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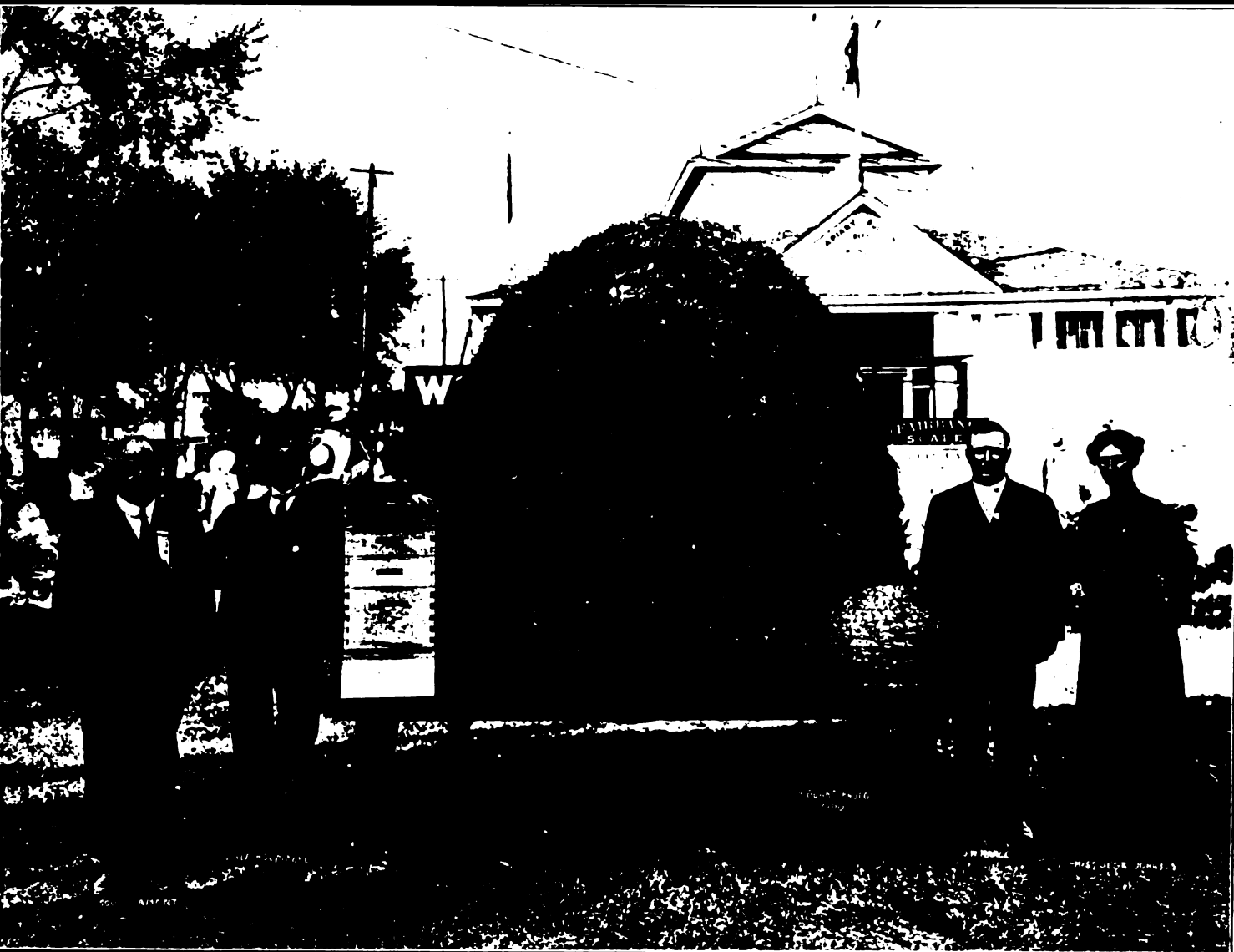
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American bee journal

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AMERICAN BEE JOURNAL

JANUARY

1913

22,138



The Apiary Par-Excellence

Apiary of Wm. Babberger, Canon City, Colorado

From 25 to 45 colonies make up the apiary. One season he harvested 23,000 sections of No. 1 honey from 25 colonies.

This photograph took second prize in our picture contest recently decided. See "Far West Department."

American Bee Journal

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White Sweet Clover Seed

I have a good supply of this seed, unhulled, which I can supply at the following prices just as soon as the orders come in:

By mail, 1 pound, postage paid, 30 cts.; 2 pounds, 50 cts.

By express or freight, f. o. b. Sandpoint, Idaho, at these prices: 5 pounds for 80 cts.; 10 pounds, \$1.50; 25 pounds, \$3.50; or 100 pounds, \$13.00.

Both as a honey-plant and soil-restorer sweet clover is hard to beat. Every bee-keeper should not only sow it himself, but should encourage others to grow it.

Special Bee-Literature Offers

Ask for my circular containing special offers of bee-literature. And if you want any bee-papers or other magazines, send me your list and I can quote you a price that will save you some money, I am sure. Address,

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Publisher and Subscription Agent,

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Booking Orders for 1913

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

**6 Queens for \$4.50;
3 for \$2.75; 1 for \$1.00**

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them:

AMERICAN BEE JOURNAL—

Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912.

L. W. WELLS.

AMERICAN BEE JOURNAL—

Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912.

C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—

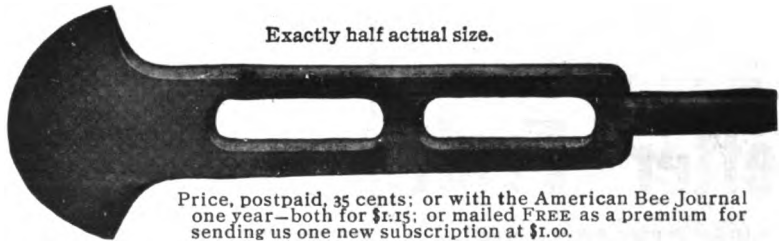
Gentlemen:—I bought a queen of you about 35 years ago, and from her I Italianized 1150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time.
Yours truly,
Portales, New Mexico, July 10, 1912.

J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is \$1.00, or with the old American Bee Journal for one year, both for \$1.60. Three Queens (without Bee Journal) would be \$2.75, or six for \$4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

The Ideal Hive-Tool Free as a Premium



Exactly half actual size.

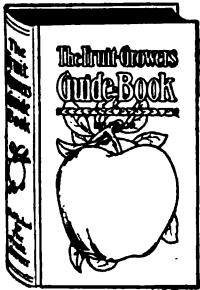
Price, postpaid, 35 cents; or with the American Bee Journal one year—both for \$1.15; or mailed FREE as a premium for sending us one new subscription at \$1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8 1/2 inches long. The middle part is 1 1/16 inches wide, and 7-32 thick. The smaller end is 1 1/2 inches long, 1/4 inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

American Bee Journal

The Fruit-Growers' Guide Book



is a complete Encyclopedia of horticulture. It has 300 pages, and is well illustrated. All about spraying, fungicides, insecticides; how to can Fruits, Vegetables, etc. It was written for the man with a thousand trees, as well as for the one with

a few trees in the dooryard. It is the result of years of study and travel.

The Fruit Grower, published monthly, is filled with up-to-date matter on horticulture.

THE GUIDE BOOK, regular price \$1.00
FRUIT GROWER, one year 1.00
AMERICAN BEE JOURNAL, one year 1.00

We club all three of these sent to one address for \$1.50, or we will send the first two for \$1.00.

Send all orders to

AMERICAN BEE JOURNAL, Hamilton, Ill.

Please mention Am. Bee Journal when writing.

Early (FROFALCON) Queens "ITALIANS"

February and March deliveries—for Untested, \$1.50 each; April, \$1.25. Tested Queens, 50 cts. additional; Select Tested, \$1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,

257-9 Market St., San Francisco, Cal.
 Or Berkeley, Cal.

Please mention Am. Bee Journal when writing.

FAMOUS QUEENS DIRECT FROM ITALY!

Bees More Beautiful, More Gentle, More Industrious,
 The Best Honey-Gatherers.

Universal Exposition, St. Louis, HIGHEST AWARD.

Extra Breeding Queens, \$3; Selected, \$2; Fertilized, \$1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write

ANTHONY BIAGGI,
 Pedevilla near Bellinzona,
 Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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Better Fruit

Published at HOOD RIVER, OREGON,

is the best, handsomest and most valuable fruit growers' paper published in the world. It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

Subscription Price \$1.00 Per Year in Advance

Sample copies upon request.

Better Fruit Publishing Company

HOOD RIVER, OREGON.

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents.
 By express f. o. b. Hamilton—5 pounds for 80c; 10 pounds for \$1.50; 25 pounds for \$3.50; 50 pounds for \$3.50; or 100 pounds for \$12.00.

We can also furnish the yellow biennial seed. This variety blooms about two weeks earlier than the white which makes it preferred by some bee-keepers. For the yellow seed add one cent per pound to the above prices on the white variety. Seed will be shipped promptly on receipt of order.

American Bee Journal, Hamilton, Illinois.

Bind Your American Bee Journal Like A Book.

You have probably desired, for a long time, some method of binding your American Bee Journal so that you could keep your back copies in a handy, convenient and readable form. We are glad to announce that in the Big Ben Binder we have at last found a simple and satisfactory binder for the American Bee Journal. It is the only practical magazine binder on the market that has the appearance of a regular bound book. No punching of holes is necessary. All that is required is to make a slight slit in the back with a pen-knife.

The Big Ben Binder holds 36 copies of the American Bee Journal. The Big Ben Binder is no experiment. It is a proven success. Binding your American Bee Journal in the Big Ben Binder is as simple as filing papers. You can now have your American Bee Journal in the form of a handsomely bound book, ready to refer to at any time. A splendid addition to your library and the very thing for your reading table. The binder is made in handsome pebble black cloth, with the name American Bee Journal stamped in real gold leaf on the front cover.

We are Selling these binders to our readers at cost price. We have had a large quantity of binders made up in advance and we have thus been able to secure a very low selling price from the manufacturers.

The Big Ben Binder will be sent you, securely wrapped and carriage charges prepaid, to any point in the United States, on receipt of only 75c. Stamps or personal check accepted. Or

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You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg-making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

MANN'S LATEST MODEL BONE CUTTER

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(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 8, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JANUARY, 1913

Vol. LIII.—No. 1

EDITORIAL COMMENTS

Encouragement

Our thanks are due to the Editor of *Gleanings in Bee Culture* and to a number of friends who have privately written complimentary letters on the present appearance of the *American Bee Journal*. We do not propose to spend time and take space singing our own praise, for deeds are better than words. We are highly gratified with the support we are securing.

Ventilation in Cellar Wintering

At the Toronto meeting, the question of cellar ventilation elicited considerable discussion. The climate of Ontario shows much variation, from the southwestern corner, which is almost as far south as the south line of Michigan to the northeastern limit, which is farther north than the north line of New York State. For that reason, the discussion was animated, and opinions varied. Mr. R. E. L. Harkness, who lives in the extreme east of the province, gave a very interesting account of his method of cellar wintering. He leaves his colonies in the cellar as late as May; once they remained until the 11th. He does not lose any bees, and finds most of them with two or three combs of brood, when brought out. All the ventilation he gives come through the door leading into the main part of the cellar, which is contiguous to his bee-cellar. But his colonies are not piled in tiers, filling up all the available space, as with most of us. He has shelves, and the hives are placed on

those shelves without any bottom-board. The number of cubic feet of unoccupied space is therefore greater than in most bee-cellars, where we place the hives in tiers of four or five. The result is that the temperature is more equable, and the need of active ventilation lessened. When colonies are piled in tiers there is a sufficient amount of heat developed to greatly increase the temperature. If ventilation is given from outside, there are possible places where the degree may be lowered to 38 or less, while other spots are still too warm, owing to the emission of heat from the clusters. Mr. Harkness' method is therefore the best. It requires a larger cellar than most of us have been in the habit of using, but it evidently pays, in the long run.

Taking all things in consideration, ventilation of bee-cellars cannot be overdone, provided the proper degree of temperature is maintained. Cellar wintering becomes dangerous only where the outside temperature is so high that it is impossible to keep the cellar cool, or where the cellar is so poorly ventilated that the air becomes foul. It should be added, however, that although it is generally considered that the temperature in the cellar should not go above 45 degrees, yet a temperature of 50 degrees or more may be all right provided there be a constant flow of fresh air.

If the cellar can be kept cool enough to maintain quietude, authorities agree that it is best to keep the bees in until

the soft maple is in bloom, so they may go to work gathering pollen as soon as taken out.

A Profitable Crop

The *Kansas Industrialist*, published by the Agricultural College of Manhattan, gives, in its number of Nov. 2, the record of a yield of \$27 worth of honey from one colony, produced in the apiary of Wm. R. Lewis. His 10 colonies gave him \$150 worth in all for the season.

Advertising Honey

One of the most profitable things for advertising honey locally is a public demonstration with a hive of bees or a single comb in an observing hive. A demonstration of this kind, with full explanations, made in front of a grocery at Guelph, Ont., attracted so large a concourse of people that the street was blocked to traffic for a while. *Field days* for apiary demonstration, when extracting honey, if properly advertised, will attract hundreds of people, who will thereafter gain confidence in the producer who thus discloses the secrets of the bee-hive to the consumer. Too little is known of our industry by the masses.

Comb vs. Extracted Honey

Not so very long ago there was a cry that more attention should be given to extracted honey. Producers of comb honey were made to feel that perhaps they were making a mistake, and no doubt some of them seriously considered the question whether it might not be to their interest to change from comb honey to extracted. That was only a year or two ago. Now comes a cry of an opposite character. "The demand is for comb honey, bee-keepers should realize that extracted is a drug

on the market, and should see that the demand for comb is supplied."

This is a little confusing. "Has there been so much change in so short a time? and if so, why?" are questions easily asked, but difficult to answer. Without attempting a full answer, we may at least consider one phase in the case, the market reports, although it is possible, even with plain figures, to make wrong deductions. Suppose we compare the reports of September, 1910, with those of the same month in 1912, taking in each case the highest quotation of those who quote by the pound in the market reports of the American Bee Journal. In 1910 the average price of comb honey was 77 percent higher than that of extracted. In 1912 it was 67 percent higher. So far as these figures indicate, they show that in the past two years the price of comb honey, as compared with extracted, instead of rising, has fallen.

A Visit to Ontario

On Nov. 11, the Editor started for the Ontario Bee-Keepers' Convention at Toronto. The Ontario Agricultural College at Guelph was visited, *en route*, and a very pleasant day was spent with the apiary students and teachers who showed us the well-known trait of Canadian hospitality.

The college apiary is composed of only a few colonies, but great care was taken of them for wintering. The hives, gathered in groups of four, are packed in large outer cases, with warm absorbents, one entrance on each side of the case.

An hour or two spent in the office of the Provincial Apiarist, Mr. Pettit, indicated the methodical manner in which the bee inspection is conducted in Ontario. The card system is used. Every bee-keeper visited during the season is recorded upon a separate card, which shows the number of colonies he possesses, the style of hive used, the condition of the bees at the time of the visit, the race of bees, etc. By this method the central office will, after a few years, possess an exact record of the state of bee-culture in the Province. Of course, the changes must be noted, but the most difficult work is surely in getting the original record established. Centers of infection of disease will be clearly delineated, and the planning of inspection work made more easy, as the task continues. Another very good plan for success in eradicating foul brood is that of having two blanks, for report by the deputy inspector and the apiarist. The deputy fills out the first blank, and upon it is

an agreement to treat the diseased colonies with a specified time, which the apiarist is required to sign. The second blank is a statement which he is to date, sign and forward, that he has treated the diseased colonies as per promise. This acts as a reminder, and I am told that they are much less likely to defer or neglect treating their bees when they know that an account is kept of the work through this method. The inspectors who do not have some such plan would do well to write Mr. Pettit, at Guelph, for sample copies of these blanks.

The meeting at Toronto was well attended, probably as many being present as in the largest State meetings on this side of the line.

Synopsis of the meeting is given elsewhere in this Journal. Two things loomed up in the mind of the listener.

The alarming European foul brood is not much feared by the man who keeps pure, active Italian bees. From all sides came the assertion that black bees are unable to cope with the disease as do the Italians. Whatever might be the differences of opinion on the methods to pursue in inspection, no one differed in regard to the advisability of keeping a good breed of Italians.

The other great point brought out is the gain of co-operation. The Ontario bee-keepers have a honey-sale's committee, and we gleaned, from the statements made, the evidence that by each apiarist reporting the amount of his crop to this committee, the members became informed of the extent of the crop. Following the advice of this committee, the price was maintained, and none of the members present secured less than 12 cents per pound for their extracted honey, when a few years ago many sold it as low as 8 cents. We may well look up to our Canadian friends for example in this matter. The United States cover a much larger territory now, but there is no reason why co-operation cannot be secured as well in a large field as in a comparatively small one.

By rising early on the morning of the second day, we were enabled to visit the Ontario Horticultural Exhibit, at the beautiful exhibition grounds, on the shore of Lake Ontario. We have seen nothing finer anywhere, in fruit, apples, pears, etc., in vegetables and in honey. Two large pyramids of honey were conspicuous, mainly extracted honey, for this is the staple product of Canadian apiarists. Middlesex county, represented by six exhibitors, had the most dainty display that we have ever

seen anywhere.

Freight Rates and Honey

We call the attention of our readers to the article bearing this title in our contributions. Mr. Smith is a railway agent and speaks knowingly. The railroad managements are often to blame for arbitrary rates, charging much more for a short haul where there is no competition than for a long competitive haul. But Mr. Smith touches the weak spot in honey packing by the average bee-keeper, unless he has had long experience. Any one who has handled shipments of honey and beeswax from all parts of the country knows how often a package arrives at a destination without any marks whatever, or worse, perhaps with the name of a big soap or cereal firm which has not been erased from the box. If we desire to secure better rates, we should learn to pack our goods carefully, distinctly, and in accordance with schedules. Until we are careful ourselves we must not blame others for being careless.

Parcels Post

The new parcels post law is in force from and after the first of January. A few months' trial will most likely convince our retail trade that they are in no danger of losing their customers from this cause. The rates are still too high, and evidently aim to protect the Express companies; but this is an entering wedge, and we will soon catch up with other nations which have led us in this years ago.

The maximum weight that may be sent is 11 pounds, in one package. The rate for the 11 pounds is:

Within the delivery limits of your Post-office, 15 cents.

Within 50 miles,	\$.35 cents
" 150 "	.46 "
" 300 "	.57 "
" 600 "	.68 "
" 1000 "	.79 "
" 1400 "	1.00 "
" 1800 "	1.11 "

For all distances greater than 1800 miles, the rate is the same as the international rate, or \$1.32 for the maximum of 11 pounds.

But we are still above the international rate in "samples of merchandise." You may send samples of your goods in lots not exceeding 12 ounces to the end of the world, in the Universal Postal Union, for one-half cent per ounce, or 6 cents for the 12 ounces, with a minimum rate of 2 cents; but you cannot send the same package within the United States, in the third zone, less than 300 miles, for less than

American Bee Journal

7 cents, or one cent more than the international postage.

Four ounces of "samples of merchandise" will go to the end of the world for 2 cents, but the same package within the limits of our own rural route will cost 4 cents.

It is worse than ridiculous that the Japanese, or any other nation, be able to send us 4 ounces of samples for less money than we can send the same amount within our own town.

The people of the United States will not be satisfied with our postal law until we can deliver any postal matter *at least as cheaply within the limits of our own country as in the Universal Postal Union.* We are still behind all other civilized nations, in this respect.

MISCELLANEOUS NEWS ITEMS

Iowa Bee-Keepers.—The first meeting of the Iowa State Bee-Keepers' Association, held in Des Moines Dec. 12 and 13, 1912, was a success in every way. Between 40 and 50 bee-keepers were present.

Besides the different addresses from bee-keepers at the meeting, talks were given by the State Entomologist and by Prof. Kennedy, of the Extension Department, both of whom gave every encouragement to bee-keepers towards securing what they want from the Legislature.

State grading rules for comb honey were adopted. The necessity for these was evident, as sections offered for sale on the Sioux City market were exhibited at the meeting, some of which contained less than 11 ounces of honey, and could not even be graded as culls. One section was shown which actually had scales of foul brood present.

The necessity for an appropriation to fight diseases was made plain. Iowa has now a very efficacious law, but no appropriation to carry it out. American foul brood is reported as present in at least 34 counties. In addition to an appropriation of \$10,000 for inspection, the Association will ask for a chair in bee-keeping at the State Agricultural College, an extension lecturer, better premiums and facilities for exhibiting at fairs and an Assistant in apiculture under the direction of the State Entomologist, this Assistant to be State Inspector. Legislation will also be asked, prohibiting the transportation of bees from one county to another, or from other States without a certificate of inspection.

Demands for inspection became so insistent last summer that the Governor and the Executive Council sent Mr. Pellett through the State on tours of inspection, his expenses being borne out of the General Funds.

This shows that it is high time that

We owe it mainly to the graft of the express traffic.

Feeding Lump Sugar

Feeding lump sugar is good in many circumstances, but we suggest that, for spring, it is a better plan to dilute the sugar and feed it warm. There is very little danger of inciting robbing, for its odor is light. Warm and diluted food is of importance during the cool days of spring. It has a tendency to induce breeding, and this watery food saves the bees many trips to the water-trough. Many old bees are chilled at the season when they are of the most value, by trips in quest of water for brood-rearing. Some loss is avoided by the use of this thin, warm syrup. But for winter, dry food is best.

hives 40 years old made of redwood and as good as new.

Some one will say: How can they tell that a dead tree has been lying in the forest 500 years. We asked the same question when we visited the big sequoias. But the answer was at hand, for our attention was at once called to younger trees apparently of that age, and already six or eight feet in diameter growing right where the head of the giant must have struck in its fall. But the California climate is especially adapted to the durability of wood, for the rainy season is short.

When all is said, however, the redwood has wonderful lasting qualities. We see no reason why it should not be used extensively for hive making, since our white pine forests are rapidly disappearing.

Pecos Valley Meeting.—The members of the Pecos Valley Association met in annual convention at Roswell, New Mex., at 9 o'clock, Nov. 12, 1912, R. B. Slease, president, presiding.

About 2500 colonies of bees in Chaves county, and not far from that number in Eddy county, were represented.

Some of the leading orchardists of the section attended. Mr. Robert J. Beers, of Roswell, a very successful orchardist, spoke in the interests of apiculture, and recognized the honey-bee to be of great value in the growing of large and perfect crops of fruit.

R. B. Slease was for the fourth time elected President of the Association; Vice-Presidents, Henry Adams, of Greenfield, Edward Scoggin, of Hope, M. N. Cunningham, of Carlsbad. Secretary-Treasurer, Henry C. Barron.

The proposed amendments to the National constitution were approved except Section 3, Article IV, as it was deemed advisable to have all memberships fall due in January of each year, thus simplifying records.

Henry C. Barron was elected delegate to the National convention to be held at Cincinnati, Ohio, Feb. 12 and 13, 1913.

The matter of supplies was taken up and discussed to some extent. Spraying with arsenic while the fruit-trees are in bloom, was recognized by the bee-keepers as a great damage to the bee-industry. Several hundred colonies were killed in the spring of 1912, in the Pecos Valley.

HENRY C. BARRON, Sec.

the disease situation be immediately dealt with, in Iowa, with vigor.

This can be accomplished in only one way, the appointment of an efficient inspector and deputies with sufficient funds at their disposal that the work be not hampered financially. Every progressive Iowa bee-keeper must impress upon the representative and senator of his district the need of such appropriation. The Governor has already promised his support.

The officers elected for the ensuing year are: President, Frank C. Pellett, of Atlantic; Vice-President, J. W. Stine, of Salem; Secretary, S. W. Snyder, of Center Point; Treasurer, C. H. True, of Edgewood.

Directors—H. B. Miller, of Marshalltown, A. H. Bonney, of Buck Grove, E. C. Wheeler, of Marshalltown.

Redwood Lumber for Bee-Hives.—On page 237 of *Gleanings in Bee Culture*, April 15, 1912, M. D. Price speaks of buying hives made of redwood which were 15 years old, and were as sound as a dollar. Commenting upon this, Mr. H. Vogeler, of Oakland, Calif., sent us a newspaper clipping from the *Saturday Bee*, of Sacramento, which says:

"Redwood is easily worked, takes a beautiful polish, and is one of the most durable of the coniferous woods of California. It resists decay so well that trees which have lain 500 years in the forest have been sent to the mill and sawed into lumber. The wood is without resin, and offers a strong resistance to fire. Insects seldom injure it because of an acid element it contains."

"Redwood timber," says Dr. Hermann von Schrenk, of the Bureau of Plant Industry, "possesses lasting qualities scarcely equaled by any other wood. Although very light and porous, it has antiseptic properties which prevent the growth of decay-producing fungi. So far as is now known, none of the ordinary wood-rotting fungi grow in redwood timber. It is because of its resistance to most forms of decay that the redwood reaches such a great age."

Mr. Vogeler states that he has seen

Honey Selling in Australia.—Goodfellow's idea of marketing honey is to ship it to Sydney to an agent, part of whose business is to ship it to Goodfellow's own local storekeeper, to supply Goodfellow's own immediate neighbors, and to ship it to towns and villages, up the line, beyond Goodfellow's own railway station.

Now, dear editor, just say, "Look here Goodfellow, there are 5,000,000 people in Australia, and they have a gob apiece, and they are, every one, ready to stick good honey in it at a bigger price than they pay for the blackest of treacle or handsomest of golden syrup. Just you get busy and get the chap that lives alongside of you to eat honey; see that the folks in your near-by towns, and the people on the

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roadside, get the honey habit, and keep your products away from the big smoke, where they don't eat it, but try to sell it in just such out-back places as *you* live in. The prosperous people of our land can better afford to eat honey at decent prices than the poorer paid artisans, etc., of Britain and the 'Contingong' can, and those same decent prices, plus extra packing, extra carrying and extra commissions."

Yours ever, G. R. HARRISON.
"Glen Havard," Ourimbah, N. S. W.
—*Australian Bee Bulletin.*

Portrait Photographed Through the Eye of a Bee.—Our readers know, as everybody does, that if you look into the eye of any one you will see your picture there. The *British Bee Journal*, in its Nov. 7 issue, gives an enlarged reproduction of a small portion of the eye of a bee, some 240 facets, with, in each of them greatly magnified, the face of Mr. James Bancroft, as photographed by Mr. Watson.

"To obtain a portrait of Mr. Bancroft was simple enough, as was also the procuring of a few of Mr. Bancroft's bees and dissecting some of their eyes; but setting up an eye so that the portrait could be seen through it and photographed was a somewhat different matter. First, a dissected eye had to be

mounted so that it could be placed upon the stage of a microscope for observation. Next, a transparent positive, on a reduced scale of the portrait, had to be made to be seen through the eye. Then an apparatus was necessary for enabling a strong light to be thrown through the portrait and the eye, on to a sensitive photographic plate."

It must not be supposed that an insect sees separate images of objects, as repeated in each facet. Only one impression reaches the brain, as is the case with human beings, even though, in the case of the bee, several thousand impressions are made on the numerous facets of their compound eyes.

This article, in the *British Bee Journal*, is well worth, by its interest, the price of a year's subscription.

Shaking Bees Out of Box-Hives.

When bees are transferred from box-hives to movable-frame hives, the usual way has been to drum them out, making the bees run up into an empty hive placed over the full one. Now they are reversing the performance in Germany, where box-hives are still the common thing. An empty hive is placed upside down upon the ground, and the full hive over this. The two are strapped together, and then both are lifted and jarred upon the ground

until the bees are shaken out. Of course, care must be taken not to jar hard enough to break the combs loose. It is said that this takes only a third as much time as drumming.

A New Honey-Strainer.—Most extracted honey, if strained at all, is probably strained through a single thickness of cloth. The difficult thing is to know just how fine a mesh the cloth should have. If it is coarse, particles of wax, etc., will pass through it. If it be fine, all the impurities, large and small, accumulate upon it, and in a little while it becomes clogged so that the honey passes through too slowly. Those of us who had opportunity to try the first extractors ever made still remember that the sieves provided at the bottom of these machines by the first manufacturers had to be removed because they clogged at once.

The illustration, given in *Bienen-wirtschaftliches Bienenzeitung*, page 237, shows a strainer, invented in Germany, intended to overcome the difficulty.

It has three strainers. The upper one is quite coarse, taking out only the larger particles of foreign matter. The middle one is a little finer, and the



A large straw-hive imitation, with a modern hive and an old-time straw-skep, in front of the apiary building at the Minnesota State Fair, September, 1912. The small straw skep was furnished by N. E. France, judge of the Apiary Exhibit. Our readers are aware of the fact that Minnesota leads all other States in the amount of premiums paid for honey and apiary exhibits. At the left of the picture is Superintendent Scott Lamont, whose portrait we gave in the August number, page 233. The gentleman by his side is the State Apiary Inspector, J. Alf Holmberg. The lady on the right hand, Miss Johnson, was employed to do the apiary manipulations, which she did very creditably.

lower one is fine enough to leave the honey entirely clean. With this arrangement a large amount of honey will pass through before there is any clogging. The lower one is the most inclined to clog, and so an extra lower strainer goes with each apparatus. The whole apparatus is 40 inches high, and the strainers are a foot in diameter. Each strainer may be taken out separately. It is called "Fix," "fix" being the German word for "quick." It sells in Germany for about \$5.00.

Even with this improvement upon the initial methods, the work of straining thick honey is probably anything but "quick."

Manipulation of the Wax Scales by the Honey-Bee.—We received sometime ago, from the United States Department of Agriculture, through the courtesy of Dr. Phillips, a pamphlet on the above-named subject, by D. B. Casteel, of the University of Texas. We found it so interesting that we tried to secure

tion as manufactured by the Weed process.

They build their homes in an improvident manner, "settling in the dry season where the rainy season will wash them out, or making their home in the rainy season where in the dry season the sun will melt their combs; in holes in the earth, between rocks, in the walls of houses, under a fairly dense bush, under a palm leaf in the open."

The color of these bees is very similar to that of the Italians.

Man's Handicraft and Nature's Provisions for Vegetation.—The accompanying picture shows the north half of the immense power plant now being built at the foot of the Keokuk bluffs, opposite Hamilton, for the big dam across the Mississippi River, just between the two cities. This photograph, which was specially taken for the American Bee Journal by courtesy of

ter than anything else that we might mention, the plentifulness of Nature's provisions?

The magnificent structure in the background, of which only one-half shows in the photo, is the largest power house in the world, and is connected with the big dam shown in our issue of May, 1912. It is the work of Hugh L. Cooper, hydraulic engineer of imperishable fame. This work is next in magnitude to the Panama Canal, and is creating a lake 65 miles in extent in lieu of the shallow Des Moines rapids of the Mississippi. It will enable ships of greater draft than formerly to descend the Upper Mississippi to New Orleans, thence to reach Panama.

The 30 big arches at the base of the building, which are the intakes for the turbines of 10,000 horse-power each, will be completely submerged, and the river bed shown in the picture will then be 50 feet under water. The smaller buildings are temporary shops within the coffer-dam. The earth wall which hides the base of the buildings in the background was a temporary coffer-dam dividing the area originally into two sections.

A full view of the entire works, from the Keokuk bluffs, will be given in this magazine ere long.

Youth Restored to Joaquin Miller by Honey and Hominy.—Hominy and honey may once more be regarded as something good to eat. Joaquin Miller, the California poet, has made the discovery. Upon the homely diet of his forefathers he has entirely recovered from his recent illness, and at the age of 75 years has undertaken what he considers the greatest poem he has ever worked upon.

The explanation has come in the announcement of his daughter, Juanita, that his diet for the past year has been restricted to hominy and honey. She says that her father has eaten it as often as three times a day, and during the past few months he has urged the food upon his visitors.

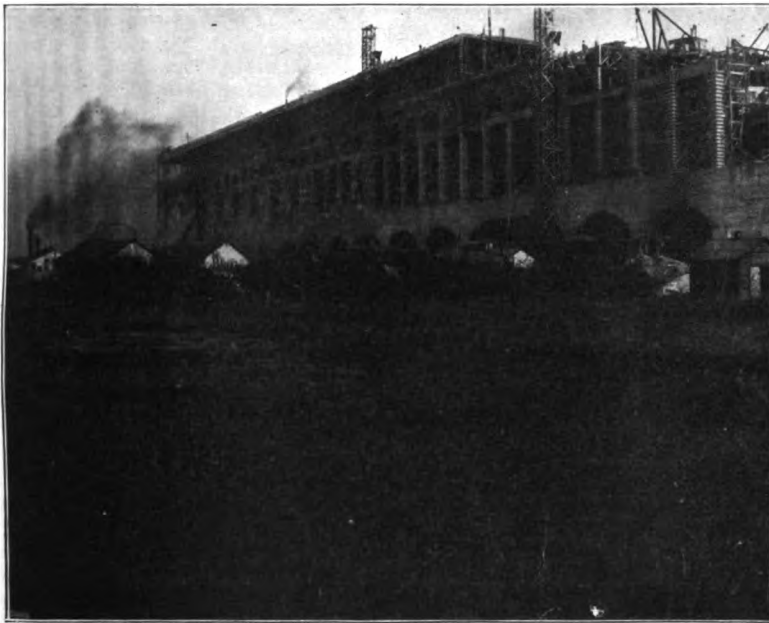
A large pan of the food has become a sort of an institution at the Miller home on the "Heights," back of Fruitvale. Questioned about his health, the poet declared that he never felt better in his life.

The poet is advancing the contention in his new poem that "God's way with man will not be done until these two seas are made as one," referring to the merger of the Atlantic and Pacific Oceans through the medium of the canal.—*Cincinnati Post*

Meeting of National Association Delegates.—Notice is hereby given that the Delegate meeting of the National Beekeepers' Association will be held in Cincinnati, Ohio, Feb. 12 and 13, 1913.

While all sessions will be open to the members and visitors, some sessions will be devoted wholly to business, through the delegates. At least one session each day will be set aside for the members to discuss such subjects as may be decided upon later, notice of which will be given out by the Secretary.

The subjects that will likely be selected for discussion will be of national



THE RIVER BOTTOM IS A NATURAL SEED BED.

two of the cuts illustrating the subject. These we are unable to get. Those of our readers who may be interested should write to the Department of Agriculture and ask for Circular No. 161, Bureau of Entomology.

The Nyasa Bees.—The British Bee Journal contains a series of articles concerning the Nyasa bee. The Nyasa Land is situated west of Portuguese and German South Africa and east of Rhodesia.

These bees are smaller than the common honey-bee. The writer, L. W. J. Deuss, reports their cells to number 65.6 to the square inch, while our bees have only 57.6 in the same space. Their drone-cells number 49.2 per square inch, while ours have only 37, or a fraction under this. It appears, however from the report, that they can and do use without difficulty comb founda-

the Mississippi River Power Company, also illustrates the contrast of Nature's work and man's handicraft, to which few people have given a thought. This part of the Mississippi River bed, which is 12 feet, more or less, below the surface, was, for the first time in the existence of the stream, laid bare by the building and pumping out of a 35-acre coffer-dam in May, 1911. *Within two weeks after the water was pumped out, honey-plants and weeds, such as sweet clover, persicarias, hearts-ease, Spanish-needles or bur-marigold, cockle-burs, rag-weeds and aquatic plants sprung up spontaneously wherever man's foot did not trample.*

Think of it! This means that the entire bed of the mammoth Mississippi River, 1500 miles in length, and averaging more than a mile in width, must be at all times covered with drifting seeds which await only an opportunity to grow. Does this not indicate, bet-

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character rather than pertaining to the production of bees and honey.

E. D. TOWNSEND, *Chairman*.
Remus, Mich., Oct. 1.

More About the Tin Section.—Replying to your invitation on page 327 of the November issue of the American Bee Journal, I beg to submit the following:

A most radical change was made in the production of comb honey through the evolution of the sanitary comb-honey package. The section holders have grooves, thoroughly protecting the side and edges of tin sections, so that cleaning them is avoided. The package keeps honey from harmful contamination, and reaches the consumer as inviting as it leaves the apiary.

The lithographed top with its celluloid disk will make the package a quick seller. Shipped at fourth-class freight rates in 50-pound containers made of corrugated paper, it will reach consignee in perfect condition, no leakage of honey, and every package salable for the highest market price.

The cost of production is the main question. The closest estimate at present on labor and material is that the package will cost about 3 cents more to produce and market than the wooden section. Each package should bring at least 5 cents more on the market than the wooden section.

PAUL HUNTEN.

Washington State Meeting.—Following is the program of a two-days' convention which will be held by the Washington State Bee-Keepers' Association Jan. 8 and 9, at North Yakima:

FIRST DAY—WEDNESDAY, JAN. 8.
MORNING SESSION, 9 A. M.

Meeting called to order by A. E. Burdick, President, after which annual reports of the President, Treasurer, and Secretary will be given.

10 a.m.—Address of Welcome by A. J. Splawn, Mayor.

Response by President A. E. Burdick.
Paper from Miss A. A. Byers, Chelan county.

AFTERNOON SESSION.

1:30 p.m.—"Spring management of bees," by Robert Cissna. Followed by discussion.

2:15—Address by George W. York, President National Bee-Keepers' Association.

3:00 p.m.—"Preparing bees for winter," by Virgil Sires. Followed by discussion.

Paper from C. P. Dadant, of Hamilton, Ill.

Paper from A. G. Kuykendall, of Grandview.

SECOND DAY—THURSDAY, JAN. 9.
MORNING SESSION.

9:00 a.m.—"Should we produce a larger percentage of comb honey?" by C. W. Higgins, of Wapato. Followed by discussion.

10:00 a.m.—"What has been the success of the Honey-Producers' Association in handling the 1912 crop?" by A. E. Burdick, President.

10:30 a.m.—"What benefits do the

bee-keepers enjoy from the National Association?" by E. B. Tyrrell, Secretary National Association. Followed by discussion.

11:15 a.m.—"Should the manufacturers and bee-keepers be more in sympathy with each other?"

A paper from The A. I. Root Company, followed by discussion.

A paper from some bee-keeper of a scientific nature. Banquet at 12:00 m.

AFTERNOON SESSION.

Election of officers for the ensuing year.

2:00 p.m.—"My method of handling bees at swarming time," by Lee G. Simmons, Vice-President, Ellensburg. Followed by short discussion.

2:30 p.m.—"Weather conditions favorable for the secretion of nectar in bloom," by S. King Clover. Followed by discussion.

2:30 p.m.—Paper from F. C. Fischer. We will discuss ways and means of enlarging the membership of the Association, and of making the meetings more educational, enthusiastic and entertaining.

The Washington Honey-Producers will hold their annual election of officers and other business necessary to be transacted on the 10th, following the bee-keepers' convention, at 9 a.m., in the Court House, by order of the President and Secretary.

J. B. RAMAGE, *Sec.*

August Number Attracts Attention.—The New Zealand Farmer, a large monthly of 160 pages, published at Auckland, N. Z., reproduces in its November edition a *facsimile* of the C. C. Miller method of queen-rearing, taken from the cover of our August number, with a short description of this method. Dr. Miller is appreciated abroad as well as at home.

Death of Paul Mickwitz.—We are exceedingly sorry to be informed of the sudden death of Mr. Paul Mickwitz, of Helsingfors, Finland, who formerly spent two years in the United States to practice bee-culture with leading apiarists. Mr. Mickwitz, who was with us for three months, was a young man of great ability. His earnestness and intense desire to foster progressive bee-culture in Finland induced him to im-



THE LATE PAUL MICKWITZ.

port Carniolan bees there. His trip of the past summer was mentioned in our columns, page 341, and the present number contains three small snapshots sent to us by him. He had promised us an account of his trip. Our hearty sympathy goes to his family.

The Texas Fairs.—The State Fair of Texas, held annually at Dallas, and the Texas Cotton Palace of Waco have been very liberal in the encouragement given the bee-keeping industry. The making of premium lists has been referred to the Texas Bee-Keepers' Association, and superintendents and judges chosen by the latter body have been recognized by the Fair Associations.

The exhibits have been truly representative of the bee-keeping industry of Texas. This year's exhibit was the best that has been held. Mr. T. P. Robinson, of Bartlett, president of the Texas association, is Superintendent of the Bee and Honey Exhibit at the State Fair, and Mr. W. H. Laws, of Beeville,



THE JULIAN ALPS—CARNIOLA.

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holds a like position at the Cotton Palace.

Mr. Wilmon Newell, State Entomologist, kindly loaned a most instructive exhibit and display, with mounted specimens, of the work and habits of the wax-moth.

All grades of Texas honey were shown most attractively, and every operation of modern bee-keeping was constantly being explained to the visiting crowds. This educational work was carried on without intermission by a committee of bee-keepers who gladly gave their time and paid their own expenses during the entire fair.

The spirit shown by these men and their painstaking work in explaining the simplicities of bee-keeping to interested farmers cannot but give Texas bee-keeping a great and immediate impetus.

An octegenarian retired bee-keeper, Major W. P. Hough, of Floresville, added a touch of real art to the exhibit by displaying some wonderful creations in beeswax. Major Hough owned the first factory for the manufacture of bee-hives in Texas, and is well known to the fraternity of 30 years ago. His advancing years have made necessary a cessation of active work. He still loves bees, and insists that the true medium of art is beeswax.

He had on exhibition two large models of the Alamo, one showing the fall and massacre in 1836, and the other as it appears today. These were in bas-relief on a background of wax. Wax of different colors was used for trees and figures in a manner surprising to one who had never seen the decorative possibilities of pure beeswax.

Another of Major Hough's creations was a curio hive made entirely of beeswax with glass paneled sides in the shape of the bust of a prominent Texas bee-keeper, and containing a full colony of bees.

Mr. L. W. Avant, of Atascosa, exhibited at the Cotton Palace a section of comb in which the cells were made of paper which had been filled and capped by the bees. This was wonderful to visiting bee-keepers, as showing what bees can be forced to do by intelligent management.

A large exhibit of bee-keeper's supplies was displayed by the Southwestern Bee Company of San Antonio. This enterprising firm has been awarded diplomas by the Texas Fairs for four successive years, and by its efforts has done much to make these annual exhibitions a success.

These expositions are doing great good for the development of Texas bee-keeping, and just now are of great value because work on a new appropriation at the next session of the Legislature is the "order of business," and anything that will place the industry prominently before the people will be of assistance.

Bur and Brace Combs.—Referring to Mr. Scholl's article in this number on brace-combs, we agree with him that they are mainly due to a crowded condition. Narrow top and bottom bars encourage the bees to build them because they can more easily join one story with the next. The bees evidently aim to make continuous combs



BRUSHING BEES INTO SHIPPING-CASES.—P. MICKWITZ.—(See opposite page.)

from bottom to top of the hive. The more different stories we have, the more brace-combs will be built, other conditions being equal. The more stories we have, the more combs we will have to scrape in the spring.

Ohio State Meeting.—The following is the program of the Ohio State Bee-Keepers' Association, which will be held Jan. 14 and 15, 1913, at Townsend Hall, Ohio State University, Columbus, Ohio:

PROGRAM.

TUESDAY 2:00 P.M.

- President's Address.
- Discussion.
- Report of Secretary.
- Report of Treasurer.
- Result of Apiary Inspection in Hamilton County—Fred W. Muth.
- With the Apiary Exhibit at County Fairs—Glenwood Board.

TUESDAY, 7:30 P.M.

- Apiculture at the University—Prof. J. S. Hine, Ohio State University.
- Address—Organization—E. B. Tyrrell, Secretary National Bee-Keepers' Association.
- Address—C. P. Dadant, Editor American Bee Journal.



SHIPPING-CASES THE DAY BEFORE STARTING.—P. MICKWITZ.—(See opposite page.)

Live Bee Demonstration—E. R. Root, Editor Gleanings in Bee Culture.

WEDNESDAY, 9:30 A.M.

- Florida Bee-Keeping—J. B. Marchant.
- Queen-Rearing—J. C. Mosgrove.
- My Experience with European Foul Brood—B. J. Holden.
- Ohio Apiculture—Impressions of a Farmers' Institute Lecturer—Prof. W. A. Matheny, Ohio University.

WEDNESDAY, 1:00 P.M.

- A Woman's Way with Bees—Mrs. Jessie Goodrich.
- Wax Rendering—H. H. Root.
- Production of Comb Honey—A. A. Doeges.
- Production of Extracted Honey—H. C. Quirin.

Eastern Illinois Meeting.—The Eastern Illinois Bee-Keepers' convention will be held in St. Anne, Ill., Feb. 4 and 5, 1913, including evening session on the 4th. Those who have promised, and others that we expect are C. P. Dadant, I. E. Pyles, A. L. Kildow, Frank Shupe, Walter Sorensen, H. Roorda, N. A. Timmons, J. Roberts and others. We want to make this meeting as important as the State convention, and want our picture "took" for the bee journals. Come and be one of us, and bring your questions. We expect good speeches, but the question-box will prevail.

H. S. DUBY, *Sec. pro tem.*

G. T. WILLIS, *Pres.*

Apiary Inspectors.—A meeting was called for Tuesday evening, Dec. 31, at the Normal School Building of Cleveland, Ohio, for the purpose of forming a permanent organization of Apiary Inspectors of the United States and Canada. A change is contemplated in the constitution of the Association of Economic Entomologists for the affiliation of Apiary Inspectors, if the latter desire it.

We will keep our readers informed of such action as may be taken.

Apiculture at the Oregon College.—A two-weeks' short course in apiculture will be given during January at the Oregon Agricultural College by Mr. H. F. Wilson, Assistant Professor of Entomology.

The course will comprise the following subjects:

- Location and Care of the Apiary,
- The Bee-family and their Development,
- The Productive Glands of the Honey-Bee, Hives and Implements, Manipula-

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tion and Management, Feeders and Feeding, Swarms and Swarming, Queens and Queen Introduction, Transferring of Bees, Bee-Diseases.

On Jan. 29 the members of the Oregon branch of the National Association will hold their semi-annual meeting at Corvallis, and on the same date the Corvallis will give a demonstration, illustrating the correct and incorrect methods of handling bees. For further information address,

H. F. WILSON,
Agricultural College, Corvallis, Oreg.

Indiana Meeting.—The meeting of the Indiana branch of the National Association will be held in Indianapolis, Ind., in the Palm Room of the Claypool Hotel Jan. 24, 1913. The foul brood conditions, and what has been accomplished, and will be accomplished, will be discussed by C. H. Baldwin, State Entomologist.

Other speakers and their subjects will be:

Outlook for Indiana Honey and Developing Home Resources—D. W. Erbaugh, Ernest Root.

Marketing Indiana Honey—John C. Bull, Geo. W. Williams.

Co-operation and Organization—E. B. Tyrrell.

We have invited Dr. Phillips, Geo. Demuth, and C. P. Dadant, and fully expect some of them to attend. We are expecting a live meeting, and are making a special effort to develop more fully Indiana's honey resources. Indiana buys carloads of honey from the West every year, much of which is inferior to the home product. When we

can have the honey for gathering it, and a market at our doors, there is no use importing any honey at all. Let's get together and furnish it all ourselves.

Geo. W. WILLIAMS, Sec.
MASON J. NIBLACK, Pres.

National Bee-Keepers' Convention.—Following is the program of the National Bee-Keepers' Association to be held at Cincinnati, Ohio, Feb. 12 and 13:

At 10 a.m. Feb. 12, the meeting will be called to order, and the proper committees appointed, including the committee on credentials. Meeting will then adjourn to enable the delegates to file their credentials with this committee.

At 1 p.m. the meeting will again be called to order, when the regular business will be taken up by the delegates. This meeting will be open to all members, but the voting can only be done by the regularly elected delegates.

At 7 p.m. the meeting will be called for a general program, in which all visitors will take part.

At 8 a.m., Feb. 13, the delegates will again take up the business matters, and should they be able to conclude their business before noon, the balance of the time will be taken up with a general program.

At 1 p.m. there will begin another general meeting of all present.

Headquarters have been arranged for us by the Cincinnati Chamber of Commerce, and a list of hotels and their rates will be given in full in the February bee journals.

E. B. TYRRELL, Sec.

using one lump for each lemon. Put the sugar into a glass jar, strain in the lemon juice, then add the cinnamon, nutmeg, allspice, honey and pineapple. Cover and put in the ice-box until ready to serve.

Then turn it into a cold bowl, add the strained juice from the clove-stuck oranges, the 2 cupfuls of iced water and the ginger ale. Serve, while it effervesces, in small punch cups. Sip a mouthful at a time, or straws may be used. A cupful of grape juice may be incorporated with good results.—*Chicago Record-Herald*.

Report and Questions from Washington

On two occasions during the past summer I had two large swarms settle on the same branch close together. They were quite low, and I placed two hives on a table close under, the entrance of a hive coming in contact with each swarm. The bees at once began to go in, and in less than one-half hour they left one hive and clustered around the other. I placed the empty hive above, and they went in and remained.

1. I did not put on a super, and have been wondering how I will handle them in the spring. I am planning to divide, and if I do, where shall I look for the queen?

2. Providing there is brood in both hives, can I make two colonies by removing the upper body?

3. A number of people keep bees here, and the place is too crowded. I have 27 colonies, and think I can do better with one-half of them, or less. As I cannot sell the bees to any one outside of the neighborhood—which would be the same as keeping them—I have decided to kill part of them, those that gave no surplus. If I can keep the old comb that has pollen in it where it will not mold or candy, would it do to feed the bees in the spring?

4. When would be the best time to do so?

5. Would heating the comb injure the honey for feeding?

6. Is pollen and bee-bread the same?

7. Is there any way to separate honey from bee-bread so it will be fit for table use? I have melted the comb in the oven and drained off the honey, and while it looks clear and nice, I imagine it does not taste good.

A great many bee-keepers ask me questions about bees, and when I tell them what a fine thing the Bee Journal is to keep one posted, they say they do not have time to read, or make some other foolish excuse for not taking a paper; even saying it is not worth while. Yet they are willing to learn from others. Some folks are odd; don't you think so?

MRS. GERTRUDE L. GOODWIN,
Roy, Wash.

It is no uncommon thing for a large swarm to cluster on two separate branches close together, having the appearance of two separate swarms, when in reality there is but one.

It looks as if that were the case with your swarm, as all the bees preferred the one hive, the one with their queen probably. Still it may be that you

BEE-KEEPING FOR WOMEN

Conducted by Miss EMMA M. WILSON, Marengo, Ill.

Queen-Cells in Sections

In scraping sections two sections were found with a queen-cell down in one corner, the cell showing that a queen had hatched. No other brood had been present. Unfortunately this is nothing so very unusual. Some years, more than two queen-cells have been found in sections, and the question is raised whether these were superseded-cells or swarming-cells, with the uncomfortable feeling that they may have been the latter, and that a swarm may have taken its departure without being noticed. When queen-cells are found in sections it is quite likely that other brood will be present, and if the section is not entirely filled with foundation that brood is almost certain to be drone-brood.

Of course, the use of excluders would entirely prevent the queen from going up to lay in the sections, yet we do not consider it advisable to use excluders, for the trouble we have with brood or queen-cells in sections is less than would be the trouble of excluders. But if we should use small starters in

sections, or anything less than sections filled with foundation, we would no doubt be obliged to use excluders. When any one complains that he has trouble with brood in sections, it is a pretty safe guess that his sections are not filled with foundation. And there are plenty of other reasons for full foundation in sections.

Another Cooling Cup

When the next warm weather comes try making a combination of fruit juice and ginger ale if you wish a delectable, refreshing beverage.

Use these proportions: Four oranges, three lemons (rind and juice), one tablespoonful of extracted honey, ½ teaspoonful of pulverized cinnamon, ½ grated nutmeg, 24 cloves, a pinch of ground allspice, a cupful of flaked pineapple, 2 cupfuls of iced water and a pint and a half of ginger ale.

Stick the cloves into the oranges through the outer skin and leave for 2 hours in a cold place. Rub the yellow zest of the lemon into lump sugar,



A MICHIGAN GIRL IN CUBA.

know that they were two separate swarms—bees often do freakish things. In that case, one of the queens would be killed as soon as they united.

1. If there is brood in both stories, she may be in either story. If in only one story she will be with the brood.

2. Yes, but one part will be queenless. By looking for eggs after three or four days you can tell which is the queenless one (there will be no eggs in that one), then a queen may be given, or, if you prefer, you may let them rear one for themselves. Instead of killing part of your colonies better unite.

3. Yes, even if it is somewhat candied.

4. Any time after bees are flying freely in the spring.

5. No, unless the honey is burned in heating, then it would be unwholesome for winter stores.

6. Yes, pollen is gathered from the flowers, and after stored in the hives it is called either pollen or bee-bread.

7. When honey mixed with bee-bread is heated the flavor of the honey is likely to be affected—the greater the heat the more the honey will be affected.

The best way is to extract the honey. If this is not possible, the combs may be broken up and the honey strained out through cheese-cloth.

Yes, it takes all sorts of folks to make a world, and some are surely odd.

Queen-Rearing in Cuba

Although rather disappointed in the two pictures enclosed, I am sending them on account of the luck I had with the batch of queen-cells shown therein. The picture is taken in an orange grove, where I have my queen-rearing outfit. At 10 o'clock a.m. I re-

moved the brood-chamber of a strong colony to a new location, leaving the honey super on the old stand, from which one frame was removed, and the frame inserted as shown in the photograph, with 28 empty cells made of pure wax, by dipping a rounded stick in it while melted, and repeating this dipping and cooling until you get just what is wanted.

In the evening these cells were grafted without royal jelly, and for the first and only time, with me, the entire 28 were accepted and sealed. The morning that the last one was capped over, a visitor happening along wished to see the cells, and the first thing I saw, on removing the frame, was a queen dodging around among the cells, and one cell torn open. I thought I recognized the queen as coming from another hive, and sure enough it was the same lady. She was a young queen, and had been laying nicely for about a week, and had plenty of honey in her home, so why she should leave it I do not know. She was captured and dropped into a queenless colony, was accepted, and is still there doing good work.

The frame was then photographed as shown, and afterward the one cell re-grafted and accepted. Taking the finding of the queen just when I did, together with the number of ripe cells I got from this batch, I think the whole operation is my luckiest. In trying to have the queen, mother of the larvæ in the cells, shown in the photograph, most of the bees were driven from the frame the lady is holding, and even then it is impossible to pick her, without knowing just where she is. The lady is a Michigan girl, and it was her first association with bees—some nerve, hey!
D. W. MILLAR.

Yes, the lady surely does show nerve to sit quietly without sign of veil or gloves while her picture is being taken. Is it not possible that this is at least partly owing to her confidence in the man who stands close by?

Even though the scene be laid in far away Cuba, a home touch is given to it by that copy of the American Bee Journal on her lap.

FAR WESTERN BEE-KEEPING



Conducted by WESLEY FOSTER, Boulder, Colo.

Spraying and Bees

The bee-keeping industry has been seriously injured in nearly all the commercial fruit districts of Colorado the past season. In the Canon City district the loss was the greatest on account of the fruit men spraying during full bloom for the leaf roller. Somewhere from 600 to a 1000 colonies and their increase were destroyed, as well as the honey crop.

The effect on the bee-industry will be to drive the bee-keepers out to the alfalfa districts. The losses from spraying were so general this year in all the fruit sections of Colorado that bee-keeping was a loss to those engaged in it.

It is possible to move the bees three or four miles away from the orchards during bloom and bring them back for alfalfa bloom, if alfalfa is not grown for a cover crop in the orchards, in which case the later sprays will poison the bloom beneath the trees. This can

be remedied by cutting the alfalfa or clover before blooming. It is practically impossible to get all to do this, however, and I have recommended for all bee-keepers to leave the fruit districts.

The effect on the fruit crop will be revealed later. It is probably true that other insects do some of the cross fertilizing, but where thousands of acres of orchards are grown, the bees are most necessary. It is my opinion that fruit-men and bee-men will have to get together, and I hope they will soon.

The bee-men secured a law several years ago forbidding the spraying of fruit trees while in bloom with any substance injurious to bees, but the fruit-men seem to resent this, and the clause in the law was changed so the bee-men have no protection except to move out of flight range of the orchards.

Spraying fruit during full bloom is

the most destructive to bees; colonies being wiped out in a very few days. The spray falling on blooming clover seems to act more slowly, some colonies not dying until early fall.

Surplus Combs of Pollen

The average bee-keeper will put away a generous number of well-filled combs of honey for supplying colonies that may become short of stores during the spring months. But does the average bee-keeper realize that pollen is as necessary (if not more so in certain localities) as honey? And why do not bee-keepers store surplus combs filled with pollen? Partly because they do not understand the conditions which cause the bees to fill their combs with pollen.

At the present time I can think of but two distinct conditions under which the bees store combs of pollen. A large colony rendered queenless will do it for lack of brood to use it.

Did you ever notice that a colony operated for extracted honey, with more chambers added above than the bees can fill, will store great quantities of pollen in the lower hive? What we need in this year of 1913, is more thorough experimental work along this line. The bee-keeper who derives his livelihood from the honey sold cannot do experimental work as satisfactorily as specially trained men. We must get the spirit of progress, so evident among farming operations, injected into the ranks of the bee-keeping fraternity.

Disinfectant for Foul Brood—Inspection

As the laws relative to inspection of bees, etc., say that the inspector or party handling diseased material must disinfect clothing, tools, etc., what do you use? What is the method of using?

What is your method of treating foul brood?

What time of year is best for first inspection, second inspection, and is a third one necessary in one season? T. D. SAFFEL.
Farmington, New Mexico.

A weak solution of carbolic acid has been used by many inspectors as a disinfectant. Its efficiency lies only in the washing away of any honey that may adhere to the hands, clothing, or hive tools. The odor of carbolic acid is disagreeable to bees and to people alike, and that might keep the bees from working on hive tools, etc., that have been washed in this solution. The best disinfectant is plenty of soap and water for the hands and hive tools, not forgetting to see that no spots of honey on the clothing are missed by the soap and water.

My treatment of foul brood is governed by conditions. I have used the single shake upon starters, and the double shake upon drawn comb with success. I have not practiced saving the brood as much as some do, because of the danger of starting robbing. The average small bee-keeper cannot be trusted with the brood-saving process at all. And many of the so-called practical bee-men spread foul brood among their own and their neighbors' bees by the same process.

Most colonies that were ordered to be treated this past season have been either shaken once or twice, the

old combs burned, and the hives burned out with coal oil.

The first inspection can best be done in April or May. This depends largely upon local conditions and season. There should be considerable brood in the hive, say five or six combs, so that if the disease is present it will have shown up. After ten days to two weeks a second inspection should be made to see if directions for treatment have been carried out. A third inspection may be needed late in the summer in a few cases, if there is a large percentage of diseased colonies in the locality. This will depend greatly upon local conditions.

You, as an inspector, will find that the spread of the disease can be largely prevented by visiting the apiaries in the fall, winter, and spring for a superficial inspection to determine whether colonies weak or dead from the disease are exposed to robbers. The combs need not be lifted or the clusters of bees disturbed, but much good may be done by caring for the disease at this critical time, and before robbing occurs.

The Apiary, Par-Excellence

The writer has visited a thousand apiaries, and four come to his mind as being worthy of admittance to the model class. Without hesitation or mental reservation, I will say that the "Apiary Babberger" is the prize taker of the four in the model class.

Mr. Wm. Babberger, the creator of this little *honey garden*, is a German artist-photographer. He has the artistic temperament to the extent that he is uncompromising in his denunciation of low bee-culture ideals. He would

say, as did Whistler, when a pot-boiler artist excused his cheap work by complaining, "Well, a man must live." Whistler replied, "Not necessarily."

Mr. Babberger would say, "If you cannot feed the artistic side of your nature as well as your body by bee-culture, better quit the bees." Pleasure must flow from all he does, or he will not do it long. Old world folks live a richer, fuller life than do we hurried, practical Americans.

If you could have taken supper with Mr. and Mrs. Babberger and "bübschen," as it was my pleasure not long ago, you would have realized as I did the beauty of just common things. The delight in plants, and shrubs, and flowers is one of Mr. Babberger's characteristics. It is a little Dutch garden that encloses his honey garden, and is all that one could wish along this line.

From 25 to 45 colonies make up the apiary. One season he harvested 2300 4x5 sections from 25 colonies. Glass panes are used for inner covers, and Mr. Babberger likes them very much. He says very few are broken, and they require cleaning but once in two years.

A goodly number of Canon City residents have become interested in bees through admiring this little garden of delight. All indoor workers can imagine the pleasure Mr. Babberger takes in this opportunity for outdoor exercise among his bees and in his garden.

When Dr. Phillips was in Canon City about a year ago, the Fremont county bee-men met him in Mr. Babberger's studio. Mr. Babberger had a pile of his honey in the center of the studio, and any one could see that he took as much pride in the excellency of his honey as in the artistry of his photographs.

SOUTHERN



BEEDOM

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

Bur and Brace Combs

There is a diversity of opinion regarding bur combs, some bee-keepers claiming that they are of considerable value in causing the bees to enter the supers more readily. It is also argued that they are valuable as ladders for the bees while storing in the surplus boxes above the brood-chamber.

On the other hand, they are "a nuisance" in the minds of probably the majority of progressive bee-keepers. When frames are handled a great deal, these brace-combs not only hold them together and make them difficult to handle, but result in smashing many a valuable bee. On this account alone bur or brace combs should not be tolerated. Another objection is that they help to cut off the communication from one story of the hive to another, materially interfering with the storage of honey in the supers, and crowding the brood-nest with honey at the expense of the supers above. This is a serious question since it not only con-

cerns the loss of surplus in the supers, but also that loss due to the weak condition of the colonies as a consequence of the queen being crowded out of egg-laying room. This is of the utmost importance where late flows may be obtained, or with colonies going into winter quarters under these conditions. Such colonies, although they have packed their brood-nest full of honey, are weak in bees, as a rule, and these bees are old ones.

