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# Gleanings in Bee Culture

VOL. XLII. DEC. 1, 1914, NO. 23.



# Special Numbers for 1915

There was a time when we were fearful that our readers were not appreciating the special numbers, our fear in this respect being prompted, perhaps, by some adverse criticism of the plan. However, we are convinced that the very large majority are in favor of having certain subjects discussed in a full and comprehensive manner, nearly a whole issue of GLEANINGS being devoted to the subject in question. Accordingly we are making a selection of subjects for 1915, taking without exception subjects that have been suggested by our readers themselves.

## **Feb. 1.—EXPERIENCES OF PROMINENT BEEKEEPERS.**

In this number we shall present an array of autobiographies, so to speak, from a large number of well-known beekeepers who will tell how they increased their business from a small number of colonies to a large number. In other words, how they progressed from an amateur to a professional. These men will discuss methods of making increase, buying bees, prices paid, etc.

**April 1.—QUINBY NUMBER.** One of the most successful exponents of modern beekeeping, and one whose pioneer work paved the way for beekeepers for all time to come, is Moses Quinby. Mr. L. C. Root, a son-in-law of Mr. Quinby, is going to furnish a number of interesting points in regard to the life and experience of Mr. Quinby never before made public, together with illustrations of the old home, etc. In this number we shall present a good many of Mr. Quinby's views on different subjects connected with beekeeping, some of which beekeepers are still debating.

**August 1.—NEW AND OLD HONEY PLANTS.** It has been a long time since any subject mentioned in GLEANINGS has been received with such enthusiasm as the subject of bee-botany. We are constantly learning of new honey-plants in various localities that are proving valuable, and at the same time there are many old honey-plants which beginners or beekeepers in other localities do not know. In this number we hope to start on a subject that shall not end for some time. In fact, GLEANINGS expects to devote more space to the consideration of honey-plants than ever before—not only in this one issue, but in many of the issues for 1915 as well.

**October 1.—HONEY FOR COOKING AND FOR THE TABLE; HONEY AS A REMEDY.** People who do not customarily use honey often show a woeful lack of knowledge concerning its use on the table, as well as in cooking. New users of honey are quite apt to store it in a refrigerator, or some other damp cool place, and when it goes upon the table it is anything but inviting in appearance. In this number, which will be full of information that the producer of honey can use to good advantage in disposing of his crop, we shall present a number of articles on the food value of honey—on different ways of serving honey, and on the use of honey in cooking. Included with this latter will be a number of new recipes that have been found especially valuable.

A great many physicians are using honey in their practice, recommending it to their patients for various purposes. We shall devote considerable space in this number to the use of honey as a remedy. While we may not show pictures to prove the comparative results "before and after taking," we believe that this number will serve to furnish the material to be used to convince any consumer that honey is a healthful food, and that he cannot afford to get along without it.



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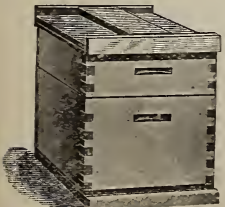
### HONEY

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## HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

### NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES Adopted at Cincinnati, 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. *No. 2*.—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 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 symbols 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; 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.

### HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

**FANCY WHITE**.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

**No. 1**.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

**CHOICE**.—Sections to be well filled; combs firmly attached, not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

**No. 2**.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more, also of such sections that weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

**EXTRACTED HONEY**.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

**STRAINED HONEY**.—This is honey obtained from combs by all other means except the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

**CHICAGO**.—Comb honey is firmly held, all grades selling fairly well. The choice to fancy grades bringing 16 to 17 cts. per lb., where the wood attached to the comb is allowed for. The amber grades range from 1 to 3 cts. less. There is no surplus of desirable grades up to the present time. Extracted white clover, linden, and water-white sage, sells at 9 to 10 cts., with other white grades ranging from 7 to 8; ambers of fine flavor, 7 to 8, with the less desirable grades and flavors from 5 to 6. Beeswax brings 31 to 33.

Chicago, Nov. 19.

R. A. BURNETT & Co.

Honey reports continued on page 5.

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**THE FRED W. MUTH CO.**

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We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. 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 new 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—4 per cent for cash orders sent in December, the discount lessening 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 has as yet 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.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

---

**C. H. W. Weber & Co.**

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Cincinnati, Ohio



# Gleanings in Bee Culture

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\$1.00 per year. When paid in advance: 2 years, \$1.50; 3 years, \$2.00; 5 years, \$3.00.

POSTAGE IS PREPAID by the publishers for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 30c per year. For all other countries in the Postal Union add 60c per year postage.

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NEW YORK.—We quote from the *Journal of Commerce* for Nov. 18: Fancy clover comb honey, 16; ditto No. 1, 14; No. 2, 13; ditto extracted, 8 to 9; buckwheat, comb, 10 to 12; ditto extracted, 7½ to 8; southern extracted, per gallon, 50 to 80; West Indian ditto, 45 to 48. The top price for beeswax, best States goods, 30 cts.; foreign offerings, 23. New York, Nov. 19. JOURNAL OF COMMERCE.

INDIANAPOLIS.—The demand for honey is good, especially on extracted; but the demand for comb is rather dull. At this writing No. 1 choice white is selling at \$3.50 to \$4.00 per case; best white extracted in 60-pound cans, in small lots, 9½ to 10½; basswood and clover mixed, 9½ to 10. Producers are being paid 30 cts. cash for beeswax, 32 in trade. Indianapolis, Nov. 19. WALTER S. POWDER.

KANSAS CITY.—The supply of best comb and extracted honey is fair. The demand is also fair. We quote No. 1 white comb, 24 sections to the case, \$3.00 to \$3.10; No. 2 ditto, \$2.75 to \$2.90; No. 1 amber ditto, \$3.00; No. 2 ditto, \$2.50 to \$2.75; white extracted honey, 8 cts. per lb.; amber extracted honey, 6 to 7; chunk honey in 60-lb. cans, 10; beeswax, 25 to 28. C. C. CLEMONS PRODUCE CO. Kansas City, Nov. 16.

ST. LOUIS.—The demand for comb honey has been very good lately; but extracted honey is still very dull, and stocks here are quite large. We are still quoting No. 1 white clover, in 24 sections to the case, from \$3.35 to \$3.50; No. 2, from \$3.00 to \$3.25; light amber, \$2.50 to \$3.00; extracted honey, 5 to 7, according to quality, flavor, and quantity. Beeswax is lower, and now quoted at 28 cts. for prime; impure and inferior, less. R. HARTMANN PRODUCE CO. St. Louis, Nov. 19.

NEW YORK.—We have really nothing new to report. There is a fair demand for comb honey, and the prices are ruling about the same as in your last issue. We have had a good deal of trouble with New York State comb honey this season on account of its candying and granulating. Siphments which we received about a month ago are now candied solid, and are being returned to us by our customers. It is the first year since we have been in the business that we have so much comb honey candied, and cannot account for it. Producers will be dissatisfied with their returns, and it is no satisfaction to us to handle candied comb honey. Extracted is in fair demand, prices ruling about the same. Beeswax is dull and declining, 30 cents per pound being low for choice domestic stock, while West Indian wax sells around 23 to 24 cents per pound. New York, Nov. 18. HILDRETH & SEGELKEN.

THE YOUTH'S COMPANION CALENDAR FOR 1915.

The publishers of *The Youth's Companion* will, as always at this season, present to every subscriber whose subscription is paid for 1915, a calendar for the new year. It is a gem of calendar-making. The decorative mounting is rich, but the main purpose has been to produce a calendar that is useful, and that purpose has been achieved.

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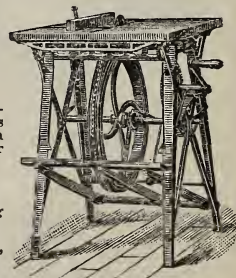
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Write to Mr. A. L. Rice, Manufacturer, 8 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

## BARNES' Hand and Foot Power MACHINERY



This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

### Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.,  
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## Wanted, 20 Tons Beeswax

at 28c cash, 30c in trade, f. o. b. Ogden  
Ship What You Have

**SUPERIOR HONEY CO.**  
OGDEN, UTAH

Manufacturers of "Superior" Foundation

## CANDY For WINTER STORES

Why not be sure your bees have enough for winter by giving each colony one or two plates of candy! We have it in large paper plates weighing about two pounds—enough to last a colony 3 to 4 weeks. Can send by post. Write for prices. A full line of supplies always in stock.