This is contrary to our idea of the conditions necessary for wintering safely, and especially for building them up promptly for early honey-flows. To obtain the best results in this direction there are none better than colonies that have been able to rear a large quantity of healthy brood late in the fall. This insures a lot of young bees that will live well into the following season, when, really, bee-life is the most valuable. Each bee in early spring is worth several later on, as they are most needed in early brood-

rearing and the building up of colonies.

The following letter is in line for just such information:

"Dear Sir:—Please let me know through either of the three bee journals of the United States, what success you have had with your *Scholl shallow extracting and brood frames* as regards *bur and brace combs*. Are you troubled any with these, especially with your frames with top-bars, $\frac{3}{8}$ -inch wide and $\frac{1}{2}$ -inch thick? How do you overcome this difficulty? Please give us an article on bur and brace combs in *divisible brood-chamber hives*; also in *deep hives*, as this is a great trouble where one has to *change frames* from one hive to another. Do you think a thick top-bar, $\frac{3}{8}$ or $\frac{1}{2}$ inch, will overcome this trouble? Do you find these bur and brace combs in frames only $\frac{1}{4}$ or $\frac{3}{8}$ inch thick by $\frac{3}{8}$ or $\frac{1}{2}$ inch wide?"

"I wish you would have all your divisible brood-chamber articles in pamphlet form like Doolittle's book, 'A Year's Work in an Out-Apiary.'"

WM. P. FRITZ.

Canastota, N. Y., Nov. 25.

What is the cause of bur combs? A crowded condition of the hive, or, in other words, a lack of room. However, they are also constructed during the time of scant nectar supply, when the flow is not sufficient for good super

work. Another cause may be improper spacing of the frames, either too wide or too close spaces, which the bees fill up with combs. My experience has taught me that the most accurately-made hives give the best satisfaction in the matter of bur combs and ease of handling.

Remembering, as a first precaution, that a crowded condition results in the most bur combs, we must try to prevent such a condition. By paying close attention to the colonies, providing the necessary amount of room, and keeping the bees busy and contented, the trouble may be obviated to a great extent.

Another thing that should receive more attention is proper "spring cleaning" of the hives. At this time the frames should be scraped clean of the small bur and brace combs that may have been started. This provides nice, clean frames for each manipulation throughout the busy season, and prevents the bees adding to and enlarging those that had already been begun. With a properly constructed hive-scraping tool this work is not difficult, when it is done before the colonies have become populous in the very early spring. At this time, too, the combs are light in honey, and brittle. They are sticky, and harder to clean off later.

We have not had any trouble with the $\frac{1}{2}$ -inch thick by $\frac{3}{8}$ -inch wide top-bars of our shallow frames, with the proper manipulations of the colonies as suggested. Far more trouble have we had with the thinner, flat, wide, top-bar shallow frames. The most trouble is given by the old style all-wood frames with very thin $\frac{1}{4}$ -inch thick and $\frac{3}{8}$ -inch wide top-bars. Thick top-bars $\frac{3}{8}$ -inch thick and $1\frac{1}{2}$ inches wide are to be recommended for deep frames, but these are too thick and heavy, as well as too expensive for shallow frames. The $\frac{1}{2}$ -inch thick top-bar, $\frac{3}{8}$ -inch wide Hoffman self-spacing frame, otherwise known as the Scholl shallow frame, has given us the best all-around satisfaction.

We believe most emphatically in providing as much free communication between the various stories of the hive as can probably be obtained by cutting down the width of the top-bars, but being careful not to go to the other extreme of getting them too narrow or too thin. This ensures better super work, and a consequent larger yield of surplus honey.

Having been asked by dozens of bee-keeping friends for information, in pamphlet form or in book form, on the subject of divisible brood-chamber hives, I have already made the beginning of such a work, which will come out some time this year.

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BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Danger from Bees

This is the best time of the season to move bees from one location to another. Bees, if not properly packed and handled, are very dangerous, yet some people are very careless with them, or around them, and each season has its victims from the stings of bees.

A beggar went to the back-door of one of our Dixie bee-keepers the past season and asked for a lunch. While it was prepared he removed the cover of a near-by hive of bees and was stung to death before he could get away. D. B. Badgeley, a wealthy farmer near Parkersburg, W. Va., was stung to death by a swarm of bees last June.

Mrs. R. W. Herlong, of Fort White, Fla., had a mare and colt stung to death the past season, and several members of the family barely escaped death at the same time. The colt and mare were grazing in the apiary, and in some way upset a colony. The bees attacked them, and in their effort to escape they upset 5 more colonies. Not only were the horses stung to death, but the furious bees took possession of the entire town until night. It was stated the next morning that there were a half

bushel of dead bees on the ground around the animals.

One man who had to take refuge between the corn and fodder in a crib near by, said that he could hear the rats running through the corn below him squealing from the effects of stings.

That tragedy will never be forgotten by the people of the town. If bees cannot be securely prepared for moving by some one who has had experience, they should by all means be moved at night. I have had much experience moving bees, and on several occasions, in spite of my care, I have had narrow escapes from accidents.

Timely Suggestions

The bees have now begun their winter sleep, and seemingly their quarters are as destitute of living objects as cemeteries. It makes me lonesome to visit their quarters, where only a few weeks ago there was so much activity. But only a few weeks more and we will witness the same.

While we rest as they do, we should formulate plans, get familiar with other bee-keepers' methods, make large de-

posits in our bank of bee-keeping knowledge, so that during the busy season next year we may draw heavily from it. Do all the necessary moving of bees, and the establishing of outer apiaries, building of honey-houses, work-shops, etc. Then, too, make a list of the bee-supplies needed for next season, and get them in readiness. It will lighten the rush which is sure to come later.

Happy New Year

As it is customary to offer New Year's greetings, I now fall in line and wish a happy and prosperous New Year to every bee-keeper in Dixie, as well as to our other readers. If I could say the word or do the thing that would cause the mantle of prosperity to fall on every one, I would do it, but it is beyond my grasp, dear reader. However, it is within your reach, and it is just whether you will try or not. The old adage is true, "Where there is a will there is a way." We need men in our business who have a fixed will to do things and succeed.

Back to Florida

It is now the first of December, and I am getting ready to go to Brodenton, Fla., for the winter, where I hope to catch up with my hunting and fishing, so that when I return next spring I will be ready for the busy season. This season has been my busiest one, and I have had no vacation. I am not mentally nor physically broken down,

but I stand in need of rest, and I look forward to a change with happy anticipation. I don't expect to be idle during my stay in Florida, for I will have lots of writing to do aside from my correspondence, as I expect to write on extensive bee-culture, and cover a broader field than any writer has ever before covered.

I have operated a large number of apiaries for years, and during the past season I ran the number up to 40, consisting of over 2000 colonies. The future seems much brighter to me than the past, and I am looking forward to where my apiaries may number nearly 100. I expect to write solely from the standpoint of extensiveness.

Chunk Honey—8 or 10 Frame Hives

"MR. WILDER:—I think I would like to produce chunk honey, for it appeals to me as being the cheapest way to produce comb honey. What size of hives do you use? I am thinking of changing from the 8 to the 10 frame hive. Do you think this would be advisable?" J. WADE DICKSON.
Westminster, S. C.

There is nothing like trying a thing out and settling it for yourself. If you run a part of your bees for chunk honey and a part for comb honey in sections, you could not go very far wrong. But I believe that where these two methods of producing honey are tested side by side, the former will win; especially is this true where a bee-keeper produces honey mostly for his own use and the near-by market, because he can leave it on the hives and remove it as he sells it. Then, too, it is not so troublesome to produce, and more of it can be produced by the same number of colonies.

But if comb honey is produced for a distant market, section comb honey would be the best. Comb honey in 1-pound sections is known on all the markets. It will not granulate so soon as chunk honey. In fact, it does not granulate at all on our southern market, and this is a very strong point in its favor.

Almost all of the honey produced in the South granulates too early, or before it can be consumed, and usually a lot of it is left over at the end of the season. This, of course, is detrimental to its sale.

Now about the 8 or 10 frame hives. I use the 8-frame hives, because a single story furnishes sufficient brood-nest for the bees in many of my apiaries, where brood-rearing is never at a very great pitch, owing to certain conditions which always prevail. The 8-frame single-story hive with a shallow extracting super makes a more ideal brood-nest, and one that can be examined better and quicker. Even if the 10-frame hive gave a better brood-nest, I could not get the first frame out or the last one in as quickly. The hive is just too small for so many frames, and this reason alone would prohibit my adopting it. No doubt in some locations, especially where the main honey-flow is short and heavy, and by the methods of some bee-keepers, the 10-frame hive is the best, but I doubt if it would be advisable to change from one size of hive to another, and in many cases it would be too much of a "mix up" to adopt both.

[Friend Wilder's statement that the

10-frame hive is "just too small for so many frames," and that he cannot "get the first frame out or the last one in as quickly" with the 10-frame hive as with the 8-frame does not appeal to us. Properly made hives should have the same space, *per frame*, whether they are 12-frame hives or 6-frame. His lightning methods of handling bees, and his bee-keeping by proxy may make

the 8-frame hive more desirable to him. However, we would like to hear from him whether he does not have more swarms and smaller ones from the 8-frame than from the 10-frame. We have always considered the 10-frame hive as scanty enough, and our experience is that a colony in a 10-frame hive will fill its wide super as quickly as the 8-frame super will be filled by the colony in a smaller hive.—EDITOR.]



MR. WILDER AMONGST THE ORANGES.

CANADIAN



BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Alfred Pike's Record Crop

"What is believed to be a record yield in alsike clover in York county, and probably in the Province of Ontario, has been grown and harvested on the farm of Alfred Pike, of Box Grove, in Markham township. From 7½ acres of land, Mr. Pike has thrashed 66½ bushels of uncleaned clover seed. This was sold to a city firm at \$11 a bushel, or \$731 for the whole lot, or nearly \$100 an acre. The average price of farm land in Markham township does not reach that amount, and the one crop would pay for the land and leave a small margin over. Mr. Pike is a successful farmer, but the yield and the prices quoted will probably stand as a record for some time."

The gentleman referred to in this clipping is well known to the writer, and the facts given are beyond question. Some few years ago, while we were still on the farm, we thrashed 100 bushels from 10 acres, but the price at that time was about \$6.00 per bushel. Yield and price combined, it certainly looks like a record breaker, as it has been a long time since alsike reached \$11 a bushel. One of my apiaries was in reach of that field of alsike, and for

some reason that yard gave me the highest average of any this season. Alsike certainly pays the farmer as well as the bee-keeper, even if yields and prices are not apt to be on a par with the example under consideration.

Experiences as a Foul Brood Inspector

Mr. J. E. Crane, of Vermont, well known to the fraternity all over the continent, is writing for Gleanings in Bee Culture some experiences encountered while acting as foul brood inspector in his State. Many of his reminiscences are of a humorous nature, and have to do with queer hives, frames and fixtures. The writer of these notes has traveled around on inspection work for four years, and met with many experiences like those that Mr. Crane tells about.

When reading Mr. Crane's last article, one of the *best things* that happened while I was at the work came to

my mind. A certain section was badly infected with foul brood, nearly every apiary visited being diseased within a radius of seven or eight miles from where we believed it had spread. A bee-keeper of the neighborhood was taking me around. He was a splendid fellow in every respect, much afraid of offending any one, and in great fear of taking me to some place where there might be danger of not being well received. After we had about covered the district, I asked him if he knew of any more bees in the community that might be infected. He replied rather hesitatingly that about five miles away a hotel-keeper lived who had about 40 colonies in box-hives, and that he had threatened what he would do to anybody "that would come around and foul with his bees."

While my friend naturally wished to know if disease was in the apiary, he questioned whether we had better bother with him, as the man had the reputation of being a fighter. To make a long story short, he was afraid that the inspector, being a little fellow, might get hurt. I jokingly told my friend that the dog that barked the loudest was generally the slowest to bite, and assured him that we would go to the place at once. As we drove up to the hotel, about a dozen men were standing around. Before my friend had introduced the proprietor to me, I had picked him out. He was a typical saloon man, very portly, and with a cigar in the corner of his mouth. After my being introduced as "the inspector sent out by the Government to inspect bees," he was cordiality personified in his manner towards me, and I was assured that it gave him the greatest pleasure to have me call, and he would at once show me his apiary. I suspected a joke, as I noticed a rather peculiar smile on his face, when he spoke of his "apiary." He took me behind the hotel. What a sight met my eyes! Forty or more boxes, not hives, were standing on scantling, with a few auger holes in the tops of most of them, over the strongest of which were placed a few sections as an invitation to go above and work. I looked at the outfit, and he looked at me, a huge grin covering his face as he remarked, "Now go ahead and inspect the bees, will you?"

About one-third of the colonies had died during the winter, and as this was in May, the moths had not yet destroyed the combs. I asked him what he was going to do with these boxes of combs in which the bees had died. And he said, "Nothing, do as you like with them." The bottom-boards were loose; in fact, the boxes were sitting on old planks, so I at once upturned them and thoroughly examined all of the combs, breaking them out to do so. As dead bees were all through the yard, not one of the hives examined showing a foul brood scale, I did not care to look into the hives that had living bees in them, and told him so. With a still more expansive smile, he told me that he wanted his bees examined—the combs of the dead colonies

would be melted up anyway, and it was the bees he was particular about. Of course, the joke on his part was in the thought that the said bees, located as they were, could not be examined.

I replied that it would give me great pleasure to abide by his wish; in fact, I would be more satisfied myself to examine every colony for him. Imagine his surprise when I blew smoke in at the entrance of the first hive in the row, gave the hive a rap or two, and then upturned it. The combs were spread apart, and one with brood was taken out of the center of the brood-nest. The bees were pure blacks, and as all know who have handled them, they will, especially early in the season, stampede when thoroughly frightened. As I wore no veil, and received no stings, I kept turning one hive over after another as if in love with the job, and the look on my hotel friend's face can better be imagined than described. Before I was through, he shouted from the far corner of the yard, "You'll do old man," and there was something said about "come in and have a drink." Neither my friend nor myself accepted the invitation, as both were on the "water wagon."

Coal Cinders

Coal cinders in front of hives (page 361). It is a good idea, and a cheap way of solving a difficulty encountered by any one who has out-yards situated on very rich soil, where the grass grows provokingly fast when the bee-keeper is so rushed with work that he hates to stop and swing the scythe or run the lawn mower. Then, unless the work is done early in the morning, the operator gets a hot reception, for nothing angers bees more than to go among them in the daytime swinging a scythe, and once in a while giving a hive a whack with the end of the same.

In many localities coal cinders can be had in any quantity, and I hope to try this plan myself next season, in at least one yard. I have tried salt, and while it kills the grass, it takes a large quantity to properly fix a large apiary, at some cost, while the coal cinders can be had for nothing.

Pollen and Weight of Hives for Winter

Miss Wilson speaks of combs being filled with pollen, and says that when this is the case hives weighing 50 pounds are none too heavy (page 362). That weight is none too heavy, even if there was no unusual amount of pollen present, but the purpose of this comment is not so much to criticize her estimate as to emphasize the fact that often colonies starve by reason of the owners failing to remember that heavy combs of pollen are not "winter stores." A colony that has all new combs, and consequently little pollen in them, may often weigh much less than another colony with old combs and a great amount of pollen.

The beginner often does not understand this, and when he lifts the hives

he may pass the heavy hive and be a bit doubtful about the lighter, only to find in the spring that his "heavy" colony is either dead or suffering with dysentery, while the "light" colony will be in fine shape and have stores left. Even old timers are sometimes fooled on this question, and in this northern section I doubt if anything causes so much winter losses as allowing colonies to go into winter quarters with heavy combs of pollen in the brood-nest.

The Short Course in Bee-Keeping

The Provincial Short Course in Bee-Keeping, to be held in Guelph at the Ontario Agricultural College on Jan. 7 to 18, 1913, bids fair to out-distance all previous efforts in this direction. In a draft of the program sent me recently, I notice the names of several friends from over the line who are to take part in the lectures and demonstrations. Among them are Tyrrell, House, Clark and others. From Ontario a number of our well-known men are billed also. For the last two days of the gathering enough might be present to have an old-time convention. I think Mr. Pettit has something of that nature in view by the way he has arranged the program. Information can be obtained by writing Mr. Pettit at the Agricultural College, Guelph, Ont.

Feeding Sugar Dry

A controversy is taking place between Editor Root and A. C. Miller as to the qualities of a certain sugar, known variously to the trade as "A," "Coffee A," "Coffee," and "Empire A." Mr. Miller has proven that the bees can use this sugar even when not a bit of water is mixed with it. Can this sugar be obtained in Ontario? While we do not anticipate using much of it, what a boon it would be for early spring if a colony was found short of stores. Place the sugar so the bees could get at it, and the work would be done—no danger of chilling the brood, to say nothing of the danger of feeding liquid food early in the spring, during times of inclement weather. I want to know more about this sugar as soon as possible.

The Weather in Ontario

On Nov. 21, our bees in York county had a good flight, and a little pollen was brought in by some colonies from scattered dandelion that were still in bloom in sheltered locations. Pollen at so late a date is a record for "our locality," and such a condition is not likely to be duplicated for years. Since then the bees have had no flight, but the weather has been milder than usual for this season of the year, until today (Dec. 12) we are having wintery weather, the thermometer getting down near zero. We have had almost no snow in this section, but north and east of us quite a lot of the beautiful has fallen.

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American Bee Journal



MEMBERS IN ATTENDANCE AT

1. G. W. Fehleisen, 2. B. A. Aldrich, 3. J. S. Myers, 4. A. D. Clancy, 5. J. C. Donahue, 6. M. M. Bruner, 7. B. H. Tripp, 8. G. W. Nance, 9. J. P. Bl...
18. W. H. Pearson, 19. J. F. Diemer, 20. Mrs. E. C. Wheeler, 21. Miss Nina Secor, 22. E. E. Townsend, 23...
29. Frank C. Pellett, 30. J. L. Strong, 31. M. G. Dadaat, 32...

CONVENTION PROCEEDINGS

Ontario Meeting

BY J. L. BYER.

The Annual Convention of the Ontario Bee-Keepers Association, was held as per schedule, in Toronto, on Nov. 13, 14 and 15. The first session opened with a full house, our efficient President Mr. Denis Nolan, occupying the Chair. Aside from the number of Ontario bee-keepers present, both men and women, the latter more in evidence than usual, we had a splendid representation from "over the line" among whom we will mention the editor of this Journal, Mr. and Mrs.

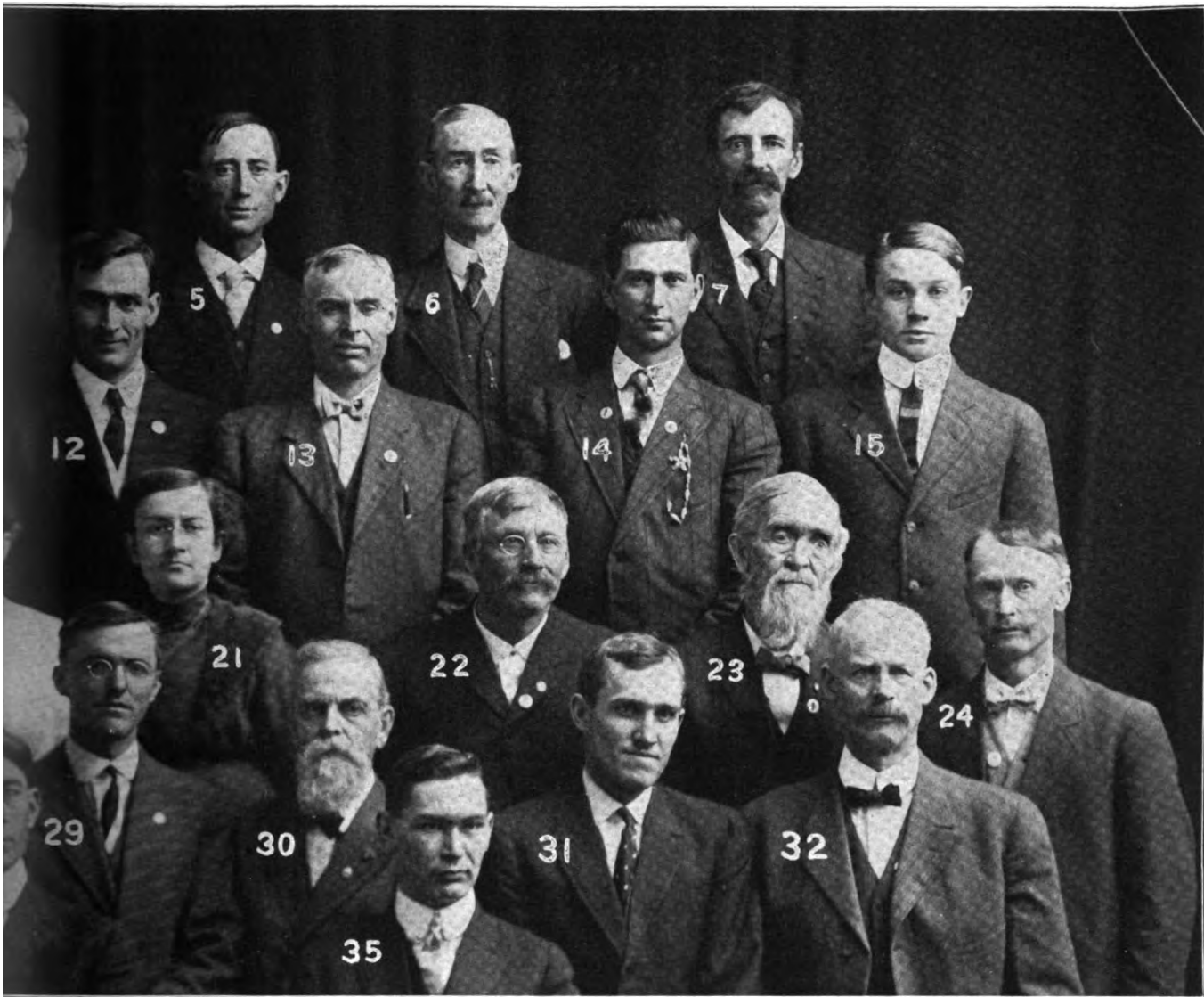
House and another lady, whose name I cannot recall, from Camillus, N. Y., Mr. and Mrs. Clark of Borodino, N. Y., and our old friend who is as much a Canadian as a Yankee, Mr. Herisher of Buffalo.

The President in his opening address referred to the fact that in many parts of Ontario the crop had not been good during the last season, but to offset this the demand for honey was very keen and prices very good. In a few of the western counties of the Province the crop had been very heavy, and in these favored localities the bee-keeper had reaped a rich har-

vest. The grant from the Government had been increased, and judging from the attitude of the Department, it looked as if we could get help from there whenever it was needed. This year for the first time the Association had put up a collective exhibit at the Horticultural Show, which was in progress at the time of the meeting. Owing to the urgent demand for honey, many apiarists had sold all their crop quite early, and as a result it was hard to get as much honey for this exhibit as was desirable; nevertheless, the exhibit was very creditable indeed, as the President declared, this being the first attempt in that line of work.

Only one County had placed an exhibit—namely Middlesex, it being among the fortunate ones in securing a good crop this year. Their exhibit was a credit to the County and to the people who did the work of gathering

American Bee Journal



OWA BEE KEEPERS' MEETING.

10. L. M. Carlson, 11. W. S. Pangburn, 12. J. W. Stine, 13. J. B. Espy, 14. W. H. Winch, 15. J. H. Schweer, 16. J. C. Stocks, 17. Arthur Wright, Grantham, 21. J. H. Burghduff, 25. A. F. Bonney, 26. E. C. Wheeler, 27. Eugene Secor, 28. S. W. Snyder, V. Hall, 33. Hamlin B. Miller, 34. —, 35. F. C. Scranton.

the goods and arranging such a tasty display of the products of the hive. Middlesex County has a splendid record for bee-keeping, and has the men and women who know how to take advantage of the opportunities that nature has put in their reach in the way of securing large quantities of as delicious honey as is produced in any country in the world.

Mr. Tyrrell of Detroit, Editor of the Review, was unable to be present to the great regret of all of us, but in his absence he did the next best thing and sent splendid papers bearing on the subjects that had been allotted to him, namely: "Improved methods of selling honey," and "Problems confronting the National."

The paper on selling honey was especially good, and I regret that it is too lengthy to appear in a short synopsis like this article. The qualities of a salesman are not acquired

in a day, any more than man can be a good bee-keeper without special preparation. As the paper pointed out, many good bee-keepers are very poor salesmen, and here came a good point in favor of organization for disposing of the bulk of the honey crop. Good salesmen must be neat in appearance, able to talk convincingly and enthusiastically about the wares they are representing, but it does not pay to exaggerate or make claims that cannot be substantiated by the goods. As an illustration in the methods of soliciting a sale as compared with an effort rather to discourage than buy. Mr. Tyrrell mentioned how one clerk will say after a purchase has been made:—

"Nothing else that you want?" while another would say "Here is a nice article that you need" or words to that effect. Generally speaking the man

who adopts the latter method will be the better salesman.

In his paper on the problems of the National, Mr. Tyrrell gave a thorough history of the Association for a number of years, stating the reasons that led up to the change of constitution as it is at present.

At the close of the discussion the feeling of the meeting seemed to be adverse to the Ontario Association becoming a branch of the National and accordingly no steps were taken to that end. While as a matter of sentiment many would like to affiliate with the National, it was felt that as a matter of business there was nothing to be gained by taking the step under discussion. One minor objection raised was that the name, "National" is not appropriate for a society doing business in two countries.

At present everything in the bee-

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keeping line seems to be booming to such an extent over here that we imagine there are no difficulties to need serious consideration aside from the fight against European Foul Brood and in so far as that work is concerned, we have to depend on our government for financial assistance. The selling of honey and other kindred problems are not problems at all just now, as it is not a question of where we can sell honey, but rather how much we can supply. My own inclinations lead me to desire affiliation with the National, but this is a question of majority rule.

Mr. Morley Pettit, the Provincial Apiarist, gave an address on the Foul Brood Situation in Ontario. Briefly, he said that American Foul Brood is being held in check and in many localities is wiped out altogether. As to European Foul Brood, however, Mr. Pettit frankly gave it as his opinion that it would sweep all over the Province, no matter how much inspection was done. The only remedy known and advised is that all black colonies be italianized with a good vigorous strain of that race of bees. From what I can learn, good Carniolans are just as good to fight the disease, but owing to their color being somewhat like that of the black bees, for beginners at least, it is much safer to italianize. The motto in regard to italianizing is "do it now" for most assuredly black bees go under in a hurry when this scourge strikes them. While there was a lot of discussion on this matter of European Foul Brood, for the first time in my remembrance, "starved brood" was not mentioned. One man who defended black bees last year, and has since gotten European Foul Brood among them said to me, "No one need ever suggest starved brood to me any more as the cause of this curse."

As the greater part of one session was devoted to the matter of running out apiaries with the aid of automobiles, one may be justified in thinking that bee-keeping has reached the most advanced stage of any period on record in Ontario. Mr. H. G. Sibbald, who is one of our most successful men, uses a Ford, five passenger car, and is highly pleased with this innovation. Seven or eight, who were present at the meeting, are also using motors in different types, and all seemed to think they were a paying investment, especially where one does not need to travel much in the winter.

Mr. Enos Farr, of Low Banks, uses a motor truck and carries extractor, engine, etc., from one yard to another. Mr. Chrysler of Chatham, and Mr. Miller of London, also use motor trucks, but they haul all the honey home to be extracted, having a large room at home with full equipment for rapid work. Both use a frame of the Heddon type, and it was pointed out that with loose hanging frames, the

combs would get damaged in transit. Personally, while admitting that both friend Miller and Chrysler are making a success with their methods, if this scribbler had to adopt similar plans he would soon go out of business. On the other hand I feel sure that neither of them would consider for a moment the thought of keeping bees as I do so that what is good for one man is useless for another—a fact that would explain many differences of opinion not only in bee-keeping but all other callings as well. No doubt many are in the same position as myself in the possibility of adding an automobile equipment to our plans. I could not afford one if I wanted it "real bad," which is not the case yet, and I am such a "botcher" with machinery that an engine to be satisfactory to me would have to be almost absolutely "fool-proof." Even if I had an auto, I would still be at the expense of a horse, as living in the country, we would need means of traveling in the winter months. Then during the past wet fall, at the time our feeding was done, some of the roads were so bad that an auto would not have served when it "ought to," and the horse would have had to be in service again. When I can afford an auto as a luxury, likely one will be bought—that time is a matter of conjecture, but as I consider the matter from a purely financial standpoint, old Dobbin will have to do our traveling for a few years yet.

J. E. Dunn gave an instructive talk on preparing bees for winter, and Mr. Harkness spoke from the standpoint of winter and spring management. One thing in which Mr. Harkness' method is out of the ordinary, and as a result created some discussion, is that he winters in the cellar, and before putting the bees inside, the regular cover is removed and a rim about two inches or more deep is set on the hive. Inside of this rim a sealed comb of honey is laid flat, and over all a few thicknesses of burlap. While he meets with good success by this plan yet to my mind he must have a perfect cellar, as in a cellar too cold there would be too much exposure of the bees prepared in that manner, when the bottom boards are also removed. The plan did not meet with much approval. The preparing of a large number of colonies in that way would mean a lot of "fussing." I would prefer having that extra amount of honey in the brood nest instead of on top of the frames. In connection with Mr. Harkness' address the usual discussion as to ventilation of bee cellars came up again, with the result, as viewed from an impartial standpoint, that fresh air, and lots of it, got the best of the bargain.

The Hon. James Duff, Minister of Agriculture for Ontario, addressed the meeting. He paid a splendid tribute

to our esteemed President, Mr. Nolan and we bee-keepers appreciated Mr. Duff's kind words very much. Encouragement was given from the Department he represents and under which bee-keeping comes. With a President thoroughly in touch with the Minister in charge of this department it seems likely for us to get any needed help. Bee-keeping as a business, in the eyes of the "powers that be" has made wonderful progress during the past few years and bids fair to keep up the pace for some years to come.

A. D. McIntosh, B. S. A., of Sterling, Ontario, told us what we can expect of the District Representatives: "Find out what you want and then ask for it." Mr. McIntosh gave ample assurance that in so far as he is concerned, the things asked for will be given to the extent that lies in the power of the District Representative.

Mr. J. W. Clark of Cainsville, the well known Buff Orpington man, gave a practical talk on Bees, Fruit and Poultry although Mr. Clark said that he would prefer the subject to be headed, Poultry, Fruit and Bees, yet he demonstrated that the right man could be very successful in all three lines combined, no matter in which order the callings were given preference.

Mr. Sladen of Ottawa, lately from England, gave a splendid paper on the subject of Bee-Breeding. Naturally, on a technical subject of this nature an extensive synopsis is necessary, and as no notes were taken, readers of the Journal will have to wait until the paper is published in full, and it will no doubt be, at an early date. Officers for next year are almost the same as last year. The places of two Directors lately deceased, David Chalmers and Mr. Switzer were filled by other men. Mr. Nolan of Newton Robinson, is re-elected president and Mr. Pettit, of Guelph College, is secretary in place of Mr. Hodgetts, who was overburdened with work. The usual resolutions were passed and the meeting adjourned to meet at the call of the Executive.

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

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CONTRIBUTED ARTICLES



Outdoor Wintering

BY G. M. DOOLITTLE.

"I live in about 43 degrees north latitude, and have a cellar that I consider unfit for wintering bees. For the the last two winters I have lost heavily by trying to winter my bees therein, so I have concluded to leave them outside this winter. Will you please tell us something about the wintering of bees on the summer stands, as I see you live in about the same degree of latitude that I do. I also note that you often answer questions for different ones in the American Bee Journal."

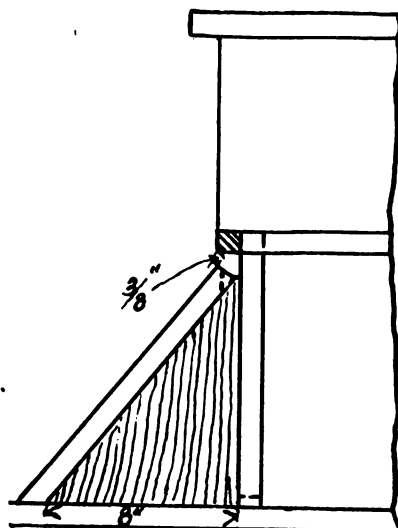
While I am an advocate of cellar wintering of bees in this locality, and believe that there is a great saving in both stores and bees by so doing, yet if I did not have a cellar suitable for bees, and did not feel free to construct such a cellar, I should certainly winter them on the summer stands. In fact, we have those within 15 and 20 miles of where I reside, who claim that better results can be had by outdoor wintering than through cellaring, as brood-rearing is started from six weeks to two months earlier when the bees are wintered out than when in the cellar, and this early brood causes the colony to reach the flow of nectar from clover in a much stronger condition than when brood-rearing is started shortly before the bees are taken out of the cellar.

There is some truth in this, if the winters are not too severe, but when we have a winter like the last (that of 1911-12), when the bees did not fly after October, and had to exist through January and the most of February in a temperature of from zero to 25 degrees below a large share of the time, the most of this kind of "poetry" seems like idle talk to all who fail to properly protect their colonies left out. A slight protection may be all right for Ohio and Pennsylvania, but in this northern latitude the heat of the bees must be depended upon for warmth; hence the whole plan of wintering must be based on conserving their heat to the largest possible extent.

In my early days of bee-keeping there was a man wintering his colonies outdoors who was very successful, and I went to see him quite often. I remember that he placed special stress upon abundant protection. He said that many who thought their bees properly protected did not realize what true protection was. In those days many acres of timothy grass were saved for seed about here, as we could then raise it cheaper than they could in the West. In threshing this ripened grass for the seed, there was a large accumulation of chaff which was very fine, yet would "stand up" under moisture, keeping light and fluffy so that evaporation was very rapid instead of

becoming wet, damp, and soggy as other chaff, especially that from oats.

He used 5 inches of this dry, fluffy chaff around the sides, back, and under the hives, with 8 inches of the same over the top, and between the chaff and the frames of the brood-nest were 2 to 4 thicknesses of old cloth cut the proper shape, from anything which had become valueless for further use in its original form. Over this chaff was a vacant space of 3 or 4 inches, then a roof over the whole hive to keep out the rain and snow. Cracks about one-sixteenth of an inch were left near the "gable ends" of this roof, so that the moisture never condensed on any of the inside parts in the shape of frost to melt during the sunny days of winter, and run into the packing, as is usually the case where no special means



MANNER OF PROTECTING THE ENTRANCE FOR OUTDOOR WINTERING.

are provided for the escape of this moisture, which is thrown off by the bees to a greater or less extent in accordance with the amount of honey consumed. Where the weather is very cool, or drops to zero or below for any length of time, the bees consume much stores for "fuel," and with this increased consumption more moisture is thrown off, and in all ordinary ways of wintering this moisture condenses on the inside walls of the hive in the shape of frost, or in the packing where an inefficient amount is used.

On the first mild day when the sun strikes the hive, this frost is turned into moisture, often of sufficient amount to run out at the entrance in the shape of water, or soak into the packing and make the bees uncomfortable during the rest of their confinement.

In addition to this packing and cover, the entrance of each hive was left quite large, and over it was a sort of vestibule or storm-door, made of a piece of board 8 inches wide, and as long as the front of the hive, up to the cleat on which the cover rested. This board was sawed from corner to corner, so that each of the two pieces made of it were at a point at the top end, which went under the cleat, and 8 inches wide at the bottom, resting on the alighting-board, which projected out that far in front of the entrance. On the slanting sides of these two pieces was nailed a board wide enough for the whole length of these slanting sides except 1/8 inch at the top, and long enough for the two uprights to be even with the sides of the hive.

In this way all rain, snow, and wind were excluded from the entrance, as the 1/8 inch, short at the top, came under the projecting cleat, excluding the storms and winds, while it gave plenty of pure air for the breathing of the bees. The packed and properly protected hive was so warm inside, and in the vestibule, that the bees could bring nearly all the dead bees, which died of old age, out on to the floor or on the alighting-board, and the dampness which usually collects where dead bees accumulate on the bottom-board of the hive was avoided. The objection to this vestibule is that when there comes a day warm enough for the bees to fly, it must be removed, or the bees will come out therein and worry themselves to death trying to get out.

But this man said that any of his family could do this were he not at home to attend to such removal himself, exceptionally. By nailing a strip on the cleat on which the cover rested, to give a downward projection of half an inch, this front board to the vestibule might be 3/8 of an inch narrower than the slanting uprights, and the bees would not be shut in, even if there were no one present when it was warm enough for a flight. This man was always successful in wintering his bees, and were I to go back to outdoor wintering, I should certainly try this plan. Borodino, N. Y.:

Freight Rates and Honey

BY B. F. SMITH, JR.

To a very large percent of the honey-producers a freight tariff and classification is something unknown. This statement is based upon instances like the following: A and B met at a convention, and B wanted some basswood honey for his own use, and asked his friend A to send him 100 pounds. As B wanted a cream can, A was to ship it in a new one. The honey came through in good shape, but the freight was \$4.18 per 100 pounds because the can was not boxed; while if it had been boxed it would have been only \$1.38. They both blamed the railroad.

In another case a farmer moved to a new locality and produced about 1000 pounds of comb honey, but as he had

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no market there, he wrote to a merchant in his old home town and made a sale of the entire lot at a certain price delivered. The shipment arrived in good condition, although the cases were not crated, but the rate was \$3.00 per 100; while, if properly packed, it would have been \$1.50 per 100 pounds. That man thinks the railroad stole \$15.

I read a statement not long ago that "no one but suckers paid the first-class freight rate; because, if they knew how, they could get the article into a cheaper class." I have also heard a great many times that the rates were made as high as the traffic would stand, and while that statement at one time was well founded, it is not true today. The items that are taken into consideration today are weight, size, volume, liability to damage, liability to damaging other freight, equipment required, claims and value. It is not the large shipper, the man who packs his honey carefully and well, who tries to send it to his customers as cheaply as possible, who makes it hard to get a reduction in the honey-rates, but it is the little producer, who does not know how to pack his honey properly.

COMPARING RATES.

Comparing honey-rates with the rates on maple syrup is about as close a comparison as we can find. In car lots maple syrup is 5th class, while honey is 4th. Glycerine, another liquid, but worth a great deal more than honey, and I hardly think the volume is any greater when put into barrels, takes 4th class rate; linseed oil, 5th class; paints in oil, 5th class; syrups of fruit for soda fountains, 5th class. These articles compare with honey in value, weight, bulk, liability to damage, etc., yet all have a cheaper rate.

In looking over the tariffs of one company whose lines traverse Illinois, Iowa, Kansas, Nebraska, Missouri, Minnesota, Wisconsin, South Dakota, Wyoming, Montana and Colorado, and there is quite an amount of honey moved in those States, we find eight special commodity rates on syrups and molasses and one on honey. Seven exceptions to classification on syrups and none on honey.

What causes honey-rates to be higher than on other goods of like nature when put up in the same style package? Honey in glass is billed as 2d class, less than a carload; but crushed fruit, preserves and jellies in glass, 4th class. I once asked a claim clerk the cause of this, and his answer was: "Did you ever see crushed fruit or jellies packed like that?" pointing to a case of honey in Mason jars that was leaking all over the freight house. "Ninety percent of the jellies and crushed fruits that we handle are put up by packers who know their business, but you cannot say that of honey shippers." Just last week I saw a shipment of some 500 pounds of comb honey packed in old oil cases; some of the sections were flat and some on edge, with two or three thicknesses of newspaper for

a cushion. Some in topless oil cans and cans set in cases. Cases marked with a lead pencil, and nothing to distinguish the top from the bottom.

Just such cases as this help to keep up the rate. It is scarcely believable the way some freight is offered for shipment, and I am sorry to say some of it is accepted; packages of considerable value wrapped in newspapers and tied with a light string, very fragile goods with hardly any protection.

Many do not realize the amount of business handled by the large companies. Walk into the shipping department of some large shipper and see what they send out daily. Then there are sometimes 50 or more of these large firms at one railway center. Your small shipment may go to the freight house with 20 dray loads of all kinds of freight, checked and receipted for on a platform, placed in the proper car, and also in the proper order in that car. A shipment from Chicago to States in the Rocky Mountains is transferred some two or three times *en route*.

PACKING.

Do not think that because a shipment is going by freight any old box will do. Some writer, not very long ago in one of our bee journals said: "Any old lumber would do for cases for extracted honey." Probably it would if it was just going a short distance without any transfer. Out of five shipments going about 900 miles, with three transfers, three arrived with damage to contents, and one with cans badly jammed. These cases were all built with new lumber, cement-coated nails, and well put up, but I know from handling some of my own cases that they are heavy, and it is very easy to break the case and not handle them very roughly either.

MARKING.

Practically all stations are supplied with marking pots and brushes. Tags should be avoided as much as possible. We receive a great many notices in this division that there is an "over" at a certain freight station without any marks of any kind, giving a description of the contents, and trying to locate the station to which it belongs. All old marks should be removed or blotted out, and agents and freight handlers are not supposed to mark your freight for you. During 1910 one express company accumulated 4395 pieces of express from which marks were gone, and for which they were unable to find owners. They probably paid for the most of them.

My only idea in writing this is that it may help the little producer to put his honey in shape so that when the National tries to get the rates to which we are entitled, the railroads will not be in a position to say, "We cannot give them on account of the large amount of damage we pay yearly on this article."

Cowley, Wyo.

An Easy Way of Getting Wax from Small Quantities of Comb

BY ARTHUR C. MILLER.

Wax rendering on a small scale, as experienced by the bee-keeper of a few colonies, is apt to prove such a shabby, disagreeable job that it is often snuffed after the first trial. The writer well recalls the attempt of one man to get the wax from about a bushel of old, black comb. His wife was away, fortunately, and after getting the fire going well in the kitchen stove, he put on the wash-boiler, half filled it with water, and as soon as it was hot he began putting in the comb. Soon he had a fine, black pudding, and he commenced bailing it out with the laundry dipper, and poured it through the best wire sieve into a nice, clean pail. It dripped on the stove and floor, clogged up the sieve, overflowed, and bedaubed everything he touched. After several hours of hard work, soaked with perspiration, tired and mad clear through, he had a few fragments of a nasty, black substance supposed to be wax.

The next two days were spent in cleaning up, and when his wife returned he had a most beautiful excuse for having bought sundry new household utensils. Now, if you want to get any old combs, just suggest to him that he extract the wax from them, and he will give them to you and then, "with a smile which is childlike and bland," he will softly open his most vicious colony, give it an accidental kick, and as you take a hurried departure you may wonder whether you really heard him say something or not.

But despite his opinions, it really is possible to render a small lot of comb easily and well. The first requisite is a convenient kettle to melt the comb in; the second, a boiler of water; the third, a wooden butter firkin or lard tub; and fourth, a strainer. The latter is a combination of a piece of chicken wire, inch mesh or less, and a piece of cheese-cloth.

The process is this: Fill the kettle half full of water, and as soon as it begins to boil put in the comb, adding a little at a time and stirring it in. When the kettle is nearly full, and the wax and water begin to boil, remove the kettle from the fire and pour the contents onto the strainer. The latter is adjusted in this manner: The wire-cloth is laid over the top of the lard tub and pushed down in the middle until it is basin-shaped; then four or five wire nails or staples are driven in the edge of the tub to keep the wire from going in further. A piece of cheese-cloth is then spread over the wire-cloth, and the strainer is ready. The contents of the kettle are slowly poured onto this.

When the strainer is about level full it is allowed to drain for a few minutes, then boiling water is poured on, a dipperful at a time, and from time to

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time the mass is gently pressed with a flat stick or paddle. When most of the wax seems to be out (and really is if the water treatment is thorough), the cloth is picked up by the four corners and its contents dumped out, the cloth replaced, and the process continued with more from the kettle. The small amount of wax left in the refuse from the strainer is not worth the labor of recovering.

The larger the tub the more water can be used, and therefore the better the results. The kettle for melting the wax should be only so large as may be conveniently handled and poured from. And if the work is to be done in the kitchen, cover the floor with several thicknesses of newspaper and save trouble from any stray drops of wax. And *never* go out and leave the kettle of wax on the stove.

Refining the wax is merely a matter of remelting it and pouring it through finer and thicker cloth one or more times.

Providence, R. I.

Can We Permanently Eliminate Foul Brood?

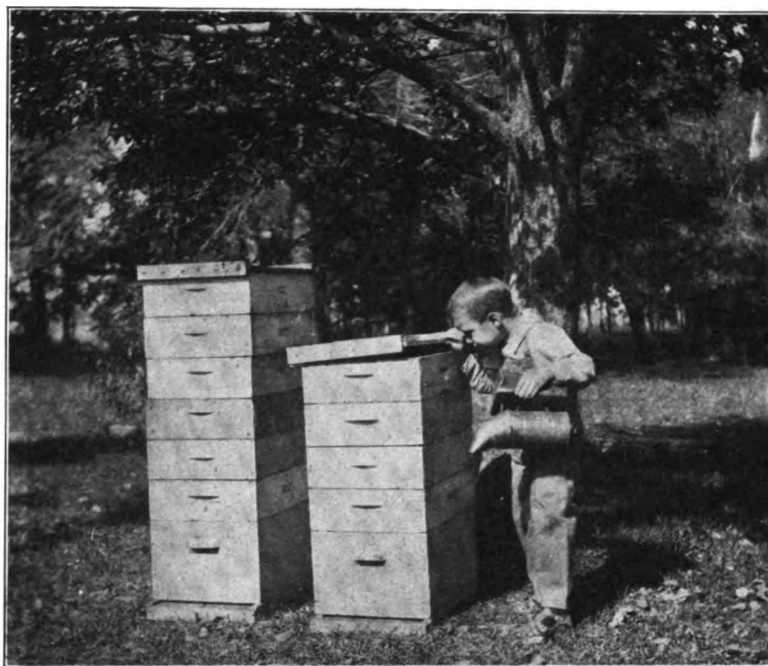
BY FRANK C. PELLETT,

Iowa State Inspector of Apiaries.

While the writer has not had a long experience as an inspector, it has become apparent that the elimination of bee-diseases is no easy matter. If all the people who keep bees were scientific in their methods as are most of the extensive bee-keepers, it would not be impossible. The practical bee-keeper, however, needs no inspector as far as he is personally concerned. Usually he has one or more neighbors who have a few colonies that must be transferred before it is possible to look into them. These same neighbors would not know foul brood if they saw it, and if they knew it was present would make no effort to rid themselves of the disease.

When the disease once presents itself in a locality the only way to get rid of it is to carefully examine every colony of bees far and near. In Iowa every eighth farmer keeps bees. This means that nearly 30,000 farmers must be looked after beside the thousands of town's people who are also bee-keepers. Foul brood is now known to be present in 32 counties, or about one-third of the State. In order to ensure a clean up it would be necessary to inspect all the bees within a radius of several miles of each diseased apiary. Very probably the disease is present in many localities where it is as yet unknown, for I think it is safe to say that not one bee-keeper in ten would recognize it.

Until we get different laws, we will continue to clean up one locality after another, only to have it break out again from some new source of contagion. Personally, I would advocate the passage of a law by the federal congress that would prohibit the shipment of bees from one State to another



MR. PELLETT'S SON INVESTIGATING.

without a certificate of health signed by some duly recognized State or government inspector. Then we should have State laws similar in intent regarding the transportation of bees from one county to another. I have read the statement from N. E. France, that they have apparently accomplished the result of getting the disease all but stamped out of portions of Wisconsin only to have it reappear from this cause.

In Iowa the bee inspection is in the hands of a State Inspector whose office is separate from that of the State Entomologist. It seems to me that the better way is to place the work under the direction of the entomologist. In most States deputies from his office visit every county every year in connection with nursery inspection. It should be possible to secure men competent to do the work of both nursery and bee inspection. However, this plan could hardly be expected to work unless the State Entomologist had an assistant in apiculture who should devote his whole time to the development of bee-culture and teaching this subject during the school year. He would be directly responsible for the success of the inspection work, and would do a considerable part of it himself. In localities where the disease is present every colony of bees should be looked after until the disease is eradicated. This will require a lot of work, and it will be easier, in my opinion, to get a sufficient increase of the appropriation for the State Entomologist's office to support this additional work than to get a separate appropriation.

The Iowa law, at present, provides that not to exceed \$1000, in any one year, shall be expended in bee-inspection. The amount is hopelessly in-

sufficient to do the work needed where there are 30,000 bee-keepers scattered over 56,000 square miles of territory.

The bee-keeping industry in Iowa is of sufficient importance to justify an assistant in apiculture at the State Agricultural College, and the development of a school of bee-keeping together with regular short-course features in this same line. It seems to me that the bee-keepers of Iowa will find this the line of least resistance.

I would like to see the matter of laws relating to interstate shipment of bees, together with uniform inspection laws taken up and thoroughly thrashed out by the National Association at its coming session. It should also be determined whether it is not time to require bee-keepers shipping honey to produce a certificate of inspection. Dr. Phillips called attention some time ago to the fact that disease is being widely spread through interstate shipment of honey from diseased apiaries.

Atlantic, Iowa.

Uniting Bees

BY DR. C. C. MILLER.

In September American Bee Journal, page 273, appears an article on uniting bees in which I disclaimed the ability to write all that could be said upon the subject. That the article was not exhaustive is shown by the fact that a Tennessee correspondent asks for further light, mentioning specifically five different points.

First, the various methods of uniting, and the general principles underlying the same, I hardly know what I can add to what I have already given, page 273.

Second—What are the best times of

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APIARY OF E. VANDERWERKEN, STAMFORD, CONN. "OF UNCOUTH APPEARANCE BUT OF REMARKABLE EFFICIENCY."
(Photographed by Edward F. Bigelow, Arcadia: Sound Beach, Conn.)

the year to unite? That question may be considered from two different standpoints. Viewed from the side of the bees, it may be said that they will unite most kindly when honey is coming in freely, and that for more than one reason; honey is such a plentiful article that they are not suspicious that any one will want to steal it, so they are not in an aggressive attitude; robbing has not been going on, and they are not suspicious of strangers that may enter; they are so busy gathering and storing the precious liquid that they have not time to be on the lookout for intruders. This might be understood to mean that bees should be united only when storing a surplus, which would be a mistake.

In my locality there is generally no surplus stored until the flow from white clover. Yet almost any time before that, when bees are flying daily, they may be united just as well as in the clover harvest; for whether they are working on willows, maples, dandelions, or fruit bloom, even if they get only enough for their daily needs for brood-rearing, they are getting enough to keep them fully occupied. I suspect it is the older bees that do most of the fighting, and when there is no work a-field to occupy their minds they are on the lookout for anything unusual and inclined to resent it. The very worst time is probably just at the close the harvest, or indeed at any sud-

den stoppage of the harvest, for then the field-bees, suddenly stopped from their labors, are trying every entrance, crack and crevice, thus stirring up resistance to any intruder; and of course any added bees are intruders.

The question may also be considered, not with regard to the peacefulness of the bees in uniting, but with regard to the time most profitable for the bee-keeper. Generally two colonies are united because one or both are too weak to be continued profitably alone, and this uniting may be in the fall or in the spring. There is advantage in uniting in the fall instead of waiting until spring; because the united colony will consume less in wintering than the two separate colonies, and also because the united colony is more certain to live through the winter than the two separate.

Third—"In the spring, when you have all the colonies you want, and the bees will keep swarming in spite of all you can do, wouldn't it be good practice to put two or more of these swarms into one hive?" Yes, if you refer to prime swarms only. If you refer to after-swarms, then I must say I am skeptical about their issuing "in spite of all you can do." For you can take the plan so often given in these columns, putting the swarm on the old stand with the mother colony close beside it, and moving the old colony to a new stand some eight days later.

And to the question whether in such a case there would be danger of all the queens being killed, I quote tradition as saying no, although I cannot quote from my own experience.

Fourth—If a swarm has been hived a week or more, another swarm will not be as likely to unite with it peaceably as when both swarms are hived on the same day. Still, they may unite peaceably even when a week apart. Neither is the uniting likely to be so successful when one swarm has a laying queen and the other a virgin as when both queens are of the same kind.

Fifth—I prefer the newspaper plan of uniting two colonies to any other, although it is not unlikely I may be a little partial to my own baby. For uniting swarms of the same kind issuing on the same day, of course there is no need of the trouble of the newspaper plan; just dump the two swarms into the same hive.

Marengo, Ill.

Put More Work into Fewer Bees

BY EDWARD F. BIGELOW.

This slogan, originated by the late Mr. Hutchinson, of Flint, Mich., is only partly right, and if accepted literally is, in my opinion, wholly erroneous. To keep more bees is the bee-keeper's



"AROUND HIS MODERN, WELL-PAINTED HIVES HE PUTS PROTECTIVE PACKING BOXES."—Photographed by Edward F. Bigelow.)

temptation and danger, unless he will do as Mr. E. Vanderwerken, of Stamford, Conn., does—put more work and thought into the bees themselves. In number of colonies, do not exceed the limit that can receive careful and continuous attention.

Mr. Vanderwerken's apiary of 22 colonies is the most efficient honey-producer for that number that I have ever seen. He has strong colonies, some of them 3 and 4 stories, full 10-frame dovetail hives. He has achieved success; first, by hard and persistent work, and secondly, by keeping the bees warm. His apiary is undoubtedly not intended as an example of spotless whiteness and neatness, but as an example of efficiency. Around his modern, well-painted hives he puts protective packing boxes, with leaves and paper clippings between the walls of the box and those of the hive. To cover the topmost hive he uses the ordinary 1/2-inch covering board; on that he piles a liberal heap of old carpets and bed-quilts, and over these puts a roof on which he has tacked tar paper. He keeps the bees as carefully protected in the hottest weather as in the coldest winter.

Here, then, are two valuable suggestions: Put more work into your colonies, and keep the bees thoroughly warm during every minute in the year.

Arcadia, Sound Beach, Conn.

Isle of Wight Disease—A New Name for an Old Trouble

BY GEO. W. BULLAMORE.

The literature of bee-keeping in England shows that, from time to time, this country has been swept almost clear of bees. Writing in 1827, Bevan, in "The Honey-Bee," said:

"In the winter of 1782-3, a general mortality took place among the bees in this country, which was attributed to various causes; want of honey was not one of them; for in some hives considerable store was found, after the bees were gone. Some were of opinion that it arose from the preceding being a bad breeding year, and thought the bees died of old age. Others attributed it to the moistness of the spring of 1783, which rendered the providing of pollen difficult, for without pollen no brood can be reared. The difficulty of collecting pollen was ascribed to the continual closing of the flowers over the anthers, the want of sun to burst the anthers, and the washing away of the pollen by the frequent showers after they did burst. The fatal influence ascribed to the wetness of the spring of 1783 seems to be improbable; though the wet might have affected the quantity of bees bred, it was not likely to put a stop to their breeding altogether, and the young bees ought at any rate to have escaped the desolating evil, if

it were old age alone; yet wherever the mortality once made its appearance every bee became its victim."

Modern bee-keeping commenced with the introduction of the frame hive in 1860, and the first few seasons were wet and cold. We find the bee-keepers of that period relating their experiences in the columns of periodicals, and using the language of the modern bee-keeper who describes his losses from Isle of Wight disease. The most noticeable feature seems to have been crawling bees, but the bees also dwindled or were found dead in a heap, on the floor-board.

There were serious losses during a run of wet years that terminated in 1883, and during the abnormal bee-seasons that have been experienced in the present century similar troubles have afflicted the bee-keeper. The bee-keepers of the Isle of Wight were the first to succeed in calling attention to the deadly nature of the malady, and have therefore been credited with having originated it.

According to systematic meteorological observations we get long irregular spells in which wet years predominate, alternating with similar spells in which dry years predominate. Bee-keeping is boomed in the dry years, and troubles other than foul brood are kept in the background during the wet spell. The Isle of Wight disease has always been with us and, favored by wet weather, has from time to time

swept across the country. Unfortunately modern methods of bee-keeping materially assisted the present epidemic.

Under the old system, islands of healthy bees were left by the disease which passed around them. In 1911, healthy apiaries still existed on the Isle of Wight. Such apiaries quickly restock a district in favorable seasons, but under the modern system, bees are imported into a dwindling apiary, and the disease is kept going until the apiaries which escape the first wave of contagion are also involved.

Microscopic examination of a crawling bee shows that the cells lining the stomach are being destroyed by a parasite. These parasites, which are in the cells, are believed to be the young stages of *Nosema apis*, a protozoon first described by Zander in 1907. The protozoa bear the same relationship to animal life that the bacteria bear to vegetable life. Unfortunately the life history of nosema cannot be studied apart from the living bee, but it is thought that these young forms, after changing into spores, escape into the bowel and are voided during cleansing flights. Bees so infected must be a potent source of infection in wet seasons when much of the water used in the hives is obtained from paths and foliage in or near the apiary. Fresh apiaries become involved through the straying of bees and swarms.

There is good evidence that affected bees sometimes do good work in a favorable season, but the stock is liable to die suddenly after being packed down for the winter. In other cases they come through winter and then dwindle badly in the spring. A heavy loss of bees is the only symptom.

Nosema disease has been called malignant dysentery, but there is no evidence on this side that dysentery is an invariable accompaniment of the trouble. That the unhealthy condition of the bee is conducive to dysentery I feel well assured. My own personal experience is that dysentery is associated with the presence of yeasts which I have always found in large numbers in dysenteric matter.

From all countries where bee-keeping is practiced we get accounts of troubles which are suspiciously like nosema disease, and I think there is great danger of this malady being spread through its real nature not being understood. Wholesale losses of colonies are attributed to the bees being old, and never to the bees being sick.

Spring dwindling is sharply marked off from paralysis, although it cannot matter much whether the bee is unable to fly away from the hive or unable to fly back to it. Losses are attributed to the use of poisonous sprays on fruit trees, and although arsenic is bad for bees, I cannot forget that before the days of fruit spraying, poisonous nectar or frozen pollen was postulated to account for "poisoned" bees. The possibility that losses were due to the malignancy of a neighbor has not been overlooked.

As to plants, a list that included all

those which have been suspected at one time or another of poisoning bees, would include most plants that yield nectar. The fact that a large number of colonies are attacked at about the same time seems to be the foundation for these statements.

A feature which was supposed to distinguish the Isle of Wight disease from all other diseases was the rapidity with which it spread through an apiary or a district. The true explanation of this seems to be that the early cases attracted no attention. These, however, caused a general infection, and with the advent of conditions unfavorable to the bee, the disease rapidly manifested itself in the affected colonies. The destruction of the first colony that shows signs of paralysis is also of little use, as the ground is soiled, and some of the sick bees have probably been attracted to other hives.

Little is to be gained by the haphazard use of drugs. We know practically nothing of their action on the bee, and the impossibility of administering them in definite quantities renders the bee an unsatisfactory patient. Reported cures must be received with caution, as enquiry may show that the colonies to which the testimonial relates died out after it was given. The only satisfactory procedure appears to be the clearing out of the apiary, and the restocking it with healthy bees after disinfecting hives and appliances. If the apiary can be started on a fresh site so much the better. If this is not possible, the site should be kept clear of bees as long as possible, and might be dug over with advantage. Then if your neighbor does not insist on keeping up a dwindling apiary, success as a bee-keeper may again be possible.

Some of the early cases of Isle of Wight disease were diagnosed as paralysis or maikrankheit. Paralysis is said to be a disease of warm climates, but its ravages in Florida and California may have some relationship to rainy seasons and swampy ground. It is hoped that observations may be made from this standpoint. If this disease is specifically distinct from the Isle of Wight disease, some definite means of distinguishing the one from the other is badly wanted.

Albury, Herts, England.

[Is it not probable that the different names, May disease, mal-de-maggio, maikrankheit, paralysis, vertigo, and the so-called constipation, are different names for the same malady, in perhaps more or less virulent stages?

L'Apicoltore, of Milan, a few years ago, gave out reports concerning this disease, showing it to be very destructive in the province of Ancona. Hamet, in his Cours D'Apiculture, reported the same disease, under the name of vertigo, as very damaging in northern France, between 1850 and 1865. In both cases, some kinds of blossoms were blamed for the trouble. But the apparition of the same disease both in

Florida and California, where the floras are entirely different, and its existence in our northern States, occasionally in spring, would indicate that we must seek the original spread of the trouble more in peculiar atmospheric conditions than in the nature of the blossoms which furnish the stores.

Bevan, himself, whom our correspondent quotes, mentions the name of "vertigo" to describe a trouble much resembling the Isle of Wight disease: "This disorder is said to occur more between the end of May and the end of June, and to be marked by a loss of power in the hind quarters, by a dizzy manner of flying, and by irregular motions, such as starting, falling down, etc."

The fact that *Nosema apis* has been fed to colonies, in some cases, without producing the disease indicates that conditions must be favorable to its spread before the disease becomes dangerous.—EDITOR.]

Use of the Bee-Escape for Extracting Honey

Read at the Illinois State Meeting

BY L. C. DADANT.

To the enthusiastic bee-keeper, work about the apiary has its fascinations as well as its drawbacks. In my judgment the most fascinating is putting on supers when the flow is on, and when the bees are fairly rolling in the honey. The most disheartening is feeding in June, when all colonies are on the point of starvation, and seem likely to starve for the rest of the summer. But the hardest and most trying work is taking off honey by brushing bees after the crop is over and every bee is intent on doing all the mischief it can.

Through the columns of the bee journals, and at various convention meetings, noted and practical beekeepers have made the assertion that they would rather take off honey by brushing than by using bee-escapes. I believe the conditions under which these men work must differ markedly from the conditions with us. Very probably they take off their honey at a time when there is still a light flow, and it may be that their super combs are well sealed throughout. Then the bees are more easily removed or smoked down than when there are empty, or partly empty, combs in the supers. Even with combs well sealed there is bound to be trouble.