**H. H. JEPSON**

182 Friend Street      BOSTON, MASS.

## BEE SUPPLIES

Send your name for new 1915 catalog out in January.

**Dept. T, CLEMONS BEE SUPPLY CO.,**  
126 Grand Ave., Kansas City, Mo.

# FOUR PER CENT DISCOUNT

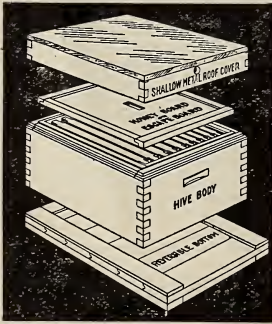
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## Root's Catalog Prices for December Cash Orders

For Root's Goods in Michigan, write

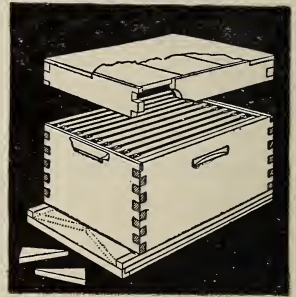
### M. H. Hunt & Son, Lansing, Mich.

## PROTECTION HIVES



10 Protection Hives, \$22.50

Do you know that PROTECTION HIVES are Double-walled, with  $\frac{1}{2}$  material in the outer wall, and sell for only about 60 cents per hive more than single-walled hives? It will pay you to investigate. Send for catalog, and special circulars.



10 Single-walled Hives, \$16.70

**A. G. WOODMAN COMPANY, GRAND RAPIDS, MICH.**

"Griggs Saves You Freight"

# TOLEDO

"Griggs Saves You Freight"

### HONEY CASES, CANS, AND BARRELS

We have a good supply of Cans, all sizes (second-hand cans); also Wood Honey-cases, Barrels of 52 gallons capacity (alcohol), the best package to ship extracted honey in—takes third-class rate, and is cheaper than cans.

### HONEY! HONEY!

If you need honey, write us. We have several kinds of the choicest in barrels or cans. State quantity you wish to buy. Comb honey in wood cases; fine quality.

### BEESWAX WANTED

**S. J. GRIGGS & CO., - 26 NORTH ERIE STREET, - TOLEDO, OHIO**  
 "Griggs is Always on the Job"



Meet me at the TULLER

For Value, Service,  
Home  
Comforts



## New Hotel TULLER, Detroit, Michigan

Center of business on Grand Circus Park. Take Woodward car, get off at Adams Ave.

200 Rooms, Private Bath, \$1.50 Single; \$2.50 up Double  
200 2.00 3.00

100 Rooms, Private Bath, \$2.50 Single; \$4.00 up Double  
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**Total 600 outside rooms. Absolutely fireproof. All absolutely quiet.**

Two Floors—Agents' Sample Rooms

New Unique Cafes and Cabaret Excellente

# Goods Now Arriving for Season 1915

We would like you to send in to us your list of supplies needed for 1915. This winter will be the time to nail and paint. When the season of 1915 arrives you will not be hurried. Why not do this, and be one of the forehanded beekeepers?

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**The A. I. Root Company**  
Syracuse, New York



## These Experts Have a Hand in All the Lewis Beeware You Buy Is This Worth Any Thing to You ?

When You Consider Buying Bee Supplies, Ask Yourself These Questions:

**WHERE CAN I BUY (NOT THE MOST) THE BEST FOR MY MONEY?**

**WHAT KIND OF MATERIAL WILL I GET?**

**WHAT SORT OF WORKMANSHIP WILL BE FURNISHED?**

**HOW WILL THESE GOODS BE PACKED?**

**WHO ARE MAKING AND STANDING BACK OF THESE GOODS?**

**WHAT ARE THEIR FACILITIES FOR DISTRIBUTION?**

### HERE IS THE ANSWER:

THE G. B. LEWIS COMPANY HAS BEEN IN THE BUSINESS OF MANUFACTURING BEE SUPPLIES FOR FORTY-ONE YEARS. IT HAS GROWN FROM CARPENTER SHOP TO A PLANT COVERING NEARLY SIX ACRES OF GROUND WITH AN ANNUAL OUTPUT OF 30,000,000 SECTIONS AND 100,000 HIVES. During all these years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality; BUT IT HAS STEADFASTLY STOOD BY ITS GUNS, MAINTAINING ONE STANDARD OF QUALITY AND WORKMANSHIP. LEWIS BEEWARE is the same to-day, was the same yesterday, and will be the same to-morrow.

**NOW, HOW ABOUT THE WORKMANSHIP IN THESE GOODS?** What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Bee-hive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis section machinery and output for twenty-nine years. These men represent the skill, the brains, and the conscience that go in the goods. We ask you again—DOES THIS MEAN ANY THING TO YOU?

**A WORD ABOUT LEWIS PACKING.** The Lewis Company also makes a business of packing boxes; therefore they know how goods should be packed. A patent woven wood-and-wire package, made only by the Lewis Company, is employed largely in packing. This makes the package light, compact, and damage-proof.

**WHO IS BACK OF THESE GOODS?** THE LEWIS COMPANY has for forty-one years stood back of every transaction it has ever made. On examination of Lewis goods, if they are not as represented, you are not asked or expected to keep them. This is our guarantee, and applies to Lewis distributing houses as well as the factory. The Lewis Company has a reputation for fair and square dealing second to none.

LEWIS BEEWARE may be obtained almost at your own door. Thirty distributing houses located at convenient points throughout the United States and foreign countries are there to serve you.

OUR 1915 CATALOG WILL BE READY FOR DISTRIBUTION AT THE USUAL TIME. Send for one, giving name of distributor nearest you.

**G. B. LEWIS COMPANY, WATERTOWN, WIS., U. S. A.**  
Manufacturers of Lewis Beeware

## Best He Ever Used

Platteville, Wis., June 1, 1914.

DEAR FRIENDS:

Just put on 500 sheets of the new foundation we received from you this spring, and must say that it is the best I have ever used or seen. The side walls seem to have a sixteenth of an inch start, and the quality of the wax is fine—two decided advantages. The foundation deserves all the praise I can give, as it certainly is excellent.

Sincerely yours, FRANK F. FRANCE.

Comb Foundation, Bee-supplies, Honey, Beeswax, Sweet-clover Seed, etc. Old Comb, Cappings, Slumgum rendered into Beeswax on shares, and Beeswax worked into foundation.

**DADANT & SONS**  
HAMILTON, ILLINOIS.

# Gleanings in Bee Culture

Published by The A. I. Root Co., Medina, Ohio

A. I. ROOT, Editor Home Department.  
H. H. ROOT, Managing Editor

E. R. ROOT, Editor

J. T. CALVERT, Business Mgr.  
A. L. BOYDEN, Advertising Manager.

Entered at the Postoffice, Medina, Ohio, as second-class matter

VOL. XLII.

DECEMBER 1, 1914

NO. 23

## EDITORIALS

### Our Cover Picture

IN many northern localities the past season, where clover proved almost a total failure, many fall flowers were unusually luxurious, especially goldenrod and aster. There are many varieties of each, and especially of the aster, some of the varieties having a very different appearance from others better known.

Near one of our swamp apiaries in September there were large tracts of unused ground with an almost unbroken stand of goldenrod. Our cover picture shows one of these. This particular tract stretched out for nearly a quarter of a mile. It was early in the morning when the picture was taken; and when we first stopped there was not a breath of air stirring, every stalk being absolutely motionless. By the time we were ready to "press the button," however, a slight breeze had sprung up, causing the blurred appearance of some of the blossoms.

### Winter Setting in Early

THIS fall throughout the country, up till about the 10th of November, the weather was exceedingly mild. Bees had been gathering pollen and nectar until very late. But old dame Nature seems to have a fashion of balancing up the weather. If it is very warm at one period, that period is almost sure to be followed by an extreme of cold, and so in this case. Two or three weeks ago the thermometer dropped to 10 and 20 above zero, followed by high winds. Thousands of colonies all over the United States were out on their summer stands in single-walled hives, waiting to go into the cellars. Many beekeepers, however, wished they had their bees inside, Dr. Miller among the number. They had been hoping against hope that they might have one more flight so they could cleanse themselves, after which they would be in fine condition to go into the cellar. But this warm spell has not materialized, or it has not up to to-day, Nov. 24,

although the temperature is tending to rise a little.

This premature cold spell of two or three weeks is going to be hard on the bees that are in single-walled hives that are to be put in the cellar. When the first warm fly day comes we shall give them a mid-winter flight, and then set them in again. Many beekeepers do not believe this pays; but in our locality it certainly does pay. Hives that have been spotted with dysentery in the cellar after one of these warm mid-winter flights have repeatedly come out in the spring in fine condition. Of course, where a colony is badly affected with dysentery a good flight for only one day does not help much. The only remedy for such colonies is *continuous* warm weather outdoors.

### More Disastrous Results Follow Shipping Honey by Parcel Post

C. F. BUCHER, of Littlestown, Pa., has forwarded to us a clipping from a local paper published in Maryland regarding a shipment of honey by parcel post which thoroughly "messed up" the contents of a large mail-sack, to the disgust of the postmaster and many of the patrons.

We feel, as we have said before, that the beekeeper or the producer should not make *experiments* of this kind without knowing what has been done by others. It is downright foolishness for any one to wrap up a section of honey, or a bottle of honey, for that matter, in a few thicknesses of paper, or a flimsy pasteboard box, and send it through the mails. Such a package may go safely the first trip or the second, but sooner or later it is going to get broken and the honey will be smeared over the contents of the whole mail-sack. If this careless experimenting is not stopped, beekeepers are likely to suffer a hardship owing to the danger of honey in any kind of retainer being ruled out of the mails absolutely.

When we get a piece of comb containing



a suspicious sample of brood together with considerable honey all sticky and dripping because the sender merely wrapped it up in a few thicknesses of newspaper, we feel like—well, we won't say what we feel like doing. Sending such a package through the mails is almost criminal carelessness. Such samples should not be sent to us any way, but to Dr. Phillips, Bureau of Entomology, Department of Agriculture, Washington, D. C.

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### Natural Foods Rich in Sugar

IN Dr. Wiley's department in *Good Housekeeping* for May appears a paragraph under the heading "Foods Rich in Sugar" As it puts honey at the head of the list of natural foods richest in sugar content we are glad to reproduce it for our readers. This, coming as it does from one of the greatest authorities in the world on foods, means something. The whole article, in fact, is worth reading, as is every thing else from Dr. Wiley. Here is what is said:

Among the natural foods which contain notable quantities of sugar may be mentioned the following: beets, sweet potatoes, turnips, radishes, carrots, and other root crops. Indeed, all the common vegetable foods consumed by man contain notable quantities of sugar. The sugar-beet yields from 10 to 18 per cent, and the sweet potato has from 4 to 7 per cent. The natural food richest in sugar content, however, is honey. Nearly all the solid content of honey is composed of sugars: namely, levulose and dextrose in practically equal proportions, in which are usually mixed small quantities of ordinary sugar. Honey is the type of natural sugar foods. Prepared foods which are largely sugars include, besides the ordinary sugar of commerce, molasses, syrups of all kinds, and confections. Among the confections are included the sugar cakes of various kinds, which are such a common component of desserts, and candies of every description.

.....

### Feeding Sugar to Make Colonies; a Further Explanation from Mr. Selser

REFERRING to our experiments in the matter of making increase at swamps or nectar from natural sources, and making increase by feeding sugar syrup, in our Oct. 15th issue, page 794, Mr. Selser writes, making a further explanation as follows:

In Sittings, October 15, page 794, you are quite correct in reference to a dollar's worth of sugar building up three-frame nuclei to full colonies with full sheets of foundation, ready for the honey harvest; with all consumed and no surplus; but it costs \$2.23 per colony to carry them up with stores to a surplus sufficient for winter.

The procedure was this: In the Root Co.'s Salem apiary, directly after the June honey-flow, with all surplus taken off, we divided eight-frame hives (populous, of course) into three three-frame nuclei, putting two frames on the original stand with an empty frame of drawn comb. This was in the first part of July, or right after the Fourth; and by the 25th

of August, when we have a big swamp fall flow at this point, the bees were in shape to stop feeding and continue on the natural flow; but this year spoken of was a failure, so we continued feeding until frost, and carried some five hundred colonies through to spring with a minimum loss of about five per cent.

We bought sugar that year in ten-barrel lots at a time, at four cents, less grocer's discount. Of course, with sugar at five cents the cost in dollars and cents would be a little more. We do not remember just what sugar we used; but we figure the cost in actual dollars and cents, so as to guide us in our future calculations.

Philadelphia, Pa., Oct. 30. WM. A. SELSER.

Mr. Selser is entirely correct. On the other hand, if we buy a colony of bees in July or August, we probably would have to feed that colony in order to put it in shape for winter. The point we wish to make in this connection is that one can, with sugar at normal prices, if he understands the art of *slow* feeding, make up a colony of bees from three-frame nuclei in July with a dollar's worth of sugar. As the nucleus will be worth anywhere from \$2.00 to \$4.00, it will make the colony net us, not including the labor, from \$3.00 to \$5.00 by Sept. 1; or including labor, 50 cents more. This will not include the hives nor extra feeding for winter if there is no fall pasturage. One reason why we went to the swamps was to get the honey for nothing; but, as will be seen from report elsewhere, the fed colonies came out ahead this year as the fall pasturage did not hold out in one location at least as we had expected.

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### Swamp Beekeeping vs. Feeding for Increase in and about Medina—a Final Report

LAST summer we had sold our bees down so low that it became necessary to make increase. Two plans were pursued to get more bees. One was, to leave some of the bees at the original outyards, and feed up with cheap Porto Rican honey after the general honey-flow was over. The other was, to move some yards to locations near big swamps. There was one big swamp, it will be remembered, of something like 1000 acres, about 30 miles northeast of us. From there were other swamps nearer at hand where we placed other bees. The nearby swamps did better than those far away, and the increase was satisfactory. The Richey yard, near the thousand-acre swamp, did not make as good increase as some of the other yards; but it drew out nearly a thousand combs from full sheets. One reason they went backward was, we drew on them heavily for bees in pound packages in July. The other reason was, that the bees had to fly so far to pasture that they wore them-



selves out. After they had made a good increase up to the middle of September they went backward on account of these long flights. Before we knew it they had become considerably weakened. It was these bees in particular that we had to send to Virginia, as mentioned elsewhere.

A yard of two-frame nuclei that were fed upon Porto Rican honey at the beginning of August built up to fine strong colonies for winter, with stores enough to carry them through to spring. The cost of the honey and the time amounted to \$1.50 per colony.\* The increase at the swamps cost nothing for feed; but the furthest yard, thirty or forty miles away, had to stand an expense of truck-hauling of ten cents a mile. That would be about \$10.00 for 50 colonies, or 20 cents apiece. Where there was plenty of fall pasturage the advantage was in favor of the swamp beekeeping. Where the pasturage was lacking or fell short, the advantage was in favor of the fed colonies.

The experiment will be tried next season, both in feeding and hauling bees to the swamps. But feeding is a comparatively sure proposition, while hauling to the swamps, while generally cheaper for a given increase, is less certain of good results.

### Wax-rendering-service Station; Massachusetts to Help Her Beekeepers in the Rendering of Old Combs

A new service station for Massachusetts beekeepers has recently been announced by Dr. Burton N. Gates, Associate Professor of Beekeeping, Massachusetts Agricultural College. The College at Amherst has installed a steam-operated equipment which is showing high-percentage yields. For instance, one trial in rendering nineteen Langstroth combs gave approximately six pounds of wax.

Already considerable quantities of comb have been rendered, and arrangement is made for much more; yet the capacity of the presses is several hundred pounds a day. We suggest that those having work to be done write to Dr. Gates, requesting this service, whereupon he will send full particulars and an application blank to be filled out and returned before the wax is shipped. Dr. Gates especially requests that beekeepers refrain from shipping materials previous to notifying him. It should also be emphasized that it is not desirable to furnish comb containing honey, not alone from the standpoint of leakage in transportation, but because it hinders efficient rendering. The

\* These fed colonies also gathered some natural stores from goldenrod and aster.

service is offered at a nominal cost, merely covering expenses, a charge of five cents per pound of rendered product. The beekeeper, however, is expected to pay transportation charges, which are slight.

We believe this idea of a central-service station to be a step in the right direction toward the handling of apicultural products. Moreover, from the success of this project already, we are certain that beekeepers appreciate the opportunity afforded them. Dr. Gates informs us also that from time to time, as circumstances and facilities permit, the wax-working operations will be improved and extended—not merely comb rendered into commercial wax, but commercial wax clarified and prepared for various markets and their demands.