When bees are crowded for room they nearly always build bur or brace combs and fill them with honey. Taking out the frames from every super to brush the bees, or even taking the supers apart is bound to tear up some comb, make the honey run, daub up some bees, and very quickly start robbing. No sooner is robbing started

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than some of the quietest colonies will become veritable demons, and the pleasure of taking off honey will become the most strenuous job one can undertake.

Taking off honey when there is still a substantial flow is relatively pleasant work, as there are few cross bees and little robbing going on. But in a honey dearth, when one has to brush and brush, when a hive has to be kept open for fifteen, twenty, or even thirty minutes at a time, that is when one really earns the honey he is getting. To my mind the bee-escape is one of the most useful of modern bee-implements. With an apiary of 30 to 100 hives, yielding from one to five tons of honey, we feel that we can make more rapid headway, save time, trouble, loss and temper by using the bee-escape throughout.

There is little doubt that more honey is taken from the hives today without the use of bee-escapes than with them. Probably the most serious objection offered to them by the practical apiarist is that they are not handy for use in out-apiaries. The fact that they have to be put on the hives the day before extracting necessitates an extra trip. When the apiary is at a great distance this is certainly objectionable. Many extensive bee-keepers, however, are now using automobiles or motor cycles, and with the help of these machines the time lost in going back and forth is reduced to a minimum, and can easily be made up in the time saved by using the escapes.

In putting on escapes we usually begin about 2 or 3 o'clock in the afternoon, depending upon just how warm the weather is. Should the weather be exceedingly hot, and the hives exposed to the sun, there is danger of the surplus combs melting down and being destroyed. One must remember, of course, that as soon as the escape-board is put on, the circulation in the upper part of the hive practically ceases. As soon as the bees in the upper story find themselves shut off from the entrance they seek a place of exit.

By next morning they are down in the brood chamber, and the supers are free of bees and ready to be taken off. We have found that on cool nights bees go down better than on warm nights, as they seek the cluster for warmth. However, if it is very cool, and the temperature hovers around the freezing point, the bees will not go down very well, and very often a small bunch will cluster in the upper super for warmth.

That the supers should be bee-tight is a very important item. Just as soon as the escape-board is in place, and the bees start down, the supers are left practically without any defense, and the robbers are not slow to discover this and make merry with the stores they find so easily.

The time it requires to put on escapes is from one to two minutes per hive, depending upon how tight the super sticks to the hive, and just how good a joint the super makes with the escape. With us there is an over-abundance of propolis, and the lower edge of the super is well gummed. If the weather is warm the propolis mashes out of the way, but if the weather is

cool it sometimes forms lumps and holds the super up from the board high enough to allow a bee to pass under.

Before we used the bee-escapes in our apiaries we were always sure to have several bad cases of robbing at extracting time. Since we have adopted their use it is a very uncommon thing to have a single colony in danger at any time, and the honey-house is not so heavily besieged by robbers. Nearly every bee-keeper realizes what a bad case of robbing means, and dozens of anti-robbing devices have been invented with more or less success. The best safeguard is to nip it in the bud and prevent any bee from securing stolen sweets.

When the escape is put under several supers in one tier, the bees are a little slower to vacate them than when put under but one super. Very often, however, we have put them under four and five supers (shallow supers), and have had the bees go down in 12 to 18 hours. Usually the bee-escapes are put on all of the hives at one time, and the single supers removed first, leaving the higher tiers for the last, so as to give ample time for the bees to descend. Occasionally a colony refuses to leave the supers; several things may be responsible for this. Brood in the supers is certain to keep the bees above, as they always protect their brood and keep it warm. The presence of a queen in the super will always prevent their descending. A hole in the bee-escape board, allowing the bees to pass back and forth, destroys the value of the escape. This objection may seem un-

necessary, but it is not uncommon for the escape-board to either have a small knot hole or a crack caused by the shrinkage of the wood. A particle of comb, a dead bee, a cobweb, or a straw in the escape spring renders the escape ineffective.

Another objection to the escapes raised by many bee-keepers is that in cold weather the honey becomes stiff as soon as the bees have left the supers, making extracting a much harder job. To my notion, handling heavy honey is preferable to brushing bees that are numb and fly just far enough to light and crawl over the bee-keeper.

These drawbacks are usually very easily overcome. When queen-excluders are used there is never any fear with either the queen or brood above. With a little care the escape-board can be made bee-tight, and the springs kept free of obstructions.

When the escape is used there is no need of handling the frames in the apiary, as this is all done in the honey-house. When the escapes are first put on, the lower super is pried loose, and if there is any dripping honey it drips on the escape-board and is all licked up clean by morning, or by the time the supers are ready to be taken off.

I am unable to give any information in regard to using bee-escapes for the production of comb honey, as our experience has been with extracted honey exclusively. However, it seems to me that they would be even more indispensable to the comb-honey producer than to the bee-keeper who runs for extracted honey alone.

Hamilton, Ill.

DR. MILLER'S



ANSWERS

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.

Feeding Bees in a Cellar

Is there any possible way of feeding bees in a cellar? I think some of my colonies are too short of stores for winter.

My cellar is rather warm this year on account of a new furnace. I have a separate apartment for the bees with plenty of fresh air, but it is still too warm at this date; the temperature keeps up to 55 and 65 degrees. The bees are very quiet yet.

I thought of giving each colony syrup separately in a sort of little tray so arranged that the bees could not drown. Would the bees come to get this syrup or could it be given in some other way? How and when could it be done so that half of the bees would not rush out of the hives? My hives are put in two rows, one on top of the other and all the covers are off. STE. MARTINE.

ANSWER.—With a big lot of fresh air for the bees you will likely find that they will winter well at 55 or 60 degrees, although they will consume more stores than at a lower temperature. Still, as you say, the increasing cold will bring down the temperature. Better not let it go below 45 degrees.

If I understand correctly, your hives are raised in front by 1-inch blocks, and that makes a space of at least an inch under the bottom-bars—possibly an inch and a half. That allows you to put a shallow dish of feed under the frames, and if your colonies are reasonably strong they ought readily to come down to the feed at 55 or 60 degrees. If it is much colder than that, and the colonies are rather weak, they will not be likely

to come down to the feed. Instead of the proposed wire-screen over the syrup you may do better to cover the syrup with cork-chips. You will get these from your grocer. He gets them as packing for grapes in cold weather, and generally throws them away.

If feeding below does not prove a success, you can feed above. Edwin Bevins reports excellent success with lump sugar. Wet the lumps by sprinkling water upon them, but do not make them wet enough to dissolve the sugar. Then lay the lumps directly on the top-bars over the cluster of bees.

Wintering—Space Above the Frames

Is the following plan good: I have a 3/4-inch board over the brood-frames. There is a 3/4-inch strip all around the outside of the board, and at each end a 2x7 inch opening. A piece of wool carpet is placed over the whole board. Also a center opening in the board 5 inches in diameter is closed by the carpet. This hole is made just right to set a feeder in, and can be used to give winter feed without disturbing the cluster very much. The whole top is then packed with a 6-inch chaff cushion.

I think the end openings in the board are large enough to carry off all the condensed moisture that may accumulate. Some bee-keepers advocate putting 1/2-inch strips over the frames, and the carpet immediately over this. Which plan do you think best? or is one as good as the other? My bees are packed in winter-cases with 6 inches of

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planer shavings all around the hives. I bridge over the entrance and allow a $\frac{3}{8}$ inch space. What do you think of this manner of wintering?
INDIANA.

ANSWER.—Your plan should work well, as also the plan you mention with the $\frac{1}{2}$ -inch strips. Very likely you would find no material difference in results between the two. Your plan does not give quite so free a passage for the air, but likely it gives passage enough.

A Frame-Lifter

Is there anything like a frame-lifter on the market? I was asked by an old bee-man to invent a small tool, one which a man can put into his pocket, but make it pull the frames out easily.

I made a little tool from sheet steel. It cuts the glue between the frames, and in a moment you can pull any frame with one hand and place the same frame back again. Your hand does not come anywhere near the frame or bees. The tool is 8 inches long, and weighs about 12 ounces. It grips the frame in the center, and holds it so well that one cannot pull it off with two hands. At the same time all you have to do is to put the frame back into the hive with one hand, touch a little catch with the finger, and off comes the tool.

Would a tool of this kind be worth anything to the bee-men, and do you think it would pay to have it patented?
WISCONSIN.

ANSWER.—I don't think a tool of the kind is in common use in this country, although frame-tongs are common in Europe. They are, however, I think, generally for handling frames in side-opening hives. A tool that would allow one to lift out a frame with one hand would likely be valued by some. Others would object that generally both hands are free anyhow, and that with one hand there would be more danger of killing bees, since there would be more danger of striking against the other combs or against the hive-ends. It is a little doubtful whether it would be worth while patenting such a tool, but then I don't know.

Doolittle Plan of Honey-Production

Have you ever tried the methods for honey-production, described by G. M. Doolittle, in his book "A Year's Work in the Out-Apiary?" If not why not?
IOWA.

ANSWER.—I have never followed the plan fully in all its details, excellent as it is. There are good plans sometimes given that it may not be the best to follow; sometimes because although they may suit my conditions the plans I am already following may seem so good that I do not think I would gain enough to make a change. Yet I suppose I have suffered more from being too changeable than from being too conservative.

Ill-Natured Bees—Saving the Scrapings of Comb Money

1. It is said that people are better natured after having eaten, and if this is so, is it not possible that the same might apply to a colony of bees. It often happens that a colony which stores a large surplus has a disagreeable disposition. Is it not possible that this is due, at least partly, to the fact that such a colony tries to get along on as little food as possible, and so we have some colonies which store a large surplus, and are ill-natured colonies.

2. I once melted up some scrapings which I got from some sections and other sources to get purer propolis, as I thought, since I supposed all but the foul matter, such as wood, would melt; but to my astonishment only about one-half changed to a liquid, and the rest, which I suppose was the propolis, changed to a black mass.

When I strained it I found that about one-half of it was bright yellow beeswax. Would it not pay for extensive producers of comb honey to heat and press their scrapings when preparing their crop for market, and so get a large amount of wax?
CALIFORNIA.

ANSWERS.—I. Your facts are all right, but you are hardly making the right use of them. It is true that bees, like folks, are good-natured when well fed. It is also true, perhaps unfortunately, that some of the best storers are ill-natured. But it hardly follows that they are in their worst temper when gathering rapidly. Indeed the opposite is true. Neither does it seem likely that the bees

are such poor economists as to put themselves on short rations when all their strength is required to store the flood of sweets that is offered.

2. Yes, you are right. No doubt many a pound of wax is thus wasted that might be saved.

What is the Value of a Swarm?

Will you answer the question contained in the last line of Edward F. Bigelow's article, on page 330 of the American Bee Journal; that is, such a swarm as he described (or any other) in September. I take it that to get the true value of such a swarm they would have to be hived in an empty hive the same as a June swarm. To help them would be adding artificially. An answer might be of benefit to beginners and slow witted people like myself.
BADGER.

ANSWER.—A slight change in the form of the question referred to will make it read:

"If a swarm in July is not worth a fly, Can anybody remember What they are worth in September?"

Professor Bigelow, of course, refers to the old rhyme:

"A swarm in May is worth a load of hay;
A swarm in June is worth a silver spade;
A swarm in July is not worth a fly."

That jingle must have been made for some locality with which I have no acquaintance. Taking it, however, at its face value, if it teaches anything it teaches that the worth of a swarm as the season advances is a constantly diminishing quantity. In July it sets down to the zero point, after that it becomes a negative quantity, by September becoming a good deal less than nothing. And that might be literally true at the time the doggerel was composed, when all that was done with a swarm was to dump it into an empty box or skep and leave it to its own devices. For the swarm would be worthless, and the mother colony would be damaged by the exodus. It is just possible—not probable—that in the present instance there was an exception, and that the flow was so heavy and continued so late that left to themselves the swarm might have built combs and stored enough for winter. The point that you have in view, probably, is that such a late swarm would be of no value, only as value would be given to it by what the bee-keeper should do for it; and in a general way you are right. Yet if it should be furnished with combs and stores, so as to winter over, the value of the colony in the following spring might be greatly beyond the value of the combs and stores furnished. Yet, again, it might be more profitable still to return a September swarm to the parent colony.

White Pine or Cypress?

Which do you consider the best and most lasting hive material, white pine or cypress?
IOWA.

ANSWER.—My guess would be that pine should have the preference, but I have had no experience with cypress.

Cement for Honey Jars

Kindly inform me how the cement is made which is used for sealing honey jars.
PENNSYLVANIA.

ANSWER.—Generally, I think, no cement is used. But I have known it to be used made of rosin and beeswax, equal parts, or with a smaller proportion of wax. I suppose paraffin might also be used.

A Problem in Cellaring

Will you give me some light on how to carry bees into the cellar without the bees flying out and stinging. For years it has been a mystery to me how to carry bees in, and sometimes out, without closing the entrances. Is there a difference in bees, handling, location, or what? I am curious to know.

First, I will give location of bees, cellar, and mode of carrying them in. Then if you run out of "don't knows," you may let me have a guess on the trouble. The bees are in 8-frame and Danzenbaker hives (100 colonies) at an out-yard, located on a farm. They are in an orchard about 12 rods from the cellar. On account of mice in the cellar I am obliged

to have wire, four meshes to the inch, over the entrances when in the cellar, the same being tacked on early in the fall. Then a common lath is notched out $\frac{3}{4}$ inches, is center nailed over the wire, and afterward pried off in the cellar. On account of inequality of bottoms this entrance closer does not always fit tight against the wire-cloth or hive.

The bees are carried to the cellar on what you would probably call a stretcher, 2 colonies to a load. No matter how careful we were to carry them the 2 rods, the bees would be all over us, with the entrances open. Consequently the entrances have to be closed *tight, very tight* when we carry bees in. It takes about as much time to see that the hives are closed tightly as it does to carry them down cellar. Probably 25 colonies are carried near the cellar-door and set down, then those first carried are taken into the cellar (still closed), and later, after the bees have quieted down some, the entrances are opened 1 to $\frac{1}{2}$ inches. Sometimes this mode is followed.

Probably 25 to 30 colonies are carried down and piled near the door. Then the entrance closers are removed in about one-half hour or more, a wet rag is placed over each entrance, and the hives carried in. But the trouble with this plan is when the wet rag is removed, the bees pour out of the hives over me and everything else near. Many take wing and are lost. Of course, this is the worst. Sometimes by being very careful not many will leave the hives.

I have tried every way known to carry them in. I tried going slow and careful, but all to no use; they are sensitized beyond degree. If you want a start of these bees you may have all that you can carry 2 rods without bees escaping with the entrance open. As to strain of bees, these bees have been bred from queens of about all of the best queen breeders. But of late years I have followed your plan and reared queens from the best honey-gatherers in the apiary, and I am with you in that every year. My best yields are always from my home-bred hornets. One yard I winter outside, but this yard I place in the cellar, and every year it is a task I dread; it is worse each year. This season the bees were cellared Nov. 23. The distance from the cellar makes the carrying by one man of one colony too slow, as it takes nearly one day for two men. Thanks for any light you can give me.
IOWA.

ANSWER.—I will tell you just as nearly as I can just how my bees were carried into the cellar this year. They were carried in Nov. 25, in the morning. The cellar had been wide open the night before. Although that does not make so much difference at carrying in as it does at carrying out, still it is better to have the cellar cool as possible, so the bees will settle down quietly when brought in. The average distance of the hives from the cellar-door was about 10 $\frac{1}{2}$ rods. Then they were carried a rod or so farther to their place in the inner room. Two able-bodied men took about two hours to carry in the 93 colonies. One of them was experienced at the business; I think the other had never carried bees before. Each man picked up his hive, carried it in his arms into the cellar, and set it in its place. You may judge of the quietness of the bees when I tell you that no sort of protection was used in the way of veils, gloves, or smoke, and the entrances were left wide open. There was one exception: I had failed to staple on the bottom board of one hive, and when the bottom dropped off I had to use smoke to fasten it on. But I must hasten to add that this year was exceptional. I think they were never carried before without veil or gloves, for at least a few colonies would prove troublesome. I don't know what made the difference. Perhaps this year the bees were in an unusually dormant condition.

Now I am not able to say just why our bees should act so differently. Some bees are more irritable than others; but I doubt if your bees are worse than mine in that respect. Perhaps one secret is in having the bees undisturbed for a long time before they are carried, and then being set down so quickly that they do not have time to get fully waked up. When they are in the most quiet condition it takes two or three minutes to get them thoroughly aroused, and in that time they are in place in the cellar. If they are stirred up ever so little, they are easily stirred up a few minutes later, perhaps hours later. You say you tack a lath with a $\frac{3}{4}$ inch opening at the entrance, prying it off in the cellar. Closing up so warm is hardly a good thing, but the important part is when you tack it on. I should think it ought to be at least 24 hours before carrying,

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But I'd rather not close the entrance that way at all.

I have carried bees on a stretcher, as you do, and sometimes it works well; but if the bees are easily stirred up the extra jarring they get when set on the stretcher, even if the stretcher be cushioned, and the longer time it takes, makes trouble. That setting down for a time near cellar-door will not do unless bees are shut in securely.

You have tried wet rags after the bees are riled. Try it before. Have the cloths dripping wet, close the entrance before the hive is touched, and take it away when the bees have had time to quiet a little in the cellar. That, of course, means you must have two or more such cloths. It is possible that my larger entrances make a difference. With your $\frac{3}{4}$ inch opening very few bees will be affected by the water; with my 2x12 inch opening 16 times as many will meet the chilly cloth to be repulsed by it.

I don't know for sure about it, but I've a sneaking notion that if I should accept your challenge to take all I could "carry 2 rods without bees escaping with the entrance open," you would have to buy bees to make a fresh start. And I don't know why you can't do as well as I can.

Is there Sale for Propolis?

Is there any sale for propolis, and, if so, tell me where I can sell it? I have heard it is worth quite a bit, but never could find out where to sell it, or how much it is worth.

KANSAS.

ANSWER.—I very much doubt if there is any market for propolis, but if any one knows of such a market let him say so. If you have propolis that has been saved from scraping frames, sections, etc., you may find it a paying job to melt the beeswax out of it.

Feeding in a Cellar—Drone-Laying Queen

1. I have one colony I transferred in August after they had thrown off their second swarm. It was late in September before I saw any evidence of a queen. About this time I saw the queen, seemingly a very large black one.

Shortly after this drones began to hatch out in large numbers, and there are a great many in the hive now, though the last day or two many were killed off. Saturday, the 14th, I found a queen in front of the entrance dead.

Can you tell me what your long experience would lead you to think was the cause for these things? I fed this colony quite freely in September and October.

2. I have two light colonies that need feeding. Can I put them in a cellar and place feed in a feeder, the feeder being in a screen wire box one foot square, and fastened over the entrance in such a manner that the bees cannot get away from the hive? Will they

feed and then return to the cluster? These colonies are no better than nuclei, but have splendid young queens, and I have no other bees to double with them, and wish very much to save them.

3. Will bees start brood in the cellar if stimulated with feed while there?

ILLINOIS.

ANSWERS.—1. It looks very much as if the queen had failed to mate and was a drone layer. Her death was no loss (assuming she was the dead queen) as a drone-laying queen is at least a little worse than no queen. The bees are now so old they are of no value, and the best thing is to brimstone them so as to stop their consuming stores.

2. The probability is that the bees will hardly reach the feed so far away, and if they should they might not get back. They may reach feed close under the bottom-bars, but are more likely to reach food placed over. Wet cube sugar, or lump sugar, but not enough to dissolve it, and lay it on the top-bars.

3. Possibly, if the feeding be continued a long time; but probably not.

Winter Feeding in Arkansas

In this climate, bees fly nearly every day in the year. However, there is nothing for them to get. Now I find that my bees are light in stores. I winter on out-door stands and I would like to feed them. Would you feed sugar or honey? I have some broken comb honey, and also some nicely sealed extracting frames with slightly bitter honey—our fall honey is all bitter—have never fed any of it. Will you kindly advise what is best in my case?

ARKANSAS.

ANSWER.—Very likely that bitter honey in sealed combs is just the thing. While the bitterness hurts it for market, I have never heard that it is bad for bees.

Feeding Liquid Feed in Winter

Is it too late to feed liquid feed in pepper-box feeders now? If so, why?

ILLINOIS.

ANSWER.—Yes and no. It's better to feed now than to let the bees starve; but it's not considered a fair deal to put off feeding till bees are in winter quarters. It is generally difficult to get them to take the feed in winter, and the disturbance is not good for them.

Ontario County, N. Y., Meeting

The annual meeting of the Ontario Co., N. Y., Bee-Keepers' Society will be held in the Court House at Canadaigua on Jan. 7, 1913. A program is being prepared.

F. GREINER, Sec.

called the parent colony. In nine weeks there would be nothing in the old hive but the daughter and grandchildren of the old queen. Where do you get the parentage?

All bee books and papers advise a temperature of 40 to 45 degrees, Fahr., for cellar wintering. My bee-cellar averages 33 degrees, Fahr., through the winter. The bees have wintered successfully in this cellar for years. I use a single-walled Langstroth hive, with plenty of ventilation top and bottom. In 1900, as an experiment, I wintered a very weak colony in this cellar. Only a quart of bees on nine frames covered by two thicknesses of burlap and no top. They came through all right.

South Bane, Vt. GEORGE E. MORRIS.

Another Bee-Song

(To the tune of "Casey Jones.")

At the Colorado bee-meeting of Dec. 12 and 13, 1912, a bee-song, by Eva D. Henthorne, was sung by 5-year old Mildred Rose Henthorne. It elicited much applause. We give one of the stanzas and the chorus:

William climbed up the cotton-wood tree, He hustled up the ladder that swarm to see. The neighbors knew by the way the smoke rolled down.

That the man in the tree-top was William Brown.

He climbed up within two feet of the place. Forty thousand bees stared him right in the face.

The limb gave way and he said, "I have to drop. And I'm going to hit the ground sir, with the bees on top."

CHORUS—

William Brown, going to hit the ground, sir
William Brown, with the bees on top,
William Brown, going to hit the ground, sir,
And he's going to hit the ground, sir, with the bees on top.

Bur Marigold or Spanish-needles (Bidens)

Regarding Spanish-needles, I enclose a letter from Mr. W. D. Darby, of Marionville, Mo., with whom I have been corresponding regarding this plant. He sent me seed of the tall variety, or Spanish-needle proper. I raised about two dozen very fine stalks 4 feet tall. Many of the branches and each stalk carried over 100 buds, which, by the way, do not open out. Mr. Darby says they are rich in nectar in his section, but I could not find a trace of nectar in those I raised. The plant I wanted is what he calls Spanish aster, and I hope to get seed of this variety from Mr. Darby in the spring, enough for a start.

There are thousands of acres in and around Chicago, swampy, and apparently suitable for this plant, and it was my ambition to give it a start, and replace this wild, swamp grass with the finest honey-plant the world has ever known.

The honey is of the "color of gold," has a wonderful "honey taste," and the more you eat the more you want to eat, as it lacks that "cloying taste" mentioned by our corn-syrup friend, Marion Harland. It is very thick, too thick to run, does not candy as early as white clover, and weighs about 13 to 13½ pounds to the gallon; 5 gallon cans run close to 65 pounds. I understand the honey is in much demand commercially for its highly saccharine contents.

It blooms in Missouri about Aug. 15 to 25, and lasts until killing frost, which is about Sept. 20 to 28, making the flow from three to four weeks in duration. When at its best it yields a flood of nectar. I have had colonies store as much as three gallons in seven days.

Another feature of value is that it gives honey after the season has closed with alfalfa, white clover etc., and does not interfere with the regular season of other plants. Exceedingly dry weather cuts down the surplus yield, but it never fails to produce an abundance for winter stores.

Chicago, Ill., Dec. 5. W. O. H. CULLEY.

Following is the letter from Mr. W. D. Darby, of Marionville, Mo.:

Dear Sir:—As to the Spanish-needle, you sent a tip-top sample, for the blossoms of this variety never open out, but are rich in nectar, and the bees work on them in that bud form. The other is a species of the above, but of the aster type, and it is a nectar-bearing plant, also. I enclose two buds

REPORTS AND EXPERIENCES



Likes the Journal

I enjoy the Bee Journal more than any other paper I take. C. M. PAGE. East Corinth, Vt.

Prospects Good for White Clover Next Season

We had a good season, and bees have gone into winter quarters in fine shape. Best of prospects for a good white clover crop next season. JNO. S. COE. Boyce, Va.

Poor Season Just Passed

We had a very poor honey season here, little surplus, and that is very dark honey-dew. Colonies are in very good condition for winter (heavy). F. G. ASHBAUGH. Avalon, Mo., Nov. 13.

California Report

As we have been very much favored with some very early rains, the prospects are

very bright for a good honey season the coming year. The bee-keepers are preparing for the next crop, getting hives, supers and sections in readiness for the new year and its possibilities.

The demand for frames, and prices on the other bee-supplies, would warrant that the bee-men anticipate a good year, and we wish them a "corking" good one.

JOHN C. FROHLIGER.

Berkeley, Calif., Nov. 20.

Cement Nails—Wintering

On page 342 of the American Bee Journal for November, Wm. Muth-Rasmussen writes in favor of bright or uncoated nails. I must say I agree with him. In using nails from $\frac{3}{4}$ to 3 inches in length, there has not been a time when I did not prefer the bright nails, but could not get them; and then think of the cement-coated fingers, worse than propolis. Perhaps if there are more bee-keepers of the same mind, some dealer will keep the bright nails in stock.

I would like to know why the bees left in a hive from which a swarm has issued are

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of the Spanish-needle, as I have them by the acre here, and one of the aster; here known as Spanish aster. It is fine for nectar. We have three varieties, but the above is the best; the third is a smaller aster, and has a little different seed, and is not so good to produce nectar.

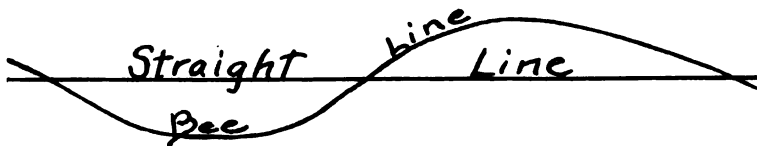
I had a good honey-flow this season, my home yard having produced about 1400 pounds of white clover honey and 600 pounds of Spanish-needle; also some smartweed honey, which is fine. The Spanish-needle is also fine, and as yellow as gold.

W. D. DARBY.

[The above letters refer to some varieties of *bidens* under the name of *asters*. We must not confound the names by using popular misnomers. Both *asters* and *bidens* belong to the Composite family. Both yield honey. The flowering yellow *bidens* may be called aster, because its rays radiate as do those of the aster, the latter name being derived from the Greek word, which means "a star." But *asters* have white, purple or blue rays, while the *bidens*' blossom either has yellow rays or is devoid of rays. There are dozens of varieties of *asters*, in almost all kinds of soils, from the richest to the poorest.]

Do Bees Fly in a Straight Line?

In answer to Dr. Miller's question, "Do bees fly in a bee line?" I am quite sure my bees do not find their way home as Dr. Miller suggests by memory of some route they have traveled before. I have found, by close observation, that my bees come pretty near



They would cross a straight line about every three or four rods. The farthest point

flying, as the old saying is, "Straight as a bee line." I mean by that, that their general course is straight. This part of Montana is hemmed in by great mountain ranges on all sides, and this gives me a peculiar location in regard to atmospheric conditions, and also an ideal chance to study this phase of the bees.

There are days here, in the height of the honey-flow, when it is perfectly still, not a breath of air stirring, and being at an altitude of 3500 feet, the air is quite rare, and one can see at a great distance very easily.

The past season my bees were working very busily on a field of mustard half a mile north of the apiary. It was a solid mass of yellow blossoms when there was scarcely anything else in bloom. I started from my yard afoot toward this field, and I could hear a steady roar of bees all the way, and could see great numbers of them in the air. When I got there they were on the blossoms by the thousands. This flow kept up for ten days or two weeks. Just as it went out of bloom a good-sized field of alsike clover came into bloom about a mile west of the apiary.

Now, did they go and come by the way of this mustard field in their flights to the clover? Not a bit of it. I could follow them by sight and sound straight to the clover. I was across the mustard field four or five times during this flow, and there was not a bee to be seen or heard on the way there or at the field.

Some time after this quite a quantity of sweet clover came into bloom about 1½ miles east of the apiary, and the same thing was repeated. A bee-line is not a straight line, but the course is straight. My bees go and come to the fields in a line like this.

in the bee line to the straight line would be eight or ten feet. FRANK MORGAN.
Corvallis, Oreg., Nov. 18.

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, \$1.00; Tested, \$3.00.
Robert Inghram, Sycamore, Pa.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
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IMPROVED golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers. Send for price list. E. E. Lawrence,
1A8t Doniphan, Mo.

QUEENS—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed. 1A1Y H. C. Clemons, Boyd, Ky.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, \$1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., \$1.25; nuclei per frame, \$1.50. A discount on orders booked 30 days before shipment. 1A1f C. B. Bankston, Buffalo, Leon Co., Tex.

We will requeen all our 2000 colonies this spring. We offer the one-year old queens removed from these hives at 40c each; \$4.20 per dozen; \$30 per hundred—delivered any time before June 1. Your money back if not satisfied. First come first served. Book orders now. Spencer Apiaries Co.
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WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken,
265 Greenwich St. New York City.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

HONEY FOR SALE—Clover honey of the finest quality in new 60-lb. cans at 9 cts. per pound. 8A1f J. P. Moore, Morgan, Ky.

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FOR SALE.—Water White Alfalfa, Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11A1f Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE.—A full line of Bee-Keepers' Supplies. Agents' prices. Save freight. Dreamland Farms, Buckingham, Fla.

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C. E. Shriver, Boise, Idaho.

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WANTED—Position in an apiary by deaf mute, 25, who is nearly completing a course in bee-keeping. Address, 1A1t
203 American Bee Journal, Hamilton, Ill.

POSITIONS WANTED—One Apiarist "Queen Breeder," one Assistant Apiarist desire engagement to work one or more apiaries on salary or share the 1913 season. West of the Rocky Mts. preferred. References exch.
Apiarists, Rt. 3, Box 9 B. Oroville, Calif.

SITUATION WANTED—By a young man who has successfully passed his examinations after taking a course of lectures and demonstrations in Apiculture at the Ontario Agricultural College. Any one desiring help of this kind for the season of 1913, kindly correspond with Morley Pettit, Provincial Apiarist, Ontario Agricultural College, Guelph, Canada. 1A2t

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ROSE COMB White Leghorn cockerels \$1.00 each. Ellen Thornburgh, Perry, Iowa.

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FOR SALE—White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks, \$1.25 each. A. F. Firestone, Broadwell, Ohio.

WANTED—Bee-men and poultry-men to write for my special proposition on the Eureka Case for wintering bees; and White-Rock eggs or stock before Jan. 15. A surprise for you. B. T. BOSSERMAN.
1A1t Rt. 16, Williamstown, Ohio.

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The Emerson Binder.—It has a stiff board outside like a book-cover, with cloth back. Will hold easily 3 volumes (36 copies) of the American Bee Journal. Makes reference easy, and preserves copies from loss, dust, and mutilation. Price, postpaid, 75 cts.; or with the American Bee Journal a year—both for \$1.60; or given FREE as a premium for sending 3 New subscriptions at \$1.00 each.

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Irish Bee Guide, by J. G. Digges.—Any one who wishes to become acquainted with the manner and methods of bee-keeping in the old country, and in Ireland particularly, ought to read this book. Price, \$1.00, postpaid; or with the American Bee Journal for one year, \$1.75.

Alexander's Writings on Practical Bee-Keeping.—The late E. W. Alexander is the man who kept 700 colonies of bees at his home place in New York. He wrote a series of articles which have been published in book form. They discuss bee-keeping in broadest terms. 96 pages, paper bound. Price, 50 cents, postpaid; or with the American Bee Journal one year, \$1.25.

A Year's Work in the Out-Apiary, by G. M. Doolittle.—The author is an experienced bee-keeper, who tells in this little book the requirements necessary for keeping bees away from home. For any one who is intending to keep bees on a large scale, this book will be invaluable. Paper bound, contains, contains 60 pages. Price, 50 cents; or with the American Bee Journal one year, \$1.25.

How to Keep Bees, by Anna B. Comstock.—This is a practical work on bees, written with the special intent of instructing amateurs in bee-keeping. The authoress is well versed in her subject, and has written a book which is very good for the amateur or suburbanite who wishes to keep bees in a small way. The book contains 228 pages. Cloth bound, postpaid, \$1.00; or with the American Bee Journal one year, \$1.75.

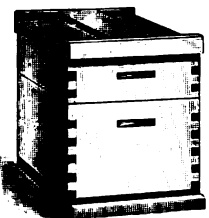
Quinby's New Bee-Keeping, by L. C. Root.—This is a modern edition of "Quinby's Mysteries." Mr. Quinby is well known to all bee-keepers. He, with Mr. Langstroth, was responsible for much of the early growth in bee-keeping in America. Cloth bound, 220 pages. Price, postpaid, \$1.00; or with the American Bee Journal for one year, \$1.75.

Townsend's Bee-Book.—If there is one bee-keeper who can claim the right to a thorough knowledge of bees through practical experience, it is Mr. E. D. Townsend, of Michigan, author of this book. He has kept large numbers of colonies for many years. He not only explains to the beginner how to get a start, but gives much information of great value to the experienced bee-keeper. 90 pages, paper bound. Price, 50 cents; or with the American Bee Journal one year, \$1.25.

Biggle Bee-Book.—This is a very small cloth-bound, well gotten up book. Its size is 4x6 1-2 inches, and it was designed to be carried in the pocket of the amateur bee-keeper. It contains concise information regarding the best practice in bee-culture. An excellent book for use when a person has only limited time to give to bee-keeping. Price by mail, 50 cents; or with the American Bee Journal one year, \$1.35.

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, Dr. PEIRO, 4536 Perry Street, Chicago, Ill.

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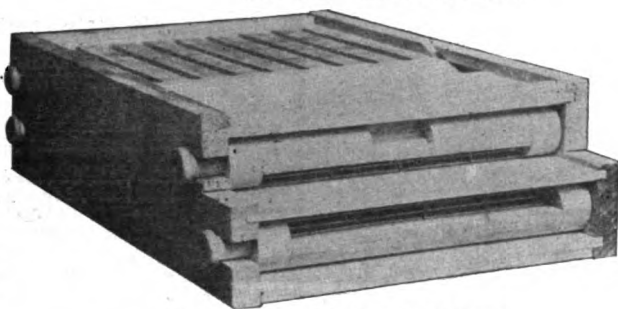
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"Two colonies of bees invoiced by you on Jan. 29 to Matsutaro Sarada, Kobe, arrived safely on March 23, and are satisfactory.

March 31, 1912

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Each Colony contained a fine Breeding Queen.

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Italians were also awarded First Prize at The Cotton Palace, in Waco, Texas.

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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.

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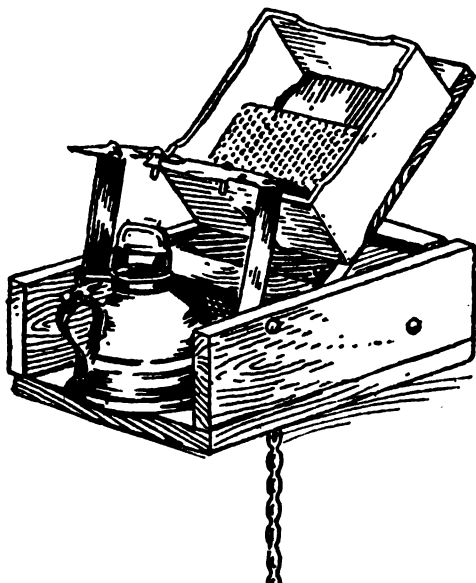
FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. The Golden are good bees bred for beauty. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts.; 12, \$7.50; 25, \$13.50; 50, \$25.00; 100, \$45. Will be ready by April 1, or sooner. Double this price for tested queens to be sent the first of June. One lb. of bees, \$1.00, with the price of queen added; 2 lbs., \$1.75, with price of queen added. One-frame nuclei, \$1.50; 2-frame, \$2.50; 3-frame, \$3.50. To each



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American Bee Journal



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And now I want to thank you for what you said, and I assure you that as soon as possible I will return the favor, not only to you, but your many interesting readers who have written so many good and cheering letters to me. I declare I don't know just how to express myself over the matter, but I must feel something like a great "big hearted" fellow feels at a good old-fashioned hand-shaking at the close of a good meeting, when the good spirit is at its ebb.

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Aye, there's the rub.

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Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

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This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only \$1.75. Send all orders to the American Bee Journal, Hamilton, I.

HONEY AND BEESWAX

CINCINNATI, Jan. 20.—The demand for honey at the present time is rather quiet, and we do not look for a change until about the middle of next month. However, we quote fancy double-decker comb honey at \$3.75 to \$4.00 a case; fancy extracted honey in 60-pound cans at 9@10c a pound; and amber extracted honey in barrels at from 5½@8c per pound, according to the quality and quantity purchased. The above are our selling prices, not what we are paying. For strictly choice bright yellow beeswax we are paying from 28 to 30 cents a pound, delivered here. **THE FRED W. MUTH CO.**

NEW YORK, Jan. 20.—Comb honey is fairly well cleaned up, some little lots are still arriving, but not of any large size. The demand is fair at unchanged prices. The market on extracted honey is decidedly dull. The high prices this season for fancy stocks, such as white clover and California sage have lessened the demand to quite some extent, and some companies have quit packing all together. While the supplies are not large of the above named, they are sufficient to meet the demand at prices ruling same as were furnished last. West India honey is weakened considerably, and is selling now at around 73@76c per gallon, according to quality. Beeswax is quiet at 30@31c. **HILDRETH & SEGELKEN.**

SAN FRANCISCO, Jan. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per lb; amber, 6@7½c; lower grades, 5@6c

Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. **JOHN C. FROHLIGER.**

INDIANAPOLIS, Jan. 20.—White comb sells at 18c in 10-case lots; No. 1 white, one cent less. Amber comb in slow demand, and at lower figures. Best extracted sells at 11@12c in 5-gallon cans. Comb honey seems to be in excessive demand, and very little is now being offered by producers. Beeswax is in good demand, and producers are being paid 30c per pound. **WALTER S. POWDER.**

BOSTON, Jan. 21.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. **BLAKE-LEE CO.**

CHICAGO, Jan. 20.—This past week has shown renewed activity in the honey market, and while the supply is ample the prices are fairly well maintained. The best grades of white comb honey bring 16@17c per pound, with a shading of 1@3c per pound on the lower grades, according to quality and color. Extracted clover and basswood ranges from 9@10c per pound, with other grades and kinds at about 8c per pound. Beeswax steady at from 30@32c per pound, according to color and cleanliness. **R. A. BURNETT & Co.**

KANSAS CITY, MO., Jan. 20.—The demand for both comb and extracted honey is still light, with light receipts. Supply good. We quote as follows: No. 1 white comb, 24 section cases, \$3.10 to \$3.25; No. 2, \$2.75 to \$3.00. No. 1 amber, 3.00; No. 2, 2.75. Extracted, white, per pound, 8@8½c; amber, 7@8c. Beeswax, per pound, 25@28c. **C. C. CLEMONS PRODUCE CO.**

LOS ANGELES, Jan. 15.—Since our last report was submitted there has been a little more inquiry for honey, but the demand has been so light for some time that holders have been willing to sell at current prices. It is very evident, however, that there is not stock enough on hand to supply the demand until the new crop comes in, and we look for a strong market from now on.

We judge that the California output of extracted honey has been about 150 carloads of 15 tons each, and of comb about 7 carloads. These figures are less than half of those for a normal crop. We quote the present market as follows: Light amber sage, 6½@6¾c; light amber alfalfa, 6½@6¾c; white to water-white alfalfa about 7c. All f. o. b. Coast, \$1.00 freight rate by rail. Light amber sage, 6½@6¾c; f. o. b. steamer, San Diego, with 6c freight rate. **HAMILTON & MENDERSON.**

DENVER, Jan. 18.—We quote comb honey in a jobbing way at the following figures: No. 1, \$3.05; choice, \$2.90; No. 2, \$2.70. Extracted honey, white, 9c; light amber, 8c; strained, 6½@7c. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here. **THE COLO. HONEY-PRODUCERS ASS'N.**

F. RAUCHFUSS, Mgr.

CINCINNATI, Jan. 17.—The demand for comb and extracted honey is light, with a good supply. No. 1 white comb honey sells in large lots at \$3.60 per case of 24 sections. There is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand sells at \$33 per hundred.

The above are our selling prices, not what we are paying. **C. H. W. WEBER & Co.**

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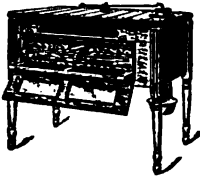


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We are beginning now to replenish our stocks. We shall have carload orders coming from the factory very often for the next few weeks. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—three percent for cash orders sent in January, the discount diminishing one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices as yet has been announced, and you may, therefore order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

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 For Our 35th Seasons' Run of
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AMERICAN BEE JOURNAL

MARCH

1913

22, 138



Recovering a Lost Swarm in Iowa

American Bee Journal



PUBLISHED MONTHLY BY

American Bee Journal

1st Nat'l Bank Bldg. Hamilton, Illinois

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Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.

Riddle, Oreg., July 4, 1912.

L. W. WELLS.



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Darlington, Wis., July 31, 1912.

C. R. BRIDGMAN.



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Gentlemen:—I bought a queen of you about 35 years ago, and from her I italianized 1150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time.

Portales, New Mexico, July 10, 1912.

J. W. HOUTZ.



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This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8¼ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1½ inches long, ¼ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

American Bee Journal

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This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

HARTFORD, CONN., April 20, 1907.
Please find enclosed \$11 for six queens. I hope to get as good ones as I received before and if I do I shall want more.

A. W. YALES.

NORWICHTOWN, CONN., Sept. 14, 1912.
I send you money order for \$3. I wish 2 of your fertilized queens. I have seen some of your bees owned by Mr. Yates and I like them.

ALLEN LATHAM.

Please mention Am. Bee Journal when writing.

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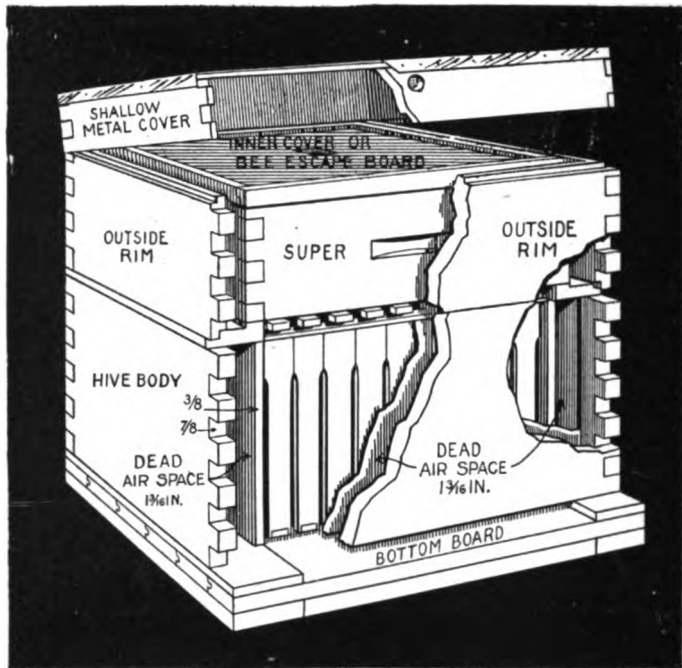
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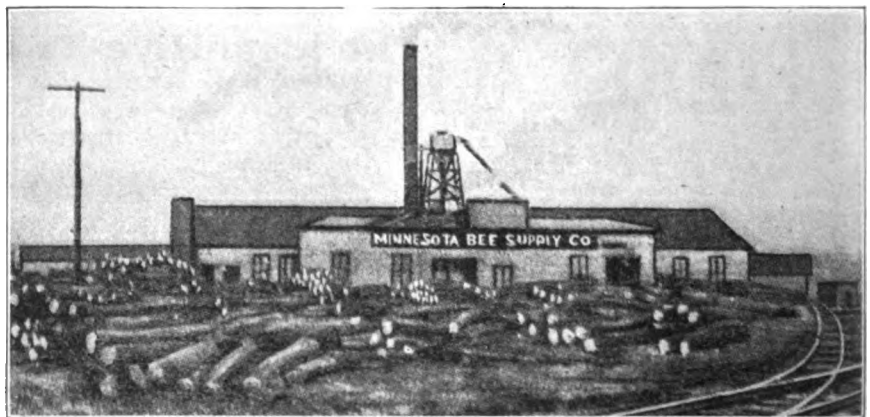
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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., APRIL, 1913

Vol. LIII.—No. 4

EDITORIAL COMMENTS

Parcel Post on Queen-Cages

Queen-bees are now to be mailed according to the new rates for all fourth class matter. This allows a package of cages weighing up to 11 pounds to be sent at the new Zone rates.

Do not forget that the stamps made especially by the Government for parcel-post packages, must be used on queen-cages.

Cages should probably be made stronger than heretofore, or at least care should be taken by the shipper to see that all cages are in good condition when mailed. They should be tied securely together when more than one is sent to the same address. The labels and wire-screens should be well fastened.

We have often noticed a package of a half dozen or more cages arrive untied. In some cases one or more from such a package would arrive on the following day or be lost entirely. The increase in weight of mails should be taken account of, and cages securely packed before mailing. This caution applies to other merchandise going by mail. Live bees may be mailed only as samples, and must not have a salable value, according to the Postal Laws and Regulations. This does not affect queen-bees with attendants, but prevents the wholesale shipping of bees by the pound or more. As long as mail matter is carried in sacks, bees in bulk would not transport successfully. We learn there are some packages now carried outside the sacks, and why not

bees by the pound when properly packed, just as they do by express. The use of hampers for packages, in combination with the sacks for ordinary mail matter would solve the problem.

The special parcel post stamps are a *nuisance* as far as the public is concerned. Postage stamps should be legal tender on all postal matters.

Let us make our wants known before the next step is taken by Congress and the Postal Department to correct and improve the parcel post regulations for the benefit of the people at large.

Stimulative Feeding

The idea that by feeding a certain amount every day, or every other day, the activity of a colony may be greatly increased is a very attractive one to a beginner. Yet it seems necessary to repeat again and again that stimulative feeding is a two-edged sword by which more harm than good may be done, and that there are experienced beekeepers who never find it advisable to practice it. Exception may be made of localities where there comes a dearth of such duration that the queen stops or greatly decreases laying. The time between fruit bloom and white clover is the one over a large region of territory in which there is a dearth of pasturage. But it seldom happens that the dearth continues long enough to affect materially the laying of the queen, for in the spring of the year it seems natural for the queen to go right on laying for some time after a flow

ceases. If the beginner wants to try stimulative feeding, let him try it on only a part of his colonies, leaving the others severely alone after seeing that they are abundantly supplied with stores. Then he may be able to tell by comparison whether stimulative feeding is a good thing in his case.

C. C. M.

The beginner will probably ask why stimulative feeding is called a two-edged sword. Because there are reefs in the method that require a good judge to avoid them.

1. You may feed a colony which is too weak to take care of what you give it, be it ever so little, and which may allow the robber-bees of the vicinity to take it away. No colony which is weak and cannot cover more brood than it possesses, should be fed unless previously strengthened in some way.

2. In stimulative feeding, there is danger of over-feeding, feeding enough to crowd the colony for room, so that the queen will have to reduce her laying. This is exactly the reverse of what we want. Then if the feeding is done at a time when the new crop is soon to begin, some of this feed might be carried up into the super at the first yield of the harvest.

3. If you feed in early spring, when the weather is too cold for the bees to fly, you will lose more bees than you will gain, for the feed will induce them to go abroad, for a few hours at least after each feed.

If your colony has plenty of honey, *some of which is unsealed*, so that the bees need not hesitate to supply the larvæ, feeding is a detriment. But if the supply, though ample, is all sealed honey, and not in sufficient quantity to crowd the bees for more room to breed, you will cause an increase of activity by either uncapping

some of that sealed honey or by adding some thin, warm food. Warm food because it will be more readily taken; thin food because in spring time the bees need water to dilute the honey of which they may make the larval pap. Some scientists contend that this pap is produced by the salivary glands of the head, others that it is produced in the stomach like the chyle, and is, in fact, "chyle food." But neither of them deny that it takes a great deal of water to produce the pap. You may ascertain this when you notice that the strongest and best breeding colonies are those that send the largest number of foragers to the water-trough or the nearest pond. This is why, although dry sugar is usually taken slowly by them, we do not consider it a very good food, for it compels the bees to go repeatedly in search of water. In cool or damp days of spring many bees are lost in their trips after *cold water*.

When speaking of thin food, we mean food containing only 5 to 10 per cent more water than winter food, and that is about two weights of sugar to one of water. Very thin food is injurious, for the bees cannot evaporate it in cool weather.

If colonies are short of stores after fruit bloom, we favor rather repeated feeding than lump amounts. Repeated feeding will keep them active and enhance laying. Lump feeding may be too copious, and if the crop comes suddenly it may cause the placing of some of this food in the supers. We remember once giving some destitute colonies, in May, combs of honey in the supers, to which they added honey instead of using it up, within a week, because the crop began with an unexpected rush.

Much depends upon location. But if you live in a country where there is a very marked shortage of bloom between fruit bloom and clover, keep your eyes open and feed if the breeding decreases. Never feed sugar syrup, if you have good honey to spare.

When the bees carry in honey or fresh food of any kind, there is an increase in the production of pap, an increase of attention paid to the queen and a consequent greater number of offerings of food to her. How much influence her own disposition to lay has on these attentions, no one can tell. However, it must be as with the hens, the natural tendency Nature has given them, to begin breeding as spring opens, is cultivated and increased by judicious use of warmth and food appropriately given. Judicious feeding also prevents "starved brood," which

is sometimes mistaken for foul brood.

Mr. B. A. Aldrich, at the Iowa meeting of the past winter, described his method of stimulative feeding which consists in using a large feeder with only a few small holes in it through which the food passes very slowly so that the bees do not secure it faster than it may be consumed in brood-rearing. This does away with the annoyance of having to open the hives often.

C. P. D.

The above had been written when the following letter was received which covers some of the points mentioned, and illustrates the ills of *over-feeding*:

In the February number of the American Bee Journal, Mr. E. S. Miles says that "when you have fed your colony what you are quite sure is plenty, then feed it about 5 or 10 pounds more."

I did this very thing to some of my colonies last winter, and obtained the worst results from these colonies. I saved the colonies all right, but the ones that I fed the most stored the least honey, and the ones that were fed little or none at all filled their hives full.

I am not trying to argue against spring feeding, but I believe you can feed too much. I fed a lot of comb honey that was hardly good enough for table use, and the bees cleaned up nearly every bit that I gave them. I believe now that these bees already had enough honey to have carried them through, and that they simply carried this extra honey down and filled the comb that they had emptied during the winter, and that the queen did not have sufficient room to lay her eggs. These colonies lived all summer (and are good, strong colonies now, for that matter), and kept the bottom stories well filled with honey, but they never increased.

I examined the frames in July or August, and found brood in only two or three frames in each hive, and these frames were more than half honey. All the rest of the frames were filled with honey. The bees never stored any in the supers.

At present my colonies all seem strong. They have had several flights this winter, and I do not expect to feed them a pound unless something unusual happens.

I have been handling bees but two or three years, and I should like to have the Editor say whether or not it is possible to feed too much.

Shelbyville, Ky. H. A. WELLS.

This letter is already answered by the above remarks. There is a very easy remedy, however, for the condition which Mr. Wells describes. It is to remove a frame of honey and insert, in the center of the over-wealthy colony, a frame of empty, dry comb, or if such is not to be had, a frame of foundation, or even an empty frame. However in the last case, the bees would probably build drone-comb, which would be injurious. After the empty

comb has been filled with brood the same operation may be repeated with another frame of honey, until the colony is sufficiently depleted of its overstock. Mr. Miles or Mr. Byer would have done this without hesitancy. Often an exchange between an excessively heavy colony and a destitute one will prove beneficial to both.

In all our manipulations of the apiary it is necessary to use judgment and foresight. We should remember that the advantage of the movable-frame hive over the box-hive is in the manipulations which it permits.

Wisconsin Foul Brood Law

A change in the Wisconsin Inspection law is now before the Legislature of that state. We are told that it goes among the representatives under the name of "France Bill," so well known is our good and popular friend N. E. France among the law makers of Wisconsin. Mr. France would like to see the inspection of bees placed under the office of the State Entomologist. This will sooner or later be the case in every State, unless a State apiarist be appointed, as they have done in the Province of Ontario. A State Entomologist must necessarily employ a competent apiarist to look after this branch of the already numerous entomological duties. The fighting of injurious insects, and

LATER.—A card from Mr. France announces that the law has passed both houses unanimously, and needs only the Governor's signature to become a law.

The Retiring of an Old Editor

The Signor And. DeRauschenfels, for 25 years editor of L'Apicoltore, the oldest Italian bee journal, lately withdrew from active life. He is 85 years old. He is one of the progressive bee-writers of the world. In 1901 he published "L'Ape E La Sua Coltivazione" (The Bee and its Culture) with an "Atlas" of bee-culture, in which he reproduced the microscopic studies of Barbo, lithographed by Clerici. He announced his withdrawal to us in a private letter, last December, while modestly refusing to send us his photograph, saying he had none, and claiming to be "unworthy of the honor."

We have, however, secured the promise of that photograph, from an amateur artist, Signor Arnaldo Cotti, who lives in the same village, Noceto, near Parma. This is lucky, for there is no photographer in this small locality, and Sig. DeRauschenfels is not in sufficient health to go to Parma.

This noted apiarist made his retiring bow to the bee-masters of Italy in the December number of L'Apicoltore,

American Bee Journal

using as his last words a parody of the short and solemn address of the glad-iators to the Emperor in the old Roman arena: "Moriturus vos salutat" (He who is about to die salutes you). His successor in the editorial chair, Vincenzo Asprea, selected by the Association, is also an able writer, and we predict that L'Apicoltore will continue with him the progressive work that it has carried on for 45 years. The January number still contains some of the work of Rauschenfels, and our readers may have an idea of the diversity of his researches, when we inform them that, in that number alone, he quotes foreign bee-journals in 17 different instances, 3 of them being from the American Bee Journal, and 2 from Gleanings in Bee Culture.

The Bees vs. the Neighbors

Mr. Thos. Buckley, an old, experienced apiarist of Peoria, Ill., has a novel method to protect his neighbors against his bees, which are located in a back yard in close proximity to another back yard. He has erected a fence of wire-netting of about an inch mesh and 8 feet high. He says the ob-

struction is sufficient to keep the bees from annoying the neighbors, for the bees rise above the fence as they take flight. So slight an obstruction would appear inadequate, but when we think it over, we perceive that the bees like a free, open space, and when once accustomed to following a course, they never hesitate. Many a neighborhood feud might be prevented by the timely use of some such protection.

Trifolium Incarnatum

The above named clover, *crimson clover*, is highly recommended by Prof. Surface, who spoke quite at length at the National meeting concerning the high quality of this peculiar and still rare clover. When we say "rare" we mean in the United States, for it is quite common in Europe. Bonnier, in his "Nouvelle Flore," mentions it as "excellent early hay" and "much visited by the bees." In his "Cours D'Apiculture" he gives it third rank, mentioning only the esparcet and the white clover before it as honey yielders. In view of its enriching qualities for the soil, this clover should be accorded a trial wherever possible.

MISCELLANEOUS NEWS ITEMS



Water for the Bees.—I was visiting in the country. The neighbor's wife was much incensed. She was a good old mother, plump and kind hearted, but on that day she was gesticulating all alone by the cistern pump, and was addressing an invisible enemy:

"Isn't that going to stop? What do you think of it? Can't get near the pump! Those miserable bees are there all the time. If you happen to leave a little water in a pail, at the end of an hour, there are hundreds of them drowned in it."

She threw out a big bunch of bees, wet and almost inert. I came near and smiled. This irritated her still more:

"They'll sting the children; they climb up one's legs; we might swallow one of them and that would kill us. I am going to complain to the police."

She was hardly to blame. I watched and saw the direction the bees took. They made a continuous line between the pump and an apiary of a few hives belonging to a man not far off. I went to him and explained to him that his bees, during brood-rearing, needed water to make the pap. He was much astonished and somewhat displeased that a stranger should attempt to teach him something. His bees were thriving, and had never needed any water. His parents had kept bees before him, and he ought to know. However, he consented to place water in a dish with a few shavings in it. In a short time the trouble was ended.—Crépieux-Jamin, in *L' Abeille de l'Aube*.

A jug filled with water, inverted over a woollen cloth in a dish will supply quite a number of colonies with a sufficient amount of water. Capillarity will

draw the water out of the jug into the cloth in the same manner as the wick draws the oil from a lamp. It is well to have the jug slightly raised, so the air may get in when a vacuum is created. Some apiarists use a long trough with boards floating in it.

St. Lawrence-Jefferson County Meeting of New York.—About 50 apiarists attended the sessions of this live bee-keepers' association held Feb. 20 and 21 at Ogdensburg. This is a fine attendance for a county organization; so large a number is seldom found at State meetings. Bee-keepers will find these local meetings very valuable, for little time is spent to reach them, and their business sessions are short, giving the members plenty of time for their program and informal talks and discussions.

The production of extracted honey, and how he winters his bees in Canada, was interestingly treated by R. F. Holtermann, of Brantford, Ont. Producers of extracted honey are fortunate in hearing this subject treated by so successful a bee-keeper. Chas. Stewart, a New York State Inspector, urged the keeping of Italian bees in preference to any other kind to ward off European foul brood. His experience proves pure Italians seldom con-

tract the disease, even when an apiary is surrounded by infected yards.

Many bee-keepers took active part in the discussions, among whom are A. A. French, Chas. S. Phelps, Mr. Hammond, and N. L. Stevens.

The meeting in 1914 will be held at Watertown, N. Y.

The Census of New Zealand.—Mr. Isaac Hopkins has a very interesting report in the *New Zealand Farmer* on the "Status of Bee-Keeping in New Zealand." In that country, census is taken every five years. The figures for 1911 are as follows:

	Bee-keepers.	Colonies of bees.	Output honey, lb.	Output wax, lb.
1906....	13,506	74,341	1,003,040	31,682
1911....	11,002	71,584	1,457,272	28,061

During the preceding 12 months 31,736 colonies were inspected by the government inspectors, of which number 3027 colonies were found to be infected with foul brood. Mr. Hopkins, in commenting on these figures, states that while the percentage (10 percent) diseased seems large, yet it is satisfactory since the inspectors are only fairly started with their work. The percent of disease should decrease materially with each season's inspection.

Although there is a law against keeping box-hives, there are a number kept *on the sly*. They would not probably exceed 2 percent of the total, however.

National Grading Rules.—The following grading rules were adopted at the National convention in Cincinnati, Ohio, Feb. 13, 1913:

Sections of comb honey are to be graded; first, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I.—FINISH.

1. EXTRA FANCY.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. FANCY.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side, exclusive of the outside row.

3. No. 1.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. STANDARD.—Comb not projecting beyond the box, attached to the sides, not less than two-thirds of the way around, and not more than 40 unsealed cells exclusive of the row adjacent to the box.

II.—COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III.—WEIGHT.

1. HEAVY.—No section designated as heavy to weigh less than fourteen ounces.

2. MEDIUM.—No section designated as medium to weigh less than twelve ounces.

3. LIGHT.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or sym-

boils are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example; Fancy white, heavy (F. W. H.); No. 1 amber, medium (1 A. M.), etc. In this way any of the possible combinations of finish, color and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases, or that in badly stained or propolized sections containing pollen honey, dew honey, honey showing signs of granulation, poorly ripened, sour, or "weeping" honey; sections with comb projecting beyond the box, or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box, leaking, injured, or patched-up sections; sections weighing less than ten ounces.

Mrs. Harriet France, a highly respected resident of Platteville, Wis., died Feb. 13, 1913, age 78 years, at the home of her only son, N. E. France. Her life had been despaired of for some time, and the devoted care and loving attention of her family could hold her no longer. Mrs. France was born July 6, 1834, in the State of New York. When 16 years old she joined the Methodist church, of which she has been a devoted member.

At the age of 22 she came alone by lake boats and overland stages to Platteville, Wis. July 23, 1856, she was married to Edwin France, formerly of New York. From here they went by stage to their pioneer western home in Iowa, Mr. France farming during the summer and trapping valuable furs

years Mr. and Mrs. France have resided in Platteville. E. France, aged 84, died five years ago. There is left to mourn their loss, N. E. France and wife; also five grandchildren.

This ever kind mother has run the journey of life well, the path marked with deeds of kindness and cheer.

Progress in Ontario.—That the department of bee-keeping at the Ontario Experiment Station is not going to let that of the States excel in progress is evident from what they propose to do this season.

Mr. Morley Pettit, the director, is asking for volunteers in the ranks of the Ontario bee-keepers to aid him in a series of experiments under the supervision of the department as follows:

1. Method for the prevention of natural swarming in extracted honey production by holding the colony together.
 2. Method for the prevention of natural swarming in comb honey production, by artificial shaken-swarming.
 3. Method for the prevention of natural swarming by manipulation of hives rather than combs.
 4. Method of spring feeding to stimulate brood-rearing.
 3. Method of packing bees when taking them from the cellar.
- Of these, the first three were tried

aged according to plans of the department was very evident.

The department figures, from statistics gathered last season from the bee-keeper experimenters, that there is an annual profit in bee-keeping of 58 percent on capital invested. This, of course, does not take into account the cost of labor involved.