We would remind the beekeepers that there is a neat income from seraps of comb, serapings, and burr-comb. This margin is especially profitable when the toilsome and disagreeable work of rendering can be avoided at a slight expense. Consider also the short distance of transportation as well as the additional yield of wax possible in comparison with the small percentage obtained by the usual laborious home process. Odds and ends of combs should no longer be used to feed the bee-moths. "Save the pieces" and have them extracted at the central station.

We would suggest that old comb may best be stored by tamping it solidly into a tight barrel or box. The more compact and harder it is tamped, the less likely moths are to injure it. Take a piece of two-by-four or other heavy tamp, and pound down the scrap as it is thrown into the barrel. The moths will not trouble wax stored in this way, especially if the material is allowed to freeze once during the winter. It is surprising what an accumulation may be made even in a small apiary. In the larger apiary it will well repay the beekeeper to sort his comb into two grades—bright and dark. Especially handsome wax is obtained from cappings or bright new comb.

We commend the new service station to the attention of beekeepers. Savings in wax will help meet your next-year's foundation bill.

### The Net-weight Law as Applied to the Comb-honey Business; Can We Get the Ruling Changed so that the Section will be Weighed in with the Combs?

WE have received one decided protest from a subscriber, asking why we did not complain to the powers that be against the

operation of the national net-weight law as applied to comb honey, and at the same time show up the inconsistency of applying the ruling one way in weighing in the wrapping around hams and applying the ruling in another way in eliminating the wood or section around comb honey. We have replied by saying that it would be about as useless to oppose the ruling of the Committee in the Bureau of Chemistry regarding the operation of the net-weight law as it would be to butt our head up against a stone wall. As a matter of fact we did file our protest, but it did no good. Perhaps there would be no objection in showing up the inconsistency, or what appears to be such, of applying the ruling one way with regard to one food product and an entirely different way in regard to another. While it is true the Committee did not *make* the net-weight law, that Committee, until the courts pass on it, has interpreted its scope. In the mean time it would be a little dangerous for most of us to go contrary to its interpretation, even though there is an apparent inconsistency in the way the ruling has been applied. By complying we show good faith on our part.

No matter what the outcome, we do not think the operation of the net-weight law will entail any great hardship. If we can only make up our minds to comply with it (and we do not see but we shall have to, whether we wish to or not), we shall find that its effect will be no great hardship. That the law as interpreted by the Committee is causing some inconvenience there can be no doubt. There must necessarily be a readjustment, and it will take time to get that under way.

In the mean time GLEANINGS has counseled its readers to "get into the bandwagon," as we see no other alternative except fine and imprisonment. When Uncle Sam begins to make arrests (which he doubtless will do later on) we will wake up when it is too late, and our idea all along has been that it would be better to comply with the ruling until the courts set it aside, and that is not impossible.

The R. A. Burnett Co., of Chicago, are probably among the largest dealers in comb honey in the United States. This company does not complain about the law, but rather of the bungling way in which it is being carried into effect. Here is what Mr. R. A. Burnett says:

The marking of weights on the wood frame is causing retailers no end of trouble. To begin with, the apiarist does not succeed in having them clearly stamped in all instances. The majority of them use too much ink, and it blots so that a "3" and an "8" are almost indistinguishable, as are some of the other figures. Then when they pack the honey in

cases they put heavy and light weights in the same case, so that the retailer buying a case of honey by weight finds there are sections running from 10 oz. to 19 oz. in the same case. Such a case is now before us.

We reason that the beekeeper thought it unnecessary to put frames of equal weight in a case, for the reason they were marked on the wood; but when the marking is blurred and the average clerk does not note the difference in a frame that is well filled and one that is not, it makes errors both for and against all parties concerned. There has been so much of that this fall that our salesmen deplore the marking on said frames. They are often incorrect, but mostly they are understamped as to weight. The remedy, in our mind, is to grade the sections before casing, so that there would not be over an ounce of difference in any of the sections. This could be done at the time of weighing by having a place on the bench for the different weights to be set, so that when they were cased it would not be necessary to do any more handling than was occasioned by the first placing. Of course, all changes of an arbitrary nature cause many people to make innocent mistakes which result in trouble of a rather serious nature in many instances.

Chicago, Ill., Nov. 5.

R. A. BURNETT.

Producers and dealers alike should be careful not to use an ink-pad that is too wet. Use a common blotter, and absorb the surplus moisture before using the stamp.

By all means sort and grade honey according to weight. We are doing it right along, and find nothing difficult about it. Said the foreman of our honey department, Mr. Gayer, "The net-weight law is causing us no inconvenience worth mentioning." The reason of this is because every section is graded and marked according to its weight. Each section of a certain weight, or within an ounce of a certain weight, is put in a pile by itself, after which the several piles are cased. Any producer or dealer who will put honey of different weights in the same case, and try to market it, will soon find out his mistake. If he continues such foolishness he will have to quit the comb-honey business.

It is an intolerable nuisance to have the honey improperly marked, and then all mixed up in one case. Producers and dealers may rest assured that the buyer will go elsewhere rather than to run any risk.

### The Push-in-the-comb-cage Method of Introducing, again

SOME two or three years ago, notably on pages 554 and 761 for GLEANINGS, 1911, and again, pages 762 for 1912, there was considerable discussion over the method of introducing a queen by liberating her on a comb and then immediately shutting her in on a small area of one of the combs under a hollow square of wire cloth, the wire cloth being pushed down into the comb clear to



the midrib. The idea of this method of introducing was to give the queen immediate access to honey in the comb, impart to her the odor of the comb, and at the same time afford her an opportunity to lay eggs prior to her release. An egg-laying queen is much more easily introduced than one just taken from the mail-sacks; and this method has the advantage that either the owner or the bees themselves can release the queen. It involved the principle of the old Peet cage of 30 years ago that was so universally successful. It was revived in later years by various people, notably by the late W. Z. Hutchinson. The plan is described in his work, "Advanced Bee Culture."

We very seriously considered the advisability of substituting this method of introducing in all our mailing-cages; but we dropped it for the time being, as the smoke method, introduced by Mr. Arthur C. Miller, seemed simpler and was just as sure of results. But quite a few have failed in making the Miller method a success, either because the directions were not carefully followed or because the method will not meet all conditions. Among the number was E. J. Ladd, connected with the Portland Seed Co., Portland, Oregon. Some considerable correspondence between him and ourselves arose over different methods of introducing. In two of his late letters he stated that he had had excellent results with the caged-comb plan. The last letter from him will speak for itself.

This year's experience has proven to us that it is far from safe to trust bees to release caged queens from the ordinary mailing-cage. In some instances, and with some colonies, the bees were so savage to get at the new comers that they actually fought each other in their scramble for places, acting like demons, and this during a honey-flow and no robbing. In just such cases as this we succeeded by using the wire-cage method, but found it necessary to select old and tough combs for the purpose, as newer combs were torn to pieces in the mad frenzy of the bees in trying to cage the queen and attendants.

Cages made and used were about 4 x 5, and these were pushed down solid to the midrib of old and tough combs containing some honey and sometimes some brood; and when using such combs in no instance was a single bee released by the bees themselves. The frame containing the new queen was placed in the center of the hive and left there until the bees showed a disposition to accept the new comers. When this disposition was shown the cage was lifted and all inside at once became part of the colony. Frequently the queen lays while caged, and takes up her motherly duties on a larger scale when released.

We have given this method a severe test the past season, and with an apiary that acted more like demons than normal rational bees, and we are firm in our belief that this method is thoroughly dependable, even under adverse conditions. We also expect to use it when introducing valuable queens and in full colonies.

Memory carries me back to an early mailing and introducing cage that had a tin back that was drawn

out when the cage was placed on a comb. There were two sharp tin strips fastened to the side of the cage, which were to be pushed through the comb and bent over, and these held the cage securely in place. The use of these cages was discontinued, chiefly for the reason that the tin gave a poor footing for the bees, and many queens were injured in the mails. The wire-cage method as used by us is really a modification of the old-time mailing-cage just described. And, by the way, I do not remember losing any queens when using that old-time cage.

By using the wire cage, success is assured; but it does take a little more time and patience. We know that hundreds of queens are lost annually in introducing by the mailing-cage method, leaving the releasing to the bees themselves. We also know that many purchasers in this vicinity believe all there is to do is to follow instructions as printed and leave them alone; then in a month or so wonder why the new bees don't show up, etc., implying the rascal who supplied the queen sent a mismatched cull; and when the colony is examined by one who knows, and matters are explained as to the why and wherefores—well, then there is a different story, and you can guess the rest.