Pure Italian stock is recommended to every one, owing to its ability to resist European foul brood.

Spring Notes.—The following from Morley Pettit, Provincial Apiarist of Ontario, is applicable to warmer latitudes also.

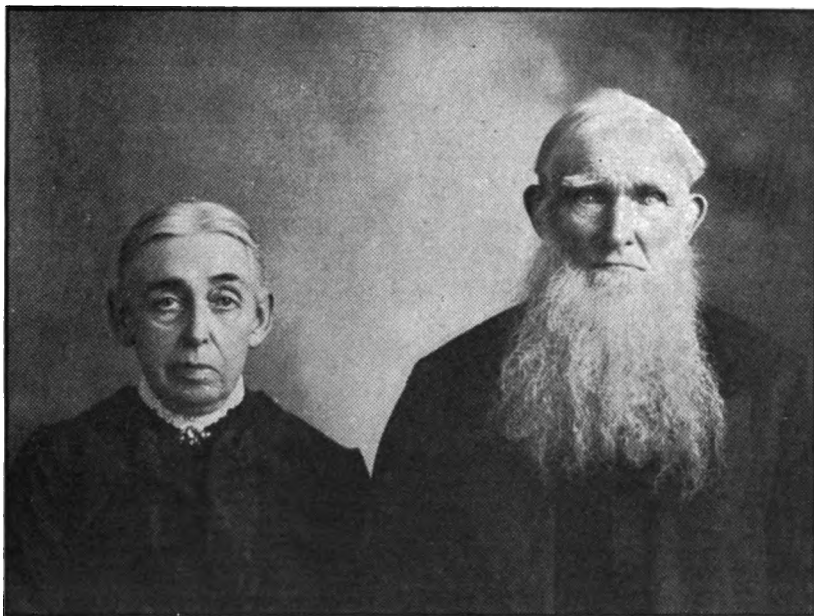
"If the hive is warm they can spread out and cover more brood. This means more young bees will be hatched in the same time. Then when summer comes there will be more workers in the hive to gather honey. Any one who thinks about this for a moment will see why all hives should be kept warmly packed and sheltered from cold winds during what bee-keepers call the spring breeding up time, right up to settled warm weather.

On the other hand, entrances must not be closed. There is that about bee nature which does not brook confinement, and except when bees are screened in for moving, they must have 'free ingress and egress' to their hives. On bright, cold days it is well to shade the entrance, however, lest the sunshine tempt some bees to come out and be lost on the snow."

Illinois Bulletin Issued.—Foul Brood Bulletin No. 1, of the Illinois State Bee Inspection Department, has just been issued. Copies may be obtained by addressing Mr. A. L. Kildow, State Bee-Inspector, Putnam, Ill., or by addressing the American Bee Journal office, Hamilton, Ill.

Death of Oliver Foster.—Just as we are going to press, we learn of the death of Mr. Oliver Foster, of Colorado. Mr. Foster was a large honey-producer and an authority on comb-honey production. A sketch of his life will be given in the May issue.

Honey-Bread in Europe.—The food value of honey seems to be better understood in the "old countries" than over here, and enormous quantities are used. Cakes and sweet-breads made with sugar soon become dry and crumbly, and to get the good of them they must be eaten when fresh; but where they are made up with honey, they seem to retain their moist freshness indefinitely. In France, honey-bread a year or 18 months old is preferred to that just made. They say "it has ripened." It is the preservative, or



THE LATE MR. E. FRANCE AND WIFE.

during winter. He became expert with the rifle. The Iowa ranks of sharpshooters for the Civil War being filled, Mr. France, with his wife and little boy, returned to Wisconsin in hopes of here enlisting. It took over two weeks to make the journey with their ox team. His health at once failed. Unable to join the ranks, or return to their western home, he engaged in selling sewing machines, and producing choice fruits and honey. Over 48

last season by a number of bee-keepers with the result that in the first the swarming was decreased from 48 percent to 21 percent; in the second the swarming was reduced from 100 percent to 57 percent; in the third the swarming was but 14½ percent as against 39 percent when the bees were left to swarm naturally. A resultant increase in honey with colonies man-

American Bee Journal



AN ORCHARD OF ALMOND TREES.

rather the unchanging quality of honey, that makes it so popular with the best confectioners.—*Exchange.*

The Bij-Vanger or Bee-Pirate of Africa.

—In our September and November numbers for 1912, we made mention of the bee-eating *philanthus* of Europe, and of the experiments carried on by

the celebrated entomologist Fabre. The South African Poultry Magazine, published in Johannesburg, in its December number, contains an article by G. B. Oettel on these insects:

This season the dry weather has brought along the familiar yellow-bodied *bij-vanger*, now more commonly known as the "Pirate." This insect haunts the watering places of bees and

entrances of hives, especially those which are not provided with a fairly wide porch for shade, and seizes the bees which are unwary enough to be about at the time. Her depredations—for it is only the female of the species that commits these raids and onslaughts on the inmates of the hive—are serious, and often demoralize the whole apiary.

I have seen whole colonies listless and "at home," fearful of the attacks of these horrid insects which hover, sometimes a dozen at a time, in front of the entrances, awaiting the incoming heavily-laden-with-stores-bee, as she drops over-burdened upon the alighting-board, preparatory to crawling inside to disgorge her supplies of nectar, or to get rid of the huge loads of pollen collected for the steadily increasing patches of brood which should now be filling every available space within the hive.

For the town bee-keeper the only really effective way to get rid of these insects is to catch them by means of a butterfly-net. This is readily accomplished by choosing a sunny day for the time of our operations. Half an hour spent in this way several mornings or afternoons will soon effect a clearance. My experience has been that the pirates quickly find out the danger zones, and leave them for other centers where their depredations are not disturbed. In this connection several informed me that poultry are excellent catchers of these pests, par-



AN APIARY IN CALIFORNIA IN THE MIDST OF ALMOND BLOSSOMS.

American Bee Journal

ticularly when the alighting-board of the hive is fixed just above the height of the birds' heads. They look out for the scuffle which invariably follows the attack of the pirate, and when both insects roll off on to the ground, one peck sees the end of the invader's temerity, and she herself rests in the crop of the fowl.

An Illinois Bee-Keeper Passes Away.

—Mr. S. T. Crim, of Dawson, Ill., who died Jan. 14 last, had almost rounded out his 73d year. Coming from Loudoun Co., Va., where he was born Feb. 29, 1840, he spent the last 30 years of his life in Illinois, keeping bees.

The Illinois State Bee-Keepers' Association will miss one of its older loyal members, who stood for the right and for progress.

Kansas Loses Appropriation.—The bee-keepers of this State fared badly

at the hands of the Legislature, whose watchword seems to be economy in appropriations, but in many cases crippling the legitimate interests of the State. We have a splendid foul brood law, and that is all. We did not receive one cent as an appropriation, and, more than that, it took the hardest kind of work to keep them from repealing the law itself.

O. A. KEENE, Sec.

A Pleasing Picture of Flowers.—On the front cover page of this journal is a picture of wild asters or daisies, taken by Wesley Foster. He wrote us:

"This little clump of flowers was growing in an orchard close to one of the apiaries of Mr. W. P. Collins, of Boulder, Colo. He is president of the Colorado Association.

"The bees were busily gathering pollen from the flowers before I frightened them away in focusing my camera."

the comb dissolved, it seems a bit strange that they will pay a higher price for honey in the comb than for the pure honey extracted from the comb. Poor woman! Poor periodical!

A Sister's Experience in Wisconsin

I started with 2 colonies about 5 years ago, and have 28 now. I have not tried to work for lots of colonies, but to keep them strong in bees. Two years ago I took 15 colonies out of the cellar and secured 1200 pounds of honey and increased my bees to 27 colonies.

Last year, being a very poor year, I did not get any honey; it was too dry. This year I had to unite a few colonies, as I had a few queens laying nothing but drone eggs. I got about 700 pounds this year. I tend the bees myself.

(MRS.) GEORGE SCHMIDT.

You were very wise to run for strength rather than number of colonies, and you certainly did well to get 80 pounds per colony, and nearly double your number of colonies besides.

Color of Pollen

Miss Annie D. Betts, who appears to be one of the keenest observers among British bee-keepers, reports some observations upon pollen that are interesting, *British Bee Journal*, page 33. Two observers may report two different colors of pollen from the same plant, and both may be right. The pollen of *Erica cinerea* may be quite pale gray, varying from this to almost black. This variation is largely due to the presence, in some of the loads, of portions of anthers, sand, etc. A great quantity of such "foreign bodies" is found in the dark-colored loads, less or none in the light-colored ones. It is possible, too, that the color of the pollen, like the quality of the nectar, may be affected by soil and climate.

Miss Betts says:

It appears that the color of pollen is also

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Manufactured Honey

A loyal sister sends the following, clipped from a religious periodical, with a woman's name signed to the clipping:

Put three pounds of granulated sugar into a porcelain vessel. Add sufficient water to moisten and make a thick syrup. When boiled to a syrup add one pound of good honey and let the mixture come to a boil. Remove from the fire and pour in vessels desired. The increased quantity will be found as good as the original pound of honey, and a great many people like it better because of the absence of the honey comb, which is dissolved.

That woman and that religious periodical might be in better business than giving publicity to such stuff as that. Let us be charitable and attribute it to ignorance, for no intelligent mother would be likely to palm off upon her children a mixture of three parts sugar to one part honey as being "as good as" pure honey. That woman is probably entirely ignorant of the fact that thousands are injured in health by the excessive demand made upon their digestive organs in changing cane sugar into invert sugar, whereas honey is ready for direct assimilation without making any such demand. Taking this view of the case, a pound of sugar is not as wholesome an article of diet as a pound of honey, and neither are three pounds as good, even though a pound of honey be added.

That statement that "a great many people like it better" would be laughable if it were not sad. If we "let the mixture come to a boil," the sugar part is as good as ever, but the honey is injured beyond repair. The delicate flavor and aroma of honey will not stand boiling. It is a pretty safe guess that the woman in this case did not learn from her own children that they

liked the boiled mixture better than the unboiled honey.

But the reason given why "a great many people like it better" is "because of the absence of the honey comb," and the honey comb is absent because it "is dissolved!" That's something new under the sun. Dissolve a thing and presto, it is gone! Equally new under the sun is the idea that one can dissolve wax in hot sugar and honey. Heretofore the most that could be done in that way was to melt it. And if "a great many people" like honey better with no comb, or with



MRS. G. SCHMIDT IN HER APIARY.

greatly affected by the state of the weather. I have noticed that loads of chestnut pollen (*Castanea vulgaris*) are nearly lemon-yellow on dry days, but distinctly green shortly after rain. A writer in the *Bliesen-Zeitung* of 1891, page 171, points out that the color of pollen varies with its age, and also with the weather. He describes the pollen of the opium poppy (*Papaver somniferum*) as green when young, becoming whitish when older. He also states that pollen secretes more oil on its surface on good nectar days; and suggests that the bees use this oil to stick the pollen together when collecting it. That they do this consciously is doubtful, especially in the light of Mr. Sladen's observations on how the corbicula is filled, but the more oily pollen would certainly stick together better; and this may partly account for the enormous loads carried home on fine days, and the very small ones seen in bad weather (though these last are probably also due to the scarcity of pollen on such days).

Some of the differences of opinion as to the color of pollen have arisen from the circumstance that a load of pollen, if kept, will often, as Mr. Macdonald points out, change color. On one occasion I took from a bee a load of bright red pollen (probably from a *pelargonium*, though I could not trace it). It was kept in a drop of water on a glass slip covered with a cover glass, and next day was no longer red, but yellow. The substance producing the red color had either evaporated or undergone some chemical change. (The drop of water had naturally dried up in the course of 24 hours.)

Lost All Her Bees

The reason you have not heard from "Ima" for some time is that she lost all her bees during the winter of 1911-12, and was unable to buy any near to start over. However, I think this spring I will buy several colonies, and you will be hearing from me with a tale of my experiences, for I expect caring for the bees, and there is nothing I like better than to write about them.

John is trying to persuade me not to get any more bees. He is still very much afraid of them. "IMA."

I am sorry that you lost all your bees, but glad that you have not lost your interest in them, and hope you may be very successful in getting that new apiary started this spring.

Experience With Many Eggs in a Cell

In the February issue of the *American Bee Journal* is an item entitled, "Cause of Many Eggs in a Cell."

In the spring of 1911 I had a swarm of bees whose queen laid drone eggs. I thought I would requeen the swarm, but could not find the queen. I tore the hive all apart, gave them a new body, looked the frames over very carefully, and shook the bees in front and watched them crawl in. I went back the next day and tried to find her, but could not.

Thinking that she was dead, I put in a caged queen. After leaving them alone for three days I went back and found the new queen dead. I opened the hive, and on the first frame I took out I found the old queen. I shut the hive up with disgust, and did not go near it for 10 days. I then found several queen-cells and more started from drone eggs. What became of that old queen I never knew. In another hive I had a good queen-cell. I gave it to them. In two days it hatched, and 10 days later I noticed that the queen was fecundated. In due time I saw worker brood capped over, and I can safely

say I saw hundreds of cells with from two to eight eggs in a cell.

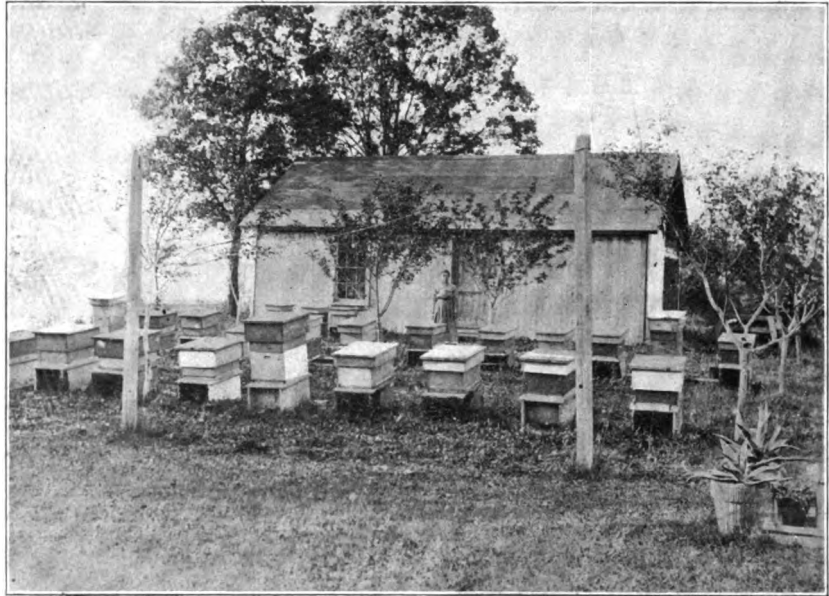
Later I looked into the hive and those cells had just one grub in a cell, and there were lots of cells with several eggs in a cell; even the sides of some of the cells had eggs on them. The swarm was very small by this time, so I gave them hatching brood from other hives. That queen

laid several eggs in each cell until the swarm was strong in bees. That was one of my best swarms in 1912.

(Mrs.) A. A. Good.

Lakewood, Wash.

This is a plain case of plurality of eggs in a cell because there was a prolific queen with too few bees to take care of all the eggs she could lay; just what usually happens in such a case.



ANOTHER VIEW OF MRS. SCHMIDT'S APIARY.

FAR WESTERN BEE-KEEPING



Conducted by WESLEY FOSTER, Boulder, Colo.

Bee-Keeping Upon the Divide South of Denver

There are many more counties in Colorado where bees assume an important role than bee-keepers realize. Upon the divide, south and east of Denver, is a beautiful country (for the plains) at an elevation of from 6000 to 7000 feet. This country, slightly rolling, has quite a little timber and a more abundant rainfall than the lower plains to the east. The Demonstration train made three stops—Elbert, Elizabeth, and Eastonville. Alfalfa is grown without irrigation, and produces considerable white honey. Sweet clover helps out more than it is given credit. The bees undoubtedly gather considerable honey from the wild-flower bloom in the neighboring hills.

Swarming is prevalent from May to September, and the farmers get little honey. "The yellow jackets get rid of the bees," they tell me, but I am of the opinion that the yellow jackets get rid of only those colonies that have swarmed themselves to weakness and late swarms that are so weak that they do not get honey in sufficient quantity

to winter. A handful of bees issuing as a swarm in September is not an uncommon occurrence. What can be expected of such a colony?

Nearly every farmer has a few hives, and those who give them care are getting fair returns. The local market is not supplied except by honey from the heavier producing districts.

From my present knowledge of the markets, I believe that Colorado could consume a much larger percentage of our total crop than at present. The higher price obtainable in the eastern markets determines where the honey will go. Colorado markets are now comparatively destitute of comb honey. If some of the honey that has been shipped East was now available for the home market, a better price would be realized than was had the past fall. Bee-men want the money for their honey, and the local dealers will not buy the year's supply of honey outright, so the honey goes East.

It is possible that I may be a little hasty in saying that the comb-honey market is cleaned up in the West, but I do not know of any quantities at hand, and I do know that some fair

markets for comb honey are very poorly supplied at this writing, March 10. Denver wholesalers quote comb honey to our Boulder merchants at \$3.50 per case of 24 sections. This honey will probably grade choice or better.



THE ALEXANDER PLAN OF INCREASE IS A FAVORITE METHOD IN COLORADO.



KEEP ALL WAX AND PROPOLIS REMOVED FROM THE FRAMES.

Sweet Clover Gaining Recognition

The lowlands along the Arkansas River, near Holly, Colo., are being taken by sweet clover apparently. This land is alkali in places, and the farmers are getting feed value out of the clover instead of fighting it. Lord Ogilvy, agricultural editor of the Denver Post, recommends the growth of sweet clover on this land. The interest in this crop is such that it seems a sweet clover institute would be welcomed.

Shallow Frames for Producing the Home Supply of Honey

There are probably a few thousand farmers in Colorado who have bees. The majority have modern hives arranged for comb-honey production, or section-holder supers to put on top of their box-hives. These farmers use a



THE MONUMENT PLANT—A MONARCH OF THE MESAS.

large part of their honey at home, cutting it out of the honey-boxes and putting them back on the hive. How much better it would be for them if they would use shallow frames in the supers. More honey would be secured, and the expense for sections avoided.

This is one of the things being shown on the demonstration train now touring Colorado for a month's trip. Mr. Frank Rauchfuss has advocated this plan for the farmers for some time. It is being followed by quite a number.

Monument Plant

The monument plant has light creamy blossoms 2 inches in diameter; the flower stalks growing 2 to 3 feet tall is visited by scores of bees. A velvety green leaf makes this a brilliant desert flower. Any park would be graced by its presence. The mesas are dotted here and there with them, and as a source of honey during May, the monument plant is important.

Many on first sight call it the yucca,

which it is not, as it has not the spine-shaped leaf. The monument plant is "monarch of the mesas," as no stock will eat the leaves. Perhaps you can find the bee on the blossoms.

Honey Recipes

Three thousand copies of the following recipes by Mrs. A. Rauchfuss, were given out on the Colorado Agricultural College demonstration train carrying a bee-keeping exhibit:

HONEY BROWN BREAD.—One cup corn meal, one-half cup honey, one cup rye meal, one cup sour milk, one teaspoonful salt, one teaspoonful soda. Steam four hours, then dry in oven 15 minutes.

AURORA HONEY COOKIES.—One cup of honey, one pint sour cream, one even teaspoonful soda dissolved in a table-spoonful of boiling water.

Mix honey, cream and soda together thoroughly, add a cup of chopped nuts (any kind desired), one teaspoonful of

American Bee Journal

ground ginger, and a heaping tablespoonful of ground cinnamon. Add flour enough to make a dough stiff enough to handle easily on the board, roll out part into buttered tins and bake in a moderately hot oven until nicely browned.

HONEY GINGER SNAPS.—One cup of butter, one cup of sugar, one cup of honey, one cup of water, one heaping tablespoonful of ground cinnamon, one scant teaspoonful of baking soda.

Sift soda into 1½ pints of flour, cream the cup of butter with the sugar, add other ingredients and more flour to make a dough that can be rolled out. Cut into desired shape and bake in a moderate oven.

SEA FOAM CANDY.—Two-thirds cup of honey, three cups granulated sugar, whites of two eggs, one-half cup boiling water, one teaspoonful of vanilla, one cup of nut meats.

Boil honey, sugar and water until if tested in cold water it is brittle. Pour this in a thin stream over the whites of

two well beaten eggs, beating the whole all the time until like a thick cream, then stir in briskly the nut meats and vanilla, and pour out into a buttered dish. After it has hardened cut into squares.

Spring Meetings of the Colorado State Bee-Keepers' Association

The Western Slope in Colorado is so remote from Denver, where our conventions are held annually, that few of our members there can get to them. A spring meeting of bee-keepers, held under the auspices of the Colorado State Bee-Keepers' Association, is being arranged for the Western Slope, probably at Delta, and one may be held at Grand Junction. The meeting will be held in April. Particulars may be had from the secretary, Wesley Foster, of Boulder. Notices will be printed in the local papers. These are aimed to be bee-keeping institutes for discussion and questions.

We have experienced some trouble with a few buyers who did not understand that a certain size package on the market could not be filled with the desired amount of honey because that package was not large enough to hold it. The only way is to procure packages that will hold the proper amount. The pure food laws require it, and this would not only protect the consumers, but also the bee-keepers who are aiming to give full value for the money. Many bee-keepers sell what is known as *short* gallon, half gallon and quart cans of honey. There would be nothing wrong with this if it was made known that these packages were actually short in weight. But when the individual containers are not labeled the discovery is not easily made. But it is not fair to those producers who put out the same kind of packages holding full net weight, 12 pounds to the gallon, 6 pounds to the half gallon, and 3 pounds to the quart can.

Especially is the difference noticeable in the crop of an extensive honey producer. For instance, if one bee-keeper markets a crop of 50,000 pounds of honey in the size of packages mentioned, and he gives full weight, it means a loss of several hundred dollars to the honest packer, as against the man who gives short weight. Both producers and buyers are familiar with the standard size packages of honey, universally put on the market. There are the two 60-pound square cans to a case, ten 12-pound round pails to a case, and ten 6-pound, and twenty 3-pound to a case. The producer quotes his honey at so much per pound for each according to style of package, viz.: so much per pound for two 60-pound cans to a case, so much for ten 12-pound pails to a case, and so on. He makes out his invoices, bills, etc., for 120 pounds of honey in each case, and 60 pounds for the ten 6-pound and twenty 3-pound cans. On his cases he may also have the same indicative figures, showing either two 60-pound, ten 12-pound, ten 6-pound, or twenty 3-pound cans of honey to the case.

Since the buyers make their orders in the same manner, or so many cases of two 60-pound cans, ten 12-pound pails, or 6-pound, etc., at so much per pound, it would indicate that both producer and consumer allude to actual contents of honey in each case. It would be only natural to suppose the two 60-pound cans of honey to a case would mean 120 pounds of actual honey, especially since the buyer is charged for 120 pounds at so much per pound. Nothing is said about the weight of the cans or about a charge for the containers, or the short weight of honey, should full weight packages not be used.

We bring this matter up, first, to aim at an adoption of proper sizes of honey packages for all alike; second, to make it fairer for every bee-keeper, so one need not lose or be compelled to compete with others who make use of short-weight packages, when the former furnishes full weight, or desires to do so for honesty's sake; and, third, that no trouble may arise with reference to complying with the pure food laws.

SOUTHERN BEEDOM

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

Prospects for an Early Season

The winter here has been unusually fair, with very little severe cold weather as compared with former years. The cold weather was of short duration, but much rainy weather prevailed. This tends to bring an early spring and early honey-flows. The catclaw, "guajilla," and mesquite, all early honey producers, are all three benefited by fall and winter rains. Therefore, the prospects for a crop from these sources are very bright.

A peculiar circumstance is that, although the winter has been warm, the mesquite trees, etc., have not shown any signs of coming out of their winter dormancy. The buds have not begun to swell, while many trees are in foliage by the beginning of March. I have noted this dormant condition of the mesquite trees in previous years. When the buds do begin to swell they develop with such rapidity that the entire mesquite trees are soon covered with a profusion of luxuriant nectar-yielding bloom, with hardly time to get bees in shape for this early flow. I anticipate such a condition this year unless late frosts should interfere. This is hardly to be expected. The prospects are good, and following the short crop of last season, the bee-keepers feel very much encouraged.

Bee-Keeping in Mexico

There has been enquiry about bee-keeping in Mexico, and it has been our purpose to collect such data as might be of interest. On account of the present disturbances in that country, however, we have not undertaken this work. But through the acquaintance of several friends in Mexico, some of whom have studied the bee-keeping in-

dustry of that country, we shall be enabled to procure some reliable notes of existing conditions, which we expect to give.

There is no doubt but that much nectar is going to waste in many Mexican localities, which might be profitably secured by progressive and adventurous bee-keepers. Whether it can be made to pay is what must be investigated. For this reason it is highly important that the market situation be looked into properly, both as to demand that might be worked up for the product obtained, as well as the price and distance to market and cost of transportation.

It is apparent, from the several inquiries received, that much interest would be given to the matter of Mexico bee-keeping if conditions there were not so unsettled. It will be only a question of time when every thing will be quiet again in that country, and this will very likely be followed by some progress in Mexico's bee-keeping conditions also.

We would be grateful to all who can give us any information on bee-keeping in Mexico, to kindly write us. Direct to New Braunfels, Tex.

Net or Gross Weight of Honey Packages

The question of proper weight of standard honey packages is becoming more serious each year. It is time the bee-keepers "get together" and come to a final agreement regarding this very important matter. The demand for packages holding full net weight of honey to the can or pail is increasing. The largest buyers of honey are careful to put into their enquiries regarding prices, a proviso of full net-weight packages, and require a guarantee of this from producers.

CANADIAN



BEE DOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Noxious Weeds as Honey-Producers

On page 46 of the February issue, is given a list of noxious weeds banned by the State of Iowa, with the statement that none of them, fortunately, are honey-producers. Mr. Editor, you had better scrutinize that list again. What about wild mustard? If it is the same mustard that grows here in the grain fields, that weed is a fine honey-yielder, as many bee-keepers will be ready to attest. Then what about milkweed? Here is one of our most profuse yielders of nectar; but in most localities it is not plentiful enough to cut much of a figure in the surplus.

It takes quite a heavy toll of bees, while they are working on the plant, owing to the peculiar glutinous, stringy pollen; yet I would be glad to have a few hundred acres within reach of my bees, as the one locality where it is plentiful always thrives when it is in bloom. Then what about the much maligned Canada thistle? While we do not cultivate this plant, nevertheless where it is plentiful enough to be of any account for the bees, it yields the most delightfully flavored honey that can be produced, and its color is in keeping with the flavor—very light.

At the Lovering yard, illustrated in the February issue, the thistles are plentiful in the rich bottom land that surrounds the apiary, and last season they blossomed freely when basswood was in bloom. The resultant honey is a blend of basswood and thistle, and we are using it on our table in preference to any other; in fact, Mrs. Byer, who is very particular as to the honey she uses, declares it has spoiled all chances of her ever preferring any other honey. A number of friends who have been at our place this winter, declare it tastes like the "bumble-bee honey they used to have when they were young." To all who were brought up on the farm, it will be needless to describe what they mean by the phrase, as it has to be realized to understand the description.

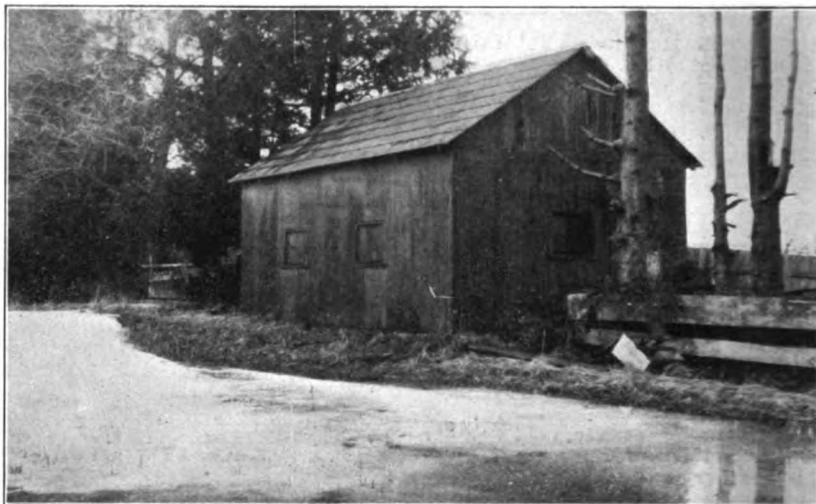
A Honey House

As the building used at the home apiary was very old, the foundation rotten, and the roof beginning to leak, I decided a year ago to put up a new building. Being very busy, and unable to get dry lumber, I decided to build the house of corrugated iron. This iron is painted red, and is sold by manufacturers of metal roofing and kindred goods. The shingles are also metallic, and painted the same color as the siding. How it will last remains to be seen, but if kept well painted I am told that the metal will stand the weather for a long time. It may be asked, is it not hot to work in it during warm weather? We have found

no trouble from that source when the windows are all open, as is the case when extracting. The windows are large, 24x30; there are two in the west side, one in the east side, in both ends, and we get all the breeze there is. When the windows are closed, and the

with 8 feet siding, and the cost, no counting gravel for floor and walls, was about \$60. This includes all labor except the hauling of the gravel and two days' work when I helped to lay the floor and do a little excavating for the walls.

Picture No. 1 shows the west side of the building; the trees on the south side are Norway spruce that have been trimmed up about 25 feet, to allow the sun to shine in the yard. The other picture shows the east side, next to the bees. As will be noticed, the window on this side is a long way from the door—a very desirable feature in any honey house, as the bees do not bother



A METAL BEE-HOUSE.



A CORNER OF MR. BYER'S APIARY.

weather hot—well, it is a good place *then* to keep extracted honey.

The windows are screened on the outside, the screens being removable. Inside they are closed with a sliding panel, and bee-escapes can be placed in frame of outside screens as desired. The foundation is of concrete, and the floor is also of the same material, so there is no danger of the floor breaking through. The building is 14x20,

around the door so much, being attracted to the screened windows. Indeed, when the windows are all opened a bee seldom tries to get in the door, even if we are extracting during a dearth. Owing to the corrugations in the siding, it was necessary to put beam filling of cement concrete mixed fine along the plate at the top and along the sills at the bottom, to prevent bees from getting in the openings. If plain

American Bee Journal

iron is made for building purposes, this could be avoided, as it would nail down tight to the plates and sills. The hives right against the building are some empty ones—only a few of the occupied ones appearing in the corner of the yard, with shade-boards leaning against the entrances.

Value of Willows

The different varieties of willows are



WILLOWS ARE GOOD FOR THE BEES.

all valuable to bee-keepers, as nearly all yield pollen, and some are very heavy yielders of nectar. They are very easily propagated, and will stand very hard usage in early growth; in fact, will flourish under circumstances that would kill other trees outright. The view shown in the picture was taken from our door-step. For years this flat was pastured closely, and everything in tree life was destroyed. Five or six years ago his flat was left for hay, and now willows are springing up all along the banks of the stream, even if floods of ice do wash against the young trees every spring.

In the center of the picture the willows can be seen along the frozen stream, and down near the brush where the stream winds along the bank these willows are 25 feet high.

A camera helps one to appreciate Nature. The landscape above is the view shown from our door. While I have often seen travelers, in the summer time, stop and take a picture of these flats, I never appreciated the beauty of the place until I had taken a picture myself.

Bee-Work in Winter

Replying to Miss Wilson, page 83, I would remind her that I spoke of "real work in the apiary." Yes, I make plans, "build castles in the air," etc., during the winter months. I often spend the hours from 5 until 7 o'clock in bed at this planning, when, in the summer time, I would be out-of-doors. I read a lot, and write quite a bit, but then all this planning, reading and writing is not real work to the chap that is outdoors all summer hustling.

Producing extracted honey we have no sections to fill with foundation, and as for scraping all the extracting combs, we do that in April and May on days not fit to work with the bees.

The Odor of European Foul Brood

Regarding smells associated with European foul brood (page 42), to some people especially on the other side of

the line, the disease is not repellant to the olfactory nerves, while here in Ontario it is obnoxious to an extreme degree. It was my lot to find the first bad cases in Ontario, and I agree thoroughly with Mr. Pettit and Mr. Harris. After learning the disease with its characteristic odor, my nose was all I needed to tell if European foul brood was present. A badly diseased apiary could be smelled 100 feet if the wind was right, and a mildly diseased colony could be detected by placing the nose at the entrance. The latter test is a good one for American foul brood, too, provided the top of the hive is sealed closely to avoid upward circulation.

I have read again what friend Sladen, of Ottawa, Ont., said about the question, and now the whole solution of the problem is plain to me. Mr. Sladen admits the smell is "extremely strong," and that a "penetrating odor is given off" from a foul colony, but he further states that, to him, the odor was "gamey" and "appetizing."

There, you have the situation in a nut-shell. To friend Pettit, as well as myself and a number of other Canucks, the smell of European foul brood is highly obnoxious. To Dr. Phillips and a number of other friends, it is a "gamey" odor, and "appetizing" in its effect. "Tastes differ, as the old lady said when she kissed the cow."

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Do Bees Consume More Stores in Mild Winters?

My experience is that they consume less, and at the same time rear more bees. This had been an unsettled question with me, but the past winter has settled it. It was one of the mildest winters we have experienced, and much of the time the bees were as active as in spring. They have consumed far less stores than ever before. The brood-nest contains lots of honey; in fact, too much for brood-rearing, and we have removed it.

From reports, many other Dixie bee-keepers are experiencing the same thing (too much honey in the brood-nest). Remove the heaviest broodless combs and put empty ones instead. Owing to the late heavy honey-flow last fall the bees were a little heavier with stores than usual, but an unusually small amount of stores was consumed.

Wintering in Florida

After taking a look at the photograph on page 16 of the January number of the American Bee Journal, many bee-keepers wrote me they wished they could be with me in the land of flowers. A number visited me, and we had a good time fishing, launch riding and

oyster gathering. The beautiful shell beach for miles along the coast was our "stamping ground." We visited orange groves, etc. They were happy and well spent hours, but the bee industry was our hobby, and much valuable information was exchanged.

There were bee-keepers with me from all parts of the country, and even far off Canada was well represented. The country and climate proved an attraction to many. They invested in real estate, and expect to spend the winters there.

Apiary Work

The honey-flow is now on in almost all parts of Dixie. Bees are swarming, and must have constant attention for the next few weeks, looking out for swarms, keeping hives supplied with plenty of super room. This can best be done by raising the supers they have and inserting the new below, next to the brood-chamber. This should be kept up for 3 or 4 weeks; then let them fill all the supers they have started.

Almost all bee-keepers in Dixie use but one super for each colony, when they should have three, so the bees do not store much surplus and swarm too much. Plenty of storing room will check swarming and keep the bees at

work, and far more honey will be harvested. If the hives are elevated from their bottoms by means of a $\frac{3}{8}$ -inch square strip placed under each side the same length as the hive, it will give good ventilation. This will also check swarming and loafing, or lying outside. Now is also a good time to make artificial increase by dividing the colonies that have started queen-cells into two equal parts; if possible leaving the queenless part on the old stand.

This equal dividing of brood, bees, and honey cures colonies of the swarming impulse, and, as a rule, the two divisions will store more honey than if left undivided. They make the best colonies for the next flow during summer or fall.

The Orango as a Honey-Plant

This includes all citrus fruit; the orange, lemon, lime, cumquats, tangerines and grape-fruit. This fruit grows extensively in many sections of southern Florida, and furnishes abundant pollen and nectar for the thousands of colonies that are located there. In some localities it yields on an average as much as 50 pounds per colony of surplus honey, which is a very light amber, has a heavy body, and very fine flavor. The taste is correspondingly exquisite, with the odor of the blossoms which cannot be excelled. What adds much to its value as a honey-plant is that it begins blooming in February and lasts for 6 or 8 weeks, covering a period of time when there are no other honey-plants in bloom.

The bees build up during this flow, and at its close the saw palmetto begins blooming. This is the greatest honey producer along the coast of Florida. Aside from its value for honey, it has no equal as a fruit producer. Take a look at the photograph, and see the trees so laden with the delicious golden-colored fruit that the limbs rest on the ground. Nothing makes a more beautiful picture to me than groves containing hundreds of acres of this great fruit. The man standing on the right is Mr. E. B. Rood, of Bradentown, Fla. The others are his fruit pickers, rigged up for business. Mr. Rood is an extensive bee-keeper and fruit grower. Thousands of people come here from all over the United States during the fall and winter months and engage in gathering, sorting and packing this fruit. They have a delightful time during the winter in this ideal climate, and return the following spring with a heavier purse. Many of them are bee-keepers who appreciate a good thing.

Eight or Ten Frame Hives?

DEAR EDITOR:—On page 16, of the January number, you call me out for preferring 8-frame hives. I do not allow natural swarming, so the size of swarms that may go out is of no consideration. Then if you refer back, you will see that an 8-frame hive-body and a regular shallow extracting super compose the brood-nest. Why couldn't I expect even larger swarms than from a regular 10-frame hive?

As has been shown, the 10-frame hive-body is too small proportionately,



PICKING CITRUS FRUIT IN THE SOUTH.

and is prohibitive of rapid manipulation, especially where there is much propolis. Nor does a 10-frame super make an ideal storing department for my locations, for it takes the bees too long to fill outside frames or sections, and by the time they do, the middle comb is travel stained. Such is not the case with an 8-frame super. It is filled much more quickly and evenly.

In some of my locations where there

is a slow honey-flow, bees store but little if any in the supers above a 10-frame brood-nest, and when they do, they fill a comb at a time, or start on one side and fill one section at a time, as if plowing a field. The result is anything but satisfactory. I have bees in many different locations in the South. I have tried 10-frame hives in all of them, and they are not satisfactory to me.



Diseases of Bees.

Foul Brood

BY J. E. CRANE,
Vermont State Inspector.

The greatest drawback to successful bee-keeping at the present time is *foul brood*. There are large areas of our country that are free from disease, and others where there is but little disease; and yet I fear that there is more in many localities than we now suspect. Over most of the northern States inspectors have been appointed, and are working each in his own way with but moderate success. There have been conventions of inspectors to discuss the best methods of combating the evil. While such gatherings are good, they are often at such a distance that many inspectors find it difficult to attend.

I have been wondering if a department of one of our bee journals might not be profitably used for the interchange of opinions among inspectors, for the discussion of many points of interest connected with inspection work. I believe our methods for the production of honey, either comb or extracted, are up to the standard of what they should be, and it is comparatively easy for one to get information.

But when it comes to foul brood, es-

pecially European foul brood, how many questions I should like to ask some person with more experience than myself, as to the best method of meeting the various problems that come to an inspector or the enterprising bee-keeper! Shall the work of the inspector be educational rather than simply to suppress the disease wherever he may find it? If the latter I fear it may not prove of much permanent value, as to do so would often destroy every colony in a given district. To teach the bee-keepers how best to combat the disease, although slower and requiring more patience, may in the long run produce better results. Some respect should be paid to the intelligence and interest bee-keepers take in the subject themselves.

Two bills were introduced into our Vermont Legislature during the past session for the suppression of contagious diseases among bees. One was an amendment to our present law that made it the duty of the inspector to visit each yard where disease was found, in 20 days from his first visit, and burn every diseased colony found. If he did not do it, he should be removed and another inspector appointed in his place. This because it was thought the inspector had not been severe enough. The other bill

was introduced from another part of our State, repealing our present law for its severity, and a new bill introduced, allowing the inspector to make but one inspection, and that only before the first of June. This because the inspector had been too severe. It was necessary to appear before the agricultural committee and see that neither bill was reported favorably. We have a very good law as it is, and if bee-keepers will co-operate with an intelligent inspector, our State may in time be made comparatively free from disease.

What is the most practical method of disinfecting hives or tools with which we have opened diseased hives? I have heard that some thought it necessary to boil tools in water for half an hour before going to another apiary. Yet it would seem that disinfection of tools was often quite as necessary in going from one hive to another. The boiling method, no doubt, is sure, but requires so much time it is doubtful if it is often followed, or even practical.

Is it ever safe to put one colony into a hive where there has been disease without first disinfecting it?

How much dependence can be placed on Italian bees to control or subdue European foul brood?

Is it safe to change comb honey supers from a diseased hive to a healthy one?

Are queens ever of any value that have been reared in a foul-broody colony?

Where shaking is resorted to, is it necessary to shake on frames of starters as most inspectors advise? Why not just as well shake into an empty box and save time and bother?

Does European foul brood spread in any other way than through the diseased honey, and if so how? We know it moves more rapidly than American foul brood, but why? Can any one tell us? These and other questions come to me as I think the subject over. Each individual inspector has experiences that will often throw light on something of which another can get no clue.

The Agricultural Department at Washington has given us a great amount of technical knowledge of brood diseases, and the question how to put into practical work the knowledge we now have is of great importance.

Middlebury, Vt.

[The foregoing article has struck us as so timely and judicious that we use it to open a department hereafter to be known as "Diseases of Bees." Mr. Crane is one of our oldest and most practical apiarists. We find his name in the American Bee Journal as far back as 1879, when he was president of the Addison County (Vt.) Bee-Keepers' Association. He could already give good advice, and was probably then an up-to-date bee-keeper. We urge apiary inspectors from everywhere to bring their experiences to this department. We want short, pithy statements, so the reader may get at the

facts without loss of time. The disease question is a serious one.—EDITOR]

Illinois State Inspection

BY A. L. KILDOW, CHIEF INSPECTOR.

On entering on my work as State inspector, I found that the inspector who served before me kept no records, and I had to make a new start.

First, I sent letters to different sections of the State, enquiring if disease was known in those parts. With the replies and information from other sources I started out. As conditions became known, and the work broadened, I hired deputies as needed, until last season I had 10 deputies doing more or less work. There is need of more, but our funds will not permit. Thus we are handicapped to a great extent. In appointing deputies in different parts of the State, I aim to cut down expenses, and consequently they are not expected to go far from home.

The work of the inspector is mainly educational. It is his duty to teach the bee-keeper how to detect the various bee-diseases, how to treat them, and to so instruct him that he may know the first symptoms of disease should it appear in his apiary.

The amateur is the most needy, as his eyes are not trained to detect symptoms that would cause a colony to become worthless. There are many little points that the inspector can give to the amateur that otherwise would take him years to learn, and the sooner he can be educated the better. The inspection work has also been handicapped because we had to act the detective, and hunt up the bee-keepers. As a rule, they have not co-operated with us. Many appear to be afraid of the inspector, and would rather not have their bees examined, for fear disease might be found, and they would have to clean up, and the thought of having to clean up is a "bugaboo."

This only applies to the small bee-keeper and the farmer, who thinks he has all he can do without (as he says) fooling with the bees. As a rule, we have no trouble with the man who tries to make something out of his bees. He is willing to learn. The

specialist knows that he must keep his colonies in good condition or he is the loser. If he has never had disease in his apiary, he is posted as to what it is, and it is not likely to make headway before he discovers it, and he makes short work of it.

On July 24, I visited the home of a man who had opposed our foul brood law, and who is one of Chicago's large bee-keepers. I had heard that he would serve an injunction on me if I came on his place; but for all that I made the visit. When I arrived at the house I found him in the midst of extracting, and very busy. Instead of serving an injunction, he treated me with as much respect as I have received at the hands of any bee-keeper. His plan in the treatment of foul brood is: In the spring he goes through all his colonies (in May), and every colony that shows even a single cell diseased is marked, and if it is in the out-yard it is brought to the home yard, and there looked after. Every colony is shaken, and the honey extracted and the combs melted. While he may never get entirely rid of foul brood, he will so keep it under control that it will not materially injure him. Before I left, he told me that if I could come back the last of the week he would have more leisure, and would take me around. The bees in his home yard are a good grade of Italians.

Bee-keepers in general should keep better bees. With disease all around them they must be up to date in everything pertaining to bee-keeping, if they wish to realize anything from their bees. Very few places are overstocked with bees. My own locality comes the nearest to it of any that I know; perhaps this is because I am better acquainted with my own neighborhood. I do not believe I am over-stating when I say that ten times as many colonies could be kept in Illinois at the present time, and kept to advantage. Besides keeping more bees and better bees, we are advised to keep our bees better.

This need was plainly demonstrated to me by finding bees kept in every conceivable way, some in plain boxes, others in boxes with slats nailed in top and bottom, some in good frame hives with no foundation, and the



WHERE SAGE, SUMAC, WILD BUCKWHEAT AND ORANGE BLOOM, AND COOLING OCEAN BREEZES BLOW THROUGH MOUNTAIN PASSES WILD.

Nature blessed this land of ours with sunshine, rain, fruit and flowers.—L. L. ANDREWS.

combs built crosswise, some in barrels, and in one case an old trunk was used. I did not go into this. The condition of the bee-yards varies as much as the hives.

Besides the regular inspection work and treatment, it is the plan to have as

many demonstrations or "field days" throughout the State as the conditions will justify. In my opinion, this is the practical and educational part of inspection, and I earnestly ask all bee-keepers for their hearty co-operation. Putnam, Ill.

acres of land. Any business in which 40,000 people are engaged, even in a small way, is worthy of more attention than has been given by the State of Iowa.

Nothing is being attempted at this time by the association that all members present at the convention did not agree upon. The things that are now being urged are:

First, an appropriation of funds for bee inspection, to be administered under the direction of the State Entomologist. It is believed to be the best plan to take the appointment of inspectors and administration of the funds of the office entirely out of politics.

Second, the establishment of a chair of bee-keeping at the agricultural college. The authorities of the school favor this move, and it might have been done before had there been any outside interest apparent to justify it.

Third, the employment of a lecturer on bee-keeping on the extension force to appear before farmers' institutes and other assemblies. This has already been done temporarily by the appointment of C. H. True, of Edgewood, for the present winter season. It is expected that a regular lecturer will be permanently employed before long.

Fourth, the passage of a law prohibiting the shipment of bees from other States into Iowa without a certificate signed by some authorized inspector, showing that they are free from disease. The Peterson bill, now pending in the Legislature, carries this provision.

Fifth, better premiums and better facilities for exhibiting at the State and County fairs. The secretary, acting on instructions from the convention, has already written to the secretary of every county fair association, calling attention to the fact that bee-keeping is not receiving the attention it deserves at the fairs, and suggesting a premium list suitable for such exhibitions.

Good results are expected from this campaign. A committee was also appointed to confer with the State Fair board regarding the exhibits at the State Fair. We expect favorable attention from this body, and hope that a separate division of bees and hive products will ultimately be established with a satisfactory place for exhibition

CONTRIBUTED ARTICLES

Spraying Trees in Bloom

BY H. F. WILSON,

Assistant Entomologist, Oregon Agricultural College.

MR. W. H. VOLCK, Horticultural Commissioner of Santa Cruz Co., Watsonville, Calif., in the January number of *Better Fruit*, under the heading of "Caterpillars, Codling Moth, Aphids," pages 16 and 17, makes the following statements: "Owing to the very early attacks of tussock caterpillars, canker worms and leaf folders, the first sprayings should not be delayed until the blossoms have all fallen, but applied while the trees are in bloom. The period from full bloom to the time when two-thirds of the blossoms have fallen *appears* to be the most practical timing. *Spraying with good arsenicals will cause no injury to the blossoms.* . . . Apply the first spraying when the trees are in full bloom to the time when two-thirds of the blossoms have fallen."

Note that he states that the time mentioned *appears* to be the best. This recommendation, which is undoubtedly given on reliable data and experiments, is a very dangerous one for both the bee-keeper and the horticulturist. Certainly such a practice causes the destruction of insects which feed upon the nectar of the blossoms, and climbing over them in search of it, aid in pollenization. In localities where it is followed the honey-bees will be destroyed. One of our local bee-keepers suffered such loss from the spraying of a single orchard that he was compelled to move to a different locality.

It is a common recommendation of this station to suggest bees for the orchard and farm, both for cross fertilization of fruits and the surplus honey. In view of this recommendation, I will state that in Oregon we have the tussock moth, canker worm, and several caterpillars which cause more or less damage to the fruit, but only in one instance have they caused enough damage to make it necessary to consider methods of control other than those now in use.

In localities where it becomes necessary to combat these early-feeding caterpillars, the spray should be applied *before* the blossom buds open. At that time the young caterpillars will be more easily destroyed than a week or 10 days later. There may be some opposition to this extra application on account of the cost, but surely the value of the cross-fertilized fruit over

the self-fertilized will be more than the cost of spraying.

Just how much we can depend upon the wind and air currents for distributing pollen is hard to say, but several investigators have carried on experiments which tend to show that not as much pollen is distributed in this way as one would expect.

I suggest that the fruit-growers of every State be careful about spraying when the trees are in bloom.

Corvallis, Oreg.

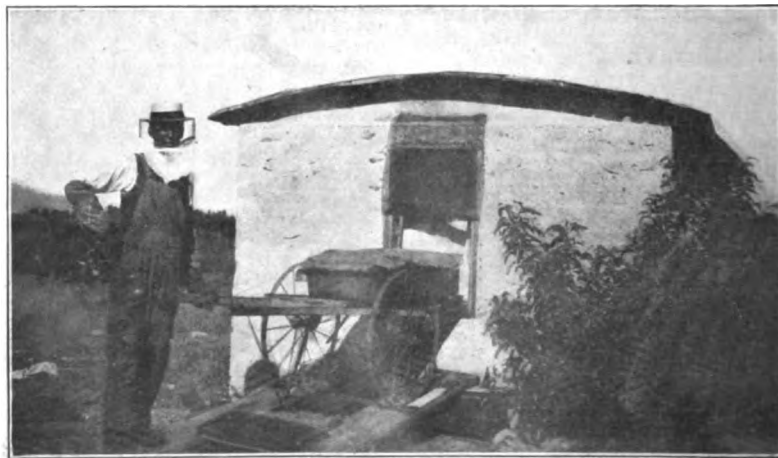
The Iowa Program

BY FRANK C. PELLETT.

Iowa State Inspector of Apiaries.

THE Iowa State Bee-Keepers' Association bids fair to become one of the strong organizations of its kind. The members are live wires, and propose to place the bee-keeping industry on a par with other agricultural pursuits in Iowa. Lack of organization has given the impression that bee-keeping is at a low ebb. But the census shows nearly 30,000 bee-keepers on the farms of Iowa. Those occupying less than three acres, the limit set by the census bureau of the smallest area composing a farm, were not reported by the census enumerators.

As a result, while more than half the number of persons keeping bees was reported, probably not much more than half of the number of bees and product is shown in the census figures. Many of Iowa's largest honey-producers live in the towns and occupy less than three



L. L. ANDREWS WITH COMBS OF HONEY READY TO GO INTO HOUSE FOR EXTRACTING.

of our products and a creditable premium list.

As fast as these results are attained others will be attempted. A bulletin is now in course of preparation by the Agricultural College devoted to opportunities for bee-keeping in Iowa.

The Iowa bee-keepers welcome scientific bee-keepers, and desire them to join the association. We fear no competition from this kind of men, and feel that our interests are mutual. On the other hand, we already have several thousand too many shiftless bee-keepers who have a few colonies in a fence corner where the weeds grow 10 feet tall, and which are not examined from one year to another. Such colonies serve to breed moths and foul brood sufficient to keep the careful man on the anxious seat all the time.

Watch the Iowa association move into the front row. Every bee-keeper worthy of the name owes it to himself, and the cause of honey-production, to join the society and lend his influence to the work outlined.

Atlantic, Iowa.

Dead Larvæ Among Live Brood

BY D. W. MILLAR.

IN THE February Bee Journal, comment is made editorially on "Dead Larvæ Among Live Brood," and "Causes of Many Eggs in a Cell."

Now, strange to say, I have a similar case of each in the same hive. The dead brood has bees hatching all around, apparently healthy, also eggs and unsealed brood in adjoining cells. I have already sent a sample to Washington just as described. The dead brood in this form is not uncommon with me, but never has been fatal, and the temporary weakness is in time overcome and the colony none the worse. It occurs more in weak colonies or nuclei that I am building up. There are no symptoms of foul brood so far as I can see, and the department at Washington may be familiar with the cause.

In the hive from which the sample of brood was sent, I at first thought the queen was missing and that a laying worker had developed, as many of the worker-cells contained from two to

four eggs, but there were no eggs at all in the drone-cells. Not caring to unite until I had heard from Washington, I decided to try the shaking plan to get rid of the laying worker, but was not thoroughly satisfied that there was one, so I took a seat and prepared to make a thorough search for the queen once more. She was found, and was to all appearances a fine one. The colony I built up from a nucleus reared and mated the queen, and since the nucleus was formed there has never been a change of queen, and she has never stopped laying, to my knowledge. Cells with more than one egg are to be found not only on one frame, but on nearly every one where there are eggs at all.

Might not this be a very prolific queen, and, being weakened, the colony is short of bees to clean up and look after a larger brood-nest, and she just cannot help laying, so gets rid of the overflow by doubling them up? When seen, the queen would give one that impression, as she seemed to be fertile, and there were no drones at all in the hive, and young bees, as I say, hatched all around the eggs, dead larvæ, and unsealed brood. The drone-cells, of which there are a few in the hive, have no eggs whatever in any of them. I will not worry about the queen, for I believe that when other things are adjusted she will be all right; but the dead brood has had me a guessing for some time.

Bartle, Oriente, Cuba.

[This may or may not be the same as Mr. Townsend speaks of. Even if it never proves fatal, it must weaken a colony. Please let us know if you learn more about it. The duplication of eggs, as you surmise, probably has nothing to do with the disease.

You speak of a possible laying worker. When this nuisance appears it does not appear singly, but in numbers.

The following letters refer to similar facts. Evidently, when disease is found the bee-keeper should not at once conclude that foul brood is present. In reporting these cases it would be well for the bee-keepers to make note of the

conditions otherwise, whether in time of scarcity of crop, and whether the colony has plenty of stores. The assertion of some writers that sometimes the nurses are stingy and do not feed the brood sufficiently might have to do with some of these cases.

The evidences are more and more in favor of the Italian bees of pure race: —EDITORS.]

I had some experience with dead larvæ among live brood last summer. It was a colony with a black queen. About one-half of the brood was dead. The queen was put on trial and convicted, and death sentence passed. I sent for an Italian queen, which arrived about the middle of June. The black queen was killed, and the new one introduced, and in a week or 10 days the dead brood was all cleaned out and the combs filled with nice, pearly brood. I don't know the cause, but I hit the remedy.

Festus, Mo.

S. B. REYNOLDS.

About dead brood in one colony and none in the other. We had the same thing in our apiary last summer. The brood was scattered all over the combs of the affected colony. Some of the cells were filled with brood and some not; some dead and others alive. We became alarmed and moved every comb that had brood from the hive and gave other brood combs, but to our surprise the same thing happened over again. Then I thought it was owing to lack of bees, as the colony was not very strong, and I watched and found this to be the case. I then sent for another queen, put her in the hive, killed the old one, and took all the brood from the hive, giving half sheets of foundation instead. The new queen commenced to lay in three days after we put her in. The colony drew out the three frames of starters, the queen filled everything with eggs, and we had no more trouble with dead larvæ. We think it the fault of the queen.

Ottumwa, Iowa. GREGORY & SON.

Concerning dead larvæ among live brood, this is a seemingly natural trouble. I have it to contend with here in my section. Your quotation from Mr. Townsend would be a fair description of the conditions as they exist in my apiaries during April, May or June. I think this trouble is partially or nearly cured through an application of daily feed, and I believe breeding from colonies that seem to be free from the trouble would come nearer to a permanent cure.

Smithland, Iowa. B. A. ALDRICH.

No Glucose in Bee-Candy

BY W. S. PANGBURN.

NOTE with interest that the New York bee-keepers object to the use of glucose in bee-candy (page 58), and they are right. I never read about that "new discovery" of making bee-candy, using part glucose, but what I feel like getting up and saying No. It would be a slur to the industry. Pure honey and pulverized or



L. L. ANDREWS' TANKS FOR STORING HONEY.

American Bee Journal

granulated sugar, or loaf sugar, have given general satisfaction.

I have bought quite a few queens, some of them coming long distances, and they were received all right, so far as candy was concerned.

If we use glucose for bee-candy, and bee-keepers adopt it generally, the next thing will be a big advertisement in the Ladies' Home Journal, or some other periodical, setting forth the good qualities of glucose, and stating that bee-keepers are using it in place of honey in making bee-candy, showing they realize its superiority over honey.

Brother bee-keepers, let us keep a clean record, and for the good of our business don't mix up with one of the worst things we have to contend with and give any chance for censure. The glucose people are very keen to grasp these ideas, and would want nothing better in the way of an advertisement than to state that we were using glucose in place of honey in making bee-candy. Let us gently lay it on the table.

Center Junction, Iowa.

[This is right. It is well known that glucose is neither acceptable nor healthy for the bees. For wintering, or for spring feeding, if no good honey is to be had, the best sugar is none too good. For mailing queens, glucose would be deadly.—EDITOR.]

Save Your Beeswax

BY G. M. DOOLITTLE.

WHILE the production of honey is made the special object in keeping bees, especially in northern latitudes, yet in every apiary enough wax may be obtained to total a handsome figure in four or five years with but little more effort than to allow it to waste. Notwithstanding this, many who are keeping bees allow this wax to be lost, or, worse still, become a breeder of the pests that torment the apiarist who is trying to keep his apiary free from the wax-moth.

Bur and brace combs are a nuisance when frames are handled and the sections put on and taken off. Every one who is "booked" for a successful bee-keeper will remove these wherever seen in any manipulation of the hives, and especially when preparing supers and hives, for the next year, which were used the season previous. As these are trimmed from frames, honey-boards, etc., they should be carefully preserved, as well as broken bits of comb, and all drone-comb which is cut out to prohibit the useless rearing of drones from scrub or grade mothers.

Then, bees perish often during the winter, or there may be combs which from crookedness, or because they are made up largely of drone-cells, or contain much pollen, or damaged by mice, are unfit for use again. In all such

cases, the wax the comb contains should be secured by rendering.

Convenient places should be at hand for the storage of all these pieces of comb and wax, both in the apiary and honey-house, so that there will be no necessity to drop or scatter them about. I have a little box in the seat carried with me, when working in the apiary, so that it is just as easy to drop all bits of wax and comb in this as to drop them on the ground. In this way I preserve any wax which may be trimmed from frames, combs or honey-boards. Such pieces are especially valuable, for they are composed almost entirely of wax, and the rendering of them is easy. It is well to keep these and all other comb to be rendered, away from moisture and light until the operation can conveniently be attended to. The rendering of bits of brace and bur comb, and other comb in which no brood has been reared, is a comparatively simple matter, since they contain nothing to prevent the wax readily separating from the residue, but with combs full of cocoons, bee-bread and other foreign matter, the case is different.

For comb which contains little foreign matter, the solar wax-extractor is a great convenience, as it takes all unpleasantness out of the house, shop or honey-house; is handy to drop all bits of wax and comb into, and if a cloth strainer is put over the place of the discharging wax, it comes forth ready for market. For the rendering of combs containing cocoons, pollen, etc. (and those without cocoons need not be excluded), I have found nothing (after having tried everything readily at hand for the average bee-keeper) better than the following:

Take a common cast-iron kettle, such as is used by nearly all farmers for heating water, boiling vegetables, etc., for the hogs or hens, one that will hold several pails of water; set the same on three stones, or three pieces of gas pipe or bars of iron driven in the ground, so as to raise the lowest part of the rounding bottom of the kettle 3 to 6 inches from the ground. Now fit two or more pieces of plank or board (nailed so the grain of the timber in them runs crosswise of each other) so that a rounding surface is made to fit the inside rounding bottom of the kettle. With a coach or lag screw, these fitted planks are screwed to the end of an "upright" made from a pole 5 or 6 feet long, or from a 2x4 scantling, the upper part of which has holes bored in it 4 or 5 inches apart. Get a pole or scantling 16 feet long, and mortise a hole through it 3 or 4 feet from the larger end (if it be a pole), so that it will admit the upper end of the "upright." Next bore a hole through the pole at mortice, so that a bolt of iron will go through it and any one of the holes in the upright, when the same is inserted in the mortice. Drive an iron stake into the ground 3 or 4 feet away from the center of the kettle as it stands on the stones or iron

stakes, to the top of which is attached a trace chain, which chain is to be attached to the large end of the pole when we are ready for it.

Fill the kettle half or two-thirds full of water and build a fire under it, and while waiting for the water to boil get a burlap sack which will hold 3 or 4 bushels, into which place the old combs, and tie the mouth of the sack securely. Some think that if these old combs have been soaked in water 24 hours they will render better, while others hold that such combs should be pounded up fine; but after repeated trials I am led to believe this to be a loss of labor.

When the water in the kettle boils, slowly lower the sack of combs into it, and as soon as melted, "work" the sack one way and the other with an old hoe, and watch the wax rise. If all the comb is not in the sack, raise the upper end, untie, and fill until all has gone into the sack. Working in this way, the whole mass of combs will be reduced to a bushel or so of refuse, when the sack is to be tied down as closely as possible.

Now put the plank end of the "upright" on the sack, the upper end in the mortice in the pole, the iron pin in the right place or hole, and the chain attached to the anchor iron over the big end of the pole, when by bearing down on the small end you can press the last particle of wax out of that mass in the burlap sack, as you "rock" the upright this way and that by carrying the small end of the pole one way and the other, thus bringing the upright to bear, under the great pressure, on every particle the sack contains.

Having all the wax out, hang a weight on the small end of the pole, let the fire go out, and the next morning take the cake of wax from the whole top of the kettle. Its thickness will be in proportion to the amount of comb you had to render.