We endorse the wire-cage method as being safe, practical, and dependable for introducing queens just as strongly as we do the use of rubber bands for rapid work in fastening combs when transferring, and of which we wrote you some time ago.

Portland, Ore., Nov. 2.

E. J. LADD.

It may be we should consider whether or not we should adopt the plan even now; but one thing that makes us hesitate is the fear that the average beginner would not be able to get a queen transferred from the mailing-cage into the introducing-cage where there was honey, brood, and young bees.

We should be glad to get reports from some of our subscribers who may have tested the thing out during the past season. In the multitude of counselors there is wisdom.

### Those Two Carloads of Bees from Medina to the Dismal Swamp, Va.; the Proposition of Trying to Make Queens Breed Both Summer and Winter

As pointed out on page 572, Aug. 1, the taking of carloads of bees south to Apalachicola, Fla., and bringing them back to Medina, after making increase, proved to be rather expensive. While we did not lose out on the proposition, we did not make very much money by it. The experiment, however, was watched narrowly by beekeepers all over the world; and from the standpoint of furnishing information through this journal it was worth all it cost. If it had not been for the fact that the bees were sold in colony, nucleus, and pound package form, we should have lost money; but as it was, we were able to clean up a little to the good; but it is very clear to us that no one whose only source of revenue would be honey would be able to move bees from the North to the extreme South in car lots, and



make it a paying proposition. If one could secure big crops south as well as north it might pay; but the big-yield years are by no means common. One cannot very well run for increase and honey both at the same time. We were fairly successful, however, in making good increase and a fair crop of tupelo honey; but the weather conditions that year were against us.

The great expense item in moving bees to Florida is the dollar freight per colony down, and the same freight back. There was another unexpected item we ran across; Queens that have been laying well during the summer in the North are unfit to continue doing good work in the winter time in the South. Nature has so designed, apparently, that queens, like every thing else, must have periods of rest. No queen can lay heavily all summer and all winter. About all one can do is to change queens after getting south, putting in younger blood to take the place of the old worn-out stock. But what is one going to do with a lot of good tested queens that will be all right the following spring, and do another summer's work if they can only have a winter's rest? During the winter time there is but little demand for queens. The problem, therefore, of having queens breed winter and summer continuously is a serious one, and must be met when moving a carload of bees from the extreme North to the extreme South. As far as this goes we shall have the same problem in Virginia.

There was another drawback; and that was, bees in the region of Apalachicola could not always breed to advantage during the coldest months. They actually went backward during January and February. Mr. Marchant was greatly worried as to whether he would be able to make increase from a lot of weak colonies. He succeeded in making good increase after requeening some of the stock, and after some of the old queens had had a rest. If he could have had young queens in all the hives, his increase would have been much more satisfactory.

Another expense item was the cost of attendance during the time of year when weather conditions were not satisfactory.

This year, instead of going to Apalachicola with our bees we decided to go to the Dismal Swamp in Virginia. A comparison of climatic conditions, from the records of the Government, show that the advantage is slightly in favor of the Virginia locality, notwithstanding it is very much further north. The Gulf Stream has made a moderate climate of Great Britain, and for the same reason the coast of Virginia, where

our bees are located, has practically the same temperature as Apalachicola, with less than half the freight to pay. We find, on further investigation, that the Dismal Swamp has practically all the flora, including the tupelos of northern Florida, with the addition of hundreds and hundreds of species of honey and pollen bearing plants that are not found in the vicinity of Apalachicola. These plants make it possible for bees to gather pollen or nectar practically every day in the year; and after a thorough investigation we came to the conclusion that the Dismal Swamp offers advantages in bee-breeding scarcely found elsewhere in the United States.

The freight rates to the Dismal Swamp region are less than one-half what they are to Apalachicola, with the great advantage of more days of good weather. Instead of engaging a high-priced man on the job throughout the winter we have placed our bees in charge of a local beekeeper until early spring comes on the latter part of February or first of March. Then we will send one of our most experienced queen-breeders and begin active increase and queen-rearing.

It will, therefore, be seen that the Dismal Swamp proposition involves less than half the freight-rate expense, less than half the labor expense, with the advantage of more days of pollen and nectar. We may not secure as much honey, but we shall have more days for flying probably.

One carload of bees started Oct. 20, and arrived in splendid condition. The car was packed in an entirely different way from the shipments of last fall to Apalachicola. We were able to get into a 36-foot car by the new way 320 colonies, and some 40 odd nuclei. By the old way of loading it crowded things to get in 250. Another carload started south Nov. 16. This last car was made up of nuclei hardly suitable for wintering in the North. If we build these up to nice strong colonies by spring we shall be satisfied.

Photos showing this method of loading on the new plan that involves less expense and less time in loading will be given a little later.

Reports will be made through these columns of the success or failure of this experiment from time to time. Of course the proposition may not pan out any better than the one in Florida last winter; but we shall certainly have a big advantage in a lower freight rate going and coming, with more nectar and pollen bearing plants following consecutively throughout almost the entire winter. More anon.

Dr. C. C. Miller

## STRAY STRAWS

Marengo, Ill.

FOR a small apiary, what better uncapping-tank than that given by "The Outlaw," p. 866?

GRACE ALLEN stands worthily with Eugene Secor as a poet for, if not among, beekeepers. Tell us about her.

GLEANINGS does well to endorse *Good Housekeeping*. Besides Dr. Wiley's valuable writings, it is worth while for its good and clean fiction. Nowadays *clean* fiction is none too plentiful in magazines.

MAJOR SHALLARD, sorry not to be in company with you, p. 857, but I have not used quilts for years. A cover having a  $\frac{3}{8}$ -inch dead-air space, covered with zinc, serves for all covering of my hives.

T. P. ROBINSON seeks to explain the impulse that causes an aged worker to make her final exit from the hive. Is it certain there is any such "impulse"? Doesn't she try her best to get back, and then fail because lacking strength of wings?

IT IS not so well known as it should be, as pointed out by Dr. Neumann, *Deutsche Bienenzucht*, 165, that one of the things that make honey especially desirable is its content of enzym, which seems to aid digestion by its mere presence—none in sugar.

DR. PHILLIPS is innocent of the charge you make against him, Mr. Editor, p. 881. I laid that trap for you, and then told him to watch you walk into it, as I knew you would. I'm sure I would have walked into it, for it seemed absurd to think that when bees were packed close together they could have room to fan with their wings.

P. C. CHADWICK deserves thanks for particular *failures* as to rearing queens in upper stories, p. 796. I think I was the first to report rearing a queen in an upper story, but my failures about agree with his. He has, however, given an advance step of value in rearing a queen above and below *at the same time*.

G. M. DOOLITTLE gives it straight, p. 797, about bees working on same or nearly related flowers, but I remember one case in which I saw a bee fly back and forth upon unrelated flowers. I suspect that bees do not give a button for relationship, but have preferences; and when there are enough flowers of their first choice they will work on no others (and that's nearly always the case when there's a surplus); but when flowers are scarce enough they have no scruples about mixing.

THE paragraph about feeding sugar, p. 794, is enlightening, even though Bro. Crane and Editor Root do not entirely agree. But in accepting the testimony that bees drew out six frames of foundation half way from a quart of syrup (1 lb. of sugar), I should want proof that nothing was yielding, for generally bees are gathering a little, and the slow feeding would give considerable time. [See answer to P. C. Chadwick in this issue, on a similar matter, in the department of Beekeeping in California.—Ed.]

THE average beginner is deeply impressed with the idea that whatever his bees are doing in the way of brood-rearing may be doubled, or at least increased, by stimulative feeding. I don't think I have seen the time in 50 years when any amount of stimulative feeding would yield a cell more of brood in my apiary. How could it if the bees already have all the brood they can cover? Of course there are places, as mentioned by P. C. Chadwick, p. 885, where at times there are such breaks in pasturage as to stop the queen's laying, and then stimulative feeding pays big. But in general the notion that the queen should be whipped up in spring to lay more is all wrong, does no good, and may do harm. [We agree with you entirely. In queen-rearing, stimulative feeding is imperatively necessary. If there is not a steady light flow of nectar secretion we believe in stimulative feeding in the fall; but seldom can it be practiced in the spring to advantage.—Ed.]