To prepare the wax for market, try this: For every 10 pounds of wax, put in a suitable sized vessel, allow two quarts of water and one pint of good vinegar, and when the whole is melted over a fire, strain through common cotton cloth into the vessel you wish to cake it in, keeping the latter vessel where it will remain warm enough to keep the wax liquid for four or five hours. Just watch it a moment, and you will see that the whole mass is moving or working and stirring about, which it will keep doing to a lesser and lesser extent as it grows colder. In this way all particles of dirt which the strainer did not remove will be found on the bottom of the hardened cake, from which it can be scraped with a dull knife.

If you wish something fancy, have several tin molds made which will each hold a 2-pound "brick," and when you have it all in this way, you can pack it in a square box, each cake wrapped in a sheet of butter paper, the same as they do "prints" of butter when you can get a fancy or "gilt edged" price

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for it. If you try this way of saving, rendering, and putting up wax for market, you will never allow more to go to waste, and may find enjoyment in the work, far beyond that of sitting down in the "country store" talking "idle gossip."

Borodino, N. Y.

European Foul Brood

BY DR. C. C. MILLER.

A CORRESPONDENT desires the latest wrinkle in the treatment of European foul brood. The styles for 1913 will be much the same as for the past year. There are, however, new members of the Bee Journal family who need information on the subject, and, alas! some of the old members may find their premises invaded for the first time this year by the dreaded visitor. So it may be well to discuss the subject in a sort of general way.

First and foremost, have only strong

colonies. A strong colony may resist an attack where a weak one succumbs. So if the disease is in your vicinity, or within a few miles, and you dread its invasion, *keep* all colonies strong. Anyway, *this is a paying thing to do if there were no disease within a thousand miles.* After the disease has made its appearance, you are sure to have weak colonies. After being attacked by European foul brood, it is only a question of time when the strongest colony will be weak. Little use to attempt any treatment until the colony is made strong, either by the uniting of two or more affected colonies, or by the giving of sealed brood or bees from healthy colonies.

Second, if your bees are not of the best Italian stock, introduce that kind. It is now quite generally agreed among foul-brood inspectors that the worst ravages of the disease occur where black blood predominates, and that a strong factor in either prevention or cure is the introduction of Italian blood. Some, however, agree with J.

E. Crane, who gives it as his opinion, Gleanings in Bee Culture, page 85, "that the ability of bees to resist disease depends more upon their strength and vigor of constitution than the color of their abdominal rings." Even so, it still remains true that in the great majority of cases there will be an increase of strength and vigor of constitution where black or hybrid blood is succeeded by best Italian blood. Indeed, Mr. Crane immediately adds to the words already quoted, "On the whole it now looks as though the introduction of vigorous strains of Italian bees might, in skillful hands, prove a short cut in curing European foul brood."

Suppose, however, no matter what the quality or condition of your bees, that the appearance of the brood is such as to make you suspicious. The first thing to do is to send a sample of the suspected brood, perhaps a comb 4 inches square, to Dr. E. F. Phillips, Agricultural Department, Washington, D. C. If you write him in advance, he

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will send you a tin box in which to mail the sample, and it will cost you nothing for this, nor for what he does for you afterward. After analysis he will give you expert opinion as to what is the matter, if anything, and probably add instructions on what to do.

SHALL THE COMBS BE SAVED?

Turning now especially to my correspondent, I suspect the question you want answered is whether it is advisable to use the same treatment for European as for American foul brood, destroying all combs, or whether it is better to use the Alexander treatment, or some modification of it, without destroying any combs. Good authorities have been very emphatic that the former is the only course advisable, considering the danger that ignorant or careless bee-keepers might by the latter course spread the disease rather than stamp it out. I have no quarrel with any one who thinks this the safer plan. It certainly is *safer*, at least in the hands of the careless. And it would be safer still not only to burn up all brood and combs, but to burn as well all the bees, hives—everything.

Indeed the time was, when that was the only treatment considered advisable for American foul brood, to burn up the whole thing, lock, stock, and barrel. Yet nowadays no one advises to destroy, in all cases, hives and bees; although it might be advisable if only a colony or two in the neighborhood were affected. But such localities are getting to be more and more scarce all the time, and the effort is made more and more to control the disease rather than to stamp it out entirely. So if it be the right thing to save the hives and bees, why not save the combs also if we can?

When the combs are destroyed, it is not the mere waste of so much valuable material. The heavy set-back to the colony from having to build up anew is a matter of greater consideration. Destroy the combs and you can count on little from the colony for that season; whereas if the combs be left, you may have a fair surplus.

ALEXANDER TREATMENT.

If you decide to save the combs, you may adopt the Alexander plan of treatment. *Make the colony strong.* Kill the queen. In 10 days kill all queen-cells. In 10 days more give a ripe queen-cell of best Italian stock, or a virgin just hatched of the same stock. When brood from the new queen appears, it will be healthy. This makes a break in brood-rearing of about a month's duration.

MODIFIED ALEXANDER TREATMENT.

Good results have been obtained without so long a break in brood-rearing. Instead of a queen-cell or a virgin just hatched, a laying young queen may be given about 20 days after the removal of the old queen. Another plan, greatly shortening the period of queenlessness, has proved well worth trying. At the

time of removing the old queen, or as soon thereafter as the bees will accept it, let a queen-cell or a virgin just hatched be given. This ought to make a break in brood-rearing of not more than 10 days. Besides the shorter time of queenlessness, there is the advantage in this case that the bees do not have the discouragement of being hopelessly queenless, and there is reason to believe that this discouragement is no help to the colony in cleaning up the disease.

CAGING THE QUEEN.

The instruction has been to kill the old queen. Instead of being killed she might be used elsewhere, but for the fact that generally a queen does not do good work after she has been for some time in a colony badly affected with European foul brood. In a very mild case, however, the queen is likely to be still as good as ever, and as the only object in removing the queen (unless she be replaced by a better one) is to stop the rearing of brood, there is no need to remove her at all. Simply cage her in the hive for a week or 10 days, and then release her. Even if a certain percent of cases thus treated should be failures, the simplicity of doing nothing more than to cage the queen for a few days may be preferred to a surer plan involving several times as much trouble.

RECURRENCE OF DISEASE.

The question has been asked, "How long does it take to get rid of the disease entirely?" Perhaps no one can answer that question with any degree of positiveness. It has been said that European foul brood is more persistent, more difficult to eradicate entirely than the American variety. Speaking of foul brood and probably referring to American, E. D. Townsend says in the *Bee-Keepers' Review*, page 45: "Once in a locality, always in that locality. One can free a hive of the disease, very probably a yard, but not a locality of any considerable area." If that be true of American, it is more emphatically

true of European. No matter whether the combs are all destroyed in the treatment of the disease, it is likely to appear again. Yet with proper watchfulness there need never be any bad case, and good crops of honey may be obtained in spite of it. In the apiary of the writer a single diseased cell is considered warrant for treatment, so there can never be any very bad case.

It should be mentioned, however, that a very little of the disease is bad in its effects, for a colony very lightly affected seems to fall behind another entirely healthy colony to a larger extent than one would suppose possible from so small an amount of the disease.

Marengo, Ill.

Color of Queens

BY C. P. DADANT.

DR. KRAMER holds that the color of queens is lighter when they are reared from a young mother; that the queen gets darker in color as she grows older, and that her progeny is therefore also darker.

He holds that the soil of a country has an influence upon the amount of mineral contained in the honey, and that it thereby influences the color of the bees. A soil rich in potash will produce lighter colored bees (according to one of his commentators, E. Van Hay). What do our queen-breeders have to say about this? Some of them who have reared queens largely both in the North and the South ought to have an opinion based upon experience.

Is it a fact that a queen reared in a very dark cell will be in general darker than one reared in a lighter colored cell? Or is this because the light-colored cells are built at the time of the greatest crop and in a favorable season?

The above enquiry was put in type and a proof-sheet sent to a number of queen-breeders with a request to give



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their opinion and their experience. The following have replied kindly to our request, for which we express our thanks: J. A. Simmons, J. P. Moore, Grant Anderson, W. J. Littlefield, A. B. Marchant, Frank F. France, Quirin-the Queen-breeder, J. M. Davis, T. S. Hall, and J. J. Wilder. It would take too much room to give all the replies in full, so we will summarize them and quote only extracts.

All agree that a queen gets darker as she grows older, but not one thinks that the daughters of a young queen will be lighter colored than those of an old queen.

J. A. Simmons says: "The inexperienced will often be surprised at having produced both light and dark queens from eggs from a evenly-marked queen.

"A queen is darker as she grows older, I am free to admit. But I have had such a liking for some good breeders that I continued to use them as such, after they had become so poor as to egg laying that they required brood from other colonies to maintain their colonies' normal condition, but the last queens reared from them were just as prolific and as light as the ones first reared."

Frank F. France says: "I have noticed that a queen just hatched from a cell that has been chilled has a darker tip to the abdomen."

Likewise Quirin writes: "A light or dark cell, light or dark honey, light or dark pollen have influence towards producing either lighter or darker queens, yet said influence is so extremely light as not to be noticed for several generations. Temperature has a far greater bearing on the color proposition than either food or color of the comb. Queens hatched in a low temperature may be good sized, etc., but will be darker than if hatched at a higher degree."

As to the effect of the soil upon the color of the bees and of the honey, France thinks it may affect the honey but not the color of the bees. Marchant says: "I believe that queens reared in the North are brighter than those reared in the South, and possibly it is the soil that causes this, as the lands in the North have more potash than those of the South."

W. J. Littlefield says: "The soil may or may not influence the color of the honey, but I am sure the honey has nothing to do with the color of the queens; if it did, in early spring when we feed back to the bees the dark honey that is not fit to put on the market, we would get very dark queens; then when we feed white sugar syrup we would get much lighter-colored queens. The color of the honey, however, has quite a little to do with the color of the wax, the darker the honey the darker the wax will be." (This last proposition, which is out of the present subject, deserves a special discussion.)

Grant Anderson has "kept bees on many kinds of soils, and has never no-

ticed any change in the color of the bees."

J. A. Simmons says: "As my queen-rearing experience has been confined to soils of a like nature, I cannot deny Dr. Kramer's statement. This is more chemistry than I have applied to queen-rearing. But would not this difference, if correct, also affect the color of persons eating this honey? Ladies, be careful or you may change your color, or be sure to get the kind of honey that will produce the desired effect. Queens alike in color and size may be produced from either light or dark cells under favorable conditions. It will be noticed that, very early or late in the season, when there is but little honey coming in, colonies made queenless and compelled to rear queens produce smaller and darker queens, in cells started from dark cell-cups about the combs, as if they were made from bits of wax gathered from the combs already built, and not of their own secretion. Therefore, it is my opinion that the season, rather than the color of the cells, makes the difference in the color of queens."

T. S. Hall says in part: "There is a marked difference in the color of some queens, when the cells are allowed to get chilled or the temperature goes below the normal. This we know, for we have left cells out all night and put them the next morning where the bees could impart the necessary heat, for the hatching of the queen. The different colors of pollen also show in the golden bees and queens. Pollen gathered from sumac gives the light bees and queens a golden rich color."

J. J. Wilder says: "I am inclined to take side with Dr. Kramer as to the color of queens and their progeny being affected by the soil, or even by the atmospheric condition of a country. I believe this will explain also why a queen and her progeny gradually darken in color as they grow older. This only applies to our rich colored Italian stock which is bred up for color. My opinion is based on experience from the high mountainous section of Georgia to the low sea level section of Florida. I have always noticed that a bright colored Italian queen and her progeny gradually darken in color, but never thought of bringing the matter up for discussion.

"The color of our Italian stock is far more easily maintained on the high and dry ridgy sections of Florida and the mountainous sections of our country. This land is rich in potash. Our principal honey plant in the high section is the partridge pea, and it grows prolific and yields nectar only on land rich in potash. On the other hand, on the low, level land of middle Georgia, where my bee-business is located, and the soil is rich in lime, we cannot maintain the color of the Italian stock. In fact, it is astonishing how fast the color darkens. The same conditions prevail along the low, flat, sea level land of Florida, where the atmosphere is very heavy and salty.

There the yellow bands of the Italians are so dull in color that they can hardly be detected.

"My apiaries on the high land of Florida are stocked with very beautiful colored Italians. I found this stock there, and it has reproduced itself up to the present. Very often a queen and her progeny come out away ahead of the others in color. My apiarist calls them our \$20 queens, and points them out to me as we go over the apiaries. When I return a few months later, and ask about these extra-fine colored queens and bees, the apiarist remarks that they have fallen off some in color. But they never change to dark-colored Italians. They are always bright, and only lose a little of their extra brightness.

"In conclusion, let me say that this is a very important question, and if solved will prove a great help to our industry."

We insert Wilder's letter in full because it brings out a point worth considering. The bees of a bright \$20-queen darken in color at different times. Is not the honey contained in their honey-sac at the time responsible in part for this? Years ago both A. I. Root and the elder Dadant called attention to the fact that the yellow bands of the Italian bees are more or less transparent, and that the color of the honey harvested by them influences their appearance without changing their color.

The sum of the replies indicates that queens are possibly darker when reared in unfavorable seasons. That is probably why darker cells have been thought to produce darker queens.

As to the unanimous agreement that queens get darker as they grow older, is it not possible that this darker appearance is due to the loss of the downy hairs of youth and not to an actual change of color? Very old queens are always hairless and shiny, looking therefore much darker than the young ones.

We believe this question is worth discussing on account of the all but unanimous desire to secure bright queens as well as prolific ones.

LATER.—Here is an additional contribution to the same subject which gives new ideas. Mr. Frohlinger uses some very plain, common-sense talk. We already know that honey from different localities is of different colors, sometimes coming from the same kind of plant.

"The color question has always been one that bee-keepers would, as it were, go mad about. Personally, I have never been a stickler for color, and have had some of the goldens that were really a picture to look at and admire; but, oh! how they could use their sting; with more than a vengeance, too, and I was very glad to get rid of them without any extra charge.

"I firmly believe that climate, soil, location and surroundings have a wonderful effect upon the color, disposition, and general contour of our bees as well as upon the human family and

domestic animals in general. 'Tell me your company and I'll tell you who you are and what you are.'

"The bees around San Francisco Bay, subject to the ocean winds, fogs, cold, etc., are more sluggish than they are near the central parts of the State, and away from these natural elements. Yes, I believe they have a tendency to get darker, too. Does not the sunshine have an effect upon those who are out in it all of the time, and will it not improve the color of an individual if he is always out in the sunshine and fresh air compared to one that is housed up all the time, and does not the skin and general complexion change accordingly? Why should not the soil, food and water have their effect upon the bees and their products?"

"Why is it that the honey from the alfalfa raised in the valley is darker than that on the higher altitudes? Tell me why fruit that is produced in the valleys has a different color and flavor from that which is produced in the mountainous regions. If you do not know this, come out and visit some of the specialty shows, or ask some fruit-

grower in the mountains and he will tell you with a great deal of pride, as well as satisfaction, and prove it, too, that the mountain fruit is the best in color, flavor, and general size.

"Here in California we have soils that are only adapted to almonds, walnuts and certain kinds of berries, but will not raise grapes and other fruits. Is it the soil only? I would say not, as climate and rain and other natural causes have their wonderful effects, and if you want to be a successful rancher, study the conditions of the soil, your climate, and then plant what is best. So it is with the bees, put them where they can get a crop at short range, and do not expect them to go 2 to 5 miles and do as well as those who must only go a stone's throw.

"Give me a strain of gentle bees with a good deal of *energy* and long tongues, and I will not look for color, but see how much honey they will gather and how well they will provide and guard their home. Take care of them and they will pay you back for every courtesy extended to them."

board, but it is better simply to call it a bee-escape. Opinions are divided as to using bee-escapes in the way you mention, some highly approving them and others not believing them worth while. I suspect that bee-escapes work better for some than for others, either because of the difference in bees or for some other reason.

3. I don't know. I should guess they would be good yielders of pollen at least.

4. I think sweet clover has been very successful in such places.

5. Speaking very strictly, I suppose the fresher the foundation is the better. But I have used foundation that had been fastened in four or five years, and I've some question whether the bees made any great difference between that and that which had been put in only four or five days. At any rate, I believe it good policy to get it ready in advance as you propose.

6. There is no fixed rule about it. One would think it best to follow Nature, and make increase at the time bees swarm naturally. But nearly every one agrees nowadays that natural swarming is decidedly detrimental to the honey crop. In my locality it seems much better to have no increase until at or near the close of the harvest. In some localities, where there is a heavy late flow, it may be better to divide early in the season.

DR. MILLER'S ANSWERS

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.

Overstocking—Honey-Boards, Etc.—Dividing

1. I have only had my bees about three years. The man I bought them from said he was selling off his bees and was going to Old Mexico, as that was a great bee-country. So I bought about one-half of his bees, and he went away and was gone about two years. Then he came back and began to increase his bees again. I have four apiaries now. One was doing fairly well, so he has just put in a big apiary about one-half mile from mine. We figure on 50 pounds per colony here. Now, what would you eastern bee-men think of being treated this way? It does not look to me like he or I will get very much honey by having the bees so close together. The locations for bees are about all taken up here, I think. There are some new locations about 18 miles from here. This over-crowding does not look very encouraging to me. What do you think of it?

2. How is a honey-board made? Is it just a board with a bee-escape on the underside? Would it pay to use these for extracting honey; put them on in the afternoon before you expect to extract, and then just take off the supers and frames together, and wheel them into the extracting house?

3. Do milo maize or sorghum yield honey or pollen? They are raising a large amount of milo maize here.

4. Does any one know of something that could be sown in waste places where irrigating water runs, or where Bermuda grass now grows that would produce honey and also be good for the farmer? There are several places here where Bermuda grass grows, when it gets the waste water from the ranches.

5. Will bees draw out foundation as soon when it has been in the frame three months as they would if only in the frame three weeks? I like to put my foundation in the frame in the winter time, when I have plenty of time. This to be new foundation just made.

6. When is the best time to make new

swarms? I worked with a bee-man one summer before I bought my bees. He made his new swarms when he was extracting. But I think it disturbs the bees so much when they are working hard, and it looks to me like they will not store as much honey if torn apart at this time. ARIZONA.

ANSWERS.—1. My thought about it is that this sort of thing makes bee-keeping a very uncertain thing to count on. Years ago I took the ground that if ever it was to be a reliable business, a man should have just as much right to his territory as the man who keeps cattle or other live stock. So far as I now remember not a single man expressed any agreement with me, although since then a good many have. There is quite a general agreement that a man has a prior right morally, although some do not even believe in that. But in matters of business, moral rights are not very reliable. I have a moral right to the possession of my horses, but if I had no legal right to them I doubt if I would keep them long. Some day bee-keepers may be advanced enough so that a man may be just as safe from interference in his bee-pasture as he now is in his cow-pasture. At present you have no redress, and must just grin and bear it—or else bear it without grinning.

2. Honey-boards were in use long before bee-escapes were ever heard of. A honey-board was one placed over the top-bars, with a bee-space between, there being in the board, holes or slots over which were placed surplus boxes. Latterly a board with an escape in it is sometimes called a honey-

Questions on Requeening, Increase, Etc.

1. I am running for extracted and comb honey. Before swarming seasons I place the queen and one frame of brood, and the balance drawn out combs, in an 8-frame hive; over this an excluder with the rest of the brood in the upper story. In 9 or 12 days I cut out all the queen-cells, if there are any. Why not put the empty hive with the drawn combs on top without an excluder? Would that work just as well or would it cause more swarming?

2. Which is the simplest way, rear queens in nuclei, or requeen the selected colony by inserting a frame with queen-cells?

3. Is there any proof that bees sleep to a certain extent during a honey-flow?

4. As a rule, every bee-keeper has some weaklings in his yard. I don't care how much attention he gives them. To strengthen them what is your plan, to swap frames or go to strong colonies, give them a good shaking and leave them with the queen and one frame of brood in the hive on the old stand, and put the rest of the brood under the weak colony? Very likely there would be queen-cells started.

5. To melt up cappings and wax scraps, what would be the simplest way to do?

6. Do you think bees will rear workers, if shaken in a hive with a queen, in a full set of all drone-combs?

7. If given full sheets of foundation will there be any drone cells?

8. I bought 3 colonies of bees in box-hives at a sale for \$1.35 each, and they were as heavy as lead. My intention was, a little before swarming season, to drum out the bees with the queen and make 2 colonies out of the parent colony. What would be the best thing to do?

9. In what way is the most honey gained by extracting, in 8 or 10 frame hives? I put on supers over double brood-chambers? MISSOURI.

ANSWERS.—1. No, the excluder is an important part of the stunt. Without the excluder swarming would be hindered to a certain extent, but not as much as with the excluder.

2. It is much simpler to hang in the hive a frame with a queen-cell, or to put in a queen-cell without the frame. Only in that case you will have to wait 10 days to 2 weeks before the young queen begins to lay. You

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also run some risk that the young queen may fail.

3. I think that has been proven; but I can not now cite the proof.

4. Early in the season the former plan; at the approach of swarming the latter.

5. Use a solar wax-extractor.

6. I tried that once, and the bees wouldn't stay; swarmed out. In other cases, where there was an excess of drone-comb, they reared an excess of drones; but in some cases they narrowed the mouths of the drone-cells and reared workers.

7. None to speak of; but the bees are likely to find some little vacancy that they can fill with drone-cells. Practically speaking, however, there will be no drone-comb if frames are entirely filled with worker foundation.

8. You can do as you suggest, or you can wait until the bees swarm, give the swarm on the old stand, put the old hive close beside the swarm, 8 days later move the old hive to a new stand, and 21 days after swarming, when all worker-brood has hatched out, break up the old hive and give the bees to the swarm.

9. Without any special care I should expect more from the 10-framer, because the colony would likely be stronger. With special management there may be no difference.

Increase Without Swarming

I have two strong colonies of bees; in each hive the brood-chamber is a double 10-frame brood-chamber, making 20 frames to each.

Now, I wish to know what is the best way to make "increase" of my bees? I would like to avoid the troubles of the usual swarming, and yet increase my stock.

ILLINOIS.

ANSWER.—Here is one good way: Operate a little before the usual time of swarming in your neighborhood; or, if you wish to take a little more pains, operate after queen-cells are started but before they are sealed, for with the first sealing a swarm is likely to issue. Set one of the stories on a new stand putting in it all the frames of brood with adhering bees, and leave the rest of the combs and bees with the old queen on the old stand. The hive on the old stand ought to give a good surplus in, a good year, and if you want to make more sure of it you can brush back into this hive the bees from half the combs of the other hive. There is, however, some danger of a swarm as soon as the first young queen emerges. You can prevent this by destroying all queen-cells but one. Or, you may prevent it by dividing the brood into two parts, providing you want the increase.

It may be still better first to put all the brood in the upper story, with an excluder between the two stories and the queen in the lower story. Then, a week later, move the upper story to a new stand. In this case there ought to be no danger of swarming.

Improving Stock

1. I would like to know of some simple way to improve my bees, without taking too much time from my other bee-work. I produce both comb and extracted honey, but mostly extracted. I am surrounded by box-hive bee-keepers; no chance to get very far away from all of them. My bees are nicely marked Italians, but I do not know how they will compare with the best strains in the country. They were brought here years ago, and natural swarming has scattered

them all over the country. There has been nonew blood introduced since the start.

2. Will you tell me some simple way in which I can keep a record of my bees—I mean a record of queens, etc., to see if there is any improvement in them?

3. Where could I get Alley's book on queen-rearing? MONTANA.

ANSWERS.—1. The matter is quite simple. Keep track of what your bees accomplish, especially those that are better than the average, and then breed from the best. If you continue this year after year you will not fail of results, even if inferior bees are all around you. It is possible, however, that even the best of your bees are not very good, and in that case it will pay well to send off to some reliable breeder for a better queen.

2. I use a cheap blank book, giving to each colony its place, and enter there the important items, especially the amount of honey each colony yields. That matter I keep in a spot on the page by itself, so that at any time I can glance at it and tell just what the colony has done. This credit may be made in the apary at the time the honey is taken off. For instance, this credit may appear: 24, 24, 24, 15. That means I took away 24 sections each time at three different times, and the equivalent of 15 sections at the last time, making 87 sections in all.

3. It is out of print, but you will find the Alley queen-rearing method in "The Hive and Honey Bee," latest edition.

Removing Winter Protection in Spring—Keeping Queens Among the Bees

1. I have always hesitated to remove the winter protection (chaff tray, etc.) in the early spring in order to examine colonies. As you advocate to take the bees out when hard (sweet) maple is in bloom, would this also be a good signal to go by for removing the winter packing, or, if not, what would be?

2. I have always been puzzled how to keep a lot of queens when not having immediate use for them. You state on page 111 about the maximum length of time one could keep queens in cages without danger to their laying powers. I suppose while so caged they do not lay any eggs. Even the interruption in laying while queens are in the mails is said to be harmful.

3. Suppose one has 3-frame nuclei, could the seven best frames of a colony be added to the nuclei without danger to the nuclei and queens? PENNSYLVANIA.

ANSWERS.—1. If you will look again you will see that it is the soft maple, not the hard, that usually gives the signal for taking bees out of a cellar. The hard maple blooms a little later. Taking bees out of a cellar is a different affair from taking away the wrappings of those that have been wintered outside. My bees have no wrapping after being brought out, but some think it pays to give them protection after that time. At any rate, if my bees were outdoors and well packed, I would hesitate about unpacking them at the time of maple bloom unless I thought there was danger of their being short of stores, and even then it might be worth while to return the packing until about the time of fruit bloom.

2. In the case you speak of, the queens were kept in small cages in a small colony. This was in the spring when there was no heavy laying yet, and I doubt if the queens were at all injured by being kept from laying. My guess would be that a queen, or a number of queens, might be thus

kept safely for a month, perhaps two months, in a queenless colony, or a queen-right colony if the bees would feed her. Indeed, she might be kept in a canded cage if the bees did not feed her, only in that case bees having a queen of their own might be hostile to her, and this nervous irritation might be bad for a queen. I am not sure that it has ever been claimed that the cessation from laying was an injury to queens sent through the mails. It doesn't hurt a queen to remain all winter without laying. Nor is it likely she is injured by ceasing to lay in a dearth long continued. She may be injured by being jarred and frightened in the mails, by sudden cessation from laying, and especially by being flung about when heavy with eggs.

3. Yes, if the bees had been queenless long enough to be thoroughly aware of their queenlessness, say two days. It would be still safer if the bees were taken from different colonies.

Brood Combs

What do you do with the brood comb after it is a few years old? Do you take it out or leave it in for a life time? TEXAS.

ANSWER.—I have never taken away a comb from the bees merely on account of its age, no matter how old. So long as a straight worker comb remains in good condition I would rather have it than a new comb. One reason for that is that the bees themselves prefer the old comb. Give them an old black comb side by side with a new comb or a frame filled with comb foundation, and they will always choose the old comb first, either for brood or honey. At least that is the way my bees have done.

Many others, however, think it well to have the combs renewed every few years, some even going so far as to renew them every 2 years. Especially do they urge this in regions where foul brood prevails. The time preferred for this renewal is in the spring or early summer, the combs taken away being melted.

Cement Hives—Swarms—Preventing Them—Winter Entrances and Packing

1. I intend to make chaff hives with outside walls of cement 3/4 inch thick, and inside walls of lumber 1/2 inch thick. The dead air space is to be filled with dry sawdust. Do you think this hive, with a cement bottom and lumber roof, will answer for summer and winter?

2. If I kill the queen to a swarm which has settled on a tree, will the swarm return to the parent hive?

3. Last summer a swarm returned to a hive before I could get it. I had planned to establish a new colony with this swarm, but it went back into the parent hive. I suspected the queen was too young. What was the reason the swarm returned?

4. To prevent swarming, I will shove the pile of supers back so as to make an opening of 1/2 inch for ventilation along the front. Will this prevent swarming and affect the storing of honey?

5. Which is the better, thin boards or bur-lap placed over the brood-chamber for wintering? Straw or leaves are to be placed above.

6. Should the thin boards be made tight or have a hole cut in the center?

7. Should the entrance be 1x5 inches, with a wire-cloth in it to prevent mice entering? INDIANA.

ANSWERS.—1. I don't know, but from what little I have read I am afraid you will not like it. Better try it on a small scale, and

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please report how it turns out. Sawdust between walls is not liked so well nowadays as something looser, as planer shavings or crumpled newspapers.

2. As my queens are all clipped, I have had many swarms come out, and after the queen dropped on the ground the swarm would return to the hive after sailing about in the air for a few minutes. Sometimes they settle on trees, returning to the hive after hanging there for a time. Occasionally they will return to the wrong hive if a swarm has issued from it a little while before and the bees are making a call at the entrance.

3. I don't know.

4. Ventilating in that way is a help against swarming, although, of course, it will not prevent it. I have practiced it much, and never knew any harm to come from it in the way of chilling bees. The only harm is that sections next to the opening are delayed in being finished, but not always. Instead of shoving the lower section-super back, I shove it forward. I have used the plan with extracting-supers, and "stuttered" them; that is, I shoved the lower super forward, the next back, the next forward, and so on.

5. I have had no experience, but some claim one way is better and some the other.

6. Some have a hole in the center and some do not, but in either case there must be packing, the same as when gunny-sacking is used.

7. Wire-cloth with three meshes to the inch is a good thing at the entrance for winter, but not when bees are flying daily.

Introducing Queens

What success do you have introducing queens? We lose a great many by the candy route. This country is so dry they don't seem to eat her out. We always have to help her out, and she is often badly dealt with. Can you tell me some surer way of introducing?
NEW MEXICO.

ANSWER.—If you help a queen out, the excitement of opening the hive is likely to stir up the bees so that the queen is in more danger than when she quietly comes out of her own accord, when the bees eat out the candy. Instead of helping her out, you might wet the candy with water and return the cage, wetting it more than once if necessary, but leaving the bees to free the queen.

Yes, I can give you a way of introducing that is entirely sure, although it is some trouble, and I have never used it except with a queen of extra value. Put any number of frames of brood in an upper story over an excluder, where the queen can not lay in them. When all the brood is sealed, replace the excluder with a sheet of wire-cloth, put an empty story over it, into which you will put the frames of brood after you have brushed off every single bee. Put your queen upon the combs, close the upper story bee-tight, and in five days set it on a new stand, giving an entrance for a single bee to pass, enlarging the entrance a few days later. The queen, of course, is perfectly safe, as these young bees know no other mother.

Another way nearly as safe, but easier, is based on the fact that it is the older bees that kick up a rumpus with a new queen. Take from the hive one or two frames of brood and put them in a new hive. Set this

new hive in place of the old hive, put on it supers if there are any, and cover over. It makes little difference whether you fill up the vacancies in the two hives. Now set the old hive on top of all, and put your caged queen in it. Of course, you have removed the old queen entirely. After the queen has been out of the cage two days or more, return the old hive to its place, giving back the brood-combs that were removed. The old bees, as they return from the field, will accept the situation kindly, having been queenless since the change. With this plan you ought not to have one failure in a hundred.

Wintering Bees on a Porch in China

I am wintering my bees in a porch at the back of my house. I covered the open sides of the porch with paper. It is about 12x6 feet. It has a big window, and a door also made of paper. I put the hives near the window and door, surrounded them singly with boxes 4 feet square, having no bottoms or tops. They are made of reed matting, and chaffed with rice husks from the bottom up to 7 or 8 inches above the hives. On top of the hives I put the supers with a piece of burlap nailed on the bottom of each. I put a board in the middle of each super, in which I cut an opening 4 inches square, and it is covered with a piece of glass through which I can feed and inspect the bees without disturbing them. Then I placed a thermometer on top of the frames just under the glass opening, and I find the temperature averages about 40 degrees Fahr., while the temperature in the paper-covered porch is about 20 degrees Fahr. The outside temperature near the porch is about 1 or 2 degrees lower. I found no dampness in the hives, and the bees are active and moving about in the hives whenever I examine them through the glass opening.

1. Does the queen, in this condition, still lay eggs and the colony rear brood?

2. Do you think my way of wintering satisfactory?

3. Would a thermometer put on top of the frames serve the purpose of approximately ascertaining the temperature in the hives? If yes, what average temperature should it show during winter, spring, summer and autumn for a normal colony?

4. In wintering, is it better to leave the bees in the cold (but not to the drafts of cold wind) so that they may not be able to move or fly rather than to artificially warm up the hive in order that the bees may not mistake the artificial warmth for spring. By flying out they would certainly die.

CHINA.

ANSWERS.—1. The likelihood is you will find the queens stop laying in the fall and then begin again perhaps toward the last of February, or in some cases possibly in January, although this is guessing, and my dates may be much out of the way, as I don't know the climate in your part of China. At any rate, I feel pretty sure your queens stop laying altogether for a time, even if the bees do not seem entirely dormant.

2. I would guess that a little higher temperature would do no harm, and yet my opinion is not worth as much as the opinion of the bees, and if they winter satisfactorily nothing more should be asked.

3. I suppose you mean the temperature in the cluster of bees, and a thermometer on top of the frames would not tell very much about this. In the human body the temperature remains nearly the same whatever the temperature of the surrounding air. It is a good deal the same with the bees. Indeed, when there is a fall in the thermometer placed over the frames, you might find the temperature rising in the cluster, paradoxical as it seems, just as the colder the day the hotter the fire in our dwellings. For the

bees have the ability to raise the temperature in the cluster by increased consumption and activity.

4. Yes, nothing should be done to induce the bees to fly when they would get chilled. Indeed, it is sometimes a good thing to shade the entrance lest the sun shining in may induce them to fly when the air is too cold. While the hives should be protected, there is such a thing as keeping them too warm.

Renting Bees on Halves—Collar Ventilation

1. I let my bees on halves last summer. Should the man who took the bees have left enough stores for winter? Four of my colonies starved to death before I could attend to them, and to more would have starved within a week if I hadn't fed them. This man told me they had plenty of stores for the winter. I let him have 28 colonies on June 5. Wasn't he supposed to return to me 28 colonies in the fall? He returned only 28 colonies with half of the increase, and the increase was 8 swarms. Now, wasn't this man supposed to leave my bees in good shape ready to put into the cellar?
Now, Doctor, is there any law on renting bees on halves?

2. I winter my bees in the cellar, and the thermometer registers from 40 to 42 degrees. It is a stone cellar with a cement floor, and the ceiling has a double floor filled in between with sawdust. It is 10x14 feet inside, and 6 feet high. I have a 2 foot square hole in the center of the ceiling for ventilation. I throw a quilt over this box, but still the cellar seems to be damp. Can you tell me the cause? The bees are quiet. I find big drops of water under the cover over the bees when I feed them.
NEW YORK.

ANSWERS.—1.—If there is any law about the matter it must be a State law. But I very much doubt that there is any law about it in your State or any other State. The great probability is that the law would insist on the carrying out of any contract made in the premises. So the whole thing depends upon the agreement that was made, and to make sure about it the agreement should have been in writing. If there was an agreement that you should receive back a certain number of colonies at a specified time, then that agreement should be carried out, even if the man to whom the bees were let should have to buy bees to make out the number. As to disposal of the increase, a common custom is to divide it equally, but that custom is hardly law. You let the man have 28 colonies, and you say "he left me only 28 with half the increase, and the increase was 8 swarms." If you mean by that that you got back the original number, 28, and half of the 8 swarms, or 32 in all, it would seem right. If, however, he left you only 28, including half the increase, or only 28 in all, that would seem unusual. As to the condition of the bees in the fall with respect to stores, that depends upon agreement. Unless there was some special agreement to the contrary, you would get the bees back in the fall without any feeding, if the season was so poor that they needed feeding in the fall. But if they had plenty of stores for winter in the brood-chamber, and he should extract some of the honey from the brood-chamber before turning over the bees to you, then I should say he was not trying to play fair.

In a matter of this kind, if there is no written agreement, the fair thing to both parties is the fair thing to do. If you have bees and I take care of them, I furnish the time and perhaps the location and you furnish

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the bees. If there is no honey I have lost my time, and you will have to lose your bees unless you furnish me with honey to feed them, in which case I would feel compelled to do the work.

But if there is a crop and I make some money, you are entitled to a part of the profit.

The custom is for the man who furnishes the bees to furnish the material, hives, sections, etc., and the crop and the swarms are divided equally. This is a fair division between labor and capital.

2. Regarding the moisture in your cellar, you have not enough ventilation.

had an orchard right by my bees, and when the trees were in bloom it was cold and the bees could not get out very much, and the trees that were closest to the bees were the only ones that had any apples on.

The owner asked me how I accounted for that? My idea was that the bees did not get very far from the hives, and only distributed pollen on the nearest trees, for one part of the orchard had as much bloom as the other did.

WELCH BIBBEE.
Cottageville, W. Va., Feb. 22.

REPORTS AND EXPERIENCES

An Ontario Letter

So far this winter has been mild and favorable for bees in this locality, along the south shore of Lake Ontario. The mercury has been playing between 4 degrees and 40 degrees until Feb. 20, when the thermometer went up to 60 degrees, and the bees on the summer stands have taken a good flight, seeming to be all right. Those in the cellar are doing fine so far, and remain very quiet.

The writer has been a bee-keeper close to 50 years as a side issue, and over 10 years for pleasure, yet still remains as one who has followed the old Swiss saying, "Drink, drink, drink;" in order to accomplish anything in the bee-fraternity worth while.

REV. J. M. WISMER.

Jordan Station, Ont.

Discouraged With California

Prospect for a good honey crop in California is very poor at present. The rainfall so far has been very light, but we may have plenty of rain yet. This has probably been the coldest winter ever experienced in California since it was settled by the American people; but it is too early in the season to tell whether it has had any bad effect on the honey-producing plants, such as the sage and mountain buckwheat.

Last year was very poor, no crop at all, and a great many bees died from paralysis. The honey business in California is too uncertain to be depended upon alone for a living, and should be run in connection with something else.

L. G. SMITH.

San Benito, Calif., Feb. 19.

Wintered Well Out-of-doors

I am sending this photograph of my apiary of 100 colonies in their winter quarters. This is March 4, and I have not lost a single colony, and they are in splendid condition in every way. I expect to harvest 25,000 pounds of section honey the coming season.

The apiary is protected on the north by

buildings, and on the west by a high fence. This is my eighth year as a bee-keeper. My crop, last year, was 0000 pounds of finished sections, a large portion of which was fancy.

BELL E. BERRYMAN.

Central City, Nebr., Feb. 25.

Early Spring in Nebraska

Up-to-date bees have wintered well. Maple came near starting in southern Nebraska over a month ago. My bees were in the cellar from Dec. 1 to Feb. 20. As there was too much moisture in the hives, I set them in clustered groups and protected them from winds. They enjoyed two fairly nice days after being set out.

T. HULL.

Fobias, Nebr.

Fears Danger of Spraying

I am in the bee-business in a small way. I wintered 10 colonies on summer stands, and they all seem to be in very good shape from outward appearance, as I have not opened any of the hives yet. Yesterday, Feb. 21, I found the bees bringing in pollen, which is the earliest that I ever knew them to be bringing in pollen in this part of the country. We are having a very warm spell just now. The thermometer registered 72 degrees yesterday, which accounts for the bees being at work so early in the season.

I am fearful that our bees will be short of stores this spring on account of such a warm winter, and unless we have a very favorable spring we will have to do some spring feeding to guard against spring dwindling and loss.

I have always wintered my bees on summer stands, and have not lost any so far, but I always aim to protect them by covering them well and having a windbreak.

I am very much afraid that the reckless manner in which the fruit-men have been spraying will soon put an end to bee-keeping in this part of the country. Bees are worth more to the fruit-men than to the owner of the bees. In the way of pollenizing the fruit. In the spring of 1910 my neighbor

A Report from Maine

The outlook for the bee-keeper in this great potato country is not very bright at present. The past summer was too wet and cool, and bees went into winter quarters rather light in stores, and not up to the standard in bees.

The winter has been the mildest known in this section for many years up to February, with the lightest snow fall. In consequence, the clover fields are covered with a coat of ice. Since February came the mercury has tried to hide, most of the time in the glass bulb at the bottom of the tube. It is 15 degrees below zero today, with a strong wind blowing.

Bees are wintered in cellars here, but an open winter like this badly injures the clover on which we depend for our surplus honey. If Burbank could be persuaded to make the potato blossom yield a liberal quantity of nectar of good quality, this would be a bee-keepers paradise.

We who have sighed for the sunny skies of southern California feel a little more contented in our northern homes since that terrible freeze. We have heartfelt sympathy for our brother bee-keepers and the citrus fruit-growers of that sunny (frost bitten) clime. May they never see anything like it again. Perhaps there is a lesson hidden in the frost and ruin that may reveal itself for the good of all. Let us hope so.

Caribou, Maine, Feb. 13. O. B. GRIFFIN.

Report from Illinois

I had 22 colonies last spring. My time being taken up with other business, I made arrangements with J. M. Bent, of Milledgeville, to take care of my bees on shares. Mr. Bent also has an apiary of his own.

I now have 58 colonies. All the increase is from the 22 except 2 swarms. We got nearly 3000 pounds of extracted honey and 350 pounds of comb honey this season. The picture only shows the west end of my beehouse. It extends 24 feet east. My bees are all in a healthy condition at present.

Polo, Ill. G. L. SAUER.

Blossoms of Almond Trees

I am sending you some pictures of the almond trees in full bloom. There are hundreds of acres of trees just like those here. The honey from the almond is bitter, but as it comes in February, it is fine for building up colonies. What swarming my bees do in March, but in 1912 I had 25 colonies and no swarms. They gave me 2800 pounds of honey.

Oakley, Calif., Feb. 26. R. V. BRYNER.

Bees Wintering Finely

Bees are wintering finely so far; however we had one day that was pretty rough on them. It was warm, and the sun was nice and warm, but a cold wind was blowing. There was all of a pint of chilled bees scattered around some of the hives.

QUIRIN-THE-QUEEN-BREEDER.
Bellevue, Ohio.

Mild Winter in South Dakota

The winter has been very mild for this part of the country, and there has been no snow so far. I am afraid the prospect for clover is not improved by this condition. My bees are wintered in the cellar, and are doing well. The thermometer has not varied 5 degrees from 45 since they were put in.

GEO. F. WEBSTER.

Early Pollen

Mr. Scholl's comments on the need of early pollen caused me to remember a photograph taken in 1906, of bees working on rye flour. When the bees were examined that spring, late in March, a number of strong



BELL E. BERRYMAN'S LONE-TREE APIARY WINTERING WELL.

American Bee Journal

colonies with healthy looking queens were found without brood or eggs, while others not so strong had brood in all stages, some of it emerging.

These broodless colonies were looked into every day for over a week before I discovered that they were entirely out of pollen. I immediately began feeding rye flour mixed in coarse sawdust in the boxes, as shown in the photograph, and in three days 40 colonies used up 35 pounds of flour. A large feeder containing sugar syrup was hardly noticed while the flour held out.

Three days after they started on the flour, eggs in plenty were found in the broodless colonies. I have found it necessary to feed them only one spring since, which was when a severe freeze killed all the bloom and leaves on the early pollen-bearing trees, leaving no other source until dandelion bloom, which came that year in June.

Bees are wintering finely, and there is a heavy growth of white clover, which seems to be all right so far, though the ground is very dry with little snow. We need rain

just as soon as the ground thaws out, to save the clover. D. G. LITTLE.
Hartley, Iowa.

Brood-Rearing Begins

I found brood in one of my colonies about Jan. 15, and now over half of them have started brood-rearing. It is down to nearly zero now, and has been below several times this winter. My bees are all on summer stands. R. R. VICTOR TIPPERT.
Quays, Ont. Canada.

L. L. Andrews' Experience

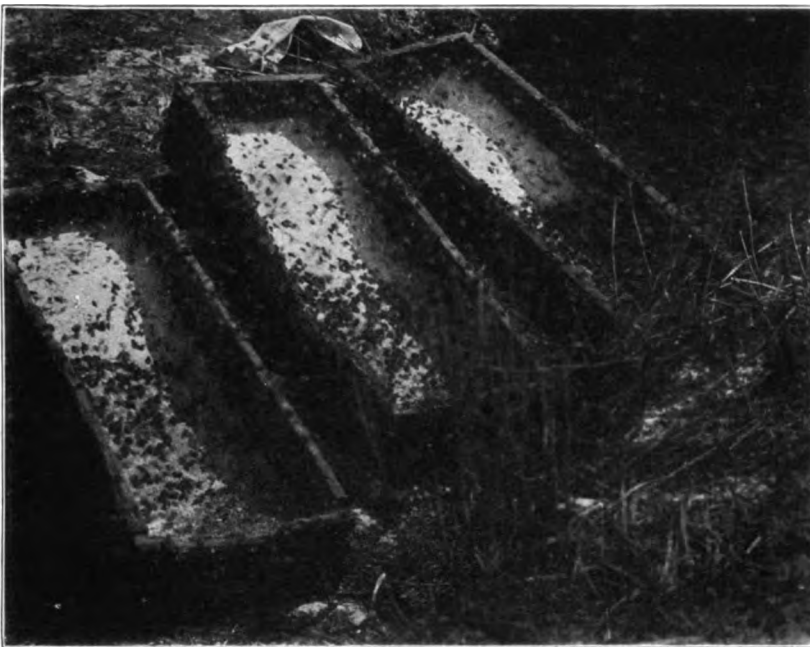
I am enclosing some pictures taken at various times during my 17 years' experience among the bees in sunny southern California. Beginning the business 17 years ago this winter, by taking 24 colonies from the cliffs and trees near the border line of Orange and Riverside counties, in the Santa Ana Mountain, I have increased by buying, etc., to

about 1200 colonies. I have made in one season all the way from a complete failure to as high as an average of 200 pounds per colony.

Anticipating a short crop last year, I shipped two carloads to northern Utah, and secured a good crop there, after I had taken the orange honey here. L. L. ANDREWS.
Corona, Calif.

Bees Winter Well in a Cave

I examined my bees in a cave today. They are in fine shape, and the temperature is 45 degrees. I have never lost a colony in the cave yet. The cave is below the level of the ground, and there are three doors to enter it. JOHN DUFFORD.
Atlantic, Iowa, Feb. 10



BEES GETTING FLOUR FOR POLLEN.



NOT BEE-KEEPING ALONE, BUT PLEASURE, TOO.—MR. ANDREWS BACK FROM A HUNT.

Classified Department

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I SHALL requeen all of my colonies this spring. Will sell all one-year old queens for 40 cts. each; \$4.20 a dozen. 4A1t Ventura, Calif. E. O. Meserve.

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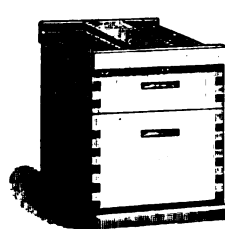
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American Bee Journal

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.
I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDBER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, and sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 10, 1911.

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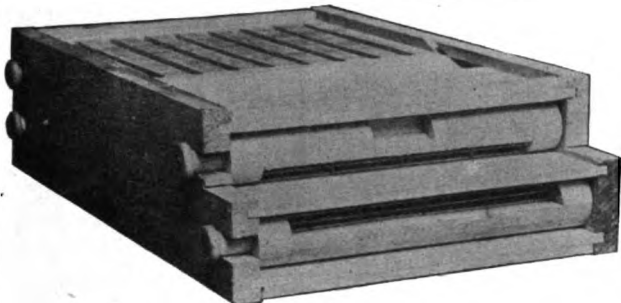
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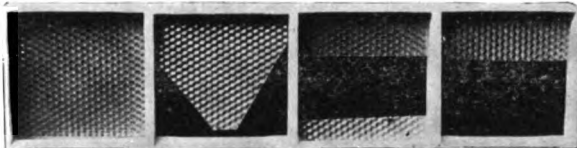
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Aye, there's the rub.

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HONEY AND BEESWAX



CHICAGO, March 17.—The supply of comb honey on this market is very light at this writing. All of the better grades have been marketed. Indeed, there is very little of any kind now offered. Prices range from 16@17c per pound for the best grades, and the amber grades from 13@14c, with the fancy light amber bringing 15c per pound. There remains quite a liberal supply of extracted honey, but it is being gradually reduced. Prices for the white clover and lindens range from 9@10c per pound; other white honeys 8@9c per pound, with the amber grades having a range of from 6@6c per pound, according to what produced from, body and flavor. There being a demand for sage honey, and what little is obtainable, sells readily. Beeswax is steady at from 30@32c per pound, according to color and cleanliness. R. A. BURNETT & CO.

NEW YORK, March 20.—We have nothing new to report, the condition of the market being about the same. Comb honey is well cleaned up with some few little lots still arriving and selling at 14@16c for white, and 12@13c for lower grades, according to quality and style of package. Extracted honey runs quiet, the demand being mostly for fine grades, of which there is not much supply. There is no change in price. Beeswax steady at 31@32c. HILDRETH & SEGELKEN.

CINCINNATI, March 18.—The demand for comb and extracted honey is light, with a good supply. No. 1 white comb honey sells in large lots at \$4.60 per case of 24 sections. There is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand, sells at 33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

INDIANAPOLIS, March 20.—Fancy white comb is selling at 18c per pound; No. 1 white one cent less; amber in slow demand at varied prices. Supply of fancy white is limited, and none is now being offered by producers. Best extracted sells at 11@12c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POWDER.

CINCINNATI, March 20.—The demand for both extracted and comb honey is very good,

and we are selling Fancy Double Decker comb honey at \$3.75 to \$4.00 a case; fancy extracted honey in 60-pound cans from 9@10c a pound, and amber extracted in barrels at from 6½@8c a pound, according to the quality and quantity purchased. For choice, bright yellow beeswax we are paying from 28@30c a pound, and if taken out in trade 2c a pound more. THE FRED W. MUTH CO.

BOSTON, March 21.—Fancy white comb, 16@17 per pound; No. 1, 15@16c. Fancy white extracted, 11@12c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE-LEE CO.

KANSAS CITY, MO., March 10.—The supply of comb honey is very light; demand good. The supply of extracted good; demand light. We quote as follows: No. 1 white comb, 24-section cases, \$1.25 per case; No. 2, \$1.00. No. 1 amber, \$3.00; No. 2, \$2.75. Extracted, white, per pound, 8@8½c; amber, 7@7½c. Beeswax, per pound, 22@23c. C. C. CLEMONS PRODUCE CO.

LOS ANGELES, March 10.—There is very little business in California honey at present, owing principally to the small stocks on the Coast. These are in the hands of holders who are not forcing sales, and the demand is correspondingly light. We quote the market as firm but quiet: Light amber sage, 6½@6¾c; water-white alfalfa, 7@7¼c. All f. o. b. Coast with \$1.00 freight rate by rail. Light amber sage, 6½@6¾c; f. o. b. steamer at San Diego, with 6c rate to New York via Tehuantepec. HAMILTON & MENDERSON.

DENVER, March 10.—We quote comb honey in a jobbing way at the following figures: No. 1, \$3.05; choice, \$2.00; No. 2, \$2.70. Extracted honey, white, 9c; light amber, 8c; strained, 6½@7c. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here. THE COLO. HONEY-PRODUCERS ASS'N. F. Rauchfuss, Mgr.

SAN FRANCISCO, Mar. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per pound; amber, 6@7½c; lower grades, 5@6c. Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. JOHN C. FROHLIGER



There has been no new blood added to my strain for over 8 years. They are Pedigreed Penn G. Snyder Swarthmore, Pa.

H. J. PFIFFNER

Wholesale and Retail dealer in Bee-keepers' Supplies Send for Catalog

Emmetsburg, Iowa.

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 Baby St., Rockford, Ill.

Notice to Bee-Keepers

I am now taking orders for pound packages and nuclei; also for my leather-colored strain of Italian queens mated on an island, and bred in their purity. Free from all disease. Prices made on application. My guarantee — Your money back if not satisfied; a liberal discount on all large orders. Reference, The American Exchange Bank of Appalachicola, Florida.

A. B. Marchant

Eastern Bee-Keepers


Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practical articles. Let us mail you our catalog on what you may need.

I. J. STRINGHAM.

105 Park Place, New York City

APIARIES: Glen Cove, L. I.

FOR 20 ACRES FREE — OUR VERY BEST FARM LAND. Would you be willing to tell your friends about our Wonderful Land opening and also do us a slight service? For particulars, address J. B. Clark, Land Com'r, Live Oak, Perry & Gulf RR. Co., Box 1507, Live Oak, Florida



GOLDEN ADEL QUEENS
AND BEES BY THE CAR LOAD

You will make money if you deal with me and get my factory price on Bee Supplies. I have millions of fine Sections. I am the oldest and largest Bee Supply manufacturer in the Northwest. Send for Catalog.

CHARLES MONDENG,
145 to 160 Newton Ave. N.
MINNEAPOLIS, MINN.

QUEENS Complete queen circular on request.
and **Largest stock bee-supplies south Ohio River.** 64 - page catalog on request.
SUPPLIES
The Penn Co., Penn, Miss.

OUR HAND-MOORE STRAIN
3-Band Italians
Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Bred strictly for business. Untested 75c; 12 for \$8.00; 50 for \$25.00.
LATSHAW HONEY COMPANY,
CARLISLE, IND.

American Bee Journal

"If goods are wanted quick, send to Pouders."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDEUR, Indianapolis, Ind.
873 Massachusetts Avenue



PAGE - KENKEL MFG. CO.

**MANUFACTURERS OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES.**

Thirty Years' Experience

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc. We invite your correspondence.

Golden or 5 Band, 3 Band Italian and Carniolan Queens.

Untested Queen, 1 for \$1.00. Tested Queen, 1 for \$1.50. Nuclei with untested Queen, 1 frame \$2.50, two for \$3.50. Nuclei with tested Queen, 1 frame \$3.00, two for \$4.00. Quick service and satisfaction guaranteed.

Page-Kenkel Manufacturing Co.,
New London, Wis.

Dr. Henry Jones Says:

That Every Bee-Keeper Should Have a **BOYUM SECTION PRESS** and a **BOYUM FOUNDATION FASTENER**. Good reason why. They are inexpensive and unequalled for **SPEED, EFFICIENCY and PRACTIBILITY**. Send for circulars telling all about them to **BOYUM APICULTURE CO., Rushford, Minn.**

COMB FOUNDATION

**WITH THE SAME TASTE
WITH THE SAME SMELL
WITH THE SAME FIRMNESS
AS THE COMB THE HONEY-BEE MAKES**

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples,
also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

English Honey-Spoon.



This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only \$1.75. Send all orders to the American Bee Journal, Hamilton, I.

ITALIAN QUEENS!

Northern bred

Superior winterers, second to none. My free list explains it all. Untested, \$1.00; select tested, \$1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

E. E. MOTT - Glenwood, Mich.

FOR SALE YOUNG ITALIAN BEES

1/2 lb., \$1.25; 1 lb., \$2.00; 2 lbs., \$3.75; 3 lbs., \$4.50. Untested Queen, \$1.00; Tested, \$2.00. Nuclei, \$1.25 per frame. No disease. Also Apiaries of from 50 to 500 colonies.

Would like to correspond with anyone desiring location in fine, sweet clover belt, where the queen-rearing business or shipping bees by the pound can be carried on under ideal conditions. Always have big swarms issue by April 1.

Stover Apiaries,
Mayhew, Miss.

Rebuilt Remington Typewriters (No. 6) or Smith Premier Typewriters (No. 2)

Prices, \$30 to \$35. Send \$5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

Remington Typewriter Company
(Incorporated)
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Write for Fall Discounts—we can save you money. 1A1f

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128 Grand Ave., Kansas City, Mo.

AN ACTIVE SEASON JUST AHEAD!



A carload of perfectly new goods is just on hand from the factory. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.

Hives should be ordered at once if they are to be ready for spring. Frames, and other inside fixtures too, should be put together now; and as this is a dull season with most of our customers, the work can be done now with no extra expense.

If you are wanting any special goods, orders ought to be in our hands within the next few days. Other cars will be coming from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the cars.

Our new catalog is out, and mailing nearly completed. If you are not on our mailing list, send us a postal-card request for this catalog.

If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line, and we can give it to your entire satisfaction.

We are sole agents in Ohio for the Roller Tray Incubator and Brooder, the best in the market. Write for catalog.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI,

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OHIO.

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT & SONS, Hamilton, Ill.

Dear Sirs :—In reply to your favor, I take this opportunity to let you know that I am a customer of yours. I used considerable of your Surplus foundation some time ago, but got side-tracked. I would have saved money by using your foundation.

R. M. Guthrie, Reno, Nev.

DADANT & SONS, Hamilton, Ill.

Dear Sirs:—Mr. N. E. France's recommendation of your goods is all O. K., but I have one that is more convincing, at least for me. I own five yards, and nearly all the combs in them are drawn from Dadant's foundation. There must be a reason.

J. M. Donaldson, 51 E. 3d St., Mooreston, N. J.

Agents Everywhere

Write Today

DADANT & SONS,
HAMILTON, ILLINOIS.

Vol. LIII.

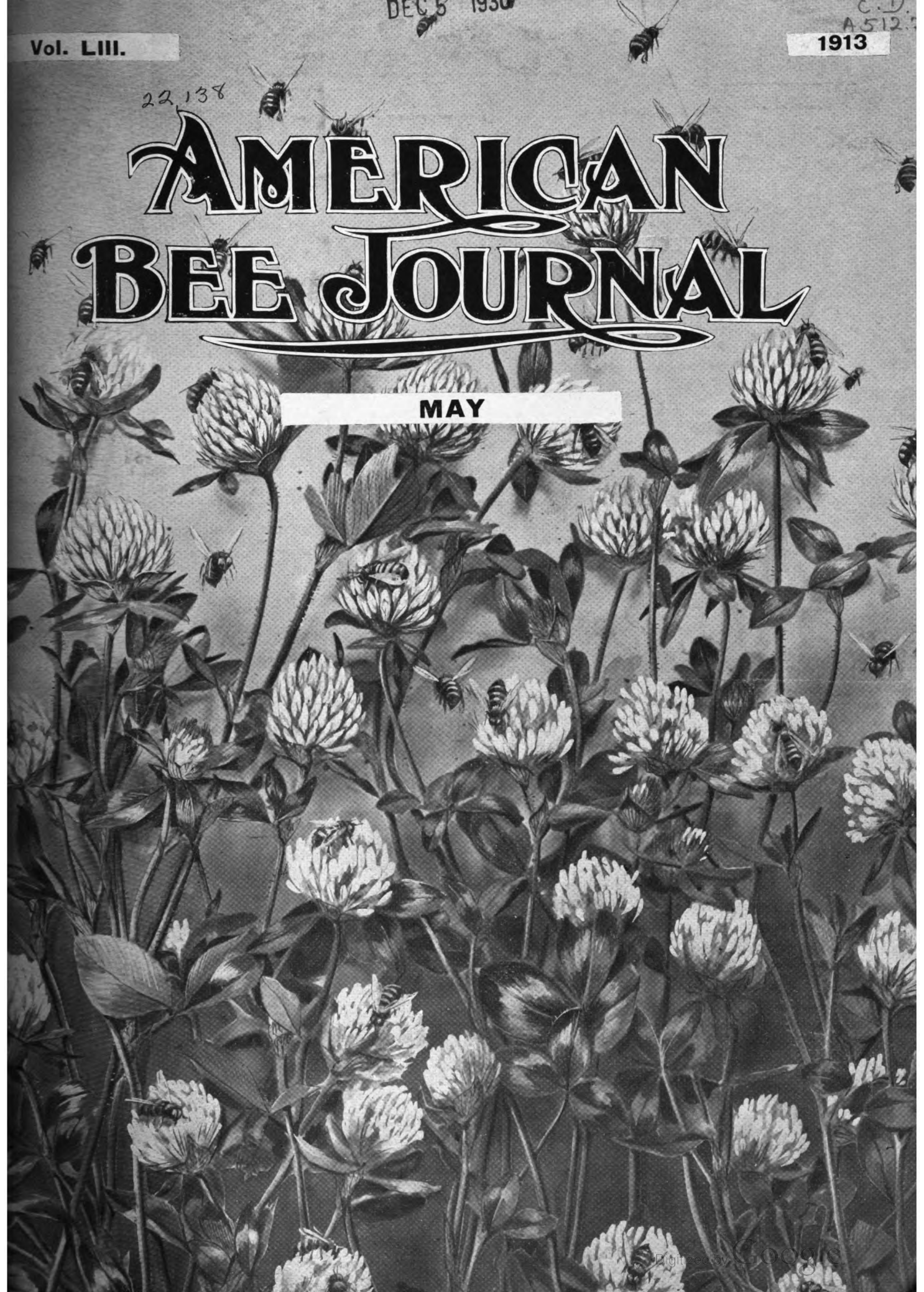
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AMERICAN BEE JOURNAL

MAY



American Bee Journal

PRATER-YORK CO.

107 MAIN STREET

Sandpoint, Idaho

PRATER-MYRICK Co. have been doing business in Real Estate, Renting, Loans, Insurance, etc., in Sandpoint, Idaho, for a number of years past. Mr. Prater has been in this county (Bonner) for nearly 20 years. For honorable, upright and square dealing the firm is well known to all here. Fortunately, I have been able to acquire the interest of Mr. Myrick in the concern, and now the firm is known as "PRATER-YORK Co.," and will continue the same lines of business.

For readers of the old American Bee Journal interested in this part of our great country, we will be glad to answer enquiries, or send our *free* Circular, which gives considerable information that is reliable about this locality.

There is much interest manifested by people living in the Eastern and South-eastern parts of the United States in this great and growing Northwest, which is destined to be occupied by many wide-awake people who are looking for a new home, and where opportunities for advancement are greater than in the older and overcrowded parts of our country. Let us hear from you, if you are thinking of making a change. Lots of unoccupied bee-territory in this county.