MIGRATORY beekeeping is an interesting thing in Europe. A great expanse of buckwheat within 12 miles of Vienna is in control of the beekeepers' association, to which members may take colonies certified as to health, paying 20 cents each for the care of skeps, and 24 cents for movable-frame hives, a skillful beekeeper being on hand day and night during buckwheat bloom (July 24 till about Sept. 8). For hiving swarms, 24 cents each.—*Bienen Vater*, 146. [We wonder how much migratory beekeeping has been practiced in and about Vienna during these troublous war times. Too bad, too bad, that the greed of the war-lords should involve millions of innocent ones, make children fatherless and motherless, and rob wives of husbands, and all for nothing. The poor and unfortunate are paying the penalty, and not the ruling classes, scarcely a man of whom has been even wounded.—Ed.]



# BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

Up to date (Nov. 11) we have had no "northers"—a really unusual condition for this time of year, for October rarely fails to give us one or more of these dreaded winds.

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The second rain of the season has been falling the past two days, a gentle one at that; and while not heavy at all points (one of which is Redlands), in some places close to two inches has been recorded. With each of these storms the beekeepers' hopes go up, and visions of a good crop of honey appear. But many times those hopes are evaporated by the warm sunshine before more comes to wet the soil to a beneficial depth. Personally I am pessimistic as to a general crop next season. Some do not share my views, but I have yet to see two good successive flows of nectar from the sage. Some say we did not get a good flow this season; but to my mind the only reason was because our bees were not in condition to gather it from the beginning of the flow in surplus quantities. In some localities as much as a 350-pound average per colony has been reported, while a few miles distant the yield was extremely light. I, like all beekeepers, am living in hopes of a sage flow, but really I expect to see only the orange give surplus quantities in this locality.

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I had the great pleasure of visiting a successful poultry-raiser a few days ago, who showed me through his entire plant. The marvel to me was not that he was successful, but rather the qualities that made his work a success. It was feeding-time when I arrived. He was just starting out with a large bucket of wheat, and I followed. Slowly and observingly he went from pen to pen, holding his bucket low as he traveled. Each chicken seemed to delight in getting a good mouthful before the grain was thrown in the scratching litter, though none acted as though they were starving by any means. I asked him if he did not know when he started that he had more grain than he would feed for the meal, to which he answered he did. "But," said he, "they like to pick out of the bucket, and I took enough so all of them could reach it easily." He loves the work, he loves his birds, each one receiving individual attention if needs be. I could not help comparing his care and his love for the work with that of those who are making a failure of the same business. Neither could I banish the thought

that the comparison fits so aptly two classes of beekeepers, the first of whom *makes* success, while the other *may* succeed if circumstances favor him. Less bees and more individual attention will succeed better than more bees and less individual attention. And this is the rule in nearly all farming enterprises—proper attention at the right time. The failure to provide a super at the proper time may result in a colony swarming, and thus curtail its surplus production greatly; or failure to give sufficient room may cause the loss of several days in the midst of the heavy flow, when honey to the amount of from six to ten pounds per day might have been saved. Many are the details of the business that receive far too little attention, while the chief work seems to be to get off the honey and "whoop her up." After the "whoop" is over, then that "we should worry" feeling sets in and holds sway until the extractor hums again.

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Mr. Editor, you say, page 794, that your foreman pointed out one colony which he thought would be a fair average that drew out six frames of foundation half way, on one quart of sugar syrup, half sugar and half water. I do not know what was the condition of the colony or other conditions at the time this test was being made; but when I read that assertion I am frank to say that I concluded your foreman did not know what he was talking about. Unless conditions were different from any under which I have tried this experiment I still think his estimate is entirely too small. I would have no worries about increasing, and sufficient comb room in the future if I could obtain results so favorable. [Our foreman wishes to state that, although he has never been accused of being very bright, yet the above-mentioned assertion is correct. The experiment was carried on during the most unfavorable circumstances. The colony in question was shaken from its combs in October. At that time asters were in bloom, and we expected they would gather sufficient to meet their needs. Instead of that, the next day it turned cool and a drizzling rain set in. When the colony was examined the second day after shaking, the bees were so nearly starved that they were beginning to drop to the bottom-board. One quart of sugar syrup, half sugar and half water, was immediately given them warm in a Boardman entrance feeder. The cap of this feeder had only two perforations, so

*Continued on next page.*

# BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado.

Sunday, November 8, the writer was in Delta County, near Crawford, at an elevation of about 7000 feet, and there was alfalfa in bloom; and but a short distance away was ice half an inch thick. The amount of bloom so late in the season was certainly a surprise to me.

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### COLORADO VOTED DRY.

The Prohibition amendment carried in Colorado by about 8000 majority. As it does not take effect till 1916 the liquor-dealers have an opportunity to close out their stocks and their business. There is about \$20,000,000 a year spent for liquor in this State. This money will find its way into other channels, doubtless, and I believe that we need not fear the panic the liquor interests have promised us if Colorado went dry. Is it not rather significant that Colorado, Arizona, Washington, and Oregon (all western States) were the only ones that voted dry. Montana was the only State voting in favor of woman's suffrage. The western States seem to have the lead in measure of gallantry.

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### THE COST OF PRODUCING A SECTION OF HONEY.

Mr. Frank A. Gray asks Dr. Miller on page 776, October 1, what it costs to produce a section of honey. The Department of Agriculture, through the Bureau of Farm Management, is making considerable headway among the farmers to find out what it costs them to produce the various farm crops. It is no more difficult to ascertain the cost of producing a section of honey than of producing potatoes or wheat or hogs. I have read several agricultural bulletins that would help any beekeeper or farmer to solve these questions.

I know one system of apiaries where a fair crop in 1913 was harvested, and cost something over \$1300 to produce 1000 cases of comb honey ready for market. It took about 500 colonies of bees, and in this amount nothing was put down for interest on the investment or pay for the owners who did the work. However, it paid for hired help, supplies, rent, horse feed, etc. I believe that beekeepers should be urged to begin keeping accurate accounts, so they may know where they stand. It is a rare farm that will pay the owner interest on the investment, allow for depreciation, repairs, etc., and pay the owner any thing but day wages. Most farmers simply get a job when

they buy a farm, and the same is true in the majority of cases with beekeepers.

No. 1 sections cost me \$5.00 a thousand, and foundation 60 cents a pound. I pay \$1.25 a thousand for folding and putting two starters in each section and placing in the supers. My supers are wedged up when they are put on the auto to be taken to the outyards. Here is the approximate cost to me of a case of comb honey, leaving out the apiary management and all other charges.

24 sections in flat.....	\$ .12
Extra-thin foundation for 24 sections.....	.12
Work putting up and starting 24 sections..	.03
Work cutting foundation, dampening sections, waiting upon operator .....	.05
Cleaning 24 sections of honey .....	.05
Packing and stamping sections .....	.05
Cost of shipping-case in flat .....	.165
Cost of nailing up case .....	.01
Cost of nailing on cover, and stamping outside of case and piling in storage pile.....	.01
Cartage to car or depot .....	.01
	<hr/>
	\$0.58

This represents the cost of material and shop labor in producing a case of comb honey. This does not cover the large items of interest on investment, depreciation on outfit, rent of location, labor of apiarist, expense for horse of auto, help in the apiary, etc. At a later date I may offer something on these latter items, as it will pay for all of us to know what is put into our business and what we get out.

*Concluded from previous page.*

that the feed was taken very slowly. Very few bees went to the field during the period of 36 hours which it took them to consume the feed. About that time Mr. E. R. Root came into the yard, and his attention was called to the remarkable fact that they had drawn out six sheets of foundation about half way. It could hardly have been that they obtained feed from any other source. In addition to drawing out this foundation they would naturally consume some of it themselves, owing to their starved condition. Now, we will admit this one experiment with one colony does not prove any thing, and it may be that it would take more than one quart of such syrup to finish out the partly drawn comb. The actual cost of comb-building has not yet been clearly demonstrated.

This is an important question to beekeepers; and if nothing prevents carrying out our plans we expect to do considerable experimenting along that line another season. —G. H. R.]



J. L. Byer,

## NOTES FROM CANADA

Mt. Joy, Ont.

I am just leaving to attend the annual convention of the O. B. K. A., which is being held in Toronto as usual. While the honey crop has been very small—a failure in most localities in the province—yet I am expecting a large crowd at our meeting. Beekeepers are, as a rule, a hopeful bunch, and place a lot of confidence in the prospects of “next year,” even if actual conditions do not augur too well for their expectations to be realized.