Honey as a Health-Food

This is the title of a 16-page circular, 3½x6 inches in size, gotten up for selling honey. It contains an article on why honey should be eaten, which gives much valuable information on honey. It also has many recipes for the use of honey, both as a food and as a remedy. It ought to be distributed freely among honey-customers. The prices are as follows:

Sample copy free; 10 copies, post-paid, 25 cents; 50 copies, 90 cts.; 100 copies, \$1.50; 250 copies, \$3.00; 500 copies, \$5.00; 1000 copies, 9.00. Your business card will be printed free on the front page on an order of 100 or more copies.

Special Bee-Literature Offers

Ask for my circular containing special offers of bee-literature. And if you want any bee-papers or other magazines, send me your list and I can quote you a price that will save you some money, I am sure. Address,

George W. York,

Publisher and Subscription Agent,

302 S. Boyer Ave.,

Sandpoint, Bonner Co., Idaho

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

**6 Queens for \$4.50;
3 for \$2.75; 1 for \$1.00**

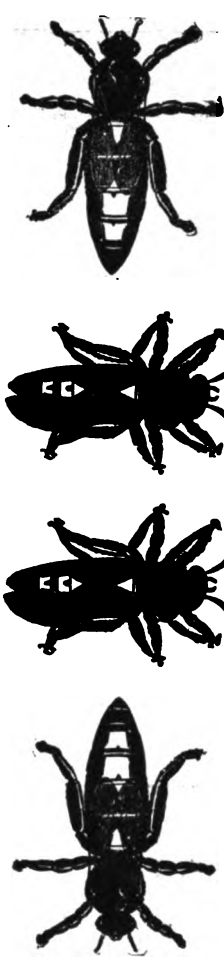
For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

AMERICAN BEE JOURNAL—
Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

AMERICAN BEE JOURNAL—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlinton, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—
Gentlemen:—I bought a queen of you about 35 years ago, and from her I Italianized 150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time.
Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is \$1.00, or with the old American Bee Journal for one year, both for \$1.60. Three Queens (without Bee Journal) would be \$2.75, or six for \$4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

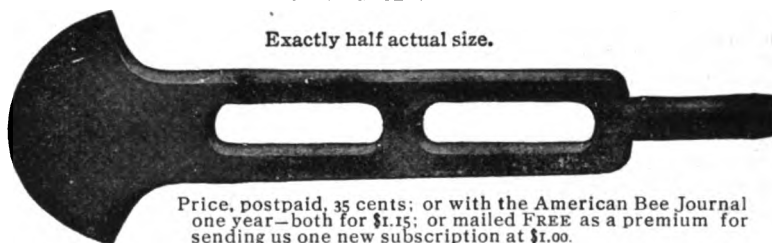


AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

The Ideal Hive-Tool Free as a Premium

NICKEL PLATED.

Exactly half actual size.



Price, postpaid, 35 cents; or with the American Bee Journal one year—both for \$1.15; or mailed FREE as a premium for sending us one new subscription at \$1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1¼ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

DID YOU EVER

Notice My Ad About the

CAUCASIANS

They would surprise you if some of your colonies had QUEENS from my STRAIN. You can have my prices if you will send your name to either place. Also get my prices on nuclei.

Box 61 Lansing, Mich., or
Box 82 Houston Heights, Tex.
A. D. D. WOOD

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 4536 Perry Street, Chicago, Ill.

FAMOUS QUEENS DIRECT FROM ITALY
Bee More Beautiful, More Gentle, More Industrious,
The Best Honey-Gatherers.

Universal Exposition, St. Louis,
HIGHEST AWARD.

Extra Breeding Queens, \$3; Selected, \$2;
Fertilized, \$1.50; lower prices, per doz., 50 or
100 Queens. Safe arrival guaranteed. Write

Member of the **ANTHONY BIAGGI**,
National Bee-keepers' Ass'n } Pedevilla near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Statement of the Ownership, Management, Circulation, Etc., of the American Bee Journal, published monthly at Hamilton, Ill., required by the Act of August 24, 1912.

Owner—C. P. Dadant, Hamilton, Ill.
Business Manager—M. G. Dadant,
Hamilton, Ill.

Known bondholders, mortgagees, and other security holders, holding 1 percent or more of total amount of bonds, mortgages or other securities—None.

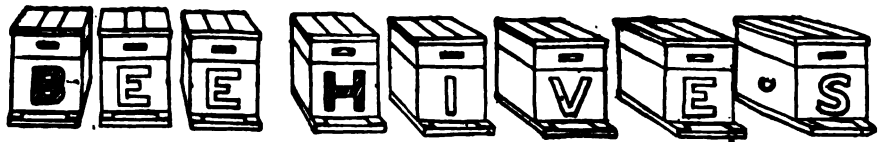
C. P. Dadant, Editor.

Sworn to and subscribed before me this 24th day of March, 1913.

T. R. KLAY,
Notary Public.

[SEAL.]
(My commission expires March 25, 1915.)

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Write today for illustrated price list stating kind and quantity wanted.

NATIONAL OIL COMPANY, Dept. 7, BALTIMORE, MD.

QUEENS Complete queen circular on request.

and

Largest stock bee-supplies south Ohio River. 64 - page catalog on request.

SUPPLIES

The Penn Co., Penn, Miss.

H. J. PFIFFNER

Wholesale and Retail Dealer
in Bee-keepers' Supplies
Send for Catalog

Emmetsburg, Iowa.



The picture that we showed in the Apr. issue of this Journal was of our mill and property at Buffalo, Minn. This cut shows our factory at Minneapolis.

We manufacture Dove-tailed hives, supers, sections, shipping-cases brood-frames, separators, also berry boxes and crates. Catalog free.

**MINNESOTA
Bee-Supply Co.,**

100 Nicollet Island,
Minneapolis, Minn.

GOLDEN ADEL QUEENS AND BEES BY THE CAR LOAD



You will make money if you deal with me and get my factory price on Bee Supplies. I have millions of fine Sections. I am the oldest and largest Bee Supply manufacturer in the Northwest. Send for Catalog.

CHARLES MONDENG,

145 to 160 Newton Ave. N.

MINNEAPOLIS, MINN.



(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at \$1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JUNE, 1913

Vol. LIII.—No. 6

EDITORIAL COMMENTS

Shipping Bees or Queens—Certificates Needed

Many States now have laws which forbid the shipment of bees without the accompanying certificate of inspection of the apiary from which they are shipped. In States having no inspector, a sworn statement made before a notary or justice of the peace is usually sufficient. We will gladly inform those of our readers needing additional information, and ask the different inspectors to forward a copy of their regulations to this office.

Mailing Queen-Cages in Cotton Bags

We are in receipt from Mr. Frank Rauchfuss, of Denver, of four queen-cages with bees, packed in a light cotton mailing-bag. The bag is of very light texture, admitting the air through. This package has the advantage of protecting the cages from strong air currents, keeping them together more efficiently than a string of twine, and yet leaving sufficient air for their breathing. It is worthy of further trial.

Foul Brood, Wastefulness and the High Cost of Living

The writer one day noticed a little cluster of excited bees on the ground in a poultry enclosure. Upon examination he discovered that they were bent upon gathering a lump of granulated honey, which had been thrown there with other table-waste. The chickens had eaten everything but the

wasted honey, butter and bones.

We complain of the high cost of living and seek a remedy in every direction but the right one. The American way is to waste, waste in all directions. We wasted our forests, under the plea that it was more profitable to burn them off than to save them. We waste our coal at the mines, in many places allowing the slack to consume itself by spontaneous combustion, or by contact with the air. We waste our land, leaving innumerable spots uncultivated, even in the heart of civilization. We waste our manures, often even contaminating our streams by using them to wash away useful fertilizers. But above all things we waste our food.

This reproof is not intended for the foreigner who has been raised on economical methods in a thickly settled country. In all probability, the foreign-born American who reads this has been taught, in his young days, to consider bread and meat as *sacred*, under the plausible plea that he might starve some day, for want of such food as he proposes to throw away, and also because so many millions in the world do not get as much as they want to eat. But our American education is different. Many a bright, neat, sensible and educated American mother thinks nothing of teaching her children to take a heaping plate-full of all kinds of food, and leave half of it unconsumed, in a disgusting heap, made of a mixture of all the dainty dishes served upon the table. Nay, in many cases, children are taught that it is

good manners to accept or take more of one dish than you can possibly use and leave two-thirds of this upon your plate. Thus meat, gravy, bread, potatoes and other vegetables, fish, butter, jellies, pie and *honey* are carried to the back-yard or thrown into the slop-pail.

When this waste takes place upon the farm, it is but half waste, for the hogs and the chickens consume most of the remnants, so however expensive it may be to feed bread, cakes, jellies or honey to the hogs, the food is not altogether wasted. But what of the cities? How much of this willful and unnecessary waste is made to clog the sewers or sour and rot in the refuse can in the back-lot?

What has this to do with bee-culture? Why should a bee-journal take notice of this bad custom and sound a note of warning? Because, as far as honey is concerned, the waste constitutes a danger. Because if one-fifth, or even only a tenth, of the honey served upon the tables is thrown away, there is a chance in many instances of the bees getting at this honey second-hand and bringing to the hive, with it, undesirable bacteria. The very best honey may contain in it germs which, *absolutely harmless to human beings*, mean ruin to the brood.

Why are brood diseases almost permanent around many large cities, in this country, if it is not owing to the fact that some of the honey shipped from all parts of the country is, to a large extent, exposed where the bees can reach it?

One will say that, in most cases, the honey is healthy for the bees and entirely free of germs. True: But we know that in case of contamination, the microscopic germ which causes brood diseases is so small and so sparingly scattered in the honey that scien-

tific examination has usually proven inadequate to find it. In other words, those germs of bacilli, which are *entirely harmless to man*, are so infrequent in contaminated honey that a microscopic examination usually fails to detect them. But they are situated in the most favorable condition for development in the stomach of the larvæ.

Aside from the dangers arising, through the wasting of honey and other foods, is it not time for our civilization to take notice of the wanton loss which has thus far been considered fashionable and proper?

We dare say that, our country through, from one-tenth to one-fifth of all the food served upon our tables finds its way to the dung heap, un-tasted. Think of wasting 10 to 20 percent of your food! How long would this amount support you in your old age?

This habit is not confined to the wealthy and well-to-do, but is noticeable even among the wage-workers, though in less degree. Neither is this of any benefit to the house-keeper, for she has to prepare so much more food, and after each meal has an ugly mess to clean up, made of a mixture of the neatest and finest morsels that she has artistically prepared. Aside from the high cost of living created by such an untidy habit, this alone ought to urge us to stop it.

Wisconsin and Iowa Going Forward

Mr. Frank C. Pellett writes us that a bill appropriating \$1500 for bee inspection has passed both houses of the Iowa Legislature. The State Fair Association has also made a move forward by raising the amount of premiums on hive products 40 percent for the coming fair.

Mr. N. E. France writes that a new Wisconsin foul brood law has also been enacted. This places an annual sum of \$2000 at the disposal of the State Inspector, who may appoint deputies. His salary is not to exceed \$5 per day when actually engaged in inspection work.

The above-named gentlemen are understood by us to be inspectors for those States.

Moisture in Nectar

The statement made on page 92, that when first gathered nectar rarely contains more than 25 percent of moisture, and usually much less, is considered by some of our readers as incorrect. There appears to be more difference of opinion on this subject than

on almost any other upon which the average bee-keeper cannot make a positive test. The United States pure food laws allow that amount of water in pure honey, and nectar in this and other countries is often found to contain 75 percent of moisture.

However, let us take notice that the amount of water in nectar depends, not only upon the kind of bloom from which this nectar is gathered, but upon the soil, the amount of moisture in the ground, and the hygrometric condition of the atmosphere at the time. Some scientific apiarists of the European continent, of the kind which one of our contemporaries calls "apiculteurs en chambre" (theoretical apiarists), have tried to give an exact figure as to the proportion of water in nectar. They might as well try to give an exact figure as to the proportion of water in the milk of cows. Our clover and basswood nectars contain very large amounts of water. Fall flowers contain less. Some of the crops of heather in Europe produce nectar so thick that it is extracted with difficulty. Perhaps, Mr. Isaac Hopkins, who wrote the statement criticized, lives in a very dry climate. This might explain his statement. It is safe to say, however, that in the majority of instances, honey freshly harvested contains much more than 25 percent of water. But to give a definite quantity as an average is an impossibility.

Here is a question on which we would like an answer: We are told that there is a considerable difference in the amount of water contained in different samples of nectar, and we know that some honeys are much thicker than others. Now is there any definite relation between the water in nectar in any particular case and the water in the honey derived from that same nectar? If A's bees gather nectar containing 20 percent more water than is contained in nectar gathered by B's bees, then will A's honey contain 20 percent more water than B's honey? Or, supposing white clover in each case, will evaporation continue until the honey is of the same density in each case?

Young Queens Destroying Queen Cells

In L'Apicoltore Moderno, Miss Fleischman criticises the statement made by J. Anderson in the British Bee Journal, that young queens, newly born, destroy other queen-cells. She has never seen this take place, although she has often watched them. We can, however, vouch for the correctness of

Mr. Anderson's assertion. Young queens which have been confined to their cells by the bees are very lively, and when freed are exceedingly eager to destroy other queen-cells.

Be True

It never pays to misrepresent. If we are found in a misstatement of facts or a gilding of our goods by putting our best in sight and hiding the poorest behind, we are sure to be found out and to lose the good opinion of others as well as our own self-respect, which suffers even when our falsehood prevails.

The advertiser should place his offers in as good a light as possible, but he should "stick to the truth." The average bee-keeper does not seek "gold bricks." Fakes are usually distasteful to him. Straight goods and straight talk are what he wants and what he should give. We will all be the better for it.

What Should a Beginner Buy?

This question is asked by a novice in bee-culture.

We have always considered it possible and advisable to begin bee-culture on a very small scale. Perhaps it was because we began it with exceedingly limited means; perhaps also because at that time most of the modern implements had not yet been invented.

The most important and most valuable part of the outfit is the colony of bees. One ought to have two if possible, because if an accident happens to a single colony, one might experience failure and become permanently discouraged.

The novice should, therefore, begin with not less than two colonies, Italian bees, in good, movable-frame hives. The quality is important. In addition to those, the only indispensable articles are: a veil, a bee-smoker, a hive-tool, some good beginner's book, and two or more empty hives, with an extra super for each and comb foundation. The quality of the articles aside from the hives and the bees, is of little moment. When the apiarist gets a little farther along, he will get better ones. The extractor, honey-knife, bee-escape, etc., will be needed later. If the man makes mistakes at first, as we all do, he will feel thankful that he has not been induced to invest largely. If he succeeds, as he will sooner or later if he perseveres, he will soon learn what he needs. Let the bees pay for it. The elder Dadant often said that after the first bees were secured, he never spent anything for them, in cash,

that was not already paid for by the bees in honey. Of course the labor was not reckoned in this because it was not a cash expense.

Glucose Again

A correspondent, in a friendly criticism, takes exception to our statement that glucose would be injurious to queens, in the candy for mailing cages. He says he has tried a small proportion, and that the queens did not suffer.

As the only advantage to be derived which is claimed by the supporters of this method is the greater softness of the candy, it is very clear that as long as we can make a sufficiently soft candy out of pure sugar, or sugar and good honey, this advantage is more fanciful than real. As to the cheapness of the article, it is well known that glucose does not contain half as much saccharine substance as honey does. At half the price it would be too dear. This has been proven in the making of grape clarets. The Concord grape does not contain sufficient sugar to make a lasting claret, and vintners use sugar added to the grape juice. Glucose was

tried, because less expensive than good sugar, but it took twice as much to secure the same result, although some chemists who were evidently paid to make a favorable report, asserted that the glucose produced more alcohol than sugar.

Let us have only the best sugar and honey as feed, and we will have no cause for regret.

A Trip to Europe

Mr. and Mrs. C. P. Dadant will start for Europe at the end of this month, or as soon as the usual spring rush of activity lessens. This will not be altogether a pleasure trip. Mr. Dadant proposes to examine for himself the local differences in quality of the bees of Switzerland, Italy and Carniola. For years the Swiss bee-keepers have asserted that they find the Italian bees inferior to their own Swiss bees. It has also been asserted that the bees of Italy differ in different localities. These matters are worthy of investigation, especially at a time when the Italian bee is so much in the lime-light, owing to its greater immunity from European foul brood. Being acquainted

on both continents, our editor will have great facilities to do this.

Communications to the American Bee Journal will be cared for in his absence by M. G. Dadant, the Manager. Urgent letters for C. P. Dadant himself should be addressed to him as follows: For July, in care of R. Gariel, 2 Ter, Quai de la Mégisserie, Paris; for August, in care of E. Bertrand, Nyon, Switzerland; for early September, in care of L'Apicoltore, 18 Via Cappuccio, Milan, Italy.

Breeding for Eggs

The Practical Farmer discourses upon a plan for getting an increased number of eggs from hens, and characterizes it as "the most important new wrinkle that has been brought out for a long time. Here's the "wrinkle:"

Now and then a hen is found that will lay 250 eggs, and perhaps upwards, per year. We are likely to raise all the pullets we can get from her eggs, in the expectation that she will transmit her unusually great laying qualities to her daughters. In practice it is found that the pullets raised from her eggs may be quite indifferent, or at least very common layers. The



MR. FRANK HINDERER CAME VERY NEAR LOSING HIS BEES WHEN THE ILLINOIS RIVER OVERFLOWED THIS SPRING.

female parent, in determining the laying qualities of a pullet, is not the only, and not even the dominant factor. The male parent seems to play the important and really decisive role. This has been brought out as a new fact by the most thorough and scientific investigations made by the Maine Experiment Station (a station that has done so much for the poultry keeper). In regard to the influence of good roosters, Dr. Raymond Pearl, of that station, says in *Farm and Fireside*: "How does a hen ever get to be high layer if she cannot inherit this quality from her mother? The answer is simple: The high-laying hen gets the excess-production factor, which is necessary to make it a great producer, from its sire.

"Here, too, is evidently the clue to the riddle which has puzzled so many who have trap-nested their flocks, when they find that some high-producing hens have good laying daughters, while other equally high producers have daughters that are poor layers. It all turns on the male used as the sire. Depending upon the hereditary constitution of the males used, it is to be expected that different proportions varying all the way from 100 percent to none, of the daughters of a high-producing hen will be themselves high producers. This is proved by experiments extending over a period of years, and involving a large number of birds. These results demonstrate the importance of getting the proper kind of males with respect to their hereditary constitution if one is to make permanent and definite progress in breeding for increased egg production.

"The aim is to get males that are 'pure-bred' in regard to the excess production factor. These can only come from high producing mothers bred with certain types of males. It is of the utmost importance in any scheme of breeding for production to select high-laying females, but it is not, as has been generally supposed, because their daughters will be good layers—this may or may not be the case—but rather because only from such mothers can males be obtained which will ultimately transmit to their daughters those qualities of high productiveness which are the goal sought."

No, the *American Bee Journal* has no notion of starting a poultry department, and the foregoing is not given with any such purpose in view. It is given because of its direct bearing upon the business of bee-keeping, and because it is believed that the importance of having the best of sires is just as imperative among bees as it is among fowls.

Thousands of queens are bought and introduced yearly for the sake of improvement in stock, but of all the bee-keepers who thus try to get better mothers for their bees, it is doubtful if 10 percent pay any attention to the sires, if indeed the number reaches one percent.

At once the reply will be made, "Oh, you can do nothing to control the

mating of the queens." True, you can do nothing directly; indirectly you can do a great deal, especially in an apiary of any considerable size. While it is true that the queen must be left to chance, each bee-keeper should do what he can to increase his chances. Suppose in an apiary of 100 colonies 10 are of choice stock, and that no attention is paid to the drones. A young queen, upon her bridal trip, will stand one chance in 10 of meeting a choice drone. Suppose, however, that the bee-keeper keeps down all drones except in the 10 choice colonies, either by trapping, by shaving the heads off of drone-brood, or by allowing no drone-comb in the hives. In that case a young queen will have 10 chances in 10 of meeting a choice drone. In other words, she has 10 times as good a

or allowing no drone comb, the choice between the three should be with the last method. Trapping drones is a nuisance at best. Shaving their heads is a dirty job. In both cases we have been to the expense of all that nursing and feeding which might have been bestowed upon worker-brood. Allowing no drone-comb, or only such as will rear a few hundred instead of the thousands which are generally bred, is the proper thing to do. But do not rely on simply removing the drone-comb. You must also replace it with worker-comb at once. Setting aside a few dry combs containing both worker and drone cells, you should use such parts of those combs as contain worker-cells, to fill the open spaces made by removing drone-combs from the brood-frames. This may be done at any



VIEW OF THE FLOOD AT CINCINNATI—NOTICE THE BIG HONEY SIGN OF THE MUTH CO.

chance as when no attention is paid to the drones.

Of course, drones from neighboring colonies may interfere very materially, but if the bee-keeper persists year after year in improving his own stock, his choice drones will constantly be meeting young queens from those neighboring colonies, making a gradual but constant improvement in surrounding stock.

It is pretty safe to venture the assertion that if bee-keepers of this country would take as much pains with their drones as they do with their queens, it would result in a million pounds increase in the amount of honey annually harvested. Like enough that is stating it mildly. C. C. M.

Now as to trapping drones, shaving off their heads when in capped brood,

time, but just before the harvest is the easiest time. If we wait until the combs are full of honey or the heat too great, it becomes an unpleasant job.

C. P. D.

Texas Inspection Law

The Texas State Entomologist, Mr. Wilmon Newell, writes us that in the passage of the inspection law, the emergency clause was stricken out, so that no inspection can be made before July in that State.

Swarming

If you would avoid excessive swarming remember the following points:

1. Have the hives well sheltered from the sun if possible from morning until night.
2. Give plenty of ventilation. Bees

should never cluster on the outside during a honey crop. They are either too crowded, too warm, or too little ventilated. It is sometimes well to raise the hive an inch or two from the bottom-board, especially in front.

3. Drones cause the bees annoyance by their bulk and their noise. Keep the drone-combs replaced by worker-combs wherever it is practicable to change them.

4. Have young queens. They lay less drone-eggs, and the bees are less apt to supersede them. When bees are rearing young queens to supersede the old mother, she is likely to swarm out and the bees will follow.

5. If you are raising extracted honey, keep a supply of empty combs ahead of need on the hive, if it takes three or four stories.

Veils and Gloves

The witty contribution in this issue on the above subject, by Mr. Bigelow,

is intended for beginners. Very few practical apiarists use gloves at all, but we all recognize the need of a veil at hand for accidentally irritated colonies. We give our preference to the veil which is most readily put on or taken off, even if a little less safe than the well-fastened veil. Each one should decide this point for himself.

Do It In June

Keep the grass cut away from the front of the hives. Shade them from the hot sun. Do not allow the bees to cluster in front for want of ventilation or for want of room. If they hang out, raise the hive from its bottom, in front.

See that your colonies have enough room to store honey, when the yield is on. To coax an average colony into the empty super nothing is better than a few half sealed sections exchanged from a very active colony, and the latter won't miss them.

tight, as it usually does when the whole sections are dampened.

A good way to dampen sections in a hurry, is to lay them out flat on a table and then apply water in the V grooves with a small brush. Many sections should be laid out, side by side, at one time, having the V grooves in straight lines. To prevent the sections from getting wet from the drip, lay them on slats. Sections will answer this purpose.—GEO. A. BOYUM.

Reinforcing Foundation.—B. Brewster, in the Canadian Bee Journal, page 48, speaks in high terms of his success in reinforcing foundation by painting melted wax over the surface with a flat 3-inch varnish brush. He does not merely paint over the upper part of the foundation (which secures against sagging), but paints over the whole of one side, the side upon which the wires are, thus fastening in the wires and reinforcing the foundation at one operation.

Last season gave the plan a severe test. Frames of foundation prepared as described were given at a time when bees were idle from dearth, and instead of chewing down the foundation as happens too often, the bees made good work, so far as they did anything, making beautiful combs of those that were fully occupied. A peculiar feature of the case was that "in nearly every case, 4 or 5 days after hiving, comb had been drawn out in every frame on the side that was painted, whilst little had been done where they had the 'Weed process' to work at."

The Demand for Beeswax.—L'Apiculteur for January publishes a statement from J. DeHasque, of the Antwerp Commercial Counting House, who mentions the growing importation of beeswax into civilized countries from new regions, such as India, Abyssinia, Eastern Africa. He remarks that these comparatively new sources, joined to the modern discovery of paraffine and vegetable waxes which are now used in place of beeswax for many commercial purposes, ought to have lessened the price of beeswax.

On the contrary, the value of pure beeswax is now greater than ever. He ascribes it correctly to the increase of the movable-frame system of bee-culture, in which a minimum of beeswax is produced.

Not long ago, assertions were made that there would be profit in producing wax instead of honey. There will be plenty of room in the future for those who hold this view to try it themselves, for beeswax is more and more in demand, and there is no probability of a

MISCELLANEOUS NEWS ITEMS



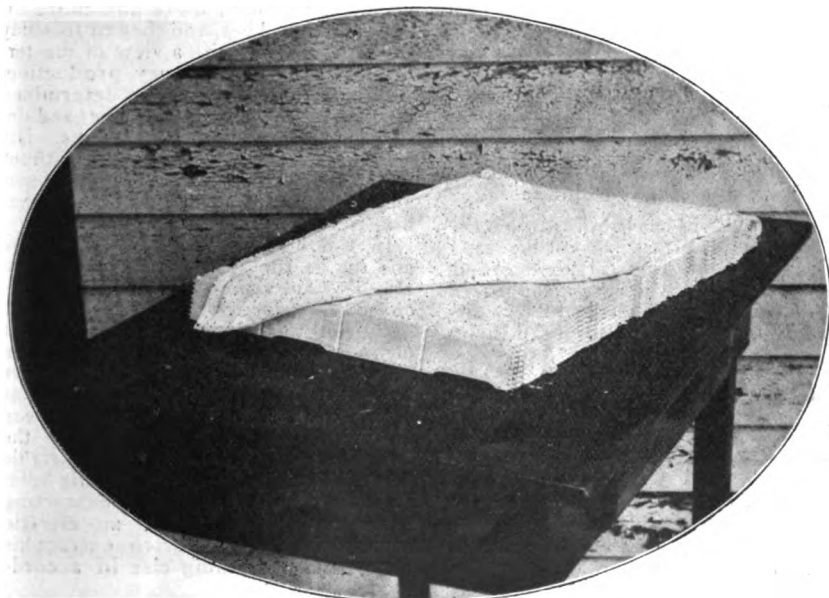
Dampening Sections by Means of a Wet Cloth.—If the sections make a creaking noise when being folded, it is a sign that they are too dry and need to be dampened.

To dampen sections, take the sections out of the crate and lay them on edge on a table; take a white cloth (towel), soak it in water, wring out some of the water, leaving it very moist, and spread it over the sections, covering the three rows of V grooves as shown in the illustration.

Leave the sections covered in this manner until they are sufficiently dampened for folding.

Ordinarily the time required is only one hour. If the sections are very dry it may be necessary to soak the cloth twice or to apply it double.

The moisture, as it leaves the cloth, settles down into the V grooves just where it is wanted. This leaves the sections dry except the V grooves, and therefore the sections will not warp, nor will the dovetailing fit together too



DAMPENING SECTIONS.

lower value. The active apiarist continues to reduce his production and increase his purchases of this article. This is natural, for success is in that direction.

Water in Honey.—Nectar contains 70 to 80 percent of water, and honey 18 to 25 percent. (In this country 25 percent of water is allowed in honey; in Germany only 22 percent.) Naturally, when bees are storing, there will be more water in the combs at the end of a day's work than there will be the next morning. So Ed. Knoke advises against taking off honey for extracting late in the day (*Bienenwirtschaftliches Centralblatt*, page 9), unless at a time when bees have not been gathering.

Alfalfa in Iowa.—"The Southwest Trail," Room 736, La Salle Station, Chicago, Ill., publishes a May number devoted entirely to the above-named subject. It is very interesting. The editor, V. L. Schoeffelmayer, well known to us for his energy and enterprise, offers this number, for the asking, to any one who will send his address.

Bees Need Enormous Amounts of Air.—In *Bienen-Vater*, page 61, are given some very interesting figures from Dr. Zander. At a temperature of 68 degrees Fahr., if we take as a standard the amount of air a man needs to breathe, in a given time, a number of frogs weighing as much as the man will need one-third as much air.

Lizards need 43 percent as much.

Dogs nearly 4 times as much.

Flies 21 times as much.

Bees 74 times as much.

Franz Richter, who reports this, figures out that a colony weighing 13 pounds will need, to support it one hour, the enormous quantity of 17½ cubic feet of air.

Let us figure a little farther, and suppose this 13-pound colony to be lodged in a 2-story 10-frame hive. Roughly figuring, these two stories will contain about 3½ cubic feet. After deducting the room occupied by frames, combs and bees, hardly half the room will be left for air; but call it that, 1¾ cubic feet. To supply the colony with 17½ cubic feet of air in an hour, the hive will have to be entirely emptied and filled ten times, or 240 times for each day. That would mean a pretty lively flow of air at the entrance, especially if that entrance should be, like some, less than half an inch deep.

To get another view of the lively breathing of bees, suppose a man weighing 150 pounds uses up as much

air as 150 pounds of bees. Seal him up in a room 25 feet long, 20 feet wide, and 9½ feet high, and in 24 hours he will be dead from suffocation.

Note, however, that all this is at a temperature of 20 degrees centigrade, or 68 Fahr. Let the temperature be 45 or 50 degrees, or whatever that point is at which bees are almost nearly dormant, and the likelihood is that the bees can get along with less air than the man.

Iowa Appropriation.—The following letter from the Iowa inspector, Frank C. Pellett, of Atlantic, explains itself:

Our appropriation is all right, and I must get busy. I met France and Kildow at Clinton last week to plan some way of dealing with foul brood where it exists on both sides of the river, as it now does adjoining both States.

Possibly no summer meeting of Iowa bee-keepers will be held, as they are very busy, and it is hard to arrange a meeting entirely by correspondence. I will be glad to inform you as soon as the matter is entirely disposed of.

Because one member of the Iowa association is having trouble from jealous persons poisoning and trapping his bees, the board has decided to employ an attorney to give free legal advice to members. We have accordingly selected Russell E. Ostrus, of Des Moines, who comes of a family of bee-keepers, and is in sympathy with the business as well as a good lawyer. We are not promising to pay expenses of litigation, although the association might vote to pay a part in a worthy case. I will be glad if you will call attention to this matter in your *Journal*.

Should Box-Hives Be Abolished?—

As our readers already probably know, the foul brood laws of Australia prohibit the keeping of box-hives. There has been some opposition to this part of the law from unprogressive bee-keepers of the country, who claim that the box-hive is not a detriment. Mr. R. Beuhne, in an article in the *Australasian Bee-Keeper*, strikes right to the point, arguing in favor of the present law. We quote him as follows:

What good will the abolition of the box-hive do? Will it prevent disease? So far as this State is concerned, where the box-hive has disappeared foul brood has either completely disappeared also or has become an insignificant factor.

Never mind the bee-trees. I, for one, am willing to start and successfully run an apiary in any suitable locality and clean it of disease, too, in a few years, no matter how many bee-trees there are, so long as there are no box-hives to re-stock the trees with swarms and re-infect the wild bees by means of mashed diseased combs hung up in bags to drain, or thrown out for the bees from several square miles of country. A bee-tree, if left alone, is comparatively harmless; quite so when it

is healthy. Even if the bees succumb to disease, it is not stirred up with a stick and scattered about; and in many instances mice, ants, and wax-moths reduce it to debris unattractive to bees before the latter find it. If some apiarist's bees do find it, it will be robbed out dry, and the apiarist will clean up the disease in his own hives. If he knows of suspicious trees he can plug up the entrance, clay it over, or nail wire-screen over the entrance, not to mention other methods, none of which he can apply to his neighbors' box-hives.

Dr. Miller on Honey Rules.—Glad to see Rauchfuss' article, page 163, but sorry he condemns the rules. It seems to me they are an effort in the right direction, there being at least something definite about them. But if Frank has something different that is better, by all means let him give it. He might also suggest rules for extracted honey. Would the Colorado rules be acceptable to the entire United States? Let us hear from him.

A Successful Iowa Bee-Keeper.—The high price of good land is causing many young men to look to the northwest or the south for an opportunity to begin life as their fathers did a half century ago. There are many now living in cities who look with longing eyes to the country, but for want of capital with which to engage in farming, feel that they must remain in an atmosphere that is uncongenial.

Such may find something of inspiration in the success of a well-known bee-keeper of Clarinda, who began the business without much capital, and as a side line in the beginning.

J. L. Strong was a carpenter and builder for many years, but becoming interested in bees, took up honey production in a small way to furnish honey for his table and profitable employment for his spare hours. As time went on, he found more and more interest in his bees, and began to study them in earnest, with a view of mastering the subject of honey production. As his apiary increased, he determined to give up his other business and devote his entire attention to bees. His friends tried to dissuade him without effect, for he was already a bee-keeper at heart, and nothing could prevent him from becoming so in fact.

In the beginning, he rented a house and lot in the outskirts of Clarinda. His bees did so well that he soon purchased the property, something that he had been unable to do in his former business. Mr. Strong has prospered since that time. Although there have been seasons when the honey crop has been short, other seasons have been sufficiently abundant to make up the shortage. He now has a comfortable home, has added other lots to his holdings, has built a modern extracting house and bee-cellar, has an electric power driven extractor to extract his honey, and everything else in accordance.

For a long series of years his bees have produced an average of 50 pounds

of surplus honey per colony each year. In addition to his sales of honey, Mr. Strong rears thousands of fine Italian queens which are sent out to bee-keepers in every direction.

There is room for many such apiaries in Iowa. The young man who can see no other avenue open to him, may, if he is adapted to the work, soon have a business and a home of his own by beginning bee-keeping in a small way in connection with his present employment. A few bees can be kept almost anywhere, and can be increased as fast as the owner's ability or opportunity will permit.—*Greater Iowa.*

Attacked by Bees.—Very formidable is the concerted power of bees by the million. This is shown in the experience of a British expedition in Africa, for the party was attacked and routed, several of the pack donkeys being killed by bees.

The swarming foes were first encountered on a precipitous mountain, where they had doubtless dwelt and multiplied undisturbed for years, since the place was sacred to an evil spirit so dreaded by the tribesmen that they never ventured to visit it.

While resting in a shady spot the commanding officer and his party looked up to see a swarm of bees streaming in and out of a large crevice in the cliff. As the hole was close to one of the worst portions of the as-

ending ledge, strict silence was enjoined on all the men.

The Europeans in the party removed their boots in order to get a secure foothold, and the whole party crept quietly along the face of the precipice. But cautious though they were, there was sufficient noise to attract the attention of the suspicious bees. Soon an angry cloud swarmed out. A false step on the part of the men would have been fatal, but there was no time to think of their footing with the furious swarm at their heels.

Fortunately no one slipped, and the van of the expedition, scrambling frantically upward from their little enemies, safely reached the summit of the mountain, while those in the rear bolted downward in the opposite direction and awaited them below. But those on the mountain top had next to think of their return. Luckily for them, the domestic habits of bees are as orderly as their methods of harvesting and architecture, and the men had only to wait until after sunset, which is the bed hour of all bees, to slip quietly past unmolested, although the task to which such a delay reluctantly forced them, of descending dangerous crags and pathless slopes in the dark, was more perilous than pleasant.

Far more tragic was an attack in a less dangerous spot, for in the sudden scattering of the caravan before the stinging hosts a sick man failed to make his escape, and was left behind.

He was missed, and the commanding officer, with two natives, went back to search for him beneath the hollow tree where the bees had issued.

The party set to work quartering the ground near the tree. The bees swarmed down upon them, and it was impossible to avoid being stung. All the men could do was to keep the insects from their eyes. After a short time it became too hot for the rescue party, and they left. It was becoming too hot for the officer also, when he stumbled upon the native for whom they were searching, and picking him up he ran.

The unhappy man, who wore only a loin cloth, was frightfully stung. His body, owing to the innumerable stings left in it, instead of presenting a smooth surface of clear black skin, appeared to be covered with a close brown fur. He died in about 5 hours.—*Exchange.*

Propolis.—A new use of propolis is given by "Francois" in the Rucher Belge:

To fasten gold leaf in the decoration of walls, ceilings, mouldings, etc., they generally use a solution of gum-lac or fatty essence. This mixture has the inconvenience of not permitting the applying of the gold leaf until 24 hours after the mixture has been used. This inconvenience is great in the case of high ceilings, such as those of the Pal-



REMARKABLE PORTRAIT OF EGGS IN THE BOTTOMS OF CELLS.—(Photographed by Edward F. Bigelow.)

ace of Justice of Liege, the moving of high scaffolds being difficult and expensive. Besides, the greater or less desiccation of the coating has an effect upon the brightness of the gold, and the tones secured are never uniform.

To remedy these inconveniences, after numerous trials, I have secured a propolis mixture which has given me entire satisfaction. This mixture dries immediately, and enables the gold leaf to be applied at once. Its composition is as follows:

One hundred and fifty grammes of propolis (one-third pound) with 500 grammes (one and one-ninth pounds) of methylic alcohol (wood alcohol) in a wide mouth vial. To hasten the liquefaction, shake the mixture once or twice daily. At the end of a week, filter through cotton wadding.

The stability of gold leaf on this mixture is astonishing, and the possibility of applying both at the same moment reduces the labor about 60 percent. The mixture does not cause the wood to swell or lose its polish.—*Les Abeilles et Les Fruits.*

Minnesota Appropriation for Apiculture.—Mr. P. J. Doll, president of the Minnesota State Bee-Keepers' Association, in a recent letter to this office, announces that the Legislature has enacted a bill providing for an appropriation of \$3000 to be used for the purpose

of establishing and maintaining an apiculture department at the Minnesota State University.

At a special meeting of the State Bee-Keepers' Association Dr. L. D. Leonard was recommended to the University authorities for the head of the department. Dr. Leonard has been an active member of the association and a bee-keeper for nearly 20 years. He is well educated, and excellently fitted for the position.

Shakespeare on Hives.—Among old papers we find the following from Mr. John Phin, the author of "Phin's Dictionary of Bee Terms":

"Shakespeare uses the word hive six times—mostly as referring to the dwelling."

"Drones hive not with me."
—*Merch. of Venice, II, 5.*

I, after him, do after him wish too,
Since I nor wax nor honey can bring home,
I quickly were dissolved from my hive,
To give some laborers room.
—*All's Well, I, 2.*

When like the bee, tolling from ever flower
The virtuous sweets,
Our thighs packed with wax, our mouths
with honey
We bring it to the hive, and like the bees
Are murdered for our pains.
—*2d K. Henry IV, IV, 4.*

So bees with smoke, and doves with noisome
stench,

Are from their hives and houses driven
away.

—*1st K. Henry VI, I, 5.*

The Commons like an angry hive of bees,
That want their leader, scatter up and down,
And care not who they sting in his revenge.
—*2d K. Henry VI, III, 2.*

When that the general is not like the hive,
To whom the foragers shall all repair,
What honey is expected?

—*Troilus, I, 3.*

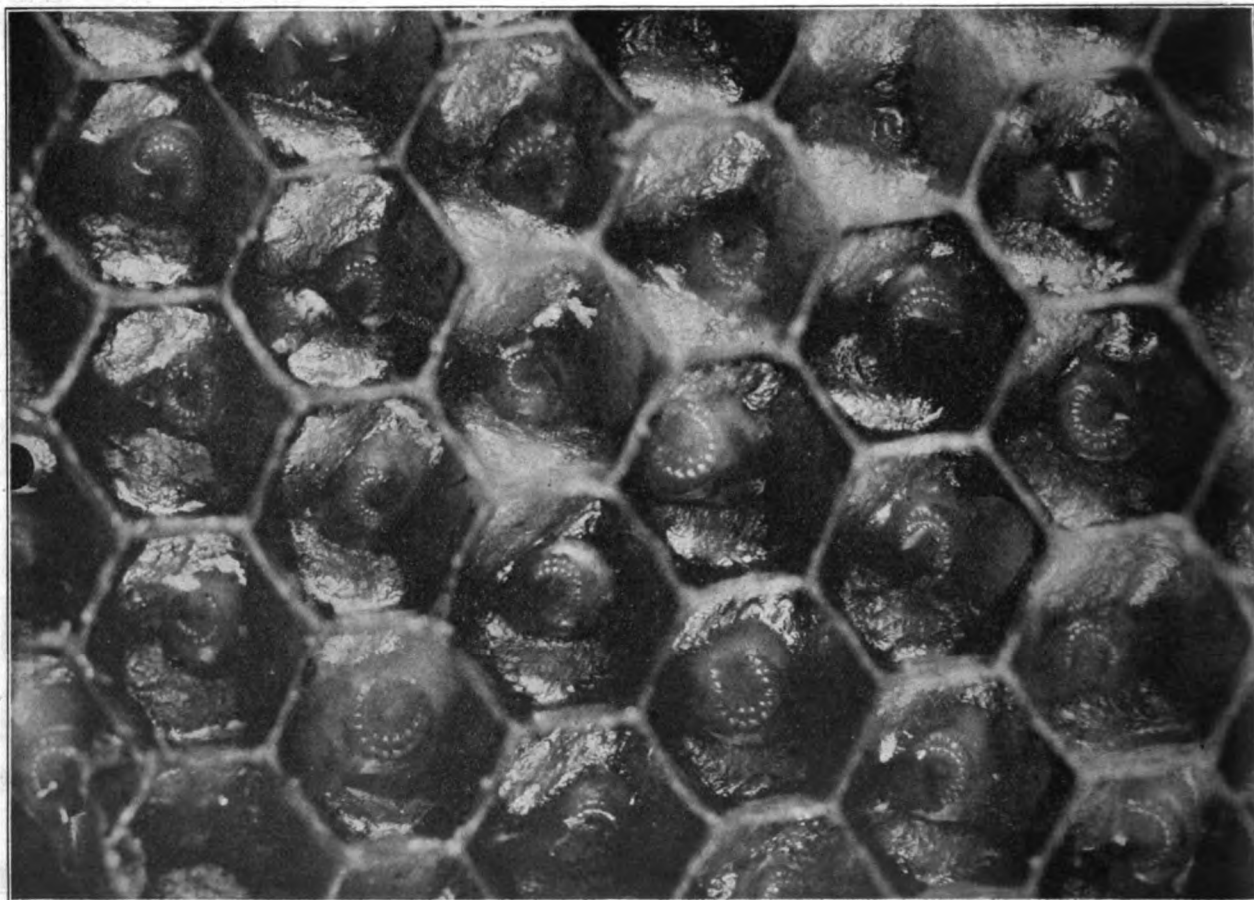
Here is another:—(ED.)

The old bees die, the young possess their
hive.

—*Rape of Lucrece, 253d Stanza.*

Honey in the Butter.—We read the statement in *L'Apicoltore Moderno*, that in some hotels of England and Switzerland, they mix 6 percent of honey with the table butter. They say that it gives a peculiarly pleasant flavor to the butter, and keeps it from becoming rancid.

Inspection Appropriation for Illinois.—The appropriation committee of the Illinois Legislature reported favorably an appropriation of \$2000 for Illinois inspection of apiaries. This is an increase of \$500 over the previous appropriation. The faithful present inspector, A. L. Kildow, says that it did not take them more than "five min-



ENLARGED PHOTOGRAPH OF LARVÆ IN THE CELLS.—(Photographed by Edward F. Bigelow.)

utes" to decide that the appropriation was needed.

The bulletin containing the inspector's second annual report, and a lot of useful information, can be had for the asking of either A. L. Kildow, inspector, of Putnam; Jas. A. Stone, State Secretary, Rt. 4, Springfield; or Louis C. Dadant, Secretary of the Chicago-Northwestern, of Hamilton.

With France in Wisconsin, Kildow in Illinois, and Pellett in Iowa, there

ought to be some educational work performed among the bee-keepers of those three States this summer.

New Jersey Meeting.—A Field Meeting of the bee-keepers' association of New Jersey will be held on Wednesday, June 25, 1913, at the apiary of George Grover, near Trenton, N. J. We hope there will be a large attendance.

E. G. CARR, *Sec-Treas.*

of combs, extracted the honey from them, and when he went to shake the bees on the empty combs he found they had not killed the queens, as they had too much room. A large swarm went to the woods and the rest all took wing and settled on a plum tree. He carried 7 swarm-catchers full, and as he was tired of carrying bees he left the rest on the tree, but they all went to the hives through the day. I got 75 pounds of honey to spare, and left 40 pounds for winter. This is the most bees I ever hived in one day. We now have 150 colonies.

MRS. INA BANKER.

Sleepy Eye, Minn.

You certainly had a unique experience. Others have had trouble with swarms uniting, but you deliberately united them. To be sure, others have united swarms, but it is doubtful that any case has been before reported in which so many as 8 were united. It is interesting to know that the queens

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

A Large Comb

This colony of bees was in a corner of a house-wall. There were five sheets of comb; one was solid from top to bottom, 16 inches wide and 101 inches long. We took out 50 pounds of honey and left about 30 pounds for the bees. This was on Dec. 10, 1910, at Soquel, Santa Cruz Co., Calif.

(MRS.) BERTHA ANTHONY.

Oxnard, Calif.

Is not this one of the largest combs on record? To realize the length of it, let it be recalled that the ceilings of many dwelling rooms are only 8 feet high, and this comb is 5 inches more than that.

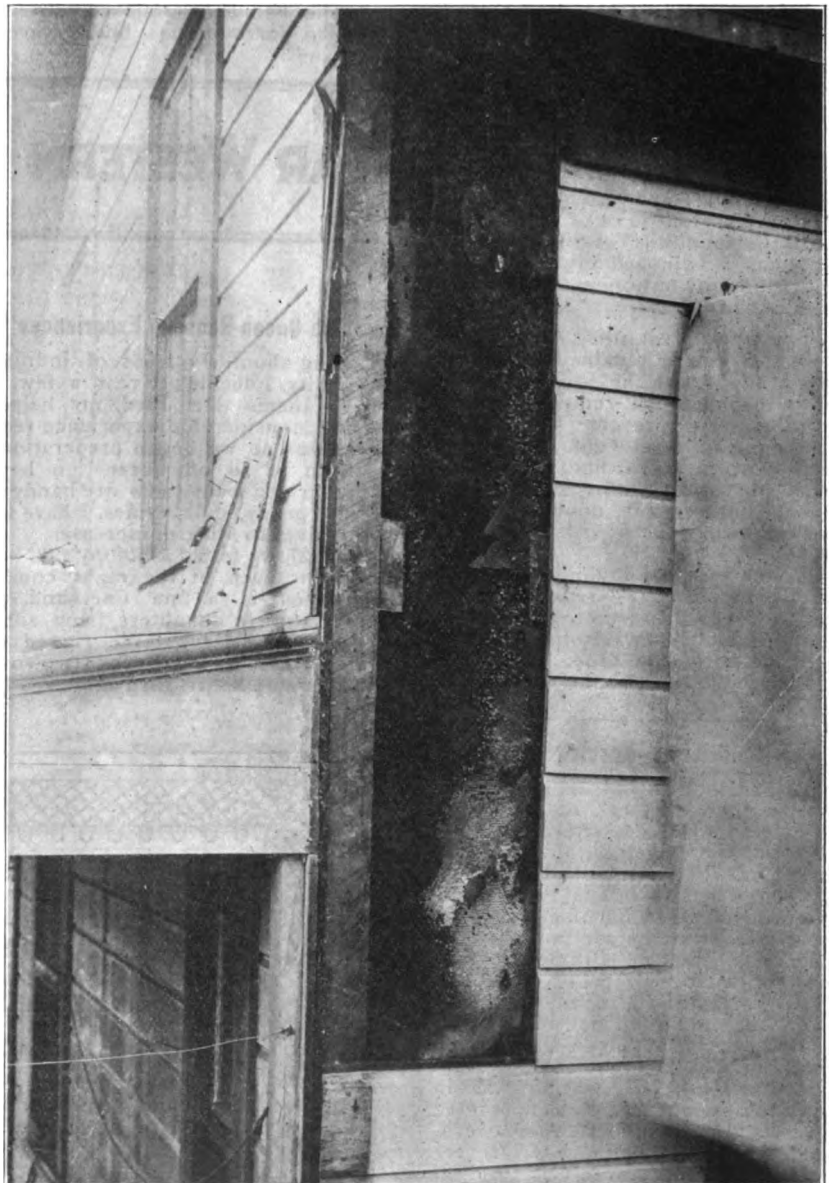
For White Hands

It is the simplest thing in the world to make cosmetic gloves. All that is necessary is to make a pair of loose mittens out of woolen cloth and spread a good hand paste over the inside of them, after which cut off the mittens at the ends, as it will not do to exclude the air from the hands. An effective glove paste can be made thus: Put two ounces of yellow wax into a double boiler and heat until it dissolves, then add one ounce of powdered myrrh and beat thoroughly. Four ounces of honey should now be added to the mixture; finally, sufficient rose water is added to make a spreadable paste. This is quite the daintiest glove paste I know of.—*Chicago Record-Herald.*

Seven Swarms in One Hive

I want to tell you what I did with 8 swarms of bees that came out one day last August, when Mr. Banker had gone to town and I was alone with the bees. I was not very strong, but I could not see those bees go off if I could possibly help it, as they were all large swarms, so I got 7 hives and tiered them in one pile, hiving all the swarms together.

When my husband came home he said he never saw so many bees in a hive in his life. The next morning he went to look for combs. He got a lot



A LONG COMB.

were not killed, and this was no doubt due, as you suggest, to the fact that so large an amount of room was given. It would seem to show that when two or more united swarms have sufficient room they have a tendency to divide into separate swarms. Some have advised, when it was desired to separate united swarms, to put twigs in the hives for them to cluster upon separately.

Some Honey Recipes

I have learned several new uses for honey. When baking apples, instead of using sugar, I pour over them extracted honey, allowing one tablespoonful to each large apple. In making fruit salad, I also use honey for sweetening. I substitute honey for the sugar in any cake or pudding where the yolk of the egg is used, also in fruit pies and sauces. When making gems and muffins, I pour in about a teaspoonful of honey; it sweetens without making a coarse grain or gritty taste.—*Good Housekeeping Magazine*.

A CURE FOR ASTHMA.—In a medical work I find it recorded that a doctor ate some ounces of honey every day for two years, and got entirely free of his asthma. Before this he had tried every known cure without securing any relief.

HYGEIA DRESSING.—Yolks of two eggs beaten stiff, juice of one lemon, two large spoonfuls of olive oil, two-thirds cup of whipped cream and two large spoonfuls of honey. Add a slight pinch of salt.—*Household Magazine*.

PASTE FOR BLEACHING ARMS.—Milk white arms can be obtained by coating them at night with the following paste and allowing it to remain on until morning. To prevent bed clothes from being soiled, it would be well to wrap your arms around with long strips of cotton cloth: Myrrh, one ounce; honey, four ounces; yellow beeswax, two ounces; rosewater, one ounce.

Melt the wax in a double boiler, then add the myrrh, powdered, while hot; beat thoroughly together, then stir in the honey and rosewater and sufficient glycerine, drop by drop, to make a spreadable paste.—*Chicago Record-Herald*.

A British Bee-Keeping Sister

The British Bee Journal gives, from time to time, sketches of prominent bee-keepers, and in a late number the subject of the sketch is Miss M. Dagmar Sillar. The sketch opens by saying: "We believe this is the first occasion on which we have had the pleasure of presenting the portrait of a lady under the heading, "Prominent Bee-Keepers," and the subject of our sketch is well worthy of a place among them."

Born in London, of Scottish parentage, Miss Sillar first kept bees in North Wales, but her most valuable service to the cause of bee-keeping was in South Africa, where she was appointed poultry and bee expert at the Government Experimental Farm. A severe illness obliged her to return to England in 1912, after a very active South African career of eight years, and the

likelihood is that British bee-keeping will profit by her activities hereafter, although Miss Sillar says of her African experience: "After all the hard work I wish I were going back to South Africa tomorrow."

Dandelions

In this part of the world it is counted that fruit-bloom has much to do with the honey harvest, not because a large amount of surplus honey is secured from fruit blossoms, for indeed no surplus is ever harvested from them here, but because they come at a time to do the most good in helping colonies to build up for the white-clover harvest. In late years, however, a strong competitor has grown up in the person of the dandelion. It is said to have made its first appearance here perhaps 70 years ago, when a lady brought the seed from the East because she thought it would seem more like home with dandelions about. Owners of lawns wish she had been satisfied with less homelike surroundings, but bee-keepers

call her blessed. Even as late as 20 years ago dandelion nectar was a negligible quantity. Now it is abundant, increasing year by year.

In a certain sense, however, the dandelion can hardly be called a competitor of fruit-bloom. On this date, May 6, observation of thousands upon thousands of dandelion blossoms shows not a single bee upon them, while the bees are roaring upon the fruit-trees. Bees have their preferences, and while fruit-bloom is to be had dandelions are neglected. Only a few days ago bees were working busily on dandelions. But the nectar of fruit-blossoms was not on the market then. Like enough they will return to their first love a little later, when fruit-trees are out of bloom.

No doubt this explains, at least in some cases, why bee-keepers call a certain plant worthless for bees in one region, while in another region it is valued highly. In the region where it is neglected by the bees, it is neglected only because at the same time another plant is blooming which is a greater favorite with them.

FAR WESTERN BEE-KEEPING



Conducted by WESLEY FOSTER, Boulder, Colo.

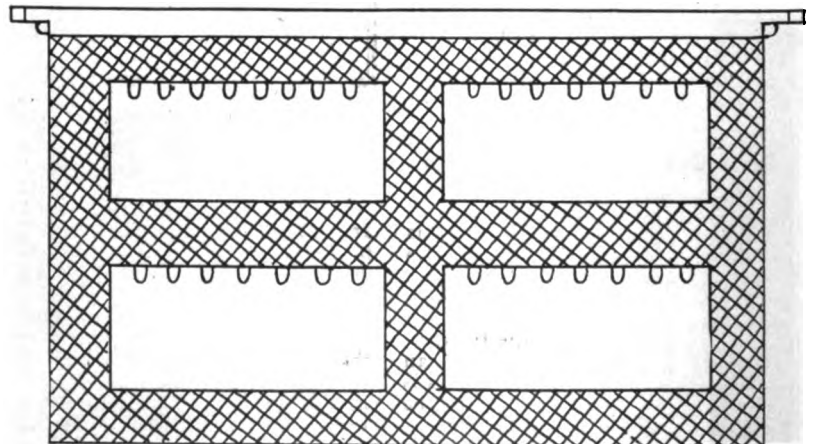
Some Queen-Rearing Experiences

Having about 50 queens of indifferent quality, I decided to rear a few, to replace them. Mr. Bird, my helper, has had considerable experience rearing queens, so we began preparations. A dozen or so of queens on hand whenever you want them are handy in an emergency, and, besides, I have 150 empty lives to fill with increase.

April 27, we found a colony that had brood in seven of the eight combs. The queen is a fine one, and we thought to rear daughters from some of her young larvæ. We rigged up several frames with cell-cups (two rows to each frame). Mr. Bird molded a lot

of cell-cups, *a la* Doolittle, and stuck them to the bars with a drop of wax. These cups looked lonesome to me without any comb in the frames, so I took a comb of several seasons' use, one that was tough and would not sag, and cut four holes in it like this:

Each aperture holds six cell-cups, and they are wide enough for the bees to build the cells down nice and long. We took the queen from the colony, I said, and two combs of brood and six nice drawn combs, and put them over a queen-excluding zinc. We grafted in the larvæ, no larger than the head of a pin, and put them in the center of the lower hive. Next day we looked in and all cups were torn down. So



A FRAME ARRANGED FOR QUEEN-REARING.

American Bee Journal

we took off the top hive with the queen, and placed it on another stand. Then we grafted another lot, put them in and also gave feed, sugar syrup that had been poured into a frame of comb. This started a little robbing, but in the evening of that day it turned cold, and the next day those cups were all torn down.

We next tried grafting cells into a queenless colony that was building cells, but they would have none of them. We are going to come back to our de-queened colony if the weather warms up and try again. Mr. Bird did the grafting. He selects some warm corner where the sun is shining brightly and no breeze stirs, and it seems warm enough to prevent the larvæ from becoming chilled.

We are going to keep at it until we succeed. It is possible that we have not fed enough, although the bees have been getting nectar from dandelion and fruit-bloom. Robbing is, however, attempted each afternoon, so that we shall feed regularly and try to get cells accepted. The changeable weather has been against us. We cannot rear queens during unfavorable weather. Although we have had no measure of success as yet, we are confident that we can rear queens when the right conditions are secured.

[The Doolittle method has often succeeded with the old queen in the upper story over an excluding-zinc. The weather is probably the cause of your ill success. It would be interesting to know how many of the extensive queen-breeders use the Doolittle artificial cell-cups.—EDITOR.]

The Efficiency Hive

Bees are going to be moved more in the future than they have been in the past. Carload rates on bees will be reduced, probably as low as live-stock rates. We need such system of management and arrangements that a car of bees can be loaded in a day, including all preparations.

When hauling bees on an automobile or wagon we should be able to load them as snugly as brick. The cover should be of the same size as the top and the bottom. The bottom and cover should be interchangeable. This is a simplification that is worth while. The cover must be tin roofed with an air-space over the honey-board.

The cover-bottom I have here shown will require but a trifle over 3 feet of lumber. The tin for the 8-frame hive size can be cut from regular roofing tin sheets 20x28 inches, two pieces from each sheet. The 3/8-inch strips are nailed on top of the tin, and hold it in place on three sides. When it is used as a bottom-board the tin is up and the wax and propolis can be easily scraped from it.

This cover-bottom requires a hive stand, as it reaches just to the front of the hive, and does not provide for an alighting-board. But in a way this is an advantage, as every hive should be placed on some good platform or stand to protect it from dampness.

A honey-board, as used with the

Acme cover, is necessary unless one uses a blanket. The use of cloths over frames and sections is out of date and cannot be tolerated by the progressive bee-man. [We still use them, and would not do without them.—EDITOR.]

Projecting hand-holds are not to be used with the hive, as they take up room and interfere with piling in compact piles. The hand-holes are sufficient.

The advantages of this hive, using the standard dovetailed hive-body and frames, are that you save expense. It is the cheapest cover and bottom made. There is no waste lumber. When you want a cover, if a bottom is handy, you have a cover. The bane of the bee-man is complicated hive parts. I am trying to get this made so as to do away with the separate honey-board, and it will be practicable, I am sure.

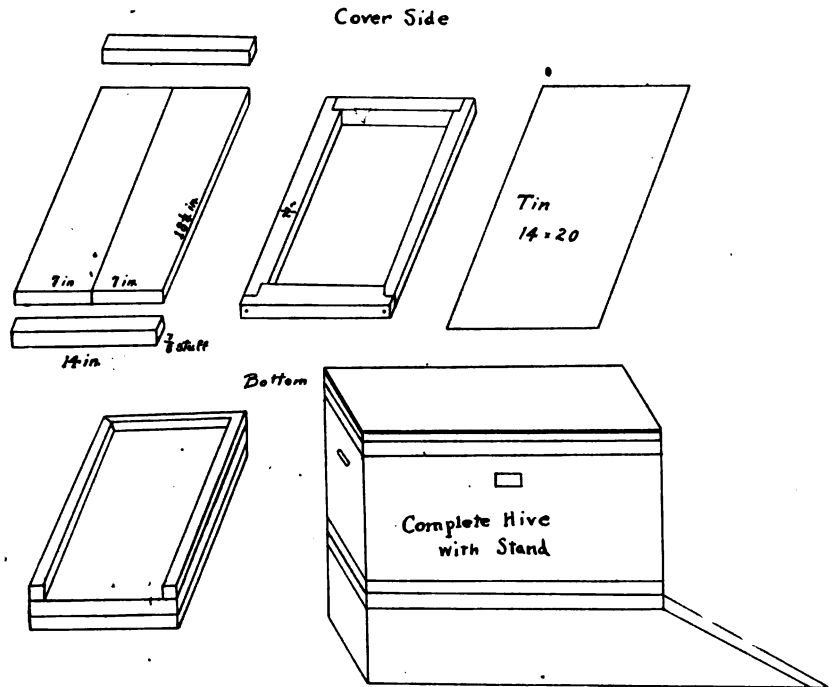
The cover will be compact, and no projecting edges will catch the wind

and blow off. Such a cover will hardly need a stone or brick.

The crack around the top edge of the hive can be seen, and robbing detected much sooner than when one has to get down and look under the cover to see whether bees are getting in. I can get these cover-bottoms, tin, nails, and all for an 8-frame hive for less than 20 cents each. Their cost, made from the best white pine, would probably not be over 25 cents.

There are 12 pieces in this cover-bottom, including the tin, and by a little better designing the number of pieces may be reduced to 10.

A shade-board might be necessary in some localities, and the lack of an alighting-board would be a very serious objection to some people. But the simplicity of the hive and parts appeals to me, and for those who do a great deal of moving it should prove of value.



WESLEY FOSTER'S COVER-BOTTOM.

SOUTHERN BEEDOM

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

Increase and Out-Yard

Instead of making increase at an apiary and building up the nuclei with the intention of later moving the colonies up to a new place to establish an additional bee-yard, it is far better to do this all at one time. One of the greatest advantages is keeping the bees of the newly-made nuclei from returning to the parent colonies, and another is preventing the chance of these nuclei being robbed out, when left in the large apiary.

We use a shallow extracting super

on all our colonies in the early spring for additional brood-rearing room and honey storage; this is also mentioned under the head of "Carniolan and Swarming," in this department. After these supers have served their purpose, and as soon as the bees of the colonies are well at work in the newly-given supers filled with foundation, which have been slipped in between the shallow-comb supers and the brood-nest on the coming of the honey-flow, the former are removed. Almost all of them will still have some brood in them which is sealed. Some will have

a good deal while others may have very little or none. Therefore, it is advisable to change some of the combs so that all will have about an equal share of brood, as some nuclei might otherwise have too much brood to care for properly.