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## THE DREADED ARMY WORM AN ENEMY OF CLOVER, AFTER ALL.

In GLEANINGS, page 745, October 1, it was stated that the dreaded army worm that was so much in evidence in many localities this past season would not attack clover. I am sorry to say that this is a mistake, as we have *prima facie* evidence to prove, by the fact that some of our best catches of red and alsike clover fields near us were absolutely denuded. After the worms had passed through the grain-fields in which the young clover was, not a thing could be seen on the bare ground but the droppings of the pest. Yes, they eat clover all right; and from what I can learn from our authorities it is one of their natural foods. [We are sorry to learn this, as we had been given to understand from what we supposed was good authority that the army worm did not attack the common clovers of the East. Perhaps this is another case of “locality,” but we think not.—Ed.]

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## FINE WEATHER, AND PROSPECTS FOR GOOD WINTERING.

Unusually mild beautiful weather has been the rule throughout most of Ontario for the past few weeks; and up to to-day, Oct. 12, we have had very few days when little pollen has not come in from dandelion and other scattering bloom. Bees are going into winter quarters strong in young bees; and where stores are good and abundant, good wintering should be assured. Our own bees are very heavy, most of the stores here in York Co. being from buckwheat. The 320 colonies here have been fed 2000 pounds of granulated sugar, which is not a large amount for that number of bees.

Speaking of feeding naturally makes one think of feeders; and this reminds me that,

judging from what many beekeepers write me, and coupled with our own experience, this would be a poor time for any one to invent a new kind of bee-feeder. Why? Simply because the common ten-pound friction-top honey-pail seems to be growing in favor above all other feeders. At our yard up north we have a number of Miller feeders—the kind I have always been in favor of in preference to any others. Last fall I was somewhat jarred to have my son report that the pails were away ahead of the other feeders; and this fall they used the Miller feeders hardly at all. Many write me a like experience; and after using more of them myself I am now inclined to think that the last feeders have been bought for our own use, and henceforth the common ever present pail will be used. In the first place they are easy to get, and cheap in price, as an extra lid can be bought and kept over, the pails being used for honey after feeding is done if desired. A few dozen extra lids cost but a trifle. They are easy to put over a colony inside of an empty super, and it is so easy to remove them when empty or partly empty. It is not easy to remove a partly emptied feeder of any other kind. There is no danger of robbing when using the pails if any ordinary precaution is taken; and it is easy to measure the feed and give one or more pails as required. No doubt other things in favor of the pails might be mentioned; but the ones given cover about all there is to the question of feeding in so far as I can think of at present

To-day (Nov. 9) we have had but two or three killing frosts, and on Oct. 28 we picked cucumbers in our garden. This will give an idea as to how mild the weather has been. More or less pollen came in during many days of October. Bees are, as a rule, going into winter quarters with large forces that were reared during buckwheat bloom; and where stores are plentiful good wintering should be expected. In some localities honey-dew was reported during the season, and I have an idea that a small amount was gathered in our York Co. apiaries. Wherever honey-dew is present in hives during winter the outcome is simply a guess with the odds in favor of disaster to the colony before spring, especially if the bees go too long without a flight.

# CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.

HOW SPEND THE WINTER EVENINGS; THE IMPORTANCE OF READING UP ON BEES.

"As the days are getting short now, and the bees are all ready for winter, I am trying to decide how the long winter evenings can be best spent to advance a young beekeeper's knowledge along the line of apiculture. Not having any definite ideas in this matter I am led to write Doolittle, asking if he will not give us something in his department along this line."

I take it that the writer of the above has chosen beekeeping as his pursuit in life, or, at least, expects to keep bees in connection with some other occupation to an extent sufficient to warrant posting up quite thoroughly in bee-lore. Having once chosen a pursuit in life, it behooves all to look after that pursuit with all diligence; and in no business engagement is this more imperative than when the culture of the bee is to be the occupation. In no way can this be done to better advantage than in reading the bee-literature of these times. Many times have I tried to get correspondents who were often asking questions to take a bee-paper or to send for a good book on bees, only to be met with certain excuses which went to show that these persons would not make a success in apiculture. A man who is not willing to put a few dollars into the apicultural reading of to-day shows by that very thing that he will not make a success with the bees; for if he has the right kind of love for the bee he will be eager to devour all the reading on this subject which he can get hold of. It is just this hungering and thirsting after knowledge regarding the practical part of beekeeping that insures success; and unless a person does so hunger and thirst after knowledge along some special line of the many industries of the world, he will never make any success of any thing.

I take it that our correspondent takes GLEANINGS. This is good; but just one bee-paper will hardly content an enthusiast. Take all the others if you possibly can. But before any of these, in importance to the beginner, is a good book on bees. Why I put the book or books first is that no one is fully prepared to understand the bee-papers till he is acquainted with the elementary principles of our pursuit. Lists and lists of questions are sent me, sometimes covering several sheets of paper, which I know would never have been asked had the writers had a good book on bees, and had they read the book understandingly. From

these books and papers, during the winter evenings, the mind is to be stored with useful knowledge which can be put into practical use as soon as the season of 1915 opens. During the winter evenings of 1869 (that being the winter after I obtained my first colonies of bees) I procured and read Quinby's "Mysteries of Beekeeping," and the "Beekeeper's Text-book," and subscribed for the *American Bee Journal* and the *Beekeepers' Journal*, the two latter being all the papers devoted to bees there were published at that time. My first year of experience in beekeeping, by way of putting the things I had read in practice gave me an average of about 25 pounds of comb honey from each old colony I had in the spring. At the end of the fourth season I had chronicled 81 lbs. of comb honey as the average surplus from each colony in the spring. During these four years I had studied, read, and worked all my wakeful hours with the bees, having nothing but fun in doing it. Beekeeping has been a source of real pleasure and keen enjoyment during all the 45 years since I commenced. And besides this pleasure and enjoyment the bees have built me a home and given me the many comforts which I can now enjoy as the "sun is going down the western slope" of life. Very much of this success was brought about by those winter evenings when I began to read up on the subject.

But many of our practical beemen do not write for publication, and such men we can visit during the long winter evenings, as another help along the line of our qualification. Many a good thing have I gotten in this way—things which I had never seen in print, and which I could never have given to the world through the columns of GLEANINGS had I shut myself in all the winter evenings to the books and papers devoted to our pets.

Then we have our bee conventions which are held for the purpose of helping those who attend, in a special manner; and while the cost may be considerable, if we improve the time as we should we can learn more than enough to cover that cost in addition to the benefit which we derive socially.

All these things will be eagerly sought after if we have a natural qualification for the calling which we have chosen. If any person loves something more than he does to study beekeeping, in all probability such a one has mistaken his calling, and the fullest success will hardly crown his efforts.



# GENERAL CORRESPONDENCE

## A REMARKABLE DEMONSTRATION IN THE HANDLING OF BEES

BY EDWARD F. BIGELOW

For several years I have been making demonstrations in various parts of the country in the handling of bees without needing gloves, smoke, or other protective device. I have at last achieved the climax in such demonstrations. I do not know what more can be done. I regret that I have no photograph to show the demonstration. I would have engaged a photographer if I had known that it was going to be so remarkable.

In the early part of September I was instructor at the teachers' institute in Tell City, Indiana. In the course of my work I lectured on honeybees, and obtained a colony that a local beekeeper placed on the grounds near the schoolhouse. This was a fairly strong colony, though it had not been in the hive very long, having been taken as a swarm only three weeks previously. I made the usual demonstration after massing the teachers around the hive, opening it and requesting a few to hold frames and to study the movements of the bees. This was done in the forenoon. At noon intermission a few teachers requested me to repeat it, and to show them the frames, bees, eggs, and larvæ. I told them that the colony was gentle, and (with care) could be safely handled. But some who had known bees at home said that I had hypnotized those bees, or done something else to them, because I had shown a few of the teachers how to take them in their bare hands. They said that no one else could do that.