This done, these supers are set on as many new bottom-boards, a cover placed on each, the whole fastened together for moving, and the entrances closed with screen-wire entrance closers. A caged queen is given to each nucleus thus made. All are then loaded on a spring wagon and hauled to the new place, the entrances partly opened, and left alone for a week or more, according to the time the bee-keeper has to spare.

When these are nicely built up another super of combs is given, and you have that many divisible brood-chamber colonies in a new apiary.

“Do It With Hired Help”

That suggestion of friend Wesley Foster, in the May issue, is of greater importance than many bee-keepers can comprehend. There are too many bee-keepers who do most of their work themselves, when they could have it done much cheaper and just as well. The writer remembers when he started out to have more of the general work done by others while he attended to the business side of bee-keeping; toward its expansion and the improvement of the methods of doing things with a minimum of labor and expense, and a maximum of profits. Some bee-keepers doubted the advisability of such a venture. They seemed to think that it paid better to do the work themselves and hire only such help as was actually needed when the bee-keeper could handle it all alone.

Such a method of bee-keeping enables one to enlarge the business to a far greater and more profitable extent than if an attempt is made to do it alone. More apiaries can be maintained. The bee-keeper should consider himself the business manager of his concern, planning his operations with a view of expanding to larger proportions. He should study out systems of management that will enable him to employ assistants as he needs them in the management of the business. Of course, not all bee-keepers have the ability to do such things on a large scale, but many bee-keepers may start slowly at first, and, with a little effort and study, learn how to increase the operations so that in time the business may be a large one.

If you will study any well regulated concern you will find that there are managers whose duty it is to look after the details, who study these matters with a view of perfecting their business systems and methods so that the most profitable ends may be reached. It is the man who uses more brain and less brawn nowadays that will reach the highest success. A man can do just so much work and no more, consequently his goal is soon reached, in the expansion of his apiary business, if the work is done without assistance. Far better it is to have more of the work done by others.



SWEET CLOVER IS A GOOD COVER CROP IN THE ORCHARD; BUT DON'T LET ARSENICAL SPRAY FALL UPON THE BLOOMING CLOVER.

Carniolans and Swarming

We have tried Carniolans, and have found, after experimenting with them for a long time, that they are a valuable race, and that they can be kept from swarming as easily as any other race of bees with the proper management. The trait of excessive swarming has gone against this quiet, gentle race of profitable honey gatherers. Our experience has shown that they require larger hives than other races, and with the proper attention just before the danger of swarming, this trait becomes unnoticeable. The secret, therefore, is in having large hives and keeping them contented and busy.

We have since then adopted the same methods for all other races of bees, with the result that we have no trouble about swarming, although our apiaries number over 30 now.

It is no wonder to us that Carniolans swarm a good deal when kept in a single 8-frame Langstroth brood-chamber. Even a 10-frame Langstroth hive is too small for them. This is due to the prolificness of the queens, and as these breed up early, the above hives

are soon crowded. These are exactly the conditions that mean the much-dreaded swarming, especially to the bee-keeper with out-yards.

We attempted to provide more room to the 10-frame hives by adding a shallow super of combs in early spring. This allowed additional breeding room besides furnishing storage room for honey that was gathered early in the spring beyond that used for brood-rearing. It also permitted the bees to move honey from the brood-combs below into these super combs. This left a less crowded condition of the brood-chamber, and the whole resulted in the production of rousing colonies of bees for the honey-flow.

There was still another trouble to overcome, however. As long as there was a chance for a congested brood-nest to develop, there was a likelihood of swarming. A colony of bees may swarm just as vehemently if clustered on the combs in an upper corner of a large dry-goods box, with plenty of empty space all about the colony, if the brood-nest is a solid mass of brood. The same condition existing in a smaller compartment would make mat-

ters still worse. What becomes necessary at this very moment is to break up that solid brood-nest, and if this is done in such a way that the queen may find new room for her egg laying, there will be no swarming, but a contented colony that will develop into a rousing honey-gathering colony. Such colonies are the ones that are desired by the bee-keeper.

Suggestions are offered for decreasing the swarming desire by giving, not only super room above, but also *below* the brood-chamber. While this may aid, it does not in seasons that are at

all favorable to swarming. The reason for this is explained by comparison with a colony in a large dry-goods box, as mentioned above. As long as the brood-nest itself is left undisturbed the chances of swarming are just as great. Breaking up this solid mass of brood is the real secret, but it must be done before the swarming fever has developed. A colony already having the fever cannot be handled so easily. If it is too late, the best remedy is that of swarming the colony artificially by what has been known as "shook swarming."

which will equal anything I have seen in the North, and that is saying a great deal. Mr. Horton says it was gathered from the locust, a statement that surprised me. Here, what little honey we get from the locust, is very dark and rank; which goes to show that "locality" cuts a big figure in more ways than one.

Moving—400 Colonies in One Place

I expect to leave home on May 14 and move the bees from the New Dublin yard, which is 200 miles east of my home, to a location 100 miles from my home where I already have 120 colonies. Nearly 400 colonies in one location will be an experiment, and while I suspect it may be too many, yet the location is above the ordinary, and we will try it for one year anyway. As to the moving, I am not expecting a picnic. With 250 colonies and about 500 supers and other supplies, all to be moved 3 miles to a railway and 200 miles by railroad—well, it means some work, sure, and I will not dwell on the subject now for fear of getting discouraged when I am primed ready to leave in a few days. I will report later how the trip pans out.

An Early Fruit Bloom

The early part of April was cold, then about the 20th winter took an abrupt jump into summer, rushing everything along at an abnormal rate. The unusual spectacle of wild plum and apple trees in bloom at the same time is seen here this year, and at this date, May 9, we fear that frost may come and kill all this abnormally early bloom. Clover looks well and bees are strong, but unless clover is as early as was all other spring bloom, there will be a long dearth between fruit-bloom and clover.

Location for Out-Apiaries

In establishing out-apiaries, it is not always possible to get just the location desired, and often one has to put up with some inconveniences that cannot be avoided. The picture shows a corner of one of my apiaries, so nicely situated that there is always a tempta-

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

North Carolina

The picture of the apiary of Mr. Joseph Robinson, of Paint Gap, N. C., is of interest to me not because I ever saw the original, but because my father spent some time with Mr. Robinson the past winter. At least half the bees are in boxes and log "gums," but Mr. Robinson is rapidly transferring all into 10-frame Langstroth hives. My father helped him while there in April. The great majority of bees in the mountain sections of North Carolina are still kept in "gums," but the most practical men are gradually discarding them for the modern movable-frame hives. Mr. Robinson is in the mountainous section of North Carolina, not far from Mt. Mitchell, which is the highest peak east of the Rockies, if I am correct. He sent me a walking stick cut from the top of a small spruce that was growing on the summit of Mt. Mitchell, and while I hope it will be a long while before I need it, it is needless to say I value it very highly as a souvenir.

Mr. Robinson keeps pure Italians, and every year imports some queens from Italy. He is alive to the folly of using "gums," as he says that with the frame hives he averages three times as much honey as from the others. It

seems strange, this being the case, that thousands of colonies are still kept in the old style. Judging by what my father tells me, the mountainous section of North Carolina is a bee-keepers' paradise, with much nectar-bearing flora.

Among the plants that yield honey are white clover, basswood, sourwood, poplar, locust, chestnut, and many other trees and shrubs. Bad roads are a drawback. About the most serious obstacle to the country, according to father, and for the warning of timid ones, is the rattlesnake. Other varieties of the "breed" are fairly common, although very little damage is done by these.

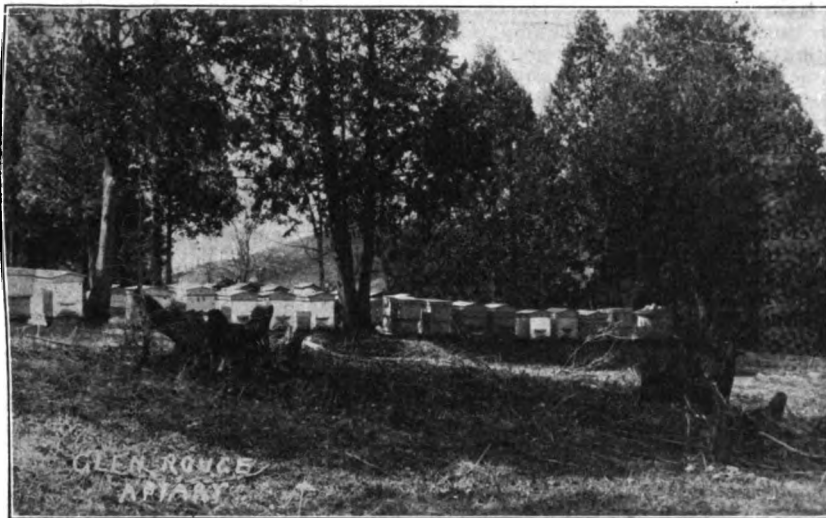
The bee-keepers of North Carolina have a heritage well worth developing. With the splendid climatic conditions, bee-keeping should be a business of pleasure and profit. Much work of the North is needless there, bees wintering well on the summer stands. In the summer season it is not necessary to provide shade, as in the mountains they do not have such extreme heat.

While speaking of apiaries in North Carolina, I am reminded that my thanks are due Mr. E. L. Horton, of Democrat, N. C., for 5 pounds of splendid comb honey sent me, the quality of



NOTE THE BOX-HIVES ON ONE SIDE—MODERN HIVES ON THE OTHER—APIARY OF JOE ROBINSON, OF NORTH CAROLINA.

American Bee Journal

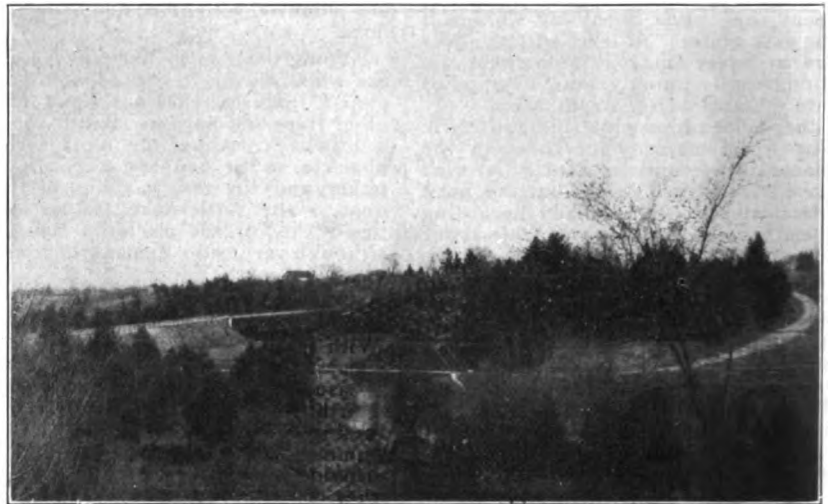


MR. BYER'S MARKHAM APIARY.

tion to lie down under the cedar trees on a hot day and enjoy the scenery instead of working. This apiary is situated in the town of Markham, but the location has no dwelling nearer than 250 yards, and trees are all around the yard. It is on a table-land about 80 feet above the valley and river. Behind this table-land the ground rises about 40 feet higher, so that the protection is splendid. About 30 feet to the left of the picture, a tiny stream trickles along, giving water for the bees, in a sheltered situation. The other picture shows the view looking south from the apiary, the two high bridges over the river being plainly in view.

This apiary always gives me the largest yield of all my bees, and the reason is not clear to me, as the other locations have much more clover around them. One factor that helps the yard, no doubt, is a large quantity of soft maples along the village streets just a short distance north of the yard. Shelter and water of easy access may also help some, especially the latter, as many colonies dwindle in early

spring because of having to fly long distances for water on windy, chilly days.



LOOKING SOUTH FROM THE ABOVE APIARY.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

No Swarms

MR. WILDER:—What is the matter with our bees? We have had no swarms this season, and almost none for several seasons, or since we "Caucasianized" our apiaries. The hives are boiling over with bees, and they have filled all the supers we have.

- Arabi, Ga. J. F. WILLIAMSON.

Like many other bee-keepers, you are losing heavily each season through lack of supers. You should have not less than three supers per colony.

In many cases the Caucasian bees have proved almost non-swarmer;

too much so for the average bee-keeper who wants to make increase by natural swarming. Artificial swarming should be resorted to, and good methods for this will be found in most of our bee-publications.

The Caucasians are not inclined to swarm. This solves a great problem with the extensive bee-keeper, for he does not have to watch swarms in his different yards. It suits us far better to make increase artificially.

Too Much Swarming

MR. WILDER:—I had 7 colonies of

bees in the early spring. They have swarmed twice each, and are still swarming. I fear I will not get any honey this year. My bees are the common black or brown bees. Should I get better stock? J. A. KING
Pitts, Ga.

The common race of bees has a few faults, and one is that they swarm too much. But little honey is produced in such seasons. This is not the worst of it. A lot of weak colonies will be on hand for winter, and winter losses will be large. You should watch them closely from now on, and feed and equalize stores as needed. As for better stock, I refer you to Mr. Williamson's letter in this department.

A Beginner's Questions

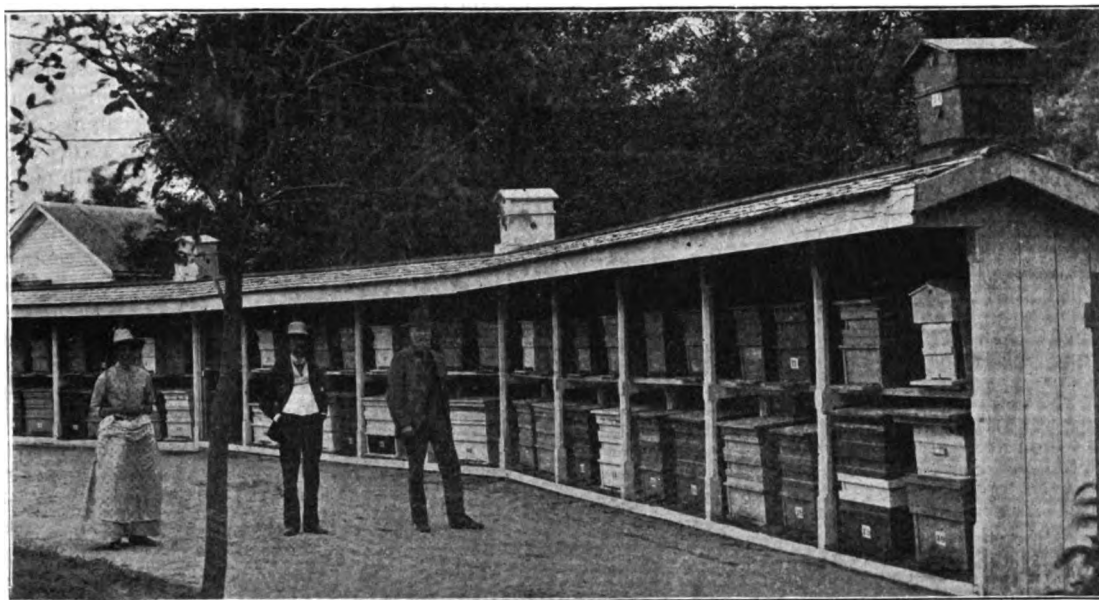
DEAR MR. WILDER:—Are honey-boards necessary when bees are run for chunk honey? When is the best time to transfer bees? How late in the season can bees be "robbed"? How can you keep worms from bees? Milledgeville, Ga. A. S. BLANKS.

Honey-boards as queen-excluders

can be used to some advantage where bees are run for chunk honey exclusively. But if some strained or extracted honey is desired, to pack with the comb honey or to use separately, they are not necessary, as the comb that is soiled from rearing young bees may be removed and the honey extracted.

From April 15 to May 15 is the best time to transfer in spring, and from Aug. 15 to Sept. 15 in the fall. There will be a good honey-flow at that time from cotton. Bees that are in modern hives can be "robbed" any time. Sealed honey can be found in the supers, as they store their honey there.

The best way to keep the bee-moth from destroying the comb is not to keep too much comb in weak colonies. Hive-bodies can be placed on strong colonies, and some of the frames of comb from the weaker ones set in them. These may be given back as the bees build up and need them. It is best to



DECOY HIVES ON THE ROOF OF THE APIARY OF THE LATE WM. STOLLEY.

give them, instead of these, some combs of sealed brood, say one each week. They will soon be strong and will protect themselves from the moths, provided they have laying queens.

Do Bees Love or Hate Moths?

We keep a few empty hives at each apiary in readiness for natural swarms, and also for artificial swarms should we see fit to make them during our rounds. Never has a swarm taken possession of such a hive. But last season we had a number of swarms take possession of hives completely filled with bee-moths. The interior of the hives was lined with their cocoons, and on this account the hives were set apart from the rest of the apiary, and

thought worthless. But the bees considered them good. This season we experienced the same thing, and we wonder whether the bees love or hate their foe, the moth. Or is it their instinct to go into quarters where they will have to spend considerable time cleaning up and getting ready for house-keeping?

[We suggest that the more or less conspicuous position of the empty hives has something to do with their adoption by the bees. The late Mr. Stolley, of Grand Island, Neb., a view of whose apiary is here reproduced, kept several empty hives, ready for swarms, on the roof of his bee-shed. He thus hived many stray swarms, and ascribed

the success to the elevated and attractive position of the abode offered.

The strong smell emitted by a hive containing moths may also have attracted the attention of the scouts seeking a home.—EDITOR.]

A Great Season

So far this has been the greatest season we have ever experienced. This condition exists throughout Dixie. There has been a great increase made and a great harvest of honey well up to all expectations, and in most cases beyond. This means a great uplift for our industry. Naturally much optimism prevails.

CONTRIBUTED



ARTICLES

Value of Combs in Sections

BY G. M. DOOLITTLE.

HAVE SOME questions sent in with the request that I answer them in the American Bee Journal. The questions are as follows:

1. When a flow of nectar comes on gradually, which would be best to use in the sections, starters of foundation, full sheets of it, or sections partly or entirely filled with drawn comb?

At the beginning of a honey-flow the bees are not fully prepared to take care of the nectar that comes in except in empty cells which may remain unoccupied in the brood-chamber. The reason is that it takes 2 or 3 days of

extra flow of nectar above what is needed for brood-rearing purposes, for the bees which build comb to use enough of this nectar for the secretion of wax to produce comb wherein to store surplus honey. Therefore, empty comb enables the bees to store honey sooner than could be done were there no empty cells in the sections or elsewhere in the hive. For this reason drawn comb, or at least a few sections of it put in the first super as "baits," are a decided advantage.

If I could have my choice, however, I should be glad to have all the sections in the first super filled with drawn, or partly drawn combs. I have known several seasons which proved

to me that a super of partly-drawn comb given each colony at the start meant just one more super of finished honey. A colony given a super of combs would have them filled and started on a second super of sections by the time the colony given foundation had made a start.

This difference is more noticeable with the dark or leather-colored Italians than with the golden Italians, hybrids or blacks. The dark Italians cling to the brood-nest where a super has no drawn comb in it, until actually forced out of it. If a bee emerges, and the queen does not stand ready to put an egg in the cell, it is quite likely to be filled with honey. Give such a colony a super filled with drawn or partly-drawn combs, and the bees will store honey in the combs about as readily as in the combs below, until a sufficient supply and long enough time has elapsed for them to be compelled to secrete wax, build comb, or draw foundation in the sections.

Bees rarely work at drawing out

foundation until sufficient honey is obtained to cause the comb-builders to secrete wax. Especially is this true with work done in the supers of sections. Hence, combs in the sections relieve the pressure upon the brood-nest. From this relief comes more brood, and this brood stimulates work in the sections and greater activity in the nectar-gathering field workers. It starts the bees to complete all partly-filled sections, or those having starters, or filled with foundation, or where only baits are used, thus bringing on a general storing above. Having made such a start, they are sure to continue it unless a sudden stoppage of the flow comes through a change in the weather.

Considering the value of drawn combs for this purpose, I have often wondered if some of us were not making a mistake in striving to have all sections, in which the bees had worked, fully completed at the end of the season; a few even going so far as to wish to "feed back" extracted honey for this purpose.

2. When the flow of nectar comes in with a rush, which of the three do you then consider the best?

From years of experience I know that there is no time in which drawn combs can be used to such good effect in this locality as at the rush that comes with the opening of the basswood harvest, when the bees that were one day almost living from "hand to mouth," came in the next day so loaded with nectar that they fell short of the hive before the sun was fairly shining in the tops of the trees. Under such circumstances nothing has been done by way of preparation for such a "down-pour," and 3 or 4 days must elapse before sufficient wax can be secreted to build comb of any amount, or foundation be drawn so that this flood of nectar can be cared for. Here is where the workers for extracted honey, with their supers of ready combs, have the advantage over the comb-honey producers who depend only upon starters or full sheets of foundation in the sections.

The comb-honey producers could do nearly, if not quite, as well by the same means, having ready-drawn combs to store this first rush of nectar in without the delay of building new store-houses. Under such circumstances I once had a colony, fitted up for extracted honey, store 66 pounds in 3 days, while colonies quite as strong had only made a start in the section supers during the same time, further than filling the six sections given them as baits.

3. In using foundation in sections which is better, to fill the section full or to use only starters?

I began keeping bees several years before the advent of comb foundation, and we did not have comb of suitable whiteness to fill the honey-boxes. It was thought that starters of comb were good enough.

So when thin foundation for sections was proposed at \$1.00 a pound, the most of us thought it too expensive to

use more than a triangular piece, having a length of 2 inches on a side as a starter. But as the price lowered, most of our practical bee-keepers began to advocate full sheets, a little short at the bottom to save the "buckle" which often occurred in very hot weather by the sag or stretching when it was being drawn. It is best never to count the cost in producing a crop of honey except in connection with the profits. If, at the end of the season, the balance is on the right side of our book-keeping, it is best not to be afraid of the outlay. It always pays to spend money when the ledger shows that the more we spend the more we make. The question should be, "Will it pay?" instead of exclaiming, "It costs too much!" If it pays, use it. If its use is not attended with a profit, it should be left alone. Spend money, and spend it freely, when it will come back with a profit. If it doesn't, then it is folly to spend it.

Borodino, N. Y.

A Good California Law

BY A. J. COOK,

(State Commissioner of Horticulture.)

OUR LEGISLATURE has just passed, without any opposition, what I believe to be one of the best apiarian bills ever enacted by any State or country. The loss from black brood in California for the past year has been alarming, and as soon as the people of the State realized this, all opposition was drowned. This bill, which I enclose herein, appoints a commission consisting of the State Commissioner of Horticulture and the president and secretary of the bee-keepers' association of the State.

It is the duty of these gentlemen to appoint a State apiculturist, as those will see who read the bill. This man must be specially fitted to have charge of the work. This, I think, is a great point in favor of the bill. This apiculturist and the commissioners are to conduct examinations for inspectors, in order that no one will be appointed who has not passed an examination, and who is not well qualified for this important work.

In these bacterial diseases great caution and no little knowledge and training are required, else the disease may be scattered more than it is cured. Our law will now secure, by rigid examination, only fit men for this inspection work. Our horticultural law has this same good feature, and it has greatly improved the service of our horticultural inspectors. We expect the same of this new law. The State apiculturist, as he goes around, will instruct the several inspectors, giving advice and suggestions wherever needed.

Sacramento, Calif.

[The law in question is too lengthy (about 9 pages) for insertion in our columns. It creates a school of apicul-

ture which every bee-inspector must attend for at least a week annually. The State apiarist, who is practically a chief inspector, receives a salary of \$1800 per annum out of an appropriation of \$5000, the balance of the amount being intended to defray expenses.

The State commissioners mentioned by Com. Cook in the above letter form a Board of Apicultural Examiners, who have power to recommend to the County Supervisors the appointment or suspension of any local inspector. They are to hold an annual meeting, without pay, for the examination of candidates for apiary inspection, and the date of their meeting is to be published in three bee journals. The compensation of apiary inspectors is fixed at \$5.00 per diem and expenses.

Bees brought from another State, or from one county into another must be accompanied with a certificate of inspection, or must be examined at once upon their arrival.

If this law is properly enforced it should prove efficient. Its best feature, to our mind, is the educational part, which provides for a school of apiculture. Every one of our States will have to come to this.—EDITOR.]

Non-Swarming Strain of Bees, Swarm Control, Capturing a Swarm Under Difficulties, Etc.

BY G. C. GREINER.

WHENEVER the subject of breeding a non-swarming strain of bees has been spoken of in our bee-magazines, I have been wondering whether its advocates really meant what they said or whether they were really joking. I am not a scientist, but judging from a layman's standpoint, I would consider such a procedure an utter impossibility, being contrary to Nature's law. To succeed in that line, we would have to go back some 6000 years or more and countermand the All-wise Creator's command, installed at about that time, "Be fruitful and multiply." If this could be done it would have the same effect as to breed a strain of poultry that would lay unfertile eggs only; in either case it would mean the annihilation of the race.

The best we can do towards producing a non-swarming strain is to breed from some of our queens that show the least inclination to swarm. In this we may be successful in a measure, or we may not. For a generation or two we may have the satisfaction that these daughters inherit this much coveted

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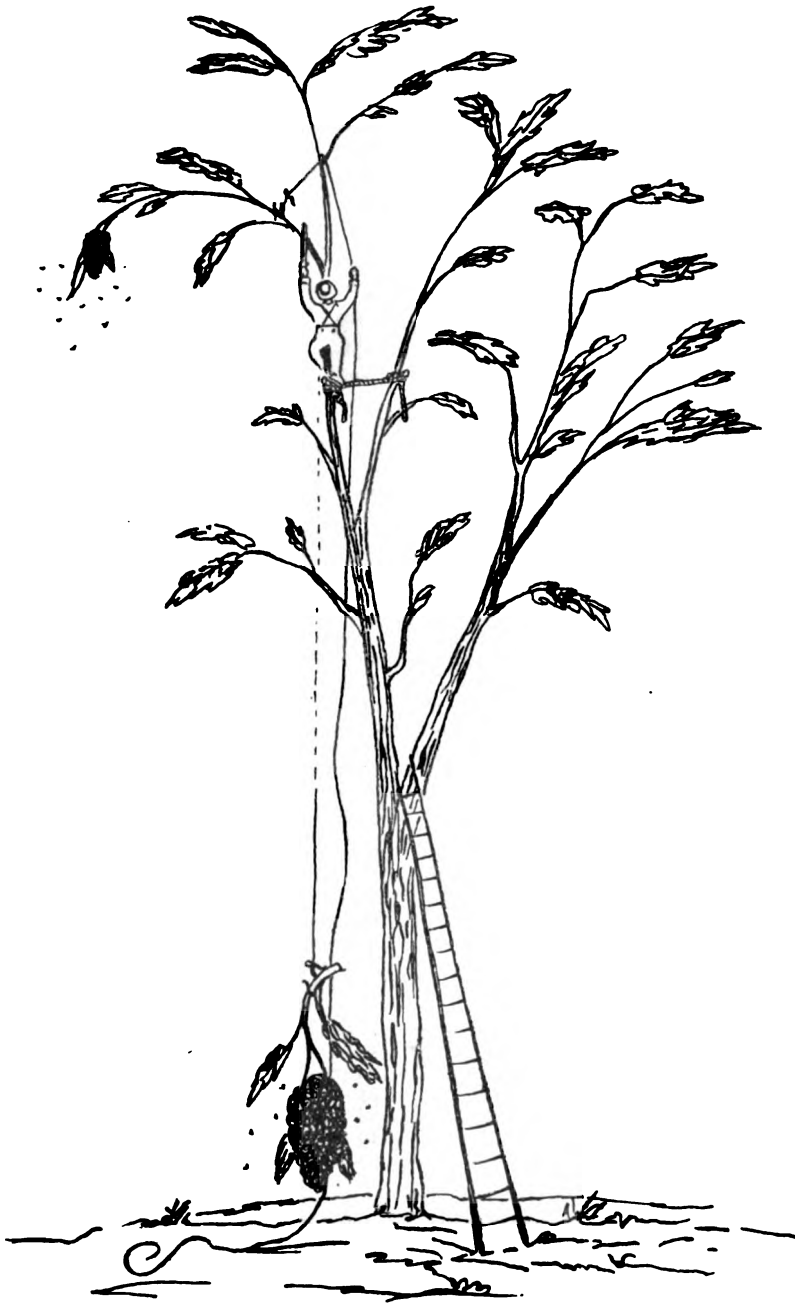


Fig. 1.

FIG. 1.—LOWERING THE SWARM.

trait of their mothers. But there is nothing certain about it. They are likely to revert back to their more remote ancestors and swarm to beat the band. It all depends upon conditions which we cannot control.

Another way that gives us at least partially the benefit of a non-swarming strain is to control swarming by proper manipulation. I have just received Farmers' Bulletin No. 503; its subject is "Comb honey." To the comb-honey producer this bulletin is of special value; it would pay any bee-keeper, beginner as well as veteran of many years' experience, to send for a

copy, if not already in possession of one. A fair portion of space is taken up in a comprehensive way with the subject of "Swarm Control by Manipulation." The various methods as practiced by our most advanced bee-keepers are given, and undoubtedly they are the most practical and in conformity with our knowledge up to the present time.

While the results of these manipulations may be very gratifying, there is one great drawback to nearly all of them. It takes too much time and labor to make them reasonably successful, and this at a time when the

bee-keeper is bound hand and foot with driving apiary work. With the production of extracted honey it is very different. We can control swarming without any extra effort, and this is one of the great advantages derived from the production of honey in this form. If we keep close watch of all our colonies, make sure that they have empty combs at all times during a honey-flow, and this we must do to receive best results in the shape of surplus honey, we have, as a rule, practically no swarming.

As an additional safeguard against swarming, we should allow no old queens in the yard. In connection with supersedure, swarms are liable to issue, and as the introduction of young, vigorous queens is necessary to insure strong, healthy colonies we, at the same time, prevent so-called superseding by doing so.

During the last 10 or 12 years, the time I have practiced producing extracted honey almost exclusively, I have had less than 5 percent swarming under the management here outlined. I had prided myself on having mastered the swarming problem to a finish, but the past season surprised me in several ways. Contrary to all expectation, I can hardly give a plausible reason for it, from Aug. 21 to Sept. 4 about 30 percent of my bees cast swarms, some of them having young queens introduced in the spring.

It has been claimed that during a light but steady honey-flow, bees are more liable to swarm than during a heavy, rushing flow, or no flow at all. This last season seemed to prove this theory. From the first week of August until the end of October, we had just such a flow. Honey was coming in just fast enough to keep bees breeding, but none to store in supers, and, as a consequence, honey being used for brood-rearing as fast as gathered, hives were not as heavy with winter stores as usual.

The accompanying pencil drawing, Fig. 1, describes the feat of capturing a swarm under difficulties. When taking a general survey of the prevailing conditions, and trying to plan some feasible way of capturing the runaways, I was almost tempted, on account of the danger connected with the undertaking, to let them paddle their own canoe. But it happened to be the choice of my yard, the queen I intended to use as a breeder next year. Besides being uncommonly gentle and prolific, this swarm, one-half of a divided one, had given me 120 pounds of white clover, and between 50 and 60 pounds of dark honey during the season—all in all a very desirable acquisition to any yard, and worth the attempt to secure them.

When climbing the tree I found that the branch on which the swarm had clustered was too frail to support a person unless some re-enforcement could be made available. The rope, connecting the two main branches, answered this purpose, and at the same time furnished a support for the operator to stand on. From the drawing it will be seen that when the limb was cut with the left hand, the right hand had to manipulate the hook and line in such a way that the swarm reached its per-

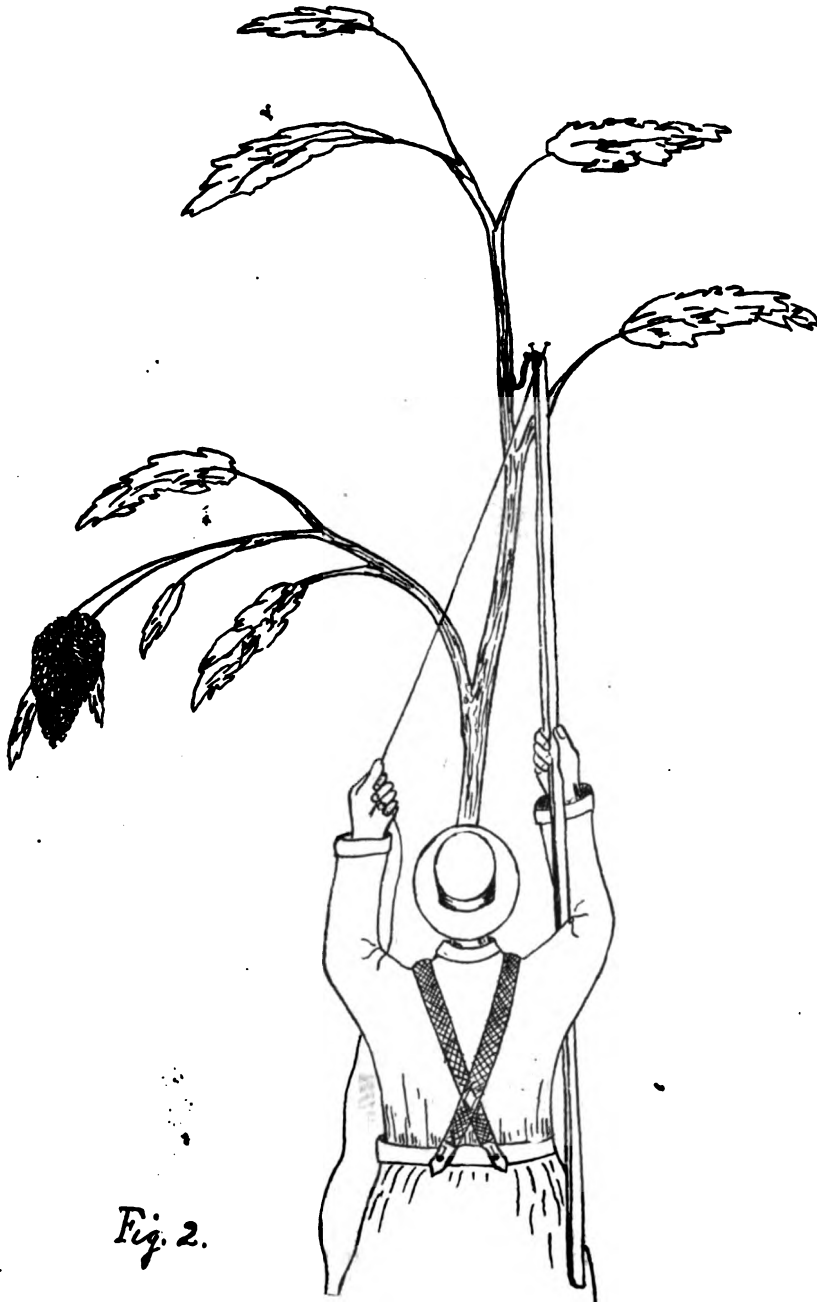


Fig. 2.

FIG. 2.—MANNER OF FASTENING THE SWARM BEFORE LOWERING.

pendicular position without jerk or jar, to keep the cluster intact as much as possible. This was no easy task to perform with one hand, but I succeeded admirably well, much better than I had expected. After the limb with the swarm had been disconnected and was suspended on the hook, I had both hands to manage the line on the gradual downward course of the swarm.

Figure 2 shows the manner of casting the hook and line over the little limb, that had to serve as a pulley when letting down the swarm. A similar

operation was necessary to make the hook catch the limb on which the swarm was clustered. Neither trick would have required very much ingenuity if a person could have stood on the ground or on any other solid foundation, but 50 feet from the ground, standing on a springy rope with one leg, while the other is clasped around the tree as the only support in this dangerous position, it is a very different proposition.

At the foot of the tree is a fair representation of the swarm as it appeared after it reached the ground. The end

of the line was fastened to the tree, while the operator descended and housed the bees.

A fair estimate of the height of the tree, the perilous undertaking, etc., can be gained from the fact that a 22-foot ladder had to be used to reach the first fork of the tree.

La Salle, N. Y.

Protection from Stings

BY EDWARD F. BIGELOW.

BUT they will sting!" That is the insistent, persistent argument urged against honey-bees by the beginner. Did you ever try to be a missionary in popularizing honey-bees as a matter of natural history or of economic interest? Then you know how it is. Talk with all the power and enthusiasm that you possess of their habits, instincts, structure, parthenogenesis and metamorphosis, and interest follows you closely. Open eyes and open mouth, say "How interesting!"

Thus encouraged, to clinch the argument you tell of the ease in starting. A colony costs so little—how easily divided—nothing to do but to buy empty hives. You dilate on the extractor, you build an imaginary pile of luscious sections—so high—you get 20 cents a pound in open market, and 30, or even more, for choice home trade. You let your imagination loose, you soar aloft in the spirit of "blessed bees." You outdo the man who borrowed a hen, hatched out 15 chickens, then from each when grown 215 chickens, then 3215, and then returned the borrowed hen (as if one would miss just one poor old grandmother hen out of a flock of 3215). So you surpass even the "blessed bee" man. You graphically picture a sunny, sloping field with woody, northern background, 500 "little happy hives," outapiaries, country estate, a beautiful pair of horses, and an automobile thrown in. Then your enthusiasm is suddenly annihilated, your Utopian picture obliterated by that one little convincing exclamation, almost petulantly given, "But they will sting!"

Let's "take the bull by the horns," as I fancy that figure of speech easier and less painful than to "take the bee by its sting," and frankly admit that they will.

Sting! Of course they will—sting, as an up country farmer who called to see my bees not long ago said, as he closed a thrilling story of the bees that got up his trousers' leg. "Sting! Gosh all hemlock! You ought to have seen them bees sting!" The man's diction would have been more stingingly effective if he had said, "Fell those bees sting." However, his classic reference to the hemlock was happy, for when the bees got fairly waked up, they put in their poison as effectively as the hemlock tea put poison into Socrates.

But I am wandering from the thesis—bees will sting. Of course, with all

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rules there are exceptions, which, in this case, hardly except or prove anything.

First, there are the Caucasians, great honey gatherers, that do not sting much, at least on paper. Then there are the "gentle strains of Italians," most of which crawl delightfully calm and placid over the comb as you hold it up to the admiration of a friend.

"But they will sting!"

"Oh, no, they won't."

You open a hive with the Maeterlinckian "large, slow gestures," and you say, "See how easy it is. Not even gloves or veil needed." You show a super well packed, and you say, "Great honey gatherers these are; none better in my apiary."

And all the time you are saying to yourself, "How they did sting when I opened the hive that rainy morning, hunted for the queen, found her, took out the frame and put it in an exhibition single-frame hive."

Or there was that day in late November, when you opened the hive to see if everything was right for the winter.

Sting! On both these memorable occasions, the thermometer said cool—but you know it was a lie—the hottest on record. It was a reminiscent day. It took you back to boyhood hours when you plowed up a yellow jackets' nest, and your trousers, your shirt, your face and your hands were speckled with crescentic yellow polka dots. The horses, you remember, left at once the plodding, prosy life of agriculture and entered the race course across the field, and you quickly decided to go in the same direction as an expression of sympathy.

Yes, any bees worth having will sting on occasion. And I'm mighty glad they will. What a lot of suffering, ill-kept apiaries there would be if we didn't have the sharp stings to punch out of the ranks those bee-keepers who don't really love bees. If it wasn't for the stings everybody would keep bees as they keep cats, and that would make you sick of honey.

So when this statement confronts you, "But they will sting!" don't dodge it. Just say, "Sting! of course they will." I wish they would sting ten times as bad. We then would have fewer bee-keepers who don't really appreciate these wonderful insects, and we would have less joy in overcoming the difficulties of bee-keeping.

When you handle bees without veil or gloves, it is like having your photograph taken—it is a special occasion—it doesn't show you as you ordinarily are, nor the bees either. And now let's make another confession, public opinion to the contrary notwithstanding. The experienced bee-man has nerves, even if he knows how to control them, and he can feel. Pain to him is pain, the same as to any one else. And he can cast no hypnotic spell, nor do the bees "know him" any better than they know any one else of similar tempera-

ment, disposition and apiarian knowledge.

So it is best to be frank at the first, and not to try to popularize bees on a false basis. Yes, bees can sting, and they do sting, and they won't make an exception of you. Perhaps the bees of some colonies won't sting, but they will not be your favorites—that is among the Italian bees. And there are certain times and certain conditions of the hive when bees with careful handling will not sting; that is, not much. But if you are a faithful and enthusiastic bee-keeper you cannot limit all your handling to those particular innocuous periods. It is in the unfavorable times that you will need the best protection.

For a long time I have made a careful study of bee-veils and bee-gloves. How perfectly protected one's head looks in the illustration that advertises the veil! But most veils in actual practice fail to reach the ideal of the picture. The loose ones that slip over the hat won't work. The bottom must be firmly fastened down, as the bees will not make the attack horizontally. Some of them have an insidious, not to say familiar, manner of crawling up under the edges. Then as the apiarist bends in his work, the veil "flops" against the cheek or the nose, or especially the neck, and that is exactly the opportunity that the vindictive insect will not allow to pass unimproved. "The Globe veil looks well, and the theory is right. The stiff bands are to hold the veil away from the face. And so they do. But they leave the neck unprotected. I have never felt that it is fair play to let the nose and the cheeks go free, and have a band of stings around the neck.

After much experience I have found the most satisfactory veil to be one that ties around the body, and may be pulled fairly taut so as to hold all parts away from the face. The hat brim must be really broad or the veil will not be held far enough away from one's features. To meet this objection I have made a "skeleton frame" of stiff yet light weight wire to slip over the hat. That holds all parts away from the face, and not the most active and ingenious bee can crawl up under it. It gives coolness, lightness, and absolute immunity from stings. In brief, it is the best that I have ever tried, and I have tried all that I ever heard of. It is the only one in which I am sure that I shall not get stung on the head.

On most questions pertaining to bees, I suppose that I shall be studying and investigating as long as I live. The rubber-glove question is an exception. So far as I am concerned, I have settled that for all times. Rubber is not the proper material. It is not a question of immunity nor non-immunity from stings. The vital point is preliminary to that, and is comparable to the famous recipe for cooking a hare—first catch him. With gloves the supreme points are:

1. Getting them on.

2. Wearing them.

3. Taking them off.

During warm weather rubber gloves on perspiring hands fail to meet these requirements. Protecting the hands from stings while at work with bees isn't much different in principle from protecting them from stains while weeding the garden, or from scratches when pulling up briars. The prime things are comfort and convenience. Rubber gloves afford neither.

The ideal glove should be of some woven fabric that will prevent the passage of stings. Long cotton gloves with an elastic band to bind them firmly around the arm just above the elbow have the right form. I wear them when stings are most to be expected. I am not in favor of oil-skin gloves. Plain hard cotton cloth is the best material. A secondary pair of gloves for special occasions, a cold or rainy day for instance, may be bought at most clothing stores for 10 cents. I have found it convenient to protect only the left hand, and use that for the dangerous work.

Such cotton gloves are not as good protectors when new as when they have been used a little; then popolis, comb, etc., give them a waxy-hard coating and filling through which stings will not pass. But in agreeableness this treatment of the gloves is much better than oiling. With such an equipment you can meet "But they will sting" by "No, they can't sting." I have worked for half a day at a time under unfavorable conditions, performing for certain colonies most meddlesome operations, but not a bee reached through to lance me.

Arcadia: Sound Beach, Conn.

Swiss Bee-Keeping

BY C. P. DADANT AND ED BERTRAND.

THE discussion which has taken place at different dates, in the American Bee Journal, between Mr. Getz and our Swiss friends, may not seem useful to some of our readers. Yet it brings out two facts: First, the Italian bee, which is so much prized in the United States, and which has evidently proven better than the black race to fight European foul brood, does not maintain its reputation in Switzerland. Whether it is owing to a better grade of bees in the Swiss valleys, or whether the moist and cool climate of Switzerland is unsuitable for the Italian race, the testimony of our Swiss correspondents cannot be disputed. It is worth while to investigate this, for we have, on the Pacific coast, a number of regions where the climate is very similar to that of Switzerland.

Second, the Swiss bee-keepers are carrying on a desirable method, if it proves practical, that of keeping "mating stations" where only selected drones are permitted to exist. It remains to be seen whether it is possible to so isolate such stations that there

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will be no danger of matings with distant apiaries. These matters are worthy of investigation.

We must bear in mind that, in spite of our boasted advance in civilization, Switzerland is ahead of us in many things. It is the oldest republic in the world, and the most democratic. It has things in practice which we are only planning to try, the initiative and referendum, and government insurance. One of our statesmen, in opposing these reforms, asserted that Switzerland has less illiteracy than the United States, and is therefore better able to progress. So there is no disgrace in our investigating the Swiss ways.

The article of Dr. Brunnich, in the May number, page 167, was put in type early in the month, and a proof was sent to Mr. Bertrand, of Geneva, the former editor of the *Revue Internationale*, and author of the book, "Conduite Du Rucher" (Apiary Management), which has been translated into a greater number of languages than any other bee-book in existence. The cut of the Burki-Jeker hives, given on page 167, was taken from this work. Mr. Bertrand is of nearly the same age as our Dr. Miller, and has also a very thorough experience, acquired near Geneva. He uses the Dadant-Langstroth hanging-frame hive. We quote extracts from his reply:

"The Burki-Jeker hive, also called 'Schweizer stock,' was due to the improvements made by Father Jeker, a Catholic priest, former president of the Swiss Association. One of the merits of this hive is to be well suited for pavilions (house apiaries) with interior rooms in which the bees may be examined without causing robbing, since the colonies are thus protected from outside bees, and one is less often stung.

"In these closed rooms one has all the tools under the hand, and one may work in all kinds of weather. Moreover, the hives in a pavilion take much less space.

"However, these divers advantages are counterbalanced by less convenience in the visits. Pincers are required to remove the frames one after another, and they must be placed successively in a box at hand. To examine the frame which is the nearest to the entrance, it is necessary to remove all the others. But one becomes used to these maneuvers.

"My friend Jeker and I have often discussed the advantages and disadvantages of the Swiss hive as compared with the Dadant hive. He tried ours and appreciated it. I tried the Burki-Jeker hive at the Geneva Horticultural School, where I was professor of bee-culture for a long time.

"Our bees swarm but little, and I believe that the use of large hives, and the habit we have of enlarging the brood-nest gradually by adding already-built combs, has a tendency to diminish the issue of swarms. But in some seasons nothing prevents the swarming fever.

"Referring to the article of Dr. Brunnich, page 167, I agree with him on several points, but he is completely in error concerning the sources of honey and its quality, in Romanic (French) Switzerland. We prize especially our first crop honey, which is white as compared to the dark or second crop honey. It is mainly white honey which is produced here. The honey from the pines is considered by us as inferior, and is not an important source. Our principal crop is from sainfoin or esparcet, yielding the very best honey. The celebrated Gâtinais honey is sainfoin honey. We also have the dandelion—but in less quantity than in German-Switzerland—sage, fruit trees, locust (an uncertain crop), etc. We usually separate the two crops and keep them apart.

"On the Italian bees, I agree with Dr. Brunnich. I have noted here that, in

the spring, the Italians fly out too early in the morning and that many are lost, especially in the mountains. Likewise they rear too much brood in the summer and fall.

"As to the black select queens reared by our German confederates, their methods are certainly judicious; but the results have not given queens superior to ours. At least those which our French Swiss have bought from time to time do not prove worthy of note. The average yield of our bees is superior to that of German-Switzerland, as statistics show.

"We have more hybrids in our apiaries than they have in German-Switzerland, for their leader, Kramer, has objected to the importation of bees, by the members, but our bees are none the worse for the mixture."

Geneva, Switzerland, April 25.

DR. MILLER'S ANSWERS

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.

Italians and Blacks

If one has common black bees and Italian hybrids, how much more honey could you reasonably expect them to produce per colony after they were Italians by requeening?
INQUIRER.

ANSWER.—I don't know. There may be a loss instead of a gain. Depends upon the kind of bees on hand and the kind introduced. I commenced with pure blacks, and the introduction of Italians likely increased my honey crops 25 to 50 percent. Then I increased perhaps as much again by constant selection and breeding from the best. But if I should now introduce an Italian queen into one of my best hybrid colonies, I would likely get less honey as a result. At a rough guess, I should say that to introduce an Italian queen of best stock into an average black or hybrid colony would result in a gain of at least 25 percent.

Requeening—Value of Colonies

1. I have 2 colonies of black bees in box-hives. I should like to transfer them to modern 10-frame hives this spring. Is during fruit bloom the best time?

2. I would like to Italianize. When would be the best time to do this? Could the new queens be introduced when the bees are put in their new hives? Could this be practiced on full sheets of foundation, wired?

3. How much is a colony of common black bees in a box-hive worth in the spring, summer, and fall?

4. How much is a colony of Italian bees in a modern hive worth, including super, sections, etc., in the spring, summer, or fall without the super?
NEW YORK.

ANSWERS.—1. For years that was considered the best time, but nowadays many prefer to wait until the colony in the box-hive has swarmed. The swarm will be hived in a movable-frame hive, and then 21 days later,

when all the worker-brood has hatched out the transferring will take place.

2. On some accounts in the fall, or at the close of the main honey-harvest, is as good time as any to introduce a new queen, as it is likely to interfere little with the working of the colony; but, of course, you will gain something in time by an earlier introduction. You can introduce her at the time of transferring, or you can take the time of swarming. You will be wise to use full sheets of foundation wired or splinted.

3. There is no rule about it, and it may vary anywhere from \$1 to \$5 or more.

4. Nor is there any hard and fast rule about this, although the variation may not be so great as with box-hives. It may be from \$5 to \$10 in spring, and \$2 or \$3 less in fall.

Shook Swarms—Bottom Starters

1. Is it a good plan to give shook swarms a frame of brood?

2. If queen-cells are started will they cause swarming?

3. Have bottom starters of foundation in brood-frames ever been used?

4. Has the queen the power to fertilize eggs or not?

5. Would transferring eggs from worker cells to drone-cells, or *vice versa*, prove it?
NEW YORK.

ANSWERS.—1. Yes; it avoids the occasional swarming out. The poorest frame of brood will answer.

2. I am not sure just what you mean, but there is always some likelihood of swarming when more than one queen-cell is in a hive, provided the colony is in condition to swarm and honey is yielding well.

3. I am not sure whether any one else has ever tried them, but I have. But I had no use for anything of the kind after I found I could use full sheets of foundation clear

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down to the bottom-bar by the aid of foundation splints.

4. Sure. She fertilizes all but the drone-eggs.

5. Yes, provided bees mature from the transferred eggs.

Sealed Covers—Re-stocking

I am a young bee-keeper. I had 7 colonies last fall, and put all of them under cover on the south side of a shop. I thought they would be good and strong in the spring, but when I set them out last week I found only 2 alive. These are good and strong. I had sealed covers on them, but they looked as if they had been pretty damp. They all had plenty of stores except one.

1. Do you think the dampness killed them? What plan would you suggest for me to take next winter?

2. I want to get more bees on the combs than I have now. Would it be best to order them by the pound from some of the southern States? Please advise me which is the best way to stock up, as I am very anxious to have a small apiary.

ILLINOIS.

ANSWERS.—1. Likely the dampness had much to do with it. With only a single thickness of board for a cover, it would get quite cold, and the moisture from the bees would condense on it and fall in drops on the bees. To avoid this, have a super or some kind of a rim over the hive, and have this filled with rags, crumpled newspapers, planer shavings, or something of the kind; this filling resting on burlap which is directly over the frames. Even with the covers just as you had them, you could pile a lot of packing on top of the covers, and this would help a great deal, for it would make the sides of the hive colder than the cover, and the moisture would settle on the sides instead of on top. It would be a good plan for you to find within 10 or 20 miles experienced bee-keepers who winter successfully, and find how they winter.

2. That depends upon what you can buy them for near home. Find out what that is, and then compare with what they would cost from the South. If you find it better to buy near home, then you can use your empty hives for swarms.

Number of Frames in a Super—Miscellaneous Questions

1. How many frames would you advise putting in a 10-frame extracting-super in order to get nice, thick combs, using full sheets of foundation? I think it is easier to uncap thick combs. Will not bees build brace or bur combs if the extracting frames are too far apart?

2. Which would be the best way to put in screws on the bottom-board so you can get the best results out of the bottom-board when using hive-hooks, and arrange it so you can always have the bottom tight against the body so you can use an Alexander feeder underneath at the end of the hive, and so either side of, the bottom-board could be used, leaving the feeder under the hive the whole season? Which are better, hive-hooks or hive-staples?

3. What kind of foundation is best to use in the extracting frames?

4. Will a virgin queen sting a person who is handling her?

S. DAKOTA.

ANSWERS.—1. Either 9 or 8 frames will work well. No trouble with combs built between in either case. If only 8 frames are used, it will increase the space between combs only about $\frac{1}{2}$ inch, and bees will not start an extra comb in so small a space.

2. I have had almost no experience with hive-hooks, and a great deal with staples. The staples work well. Whether the hooks

would work enough better to pay for the extra expense I don't know.

3. If you use shallow extracting-frames, you can use light brood foundation, only you must be careful about turning the extractor too fast while the combs are new. Indeed you can use light brood with full-depth frames if you turn the extractor slowly, extracting only a part of each side and then reversing.

4. No.

Advantage of Two Supers

How much of a disadvantage is there as to supers in comb-honey production, when from lack of numbers of same only one is on a hive, and that being full, the hive is without a super for say 2 or 3 hours, that it takes to empty the super and put in new sections? Two hours may seem long for that, but an account should be taken that there may be more than one hive to be relieved, and that one makes one thing of emptying all supers, cleaning and fitting and then replacing all. This compared with having two supers, so that while one is off the other remains on. So doing, of course, the colonies, for the few hours that the supers are re-organized, are out of work except in the brood-chambers.

PENNSYLVANIA.

ANSWER.—I have some doubt whether there would be any appreciable difference between putting on the empty super at the time of taking off the full one and a delay of 2 or 3 hours. During that delay the fielders would keep right on at work, only there would be a little congestion in the brood-chamber. But I would count either way wasteful; that is, I would count it wasteful to let a good colony have only one super at a time to work on. In the heart of a good harvest I would count it a poor colony in my apiary that would not be working on 48 to 72 sections at a time. Each colony will have 4 supers oftener than 3, and sometimes a colony will have as many as 7 supers at a time.

Cell-Protectors and Nurseries

1. In rearing queens, do you use cell-protectors? If so, give the plan. I am told by a bee-man that by using them I can hatch 6 to 10 in one nucleus, that the bees will feed them, and that I can then turn them out one at a time and remove as fast as they are mated. If you don't like that plan how would it do to hatch them, then put them in the queenless hives and nuclei to mate? Will not the queenless colonies accept them while virgins?

2. What kind of a cell-protector do you think is the best? How many days before hatching should they be put over the cells?

KENTUCKY.

ANSWERS.—1. Let us be careful to discriminate between a queen-cell protector and a nursery. The West queen-cell protector protects all of the cell except the tip. The workers will not tear open the tip end of a queen-cell, but the protector does not hinder the young queen from emerging and running at large in the hive. On the other hand, no virgin can get out of a compartment of a nursery, nor can any bee get into it, except in the case of the Stanley nursery, which allows the passage of workers but not queens. I have never made much use of queen-cell protectors, and they cannot be used in the way you say, for any or all queens can get out of the protectors and kill each other. I have made a good deal of use of the Miller nursery, and a queen-nursery can be used in the way you mention, at least to a certain extent; that is, the virgins can be allowed to emerge from their cells, and

you can remove them as you wish. But they cannot be mated, and must be removed and put in a nucleus or full colony to be mated. The workers cannot always be relied upon to feed the virgins in the nursery, but you can provide them with queen-candy. A queenless nucleus or colony will accept a virgin with proper precautions, but not always so readily as it will accept a laying queen.

2. I know of only one kind of cell-protector, the West, and I like the Miller nursery best, as might be supposed. The manner of use is very simple: The riper the cell is when confined the better, and I have sometimes put in the virgins after emerging from their cells. Of course the cells must be cut from the comb before being put in the nursery. A nursery is merely a convenience to hold the cells or virgins until they are wanted, and a virgin can be thus held 10 days or more, but the shorter the time the better.

A Good Location

How many colonies can I keep in one yard, and about how much comb or extracted honey could I get in one year, in this location, if my bees had good care?

I will name 10 of the most important honey-plants: Pussy willow, fruit blooms, raspberry, rock maple, vine maple, wild raspberry, wild blackberry, white and red clover, dandelion and fireweed. The fireweed lasts from the middle of July until frost, and the rock maple grows from 6 inches to 4 feet in diameter. It sounds like a swarm when the bees are working on the two. Besides these flowers I have named, there are 20 or more which the bees work on. Bee-pasture lasts from April 15 to the middle of September.

There were many wild bees here, and I have found as many as 11 swarms in one day; but now they are pretty well cleaned out.

WASHINGTON.

ANSWER.—That's a fine list of honey-plants, and if the white clover, wild raspberry are abundant, you ought to have no trouble in keeping 100 colonies and getting in a good year 100 pounds of comb honey or 150 of extracted per colony. But that is on the supposition that they have the best attention, and not merely attention at swarming time.

Questions About Queens

1. Is there any way to tell how good the queen is in a weak colony, during brood-rearing?

2. Is there any way to tell whether queen-cells are built for swarming or for superseding?

3. If a young queen is given to a colony in the spring, will swarming be retarded, and if so, to what extent? That is, how much more crowding will they stand, or the reverse?

ARIZONA.

ANSWERS.—1. No. She may lay enough eggs to keep a weak colony supplied, but not enough for a strong colony. Yet even in a weak colony a very poor queen may not keep the cells filled with eggs in an orderly manner, but will skip more or less cells. Even in a strong colony you cannot tell how good a queen is merely by looking at her brood. The most prolific queen is not by any means always the best. To learn how good a queen is you must wait to see how much honey her bees will store compared with others.

2. No. But you can often make a good guess. If 10, 12, or more are started, it is a pretty safe guess that swarming is contemplated, especially if at the usual time for

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swarming. If only 2 or 3 are started, like enough it is a case of superseding.

3. If a queen that has been laying only a few days be given at the beginning of the swarming season, and if the colony has not yet made preparations for swarming, there is very little chance of swarming that season. The same is true to a greater or less extent if the young queen be given earlier. I am not sure about the *retarding*, but the chances for swarming are greatly lessened by the giving of a young queen. When you ask me to tell just how much crowding they will stand, you're crowding me in too tight a corner. Fact is, I don't know. I think something depends upon the queen, and perhaps still more on the bees. With some bees, a vigorous young queen could probably not be forced to swarm by any amount of crowding, provided the queen were not given too early, and from that it will shade all the way down to where allowing only room for 25 pounds of honey might induce swarming.

Queenless or Very Strong?

I have 8 colonies, but one seems to fly more than the rest. What is the reason? At times when there is not one bee flying from the 7, there are many flying from the one mentioned above. PENNSYLVANIA.

ANSWER.—I don't know. Sometimes a very strong colony flies more than others. It may be more excitable than the others. It may be excited by the loss of its queen.

Transferring—Choosing a Location

1. I am a beginner, having 2 colonies of bees in "box hives." Will you please give me the best way to transfer them to a movable-frame hive?

2. Do you think this (eastern North Carolina) is a good place for bees?

3. I wish to requeen my bees after transferring. Please give me a good plan for requeening.

4. Do you think it would be a good place to locate an apiary in a locality where there are about 300 acres of cotton planted each year, 400 acres of corn, 200 acres of peas, and 50 acres of tobacco; in which there are 50 colonies of bees in box-hives within 2 miles?

5. What size of hives do you think best for this part of the country, when running for comb honey? NORTH CAROLINA.

ANSWERS.—1. Wait until they swarm, give the swarm in a movable-frame hive, set it on the old stand, and set the old hive beside it. A week later move the old hive to a new stand 6 feet or farther away. That will strengthen the colony in the new hive, and give you a good lot of surplus if there is surplus to be had. In 21 days from the time the swarm issued there will be no brood in the old hive except a little drone-brood, when you will break up the box-hive, fasten in frames any good straight worker-comb you may find, and fill up the new hive with frames filled with foundation.

2. From what I have heard I think it averages fairly well.

3. You probably mean to send off and get a queen by mail, and with that will come directions for introducing. The plan quite generally used is to remove the old queen as you receive the new one, put the cage in the hive between the frames of brood, and let the bees release the queen by eating through the candy. Sometimes the plan is to have the candy so covered that the bees cannot get at it for a day or two, which is considered a little safer than if the bees should release the queen too soon.

4. My guess should be that bees would do well there; but it is hard to make a safe guess with no greater knowledge. In some places cotton is a great honey-plant, and the same may be said of tobacco; but I don't know how it does in your locality.

5. Most likely the 10-frame.

How Many Colonies?—What Kind of Bees, Hives, Etc.?

1. I desire to start in bee-keeping, and have had no experience in handling bees in movable-frame hives. I am at present employed in a railroad office as night telegraph operator, with hours from 1 o'clock a.m. to 10 a.m., and do not know how long I shall be located here. Which do you think would pay me better, to get only 1 or 2 colonies of a good strain or start with 10 or 20?

2. What kind of bees do you think are the best honey-gatherers?

3. Which hive do you recommend for a beginner, the Tri-State, Dovetailed, or Leahy telescope; also which size of frame, 8 or 10? (I am located in northeast Missouri.)

4. Which do you recommend for a beginner, comb or extracted honey?

5. Which frame do you think is the better, the Hoffman or loose top staple-spaced frame, and which is the easiest to handle?

6. What frame do you use? Also what size section or extracting frame?

7. What do you think of hives made of yellow cypress or redwood? MISSOURI.

ANSWERS.—1. It is better to have two than one, but with no experience it is hardly wise to go beyond three.

2. Taken all in all, there is perhaps nothing better than Italians. A cross between Italians and blacks may do as well in the first generation, but they are more likely to run out than the pure Italians.

3. These all have the regular Langstroth frame, 17 $\frac{1}{2}$ x 10 $\frac{1}{2}$, the size to be recommended, and aside from this the particular form of the hive does not matter greatly. The dovetailed has the advantage that it is the one most generally in use. As to the number of frames, the 10-frame is decidedly better for a beginner, and like enough for the old stager as well.

4. For some, one may be best; for some, the other. For the greater number extracted is probably better.

5. Preferences differ. Some like the Hoffman, and others would not have it around because the bees glue the frames together making them harder to handle than the other kind of frames. With the metal spacers latterly used on the Hoffman, it is not so objectionable.

6. I use the Miller frame, which is a plain Langstroth frame with common galvanized shingle nails for side-spacers and small staples for end-spacers. I use the same for an extracting-frame, although if I were going extensively into extracting I would likely have a shallower frame. I use the section most generally in use, 2-bee-way 4 $\frac{1}{4}$ x 4 $\frac{1}{4}$ x 1 $\frac{1}{8}$.

7. I have had no experience with them, but from what I have read I suppose they are good.

Superseding—Rearing Queens

1. I have noticed you said, on one occasion that you left superseding to the bees. In that case, you could probably tell me the percentage of queens that live 1 year, 2 years, 3 years, 4 years, and 5, if any?

2. I propose rearing a few queens from an imported queen. I have never found it a very slow process. I have an apiary of 60 or 70 colonies, and have five or six dollar queens. I have a location 4 miles from any other colonies, and 10 miles from any

would I require to re-see say 25 queens and have them mated in that yard? Would you take 2 colonies, one for drones and one for cells?

3. The horizontal method appeals to me as being more simple than any other that I have read of. What do you think of it?

4. Would a 2-frame nucleus be large enough; say 4 of these in a 10-frame hive properly divided? Would you make these nuclei at home, and then haul them to the queen-rearing yard?

5. With drones in all the hives, more or less, as in the swarming season, how would you dispose of them? I have your "Forty Years Among the Bees," but you do not seem to have had this mating question to deal with. MANITOBA.

ANSWERS.—1. It would take the figuring up of a number of years to find such an average. I have just looked up the year 1912, and find that the year opened up with 31 percent of the queens from the previous year, 64 percent of the two years previous, and 5 percent of three years. Another year might give quite a different story, as also might, and almost certainly would, a series of 10 or 20 years. For surely it will not prove the rule that there will be twice as many 2-year-old queens as 1-year-olds. Why that happened to be so in 1912 I do not know. Neither will it generally happen that there are no 4-year-olds, although 5-year-olds are very rare.

2. No great outfit is needed. All that is essential is to have the 25 nuclei and a colony with drones, unless, indeed, you do without the latter colony and manage to have the drones in your nuclei. No need to take the colony with your best queen. Let her stay at home, and merely take cells of her stock with the nuclei. I take it that you will use your regular brood-frames of full size, so the only special thing needed is the nucleus-hives, and you can do without them if you use a full hive for each nucleus.

3. I am not certain I know what you mean by the horizontal method, unless you mean several nuclei on the same level in a hive, and that certainly is good. Yet as a matter of convenience, of late years I have generally used a full hive for each nucleus. You have the advantage of mutual heat when you have several nuclei in one hive, yet in hot weather that does not make so much difference.

4. Yes, a 2-frame nucleus answers well. I wouldn't form the nuclei at home; merely prepare for them at home. That is the chief beauty of hauling the bees off to a distance of 3 or 4 miles; you can divide them up as you like, and they will stay where they are put without precautions. In a 10-frame hive you can manage to have 10 frames, each well filled with brood and well stocked with bees. After they have stood queenless in the home apiary perhaps two days, staple on each comb, centrally, a queen-cell. A day or two later take this hive to the out-

put one of the frames wherever nucleus. At the same time you are rearing another hiveful of brood and when queenless for two or three days of these given to each nucleus, unless you

by. Lay out the nuclei, unless you have any; being in the colonies after

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American Bee Journal

pose of the drones, so that you will take none there except in the one hive.

A Difficult Swarm—Old Queens—Placing Frames

1. What is a good way to have a large swarm of bees from a bee-tree? The small entrance is about 20 feet from the ground, and the tree is much too valuable to be cut.
2. In requeening how can I keep the old queen in good condition for several weeks until I find out whether or not I shall need her?
3. Can large brood-frames be interchanged successfully with shallow extracting frames which were also used as brood-frames? Will it make any difference to the bees if the large frames do not *quite hang*, but only set in the brood-chamber? I am trying to use a number of deep supers as bodies; they measure exactly the same depth, but the frames of the regular bodies are just a little too tall to hang in them.
4. In hiving a swarm where only the queen and not quite two frames of bees can be captured, should the division-board be used as in nuclei, and about how many frames of comb or foundation should be given them?

KENTUCKY.

ANSWERS.—1. Your question puts me very much where those bees are—"up a tree." I have some doubt whether there is any way by which you can get those bees

into a hive—provided the tree is not to be cut—without costing more trouble and labor than the bees are worth. Possibly you might smoke 'em out, if you can in some way secure footing enough to operate so high up in the air. The first thing is to decide as nearly as you can where the colony is located with reference to the entrance, for I take it from what you say that there is only one entrance. That may be at the top of the cavity, at the bottom, or somewhere between. With your ear against the tree, listen to the noise of the bees when you pound upon the tree, and you may be able to locate them. If the entrance be at the top, or near the top, then make another hole at the bottom; otherwise make a hole at the top of the cavity. Then into the lower of the two holes send something whose odor will drive the bees out of the upper hole, carbolic acid, tobacco smoke, etc. Even ordinary wood-smoke from a smoker may suffice if persisted in. As soon as the bees are out, plug the holes so they cannot return, and then treat them as a swarm.

2. The best way is to keep her in a nucleus

of one or two frames. You may be able to keep her in a queen-cage provisioned with queen-candy, especially if you put a dozen of workers with her, and keep her in a warm place.

3. If I understand you, the bottom-bars of the frames will rest on the hive-floor. That will be all right except for the annoyance that the bottom-bars will be glued to the floor. For a temporary thing it will do, but hardly for a permanency.

4. A division-board is not needed, but it is better to have a dummy; that is a board like a division-board, but having a space all around. The hive may be filled at first with combs, or you may give only one comb more than the bees can cover, adding others as they are needed.

Keeping Down Increase

I desire to keep down increase and rear new queens every year, and as I am busy I want to do this the simplest and easiest way possible.

1. How would this do? When a swarm comes out, hive it in a new hive on the old stand, put a queen-excluder over the entrance so as to get the old queen, kill her, then set the section of hive containing the brood and queen-cells on top of the new hive containing the swarm, and the super also, if there was one on the hive, placing the other section of brood on some weak colony? After shaking the bees out in front of the parent colony, would not this give a new queen, keep down increase, and give a good crop of honey? We would cut out all of the cells but one, or would that be necessary?
2. Just before the clover bloom comes, or before the bees show signs of swarming, say two weeks before the main honey-flow, how would it do to take one or two frames of brood and young larvae, six full sheets of foundation, put them in a half brood-body, and set this on a section of empty combs; set this on the old stand, shaking part of the bees from the old frames; then set the old hive, queen and all near by on a new stand, and in 4 or 5 days put a super of full starters on the queenless part, and after the flow is over unite them? Would the new queen kill the old one, so that we would have a new queen in each colony so treated *without ever having to look up the old queen*? I don't like to hunt for queens. I had settled on the Chapman plan of taking the old queen away, but that means you will have to find her first, which is a job in full colonies. I have tried every plan given, and I believe to just look over one frame at a time is as good as any. . . SUBSCRIBER.



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SKY-SCRAPERS IN A WESTERN APIARY.

ANSWERS.—1. Yes, this would work well. You would have to cut out all cells but one, else the first virgin out of her cell would be likely to issue with a swarm. Instead of that, it would be a little better if you would wait until you hear the young queen piping in the evening (this would be a week or more after the issuing of the swarm), and then the next morning kill *all* queen-cells. This would be a little surer to give you a good queen than to kill all cells but one, for the cell left might not be the best, and in rare cases might even contain a dead larva.

2. I don't believe you would like this. You would hardly get the very best queens in this way. For one thing, queens reared so early are likely to be poor. Then you are not certain which part would be queenless, and if it should happen to be the one set on a new stand, it would likely be too weak and discouraged to rear a good queen. If the queenless part were left on the old stand, a swarm would too often issue with the first young queen.

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REPORTS AND EXPERIENCES

The Season of 1912

In order to give a true picture, we must go back to the fall of 1911, which was about the most discouraging fall I ever saw as far as bee-keeping is concerned. We had nothing but rain and cold weather all through August, September, and part of October, and by the middle of November considerable snow which stayed until spring, consequently the queens stopped laying in September. This, coupled with the fact that during August considerable honey-dew was gathered, and that for weeks the thermometer never went higher than 30 degrees above zero, is it any wonder that the majority of our bees died?

Had we bee-keepers been smart enough to take away all the honey and feed sugar syrup, we could have saved our bees, but as the honey-dew was not of a very dark color, and did not taste bad, no one had any idea it would be so detrimental to the bees. The majority of bee-keepers lost nearly all their bees, many of them every colony they had. When my 46 colonies were taken out of the cellar (March 21) they were all alive but one, but on examining them the next day, I knew that half of them would not pull through. In many hives I found but a small handful of bees (and right here let me say that if we bee-keepers of the North could have sent to the South for bees by the pound, we could have saved most of those colonies). The hives were spotted so that not even the numbers could be read, and the odor was fearful.

By uniting the number of my colonies was reduced to 26. They were then well protected with tar paper, and as we had very nice weather for about two weeks, I fed thin sugar syrup, and also pollen, in a warm, sheltered place. The pollen was corn meal, oat meal, rye and graham meal mixed. If there had been a natural flow those bees could not have worked better. The queens started to lay at once, and though the spring was cold and backward, they kept laying more or less until the white clover flow started in earnest. When bees started to build queen-cells, and swarming commenced in earnest, they were divided artificially and increased to 53 colonies. The white clover flow lasted nearly two months, and tons and tons of nectar went to waste because there were not enough bees to gather it. These 53 colonies gathered a little over 3000 pounds of the finest honey I ever had, and they would have done much better had they been as strong in numbers as in other years.

After the clover flow stopped, the golden-rod and fall flowers commenced to secrete nectar. All of a sudden, on Sept. 15, it stopped and no more honey came in. During the fall the bees started swarming again. As late as Sept. 26, a fine stray swarm came to my apiary. On examining this colony

later I found the brood-chamber filled with young bees and brood, but very little honey.

The bee-keepers that did not heed the warning of the bee journals, and did not feed their bees will find to their sorrow this spring their bees have starved to death in spite of the splendid flow we had last summer. My 53 colonies were fed over 600 pounds of sugar. G. A. BARBISCH.

La Crescent, Minn.

A Washington Letter

Bees have wintered splendidly, although nearly three months in the cellar without a flight. Cellar wintering is much to be preferred to any outdoor plan in this part of the State, for the reason that while we have many bright, calm days that entice the bees from the hives, it is seldom that the air is balmy enough for successful flights, and many of them soon drop and perish in the snow.

Only 100 miles south of here bees winter successfully on the summer stands with no protection; while we, being nearer the Cascades, sometimes have sleighing from the beginning of December until March.

Bees are doing better each year, as more young orchards reach the blossoming age, and as the fruit-growers realize the importance of cover crops among the trees. Alfalfa, vetch, and clovers are used mostly for this purpose, and being first-class honey plants are welcomed by the bee-keeper. Bee-pasturage, outside of the irrigated districts, is rather scant. Millions of flowers, blossoming in early spring, that would be valuable nectar producers if they came at a more congenial season, "waste their sweetness on the desert air," while the bees remain impatient prisoners at home, waiting for the few calm, bright days with which we are blessed at this time. How they seem to appreciate each warm day as they start forth joyously on their circling flights, prospecting for pollen in the tops of the pussy willows; while, in many places, tardy snow-banks still cover their roots.

J. D. YANCEY.

Port Columbia, Wash., March 27.

Too Many Bees in One Locality

Some people may think this Buckeye valley is a great place for bees, where the farmers raise so much alfalfa seed each year. The bees do fairly well, but there are so many bees here now it cuts the honey crop down low, and there is not as much profit in it as there used to be. There are no bees for sale here, and no good locations for bees that I know of but what are already taken up.

One of the bee-men sold about one-half of

his bees two years ago, and was going out of the business, but now he is increasing his number very fast. He is putting in an apiary within one-half mile from another apiary. He has also put one within a half mile of my apiary. I guess he figures that his bees will not fly very far. Within a radius of 4 miles there are 900 colonies of bees, and only one-half of the range is alfalfa. The other is mesquite along the canal. Any one who has been thinking of coming to this valley to locate can get some idea of how many bees there are here. ALBERT J. ROSS.

Buckeye, Ariz., May 15.

Feeding Sugar Candy

I saw a discussion in the bee-papers lately regarding the use of dry sugar for feeding bees during winter. I have practiced candy feeding for the purpose of carrying colonies through the winter that are short of honey. I don't often have them myself, but I find plenty among my neighbors that I buy for a "song," and take through the winter on candy. They make fine colonies the next year. I use granulated sugar for the candy, and add about one cup of honey to 10 pounds of sugar, as I think this makes a softer candy, and bees can use it better in dry freezing weather. I have fed the cube candy, and lost 4 colonies; all I fed with it in the winter of 1911-12. I find it too hard and dry.

In making the candy I am careful not to have it scorched, and this is easily avoided by stirring it all the time, and keeping the fire low at the last. When, by the usual methods, I find it has boiled enough I remove it from the fire, and continue to stir it until it begins to thicken a little, when I pour it into wooden butter dishes that hold about 3 pounds. I use it when cold by placing the plates upside down on top of the frames over the cluster of bees.

I have brought through to this day one of the smallest colonies of bees I ever tried to winter; a small 2-frame nucleus, and they have not a drop of honey in the hive; nothing but cakes of sugar candy. These bees are as bright and clean as any bees could be.

The only loss of bees in this locality this winter is from starvation, and that among the careless who keep a few colonies in any old box. A BOY.

Ashland, Ohio.

Foul Brood Bad in Wisconsin

My bees came through the winter fine. I have not lost a single colony, and never before except one in 1911-12. I winter my bees outdoors in chaff hives, and if they are packed right they will go through all right. I have 40 colonies now, and should we get a good honey season I will increase to 50 colonies. That is all I care to have. If I attend properly to 50 I have more profit than otherwise from 100 colonies. For the last three years we have had poor honey crops.

We have very few bees around here. We had several bee-men with 100 to 200 colonies, but today they have none—all killed by American foul brood. I do not think we have 20 colonies in our county. I hope our new law will help us to get rid of that pest; that is, if it will be enforced by the officers. If not, then a few years more and we will have no more bees in this county. I think I don't say too much if I say there are more than 1000 foul-broody hives standing around. So you can judge for yourself what the result will be. I have fought against the disease since it started here, but under these conditions I will never get rid of it.

Grafton, Wis., May 6 WM. NIERODE.

Flood Does Damage

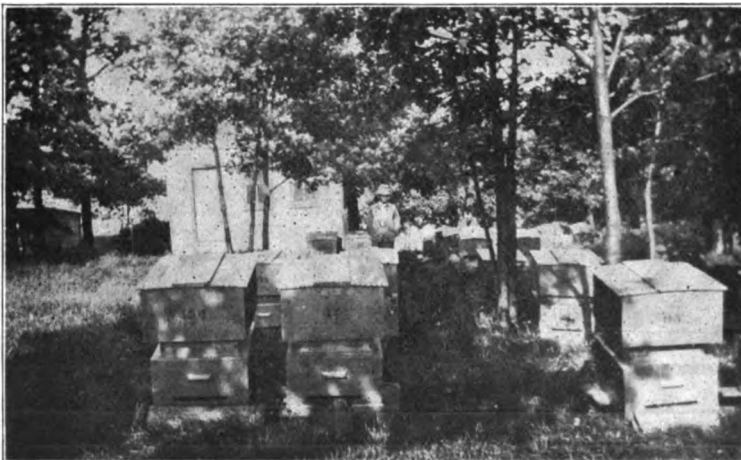
I have almost been swept out of business. On March 25 we had the worst flood in 35 years. I lost nearly all of my bees and had my bee-supplies ruined. The water was almost in the house. I am washing the mud out of the hives that have a few bees in them in order to secure a few colonies.

Edwardsville, Ill., April 2. LOUIS WERNER.

Very Small Loss

Our bees are all out of the cellar, and I am examining them very carefully. Hardly any winter loss. Our north yard had just one, and that one was queenless. Bees are gathering pollen today from the poplar and aspen, and also the maple.

Platteville, Wis., May 1. FRANK F. FRANCE.



APIARY OF J. H. KNESER, OF BARRINGTON, ILL.

American Bee Journal

Classified Department

(Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.)

BEES AND QUEENS.

NUTMEG ITALIAN QUEENS, leather color. After June 1, \$1.00. A. W. Yates, Hartford, Conn.

FOR SALE—A limited number first-class untested Italian queens after June 15 at 75c each. J. I. Banks, R. F. D. 3, Liberty, Tenn.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, \$1.00; Tested, \$3.00. 1A0t Robert Inghram, Sycamore, Pa.

FOR SALE—Pure Italian Queens, by return mail; no disease. C. M. Scott & Co., 1004 Wash. St., Indianapolis, Ind.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1A1f 70 Cortland St., New York City.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any. Wm. S. Barnett, Barnett's, Virginia.

FOR SALE—Golden untested queens 80 cts, each, or \$8.00 a dozen. Safe arrival guaranteed. D. F. Talley, R. F. D. 4, Greenville, Ala.

HARDY Northern-reared Queens of Moore's strain of Italians; ready June 15. Untested, \$1.00; 6 for \$5.00; 12 for \$9.00. See testimonial on page 210. P. B. Ramer, Harmony, Minn.

VIRGINIA three-banded Italian queens. Untested, 75 cts. Tested \$1.00. All dead queens replaced free. Ready May 15. 6A4t S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

DAY-OLD Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each; \$5.00 per doz. Untested, \$1.00. Tested, \$1.50. Geo. H. Rea, Reynoldsville, Va.

IMPROVED golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers. Send for price list. E. E. Lawrence, 1A8t Doniphan, Mo.

FOR SALE—Bees by the pound, 1 lb., \$1.25; ½ lb., 75c. Italian Queens, \$1.00 each. J. B. Marshall, Big Bend, La. Rosedale Apiaries

VIRGIN QUEENS—40c each; \$3.50 per dozen, Italian or Carniolan. Stanley Queen-Rearing outfit complete, \$3.00. Stanley & Finch, 6A1t 1451 Ogden Ave., Chicago, Ill.

GOLDEN THAT ARE GOLDEN—Pure Italian queens. Better than last year. Gentlest race of bees on earth. Price \$1.00 to \$5.00. Send for Booklet. Geo. M. Steele, 6A2t 30 So. 40th St., Philadelphia, Pa.

QUEENS—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

ITALIAN QUEENS—3-band bred from the best stock procurable for honey-gathering qualities. Untested, June, \$1.00; after, 75c. Tested, \$1.50; select tested, \$2.00. 5A4t R. A. Shults, R. F. D. 3, Cosby, Tenn.

FINE ITALIAN QUEENS—Three-banded. Especially prolific, hardy, and gentle. Unexcelled as honey gatherers. You will make no mistake if you order them. "Come early and avoid the rush." \$1.00 each; 6 for \$5.50. 6A4t J. F. Archdekin, Rt. 7, St. Joseph, Mo.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Golden and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00. 2A1t J. B. Brockwell, Barnetts, Va.

GOLDEN ITALIAN QUEENS, of best strain. All cells built in strong colonies. No foul brood or other disease. Untested, \$1.00; tested, \$1.50. Cash with order. Booking orders now. Delivery about April 15. 4A3t Ben Robinson, Taylor, Tex.

MONTANA QUEENS, bred in the Mussel shell Valley. No other bees within 60 miles; foul brood unknown; all queen candy boiled. Three-banded Italian queens ready June 1. Untested, \$1.00. Tested, \$1.50. Orders booked now. 6A4t Elso Apiary, Elso, Mont.

SPECIAL—Golden-all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, \$12.50; 100, \$60.00. Tested, \$1.25. Select-Tested, \$2.00. Breeders, \$5.00 and \$10.00. J. T. Dunn, Queen Breeder, 6A7t Rt. 3, San Jose, Calif.

I SHALL requeen all my colonies this spring. Will sell all one-year old queens for 40c apiece; \$4.00 a dozen. Untested Italians of J. P. Moore's and Doolittle's stock, 90c apiece; \$5.00 a dozen. No disease, safe arrival guaranteed. Edward O. Meserve, 6A3t Ventura, Calif.

THE TWO B's of quality—Italian Bees and Sicilian Buttercups. For all that is best, unexcelled. Untested queens \$1.00 each; six for \$5.00. 2-frame nucleus with untested queen, \$3.50; 2-frame nucleus, \$4.00. Buttercup eggs and stock in season. 6A4t H. William Scott, Barre, Vermont.

FOR SALE—Guaranteed pure-mated 3-band Italian queens. I recommend 4 points: Gentle, prolific, extra good honey makers, good winterers. J. E. Hand strain. State Inspector's certificate. Queens by return mail or your money back. Select untested, 85 cts. J. M. Gingerich, Rt. 3, Arthur, Ill.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, \$1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., \$1.25; nuclei per frame, \$1.50. A discount on orders booked 30 days before shipment. 1A1f Bankston & Lyon, Buffalo, Leon Co., Tex.

QUIRIN's famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; fiveyards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. Quirin-the-Queen-Breeder, Bellevue, Ohio.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, \$1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., \$1.25; nuclei per frame, \$1.50. A discount on orders booked 30 days before shipment. 3A1f C. B. Bankston, Buffalo, Leon Co., Tex.

MOORE'S Strain and Golden Italian Queens. Untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Banat and Caucasian Queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. Rails, Orange, Calif.

ONE of our customers (J. A. Carnes, M. D., Mt. Carmel, Pa.) writes: "Your bees are evenly marked; all golden but the tip. They are the most GENTLE bees I ever handled. Untested queens, \$1.00 each. Send for wholesale prices." C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

THREE-BANDED Italian Queens and Bees. Untested queen, 75c each; six, \$4.25; twelve, \$8.00. Tested, \$1.25 each; six, \$7.00; twelve, \$12.00. For select queens add 25c each to the above prices. Nuclei without queens, 1-frame, \$1.50; 2-frame, \$2.50; 3-frame, \$3.00. For nuclei in quantity lots, and bees by the lb., write for prices and circular. 5A6t Robert B. Spicer, Wharton, N. J.

WE will requeen all our 2000 colonies this spring with young queens bred from our best home and imported Italian stock. We offer the one-year old queens removed from these hives at 40c each; untested queens, this year's breeding, 60c each. Special reduced prices for 100 or more, either old or young. We breed for business, not looks. No disease; delivery guaranteed. Book orders now to insure early delivery. Spencer Apiaries Co., Nordhoff, Calif.

CHOICE QUEENS from June to Sept. 1 at \$1.00 each; six for \$5.00. Place orders now, and have them filled in rotation. 5A1f D. J. Blocher, Pearl City, Ill.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken, 265 Greenwich St. New York City.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices. 11A1f Dadant & Sons, Hamilton, Ill.

FOR SALE

FOR SALE—50 to 300 colonies, 8-frame; good condition. E. F. Atwater, Meridian, Idaho.

FOR SALE—Our entire stock of hives at reduced prices. Gregory & Son, 5A2t Ottumwa, Iowa.

FOR SALE—One 10-acre alfalfa farm, 6-room house, 200 col. bees. One 3 1-5 acre home, 6 room house, 200 col. bees. Both choice locations and fine climate. W. H. Crawford, 6A1f Roswell, New Mexico.

FOR SALE—225 Comb-honey supers, 8 and 10 frame. All painted and in good shape. I am going to Canada; am out of the bee-business and must sell. Chas. Clark, 6A1t 9720 Logan Ave., Chicago, Ill.

FOR SALE—Empty second-hand 60-lb. cans—two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

FOR SALE—Fine Italian queens; untested, 75c; \$8.00 per dozen; tested, \$1.00; breeders, \$3.00. Nuclei, \$1.25 per frame. Full colonies in new modern eight-frame hives, \$7.00. California Bee Co., 500 S. Rowan Ave., Los Angeles, Calif.

FOR SALE—At a bargain, 20-acre fruit ranch in famous Wenatchee-Columbia River red apple belt. Planted to standard winter apples; trees 4 years old. Will take bees and good location in South, in part payment. For full particulars write J. D. Yancey, Port Columbia, Wash.

SUPPLIES.

FOR SALE—Bees, Honey, and Bee-Keepers' Supplies. A. E. Burdick, Sunnyside, Wash.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 4A1f Greenville, Tex.

BEE-SUPPLIES for all Bee-Keepers in southern Idaho and East Oregon. Wholesale and retail. All we want is an opportunity to figure with you on Supplies. Write for Catalog. It will be ready by Jan. 1, 1913. It costs you a postal card only. C. E. Shriver, Boise, Idaho.

BEE-SUPPLIES—none better. 35 years of experience.

1 Ideal Winter-Case, complete.....	\$2.50
1 Hoffman Brood-Frames in flat.....	2.50
500 No. 1 Sections.....	2.50
100 Section-Holders, scalloped.....	2.00
100 Section Slats, ¼ inch.....	1.00
1 Champion Smoker.....	.70

DADANT'S FOUNDATION.

Medium Brood, per pound.....	.50
Thin Surplus " ".....	.65
Extra Thin " ".....	.60

Discount on larger amounts.
Satisfaction guaranteed or money refunded.
R. H. Schmidt,
R. R. No. 3, Box No. 209, Sheboygan, Wis.

American Bee Journal

WANTS AND EXCHANGES

WANTED—To exchange queens and nuclei for Field glass, and 4-frame Root automatic extractor for Langstroth frame. A1F
A. D. D. Wood, Box 61, Lansing, Mich.

MISCELLANEOUS

RECLEANED Silverhull Seed Buckwheat, 1 bushel, \$1.15; 5 or more, \$1.00 per bushel. 5A2t
F. O. B., Wm. Vollmer, Akron, N. Y.

DETECTIVES WANTED—Young men to operate in own locality, secret service work. Experience unnecessary. Enclose stamp for particulars. Universal Detective Agency, 304 Colcord Bldg., Oklahoma City, Okla.

REDUCED PRICES on Eggs, Chicks, Ducklings, White Leghorns, Penciled or Faun Runners. Free circular. Could use Italian Queens or Bees in exchange. 6A3t
R. O. Dickson, Box 61, La Harpe, Ill.

WE WANT to get old numbers of American Bee Journal, especially those in Volumes 40 to 48, the years 1900 to 1908 inclusive. Those having any of these numbers should write at once, giving the dates of the ones they have. We will immediately quote a price on them. Address,
American Bee Journal, Hamilton, Ill.

FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, \$1.00; six for \$5.40; twelve for \$9.60. One tested queen, \$1.50; six for \$8.40; twelve for \$15.60. One-frame nuclei, untested queen, \$2.50; six 1-frame, \$15.00; one-frame nuclei, tested queen, \$3.00; six 1-frame, \$17.40. Full colonies, one for \$7.50; two for \$14.00. If more frames are wanted than are listed, add \$1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed. W. J. Littlefield,
1015 W. 7th St., Little Rock, Ark.

SITUATIONS.

WANTED—Family to take care of poultry and bee-plant. Must know the business. W. S. Morlan, Box 715, McCook, Neb.

WANTED AT ONCE, help in apiaries. State age, experience and wages in first letter. None others answered. 6A1t
The Rocky Mountain Bee Co.,
Forsyth, Mont.

SITUATION WANTED—Single man, 20, able, handy, sober. Will work for board with a successful apiarist in order to get information on Bee-keeping. 6A2t
Manos, Block A, No. 9, Pullman, Ill.

POULTRY

INDIAN Runner Ducks, light fawns, also dark penciled, white eggers, \$1.00 and up. R. O. Dickson, Box 61, La Harpe, Ill.

FOR SALE—Buff Orpington eggs, pure bloods: \$1.00 for 15. Satisfaction guaranteed. 2A17
W. H. Payne, Hamilton, Illinois.

FOR SALE—White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks, \$1.25 each. A. F. Firestone,
Broadwell, Athens Co., Ohio.

WESTERN QUEENS

3-BAND LONG TONGUE ITALIANS FREE

As a special introductory offer we are going to give absolutely free with all orders for 12 tested or untested queens, one select queen. Offer good only until June 15.
PRICES: Untested, 1, 00c; 6, \$4.80; 12, \$9.00. Tested, 1, \$1.35; 6, \$6.50; 12, \$12.00. Virgins, 40c; 3 for \$1.00. Queens shipped on 1-fr. nuclei, \$1.75 extra. Satisfaction guaranteed. Write for our new plan.
"Queens Made to Order."

GLEN L. EVANS, Greenleaf, Idaho
BREEDER AND IMPORTER OF FINE QUEENS.

Try My Famous Queens From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, \$1; six, \$5; 12, \$9; 25, \$17.50; 50, \$34; 100, \$65. Tested, one, \$1.50; six, \$8; 12, \$15. Breeders of either strain, \$5. Nuclei with untested queen, one-frame \$2.50; six one-frame, \$15; two-frame \$3.50; six two-frame \$20.40; nuclei with tested queen, one-frame, \$3.00; six one-frame, \$17.40; two-frame, \$4; six two-frame \$23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

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is the best, handsomest and most valuable fruit growers' paper published in the world. It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

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QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS
That fill the supers quick
With honey nice and thick.
They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, \$1; six, \$5; 12, \$9.00. Select untested, \$1.25; six, \$6.00; 12, \$11. Safe arrival and satisfaction guaranteed. Circular free.
J. P. MOORE, Queen-breeder,
Route 1, Morgan, Ky.

JOHANN STRGAR
Wittnack. P. O. Wecheiner Feistritz,
Upper Carniola (Krain), Austria.
Breeder and Exporter of
PURE CARNIOLANS

RAMER'S QUEENS Of Moore's Strain of Italians

Ready June 15

Untested, \$1.00; 6 for \$5.00; 12 for \$9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—
Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 100 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.
Yours very truly,
HALVER J. HALVERSON.
Rt. 4, Preston, Minn.



Am Now Shipping Untested Queens from My CELEBRATED PEDIGREED STRAIN!

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.
SWARTHMORE APIARIES, Swarthmore, Pa.



ITALIAN BEES Choice Home Bred and Imported Queens

Reared in full colonies

Prices for May:
One untest. queen \$1.10
One tested queen \$1.75
One select tested queen \$1.85
One Breeder \$3.10
One comb Nucleus, no queen \$1.15

1/2 lb. bees, \$1.00; 1 lb. \$1.00. Safe arrival guaranteed. For description of each grade of queens send for free catalog.

J. L. STRONG,

204 E. Logan St., CLARINDA, IOWA

ITALIAN QUEENS

\$1.00 EACH, \$9.00 PER DOZEN.

Queens are reared by as good a method as anybody can rear Queens. My stock is hearty and fine honey-gatherers. All queens shipped by return mail within 24 hours after I receive the order.

M. BATES, R. D. No. 4, Greenville, Ala.

BREEDING QUEENS . . .

Can be sent out any time after May 1. We have a choice lot of Italian queens at \$2.50, \$5.00, and \$10.00. No untested queens before July. Send for circular.

Boelittle & Clark, - - Marietta, N. Y. Onondago County



Fine Yellow

Italian bees & queens. If you need a fine yellow Queen quick, try Fajen and you will order more. Extra fine queen, only \$1.00; untested, 75c. 3-fr nucleus, only \$2.75. Full colony in 8-fr. hive with fine tested queen, \$5.50.

J. L. Fajen, Stover, Mo.



Line Bred

Carniolan Queens!

Carniolans winter with their colonies most populous; build up best in the apiary; enter supers more readily cap their Honey very white; are gentle, and no more inclined to swarm than Italians, if properly managed. Ask for FREE paper, "SUPERIORITY OF THE CARNIOLAN BEE," explaining these bees more fully, and best management for comb and extracted honey. A limited number of nuclei and 8-fr. colonies for sale at end of June.

Untested, \$1.00; doz., \$9. Tested, \$1.50; doz., \$12.

ALBERT G. HANN,

Carniolan Queen Breeder, PITTSBURGH, N. J.

American Bee Journal

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 133 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 10, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog The A. I. ROOT COMPANY, Medina, Ohio BRANCH OFFICES

New York, 130-141 Franklin St.
Philadelphia, 8-10 Vine St.
St. Paul, 1024 Mississippi St.
Washington, 1100 Maryland Ave., S. W.

Chicago, 213-231 Institute Place,
Des Moines, 505 W. Seventh St.
Syracuse, 1631 Genesee St.

Mechanic Falls, Maine

A Few Agents Handling these Goods:

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| California..... Madary's Plaining Mill, Fresno
Madary's Supply Co., Los Angeles
Colorado..... Barteldes Seed Co., Denver
Indiana..... Walter S. Poudel, Indianapolis
Michigan..... M. H. Hunt & Son, Lansing
New Mexico..... Roswell Seed Co., Roswell | Missouri..... Blanke Mfg. & Supply Co., St. Louis
John Nebel & Son Supply Co., High Hill
Ohio..... S. J. Griggs Co., Toledo
C. H. W. Weber & Co., Cincinnati
Texas..... Texas Seed & Floral Co., Dallas
Toepferwein & Mayfield Co., San Antonio |
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EARLY ORDER DISCOUNTS WILL PAY THE FREIGHT ON BEE SUPPLIES!

28 years experience in making everything for the bee-keeper. A large factory specially equipped for the purpose, insures goods of highest quality. Write for our illustrated catalog today.

**LEAHY MFG. CO. HIGGINSVILLE, MO.
OMAHA, NEBR.**

IF YOU are having trouble trying to live by eating by eyesight, send for my circulars and receive a slice of eating by brainsight.
C. W. DAYTON, Owensmouth, Cal.
The Ripe Honey Man

Early (FROFALCON) Queens "ITALIANS"

Untested Queens to June 1st \$1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for \$1.10.

JOHN C. FROHLIGER,
1642 Milvia Street, Berkeley, Calif.
Greater San Francisco, Calif.
Falcon Bee-Supplies, etc.

GOLDEN QUEENS

for business, 75c each, or 6 for \$4.25. Untested, mailed promptly, for 25c, 50c, or \$1.00 lots. Write me. Safe arrival guaranteed.


R. O. COX, Box 8, Garland, Ala.

CARNIOLAN QUEENS!

Untested \$1.00 for one, \$5 for six, \$10.00 for twelve
 Tested \$1.20 for one, \$6 for six, \$15.00 for twelve

These queens are bred from the best strains selected after sending to queen raisers in many different places in Austria. Having bought all the bees within several miles of this Apiary we will agree to replace any untested queens that prove to be hybrids. Some of the best imported Carniolans show slight traces of yellow, but are gentle, not a cross hybrid with two or three yellow bands.
WM. KERNAN, Dushore, Pa. Route No. 2.

WESTERN BEE-KEEPERS can save get the best goods obtainable especially made to meet Western condition. Send for new catalog and special price-list to
**Colorado Honey-Producers' Association
Denver, Colorado**

 **Three-Banded ITALIAN QUEENS**
Nothing but the Leather-Colored Bees bred by me. If you want supers of honey, use my Queens. Perfect Queens of Quality or money refunded. \$1.00 each, or \$9.00 per doz
C. S. ENGLE, Beeville, Texas

PHARR'S GOLDEN AND THREE BANDED ITALIANS



Untested - - \$1.00
 Tested - - \$1.25
 Breeders \$3 to \$5.00

We have 50 Golden and Three Band Breeders. Can mail from April 1 to 15. Place your orders now. Address,

**JOHN W. PHARR,
BERCLAIR, TEXAS.**

THE FAMOUS TEXAS QUEENS ITALIANS! CARNIOLANS! BANATS!



Are Ready to Mail
PRICES:
 Untested - - - 75c Each
 \$8.00 per doz.
 Tested - - - \$1.25 Each
 \$12 per doz.

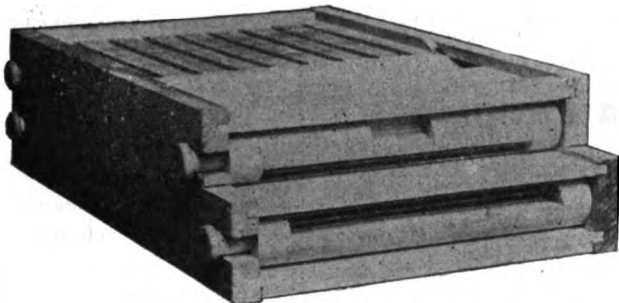
**GRANT ANDERSON,
SANBENITO, TEXAS.**

American Bee Journal

The Robbers Disturb You When Feeding

Easy Solution, Use the

Schamu Patent Roller Entrance HIVE BOTTOM



No worry
When you
are ready,
adjust for
swarming,
or drones.
Ask for a
free folder

Proper Ventilation for Honey Flow.

PRICES: \$2.00 F. O. B. LIVERPOOL, FOR 8 FRAME SIZE.
\$2.50 F. O. B. LIVERPOOL, FOR 10 FRAME SIZE.

Dr. Chas. G. Schamu, Liverpool, N. Y.

FOLKS LIKE

Michigan Comb Honey

However, it is so scarce that they can't get much of it. It is a case of under production. Better make this year a comb honey year. Pages 12 and 13 of our Catalog show comb honey outfits—and they are all Root's goods. Beeswax wanted.

Italian Bees and Queens in half-pound and pound packages.

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143 Condit St., - Lansing, Mich.**

If You Need QUEENS

for Queenless Colonies, you want them in a hurry. We can fill your order for choice tested Queens by return mail for \$1.00 each. Three band Italians. No disease. Satisfaction guaranteed. Send for price-list.

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BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, \$1.00; or with a year's subscription to the American Bee Journal—both for \$1.80; or given FREE as a premium for sending us 3 New subscriptions at \$1.00 each.

American Bee Journal, Hamiltan, Illinois.



AT LITTLE ROCK, ARK.,

You can get your Bee Supplies and save time by sending your order to us, we can save you in FREIGHT as well as Money on supplies. Send for catalog of Supplies and Queens.

One Untested Queen, \$1.00; six, \$5.00; twelve, \$9.00. One Tested Queen, \$1.50; six, \$8.50; twelve, \$15.00. One-frame Nuclei, Untested Queen, \$2.50; six r-frame, \$15.00; one-Frame Nuclei, Tested Queen, \$3.00; six r-frame, \$17.00.

If more Frames are wanted than are listed, add \$1.00 each for as many frames as are wanted with Nuclei. No disease, and satisfaction guaranteed.

Little Rock Bee-Supply Company

1015 W. 7th Street

Little Rock, Arkansas



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(Trade mark)



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SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Dozen, \$1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

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Lewlstown, Illinois**

3-Band Long-Tongued

Red Clover Italian

QUEENS

FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts; 6 for \$4.00; 12 for \$7.50; 25 for \$13.50; 50 for \$25.00; 100 for \$45.00. Double this price for tested queens. One-frame nucleus, \$1.50. 2-frame, \$2.50; 3-frame, \$3.50. To each nucleus add the price of queen. No personal checks accepted.



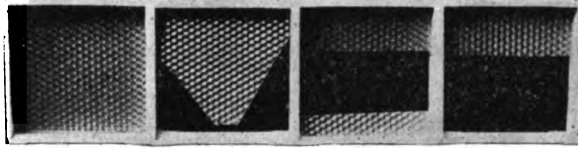
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"Falcon" Foundation!

Made in Our Plant at Falconer, N. Y.

From the sweetest and purest beeswax that can be obtained. Noid stock—made daily by our own superior methods. Falcon foundation is coming in more constant use every year, and has proved itself to be most readily accepted by the bees.



Other Goods:—Double-grooved Hoffman brood-frames as well as sections will be needed for spring use. As it takes a lot of time to put up frames and sections with starters or full sheets, it would be well to look up your requirements. It will give you ample time by ordering now.

Light Standard Brood, 1 lb., 85c; 5 lbs., 87c.
Extra Light Standard Brood 1 lb., 80c; 5 lbs., 80c.

Light Section, 1 lb., 65c; 5 lbs., 64c.
Extra Light Section 1 lb., 70c; 5 lbs., 67c.

Write for samples of our foundation and Red Catalog postpaid. All goods guaranteed. A trial will convince you. Distributors everywhere. Factory W. T. Falconer Mfg. Co., Falconer, N. Y. Central States distributors: H. S. Duby, St. Anne, Ill., C. C. Clemons, Bee-Supply Co., Kansas City, Mo.

W. T. FALCONER MFG. COMPANY, - FALCONER, NEW YORK
Where the good bee-hives come from

TOLEDO

"Griggs Saves Your Freight" "Griggs Saves Your Freight"

Is the place all successful bee-men have their eyes on now. The proof is the way orders are streaming in here from all over the United States.

PROMPTNESS, LOW FREIGHT RATES, AND BEST PRICES ARE OUR MOTTO

Our large three-story Warehouse right in the heart of the city, only 5 city blocks from 10 of the largest trunk railroads in the United States, gives us prompt service no other agent enjoys. We carry the Largest Stock of Root's Goods of any agent, and our force of competent bee-men of practical experience ensures you against errors and delays. Even the Factory itself can't give you such promptness.

Special Prices Quoted on Quantities. Send us a list of your wants. Free catalog for the asking. Orders for BEES, QUEENS, NUCLEI; also BEES by the pound given Special attention. Beeswax always wanted.

CHICKEN FEED OF ALL KINDS AT JOBBERS' PRICES.

S. J. Griggs & Co., 24 N. Erie Street., Toledo, Ohio "GRIGGS IS ALWAYS ON THE JOB."

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
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Do You Want to Know How to Manage 3000 Colonies of Bees in 50 Yards?

Do you want to learn modern bee-keeping upon modern principles? Upon principles of magnitude? Do you want to know how to organize bee-keeping? Do you want to know how one man by the turn of his hand started 50 bee-yards, turning honey into one modern reservoir? It was but 15 years ago we were told one man could find all he could profitably do with one bee-yard. Now comes this modern giant of beedom managing 50 yards that contain an aggregate of 3000 colonies.

The Bee-keepers' Review has made arrangements with this giant of modern methods of honey-production, a method that will revolutionize bee-keeping of the future. A series of ten articles that will begin with the July number of THE BEE-KEEPERS' REVIEW, are from one of the very best known writers of the day. The only way you can secure this treat of unusual interest, is to sit right down this minute and write your check for a dollar for a year's subscription to THE BEE-KEEPERS' REVIEW, Northstar, Michigan. 50 cents more will make you a member of the NATIONAL for one year. **Do it now!**

THE BEE-KEEPERS' REVIEW, Northstar, Michigan

NOTICE! QUEENS!

From Caraway Prize Winner Stock—Ready to Go by Return Mail
THREE-BANDED ITALIANS ONLY

Untested queens, 50c each; 12 for \$4.00. Tested queens, \$1.00 each; 12 for \$12. Breeder queen, \$5.00 each. I also sell nuclei. One 2-frame nucleus for \$3.00; 10 2-frame for \$27.50. Bees by the pound at \$1.50; per lb., 10 1-lb. packages for \$12.50. Add to these prices the price of the queen or queens desired. These prices are f. o. b. Mathis. I guarantee nuclei and bees by the lb to arrive in good condition within 1250 miles of Mathis. Positively no disease in my apiaries. Health certificate furnished with each shipment. I guarantee every queen to give entire satisfaction. This is a square deal. I hold 02 first prizes, 45 second, and 2 third prizes on my bees, queens, and products of my apiaries. This speaks for itself—NONE better. My 3-banded Italians carried off first prizes again at Dallas and Waco fairs last fall. All of these prizes have been won in the last three years. Queen circular free.

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Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, \$1.25; 5 for \$5.00; Breeders, each \$5.00. Address

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SAVE TIME, fold your sections at one operation, quick and perfect with a Rauchfuss Combined Section Press and Foundation Fastener, guaranteed to give satisfaction. Send for illustrated circular. Price, \$3.00 delivered anywhere in U. S.

Colorado Honey-Producers' Association
Denver, Colorado

HONEY AND BEESWAX

CHICAGO, May 17.—The market has cleaned up quite well on extracted honey during the past month, and prices remain about the same as in our previous quotation. The clover and linden bringing 9@10c per pound when in every sense perfect; other white honeys 8@9c per pound. Amber grades 7@8c per pound. No. 1 to fancy white comb honey 17@18c per pound; other grades from 1@5c per pound less, with very little on the market. Beeswax 30@32c per pound, and in good demand. R. A. BURNETT & CO.

KANSAS CITY, Mo., May 21.—Our market is bare of comb honey; good demand. Supply of extracted fair; light demand. We quote as follows: Extracted, white, per pound, 8@8½c; extracted, amber, 7@7½c. Beeswax, per pound, 25@28c. C. C. CLEMONS PRODUCE COMPANY.

BOSTON, May 22.—Fancy and No. 1 white comb, 16@17 per pound. Fancy white extracted in 5-gallon cans, 11@12c. Beeswax, 30c. BLAKE-LEE COMPANY.

INDIANAPOLIS, May 21.—The market is practically bare of fancy white comb honey. No. 1 white is selling at 16@17c per pound; amber comb in slow demand and at varied prices. Best extracted sells at 11@12c per pound in 5-gallon cans, according to quantity at one shipment. Beeswax is in good demand, and producers are being paid 30c per pound cash. WALTER S. POWDER.

SAN FRANCISCO, May 20.—There is very little of the old comb honey on the market, and we are promised some of the new very soon, and have had some new extracted honey in very small quantities. The demand for extracted honey has been better than for some time, and the crop so far in this section will be limited. Fancy comb honey at 14@15c. Water-white extracted at 9@9½c; light amber, 7½@8c; amber, 6½@7c; dark, 5@6c. Beeswax, 24@30c per pound. JOHN C. FROHLIGER.

DENVER, May 22.—No more comb honey to offer. We quote extracted honey in a jobbing way at the following figures: White, 9c; light amber, 8c; strained, 6½@7c. We

pay 28c in cash per pound, and 30c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N., Frank Rauchfuss, Mgr.

CINCINNATI, May 23.—There is a fair supply of comb honey on the market, and we are selling our fancy double-decker comb honey at \$3.75 to \$4.00 per case. Fancy extracted honey in 60-pound cans at 9@10c a pound, and amber extracted honey in barrels at 6½@8c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 28@30c a pound delivered here, and if taken out in trade we allow 2c a pound more. THE FRED W. MUTH CO.

NEW YORK, May 22.—There is nothing new to report; some few straggling lots of comb honey are still arriving and selling at from 14@16c for No. 1 and fancy white; lower grades at from 12@13c. Extracted is quiet with heavy shipments arriving from the West Indies, and the demand being dull prices are declining. We have no new southern as yet, but expect to have the first shipment within a week or so. Beeswax steady at 30@31c. HILDRETH & SEGELKEN.

CINCINNATI, May 20.—The market on comb honey is in good demand, with a fair supply. No. 1 white selling at \$3.95 per case of 24 sections wholesale, and \$4.00 per case retail. There is no demand for off grades. Light extracted honey in 60-pound cans, 8@8½c. White extracted honey in 60-pound cans, 9@10c. Beeswax is selling at \$34 per 100 pounds.

The above are our selling prices, not what we are paying. C. H. W. WEBER & Co.

LOS ANGELES, May 20.—Stocks of white extracted honey on the coast are entirely exhausted, and are not quotable at any price. Light amber extracted honey is in light supply, and is quotable in carload lots at 6½c f. o. b. Coast. Comb honey is in very light supply, and there is scarcely enough left for local consumption. Beeswax is selling to eastern buyers at about 30c per pound. HAMILTON & MENDERSON.

Notice to Bee-Keepers

I am now taking orders for pound packages and nuclei; also for my leather-colored strain of Italian queens mated on an island, and bred in their purity. Free from all disease. Prices made on application. My guarantee—Your money back if not satisfied; a liberal discount on all large orders. Reference, The American Exchange Bank of Appalachicola, Florida.

A. B. Marchant

ITALIAN QUEENS

Golden untested, \$1.00; six, \$5.00. Tested, \$1.50; six, \$8.00. Virgin, 40c; six, \$2.25; doz, \$4.50. Our queens are extra fine this season. Every queen guaranteed to give satisfaction. Ready for shipment direct to customers. Nuf ced. 5Atf E. A. SIMMONS, Greenville, Ala.

Eastern Bee-Keepers

Furnishing bee-supplies has been our business for 23 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practical articles. Let us mail you our catalog on what you may need.

L. J. STRINGHAM, 108 Park Place, New York City

APIARIES: Glen Cove, L. I.

OUR HAND-MOORE STRAIN 3-Band Italians

Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Bred strictly for business. Untested 75c; 12 for \$8.00; 50 for \$25.00. Select mated, \$1.00 each. Virgins, 40c each, or \$4.00 per dozen. HONEY WANTED.

LATSHAW HONEY COMPANY, CARLISLE, IND.

"Bee-Keepers' Guide"

This book on bees is also known as the "Manual of the Apiary." It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American bee-book. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library. It has 544 pages, and 295 illustrations. Bound in cloth. Price, post-paid, \$1.20; or with a year's subscription to the American Bee Journal—both for \$1.90. Send all orders to the office of the American Bee Journal.

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ALSIKE CLOVER SEED.

Small red, Mammoth, timothy, alfalfa, sweet clover, (white or yellow) millet, rape, blue grass, etc., also seed corn, thoroughbred, four varieties. Catalog apiary supplies free. Honey new in July and later.

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Write for our 64-page catalog free, and for lowest prices on supplies. Full information given to all inquiries. We handle the best make of goods for the bee-keeper. Freight facilities good. Let us hear from you.

JOHN NEBEL & SON SUPPLY COMPANY High Hill, Missouri

BARNES' Foot-Power Machinery



Read what J. I. PARKER, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 80 chaff hives with 7-in. cap, 100 honey-rocks, 600 brood-trusses, 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 665 Ruby St., Rockford, Ill.

A TRIAL PACKET of This Grand TOMATO FREE!

Rowe's GRAND RAPIDS MARKET TOMATO was originated by Mr. George E. Rowe, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This tomato is the very earliest of the heavy cropping varieties; it yields abundantly, a Grand Shipper, and is the Most Delicious Tasting tomato ever put upon the market. In Size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is solid, and cuts like a piece of beef-steak. One grower near Grand Rapids, Mich., sold OVER TWO THOUSAND DOLLARS worth of these tomatoes off of two thousand acres. We are willing to stake our reputation on this tomato. The seed cannot be procured from Seedmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT; and you can get a packet, if you act now.

Shows you How to Make Money Raising Fruit; How to Prune and Thin Properly; How to Control Insects and Plant Diseases by Spraying; What Varieties to Plant; How to Set New Orchards; How to "Rejuvenate" Old Orchards. THE FRUIT BELT is a Big Illustrated Magazine, Filled with Good Things for You.

TRIAL OFFER We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address—

THE FRUIT BELT R. 12, HAWKINS BUILDING GRAND RAPIDS, MICHIGAN

American Bee Journal

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

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POWDER, Indianapolis, Ind.
873 Massachusetts Avenue



A BOYUM FOUNDATION FASTENER

Is just what you want. Price, postpaid, \$1.75. And a

BOYUM SECTION PRESS

Price, postpaid, only \$1.00. Both, postpaid, for \$2.50

Manufactured by **The Boyum Apicultural Co., Rushford, Minn.**

COMB FOUNDATION

WITH THE SAME TASTE

WITH THE SAME SMELL

WITH THE SAME FIRMNESS

AS THE COMB THE HONEY-BEE MAKES

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples, also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

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Manufacturers

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"NONE BETTER"

BEE-KEEPERS' SUPPLIES

Thirty Years' Experience

Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping Cases, Brood-Frames, Separators, etc.

We invite your correspondence.

Page-Kenkel Manufacturing Co.,
New London, Wis.

English Honey-Spoon.



This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only \$1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

ITALIAN QUEENS!

Northern bred

Superior winterers, second to none. My free list explains it all. Untested, \$1.00; select tested, \$1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

E. E. MOTT - Glenwood, Mich.

30 to 75 Percent Discount

Compare our prices with other dealers, and see if we can't save you dollars, and we will guarantee you satisfaction. If you have combs, why not put bees on them? 1/2 lb., \$1.25; 1 lb., \$2.00; 2 lb., \$3.75; 3 lb., \$4.50. Untested queens, \$1.00. Tested, \$1.50. Nuclei, \$1.00 per frame. Full colonies in 8-frame hive, only \$5.00. Full colonies in 10-frame hive, only \$6.00. We will furnish tested queens with full colonies for \$1.00.

Where can you beat these prices? We will guarantee the stock to be pure and good as can be had. Hives are Root make.

The Stover Apiaries

Maplewood, Missouri

Rebuilt Remington Typewriters (No. 6)

or Smith Premier Typewriters (No. 2)

Prices, \$30 to \$35. Send \$5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

Remington Typewriter Company
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Bee-Supplies

We are Western Agents for

"**FALCONER**"

Write for Fall Discounts—we can save you money. 1Att

C. C. Clemons Bee-Supply Co.,

128 Grand Ave., Kansas City, Mo.

HONEY AND BEESWAX

CHICAGO, Sept. 18.—The market during the past six weeks has been practically one of large receipts and few sales. It is difficult now to place the best grades of comb honey at more than 17c per pound, with the majority of the receipts selling at 15@16c per pound. The amber grades range from 1@3c per pound less. The weather has been too warm up to this time to place honey with the general trade, but now that the peach season is drawing to a close, there is a probability of a much more active market. Extracted honey is also quiet with the white grades, bringing from 8@9c per pound; amber, 7@8c per pound, according to kind and quality. Extracted in barrels is selling at from 7@10c per pound less than in cans, as the trade no longer wants it in that shape. Beeswax steady at from 30@32c per pound, according to color and cleanliness.

R. A. BURNETT & Co.

KANSAS CITY, Mo., Sept. 17.—Receipts of comb honey are large. Three cars of western comb are on the market, beside local shipments. The demand is good. Receipts of extracted are not large; demand fair. We quote as follows: No. 1 white comb, 24 section cases at \$3.15 to \$3.25; No. 2, \$3.00; No. 1 amber, \$3.10; No. 2, \$2.75 to \$3.00. White extracted, per pound, 8@8½c; extracted amber, 7@8c. Beeswax, No. 1, 30c per pound; No. 2, 25c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, Sept. 18.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less. Finest ex-

tracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.

WALTER S. POWDER.

CINCINNATI, Sept. 18.—The demand for both comb and extracted honey is not as brisk as it should be for this time of the year. We are receiving quantities of both comb and extracted honey. Fancy white clover comb honey is selling at 16c per pound. No. 1 white is selling at \$3.50 a case of 24 sections. Off grades do not sell. Extracted white clover honey in 60-pound cans is selling from 9@9½c per pound. Amber grades are selling from 7½@8½c per pound, according to grade and quantity purchased. Beeswax is selling from \$3 to \$3.50 per 100.

The above are our selling prices, not what we are paying. C. H. W. WEBER & Co.

CINCINNATI, Sept. 19.—The crop of honey throughout the State is greater than one can imagine. While the prices are sagging some, it is only a question of having the nerve to hold up the price. We are still selling comb honey at 14@16½c per pound for a good to choice grade; while amber extracted honey in barrels is selling at 6½@9c per pound, according to the quality and quantity purchased. Please observe the above are our selling prices, not what we are paying. For choice bright yellow beeswax we are paying 30c per pound delivered here.

THE FRED W. MUTH CO.

SAN FRANCISCO, Sept. 19.—Comb honey has been coming in, and the demand is very

light, owing to plenty of fruit. Extracted is moving slowly. Comb honey, fancy, 14½c; No. 1, 13c; light amber, 10@12c; darker grades 8@11c. Extracted, water white, 9c; light amber, 7½@8c; other grades, 5@7c. Beeswax, 30c for nice yellow; darker grades, 24@26c. JOHN C. FROHLIGER.

BOSTON, Sept. 19.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound. BLAKE-LEE COMPANY.

DENVER, Sept. 18.—The honey crop in northern Colorado has been good. We quote our market in a jobbing way as follows: No. 1 white comb honey per case of 24 sections, \$3.95; choice, \$2.88; No. 2, \$2.75; white standard, 8@9c; light amber, 7@8c; strained, 6½@7c. We pay 26c cash, and 28c in trade, for clear yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, Mgr.

LOS ANGELES, Sept. 15.—Since writing on June 30, quoting light amber honey at 6½c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded an eighth of a cent per pound on firm offers.

HAMILTON & MENDERSON.

NEW YORK, Sept. 19.—The new crop of comb honey is now beginning to arrive quite freely; the demand is good for all grades and we quote a fancy white at 16c, and some especially fine lots will bring 17c. No. 1 white at 14@15c; No. 2, 13c; mixed, dark, and buckheat at 11@12c per pound. Extracted is in fair demand, with sufficient supply of all grades excepting California sage. We quote white clover at 8@9½c, according to quality light amber, 7½@8c; dark, mixed, and buck wheat, 7@8c; southern in barrels, as to quality, 70c@80c per gallon. Beeswax steady at 32c per pound. HILDRETH & SEGELKEN.

An Active Season is Here!

A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.

Hives should be ordered at once if they are to be ready for swarms. Frames, and other inside fixtures, too, should be put together now.

If you are wanting any special goods, orders should be made at once. Other cars are coming regularly from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the car.

The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.

If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.

We are sole agents in Ohio for the Roller Tray Incubator and Brooder—the best in the market. Write for our catalog.

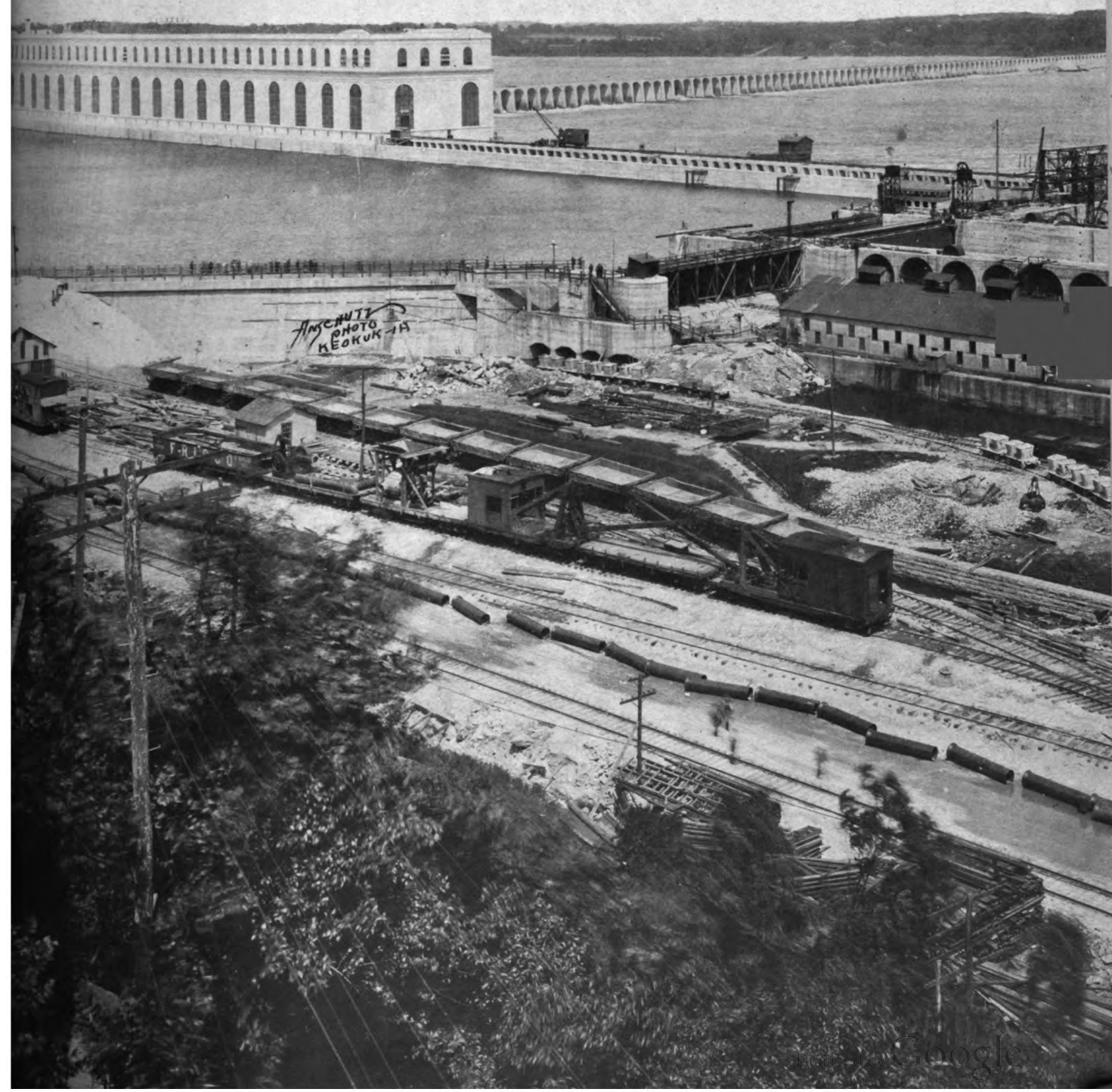
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