In the afternoon a large number of visitors were present at the regular session, and at the recess the same question was brought up, the teachers and the visitors requesting information about my method of hypnotizing those bees. What was the secret? I made this announcement: "After our regular afternoon session I will make the most remarkable demonstration ever made in this country. I will act by proxy, so that you cannot say that I do any thing to the bees, or that I have any peculiar influence over them." From the visitors present I selected a small boy and a girl, neither of whom had had any experience with honeybees. I selected four tall young men, and requested them to remove their coats and roll the shirtsleeves to their shoulders. I asked for eight volunteers from among the young ladies who had low-necked

dresses and bare arms. The ladies were requested to push their sleeves to their shoulders. I directed the entire company to go on the campus and arrange themselves in a circle around the hive. I should say that there were 350 people present. I stood back in the crowd and had the eight women arranged in a row near the hive and the four young men in front of them. I sent the little boy and the little girl to the hive to remove the cover and pass the frames to the young men, who were to search for the queen and to give that frame to me. I returned it to the hive. The other nine frames were divided among the four young men, most of them holding two, one holding three. They held these frames above the young ladies' heads, and at a signal of one, two, three, they shook the entire contents of that hive over the eight young ladies. I confess that my heart was in my mouth when I gave that signal. I thought at the very best that there was no great thing to be gained, and there would be a lot to lose if those young women were stung. I thought I should probably be carried home in the ambulance after the mob got done with me. But to my surprise, as well as to that of the spectators, although those young women were covered with honeybees, not one was stung. The air was black with flying bees. At first it seemed as if the entire colony would go off. The owner became alarmed, but I could assure him because I had the queen. I was confident that the bees would return to the hive. Bees covered the ground and the people. Gradually, however, they began to center toward the entrance of the hive, and the entire hive was coated with bees. The people took them up by the handfuls and did almost every thing conceivable with them.

I know of nothing left for me to do that is more daring and courageous than that, and of nothing to demonstrate more convincingly that bees, if properly handled, are not disposed to sting. If you know of any one else who has dared to shake eighty thousand honeybees over bare necks and bare arms until they look as if they have been peppered, I should like to know who did it. If you know of any "stunt," as the boys would say, that could excel that as a public demonstration, please tell me what it is, and I may at some time raise enough

courage to try it. The people at Tell City took the whole demonstration as a matter of fact, as if I were going from place to place and doing the same thing every week. You will agree with me that it was decidedly out of the ordinary. It will take me some time to accumulate courage enough to do it again. Perhaps I shall never make another such venture. I have frequently had people put their hands into a mass of bees, or take them up by the handful, and I have seen

other demonstrators do similar things; but never before have I seen eight young women covered with bees, and the remarkable demonstration made by totally inexperienced persons. The prerequisite condition upon which I insisted was that the fourteen volunteers must be those who had never handled bees, and from homes where bees are not kept.

Arcadia, Soud Beach, Ct.

## SUCCESSFUL BEEKEEPING IN THE CITY

BY A CITY BEEKEEPER

To the veteran beekeeper an article about successful beekeeping in cities may appear like another case of carrying owls to Athens or coal to Newcastle. Yet GLEANINGS is not read by the veterans alone, but by an ever increasing number of novices or amateurs.

There was a time when you could not talk bees to me. Politely I listened to the enthusiastic recital of a friend concerning the mysteries of an apiary; but, like some of the seed in the parable, it fell by the wayside. Bees sting. It must be difficult to master all the details connected with their care. That settled it.

original two colonies. It makes me smile now when I think of the feverish anxiety in hiving that first swarm. There was no reason for excitement, because the queen was clipped and I found her at once in front of the hive. (That, by the way, was the only swarm I had in four seasons.) In that first year I got 120 lbs. That wasn't much; but to me, who had expected nothing, it was an encouraging beginning. From four colonies I received 350 lbs. the following year. The year after, six colonies yielded 740.

In the fall of that year I found foul brood in my apiary. That nearly put a

quietus on my enthusiasm. When I first found those sunken cells, so much dreaded by the beekeeper, and saw that ropy, foul-smelling stuff, which I had read so much about, I felt as though I had seen an apparition. Because I noticed it first in a colony where I had introduced a new queen I blamed it on the candy in her cage. An indignant reply from the breeder led me to look for another cause. I am quite sure now that my strong colonies robbed the infected hives of a negligent beekeeper in

the neighborhood. At any rate he hasn't had any bees since that time, which seems to show that I am not far wrong in my guess. Well, I had quite a fight getting rid of the dread disease. It was late in the fall, and no nectar coming in from the field. But then, a smooth sea never makes a skillful mariner. I weathered that storm, and



FIG. 1.—Bees kept in a crowded district in a city of 500,000. The building marked X is a school, and the bees are kept on this side.

But the time came, about six years ago, when I was tempted to try it. Well do I remember how doubtful I was of success, and how I felt as though it were hoping too much to expect any honey at all the first season. I may say now that I have been successful. During the first season I had three colonies, one of them a swarm of my





FIG. 2.—A view of the colonies mentioned under Fig. 1.

learned a whole lot besides. At first I intended to let them die; and for that reason I lost several colonies which might have been saved. The next season was poor—only 90 lbs. from 4 colonies. One of them, which had not been treated the fall before, showed signs of foul brood; but it readily yielded to treatment according to the McEvoy method. Since then I have not had a trace of foul brood in my yard, which plainly shows that it may be eradicated.

The following season was better, and yielded about 300 lbs. But my banner year was 1913. From 6 colonies, spring count, which through swarming increased to 9, I received 2125 lbs., an average of 236 lbs. per colony. There was an abundance of white and sweet clover, and the faithful little workers filled super after super.

As this is a town of about 500,000 inhabitants, I'm often asked, "Where is your bee pasture?" We do not live in the center of the town, but about half a mile inside of the city limits. The bees find plenty of sweet clover on the commons and beyond the limits. Last year we had more white clover than I ever saw before.

Again I'm asked, "Don't your bees trouble the neighbors?" Well, they haven't so far. My bees stand along the south side of a school (see illustration). The windows are on the east and west sides of the building. Only once a child was stung. That was last fall, and it was my own fault too. I transferred a colony at a time when there was no nectar to be found in the fields, and when they were naturally cross. I should have waited till after school hours. There were, however, no hard feelings. Though stung in the upper lip, the child's face was not disfigured, probably due to bathing with

a solution of soda and water. A pint of honey made her forget all pains.

As the years go by, my interest in bees does not diminish. I consider them a fascinating diversion for a man who leads an indoor life. One of our great authors said: "Every professional man needs a hobby." That is true. Only be careful that it be an innocent one. Some of my friends go fishing when they wish to rest their tired nerves. Others enjoy a baseball game. Tastes differ, of course. We cannot all have the same inclination; but I would not trade my hobby for theirs by any means. For a man who is interested in the great outdoors, and wishes to get a little closer to nature, there can be hardly any thing more attractive and fascinating than the keeping of bees, as thousands of enthusiastic beemen will testify. Most years you will find it profitable besides. In these days of the high cost of living this is well worth being remembered.

But a novice might say, "How shall I start? I know absolutely nothing about bees." My answer is, "If you wish to learn swimming, there is nothing like getting into the water and making an effort. If you wish to start with bees, simply get a colony. You'll learn as you go along." You cannot possibly know less than I did when I commenced. Start in a small way, then you'll not be out very much in case you fail the first time. My first year's expenses were about \$20 for two colonies, hives, supers, and tools. But I had \$12.00 worth of honey, which was 60 per cent on my investment, and three colonies to go into winter quarters; and last, but not least, many dollars' worth of recreation.

It is true, if you wish to succeed with bees you must have a liking for them; you must

be handy with tools; and, above all, you must be resourceful. There are ever so many problems turning up which must be solved. If you are of the right kind you will enjoy this part of it immensely. On the other hand, if you are of the helpless kind, if you can't drive a nail straight, if you cannot act in an emergency, if you are so easy-going that you hate to exert yourself, then take my advice and leave it entirely alone. The

hustler, however, will win, even against great odds.

I like to tell my friends the beginning of Mr. A. I. Root's beekeeping career—how that absconding swarm which passed over his head one day in 1865 turned him into a beekeeper, and that he became one of the most important figures in the beekeeping world, and is still living to witness the blessings bestowed upon him by the Lord.

## BEEKEEPING AS A HOBBY

BY A. J. JAMES

Amateur beekeeping is a most fascinating hobby. When once inoculated with the germ of bee fever by one's own bees the malady is almost impossible of cure. In fact, there are but few cases of complete recovery on record. It develops rapidly when once started, and leads the victim along with an irresistible attraction to the delights which come from a growing intimacy with the emblems of industry.

few colonies of bees can be attested by the thousands of amateurs who are getting both enjoyment and profit from their little workers.

For the business or professional man whose mind is harrassed by the duties of these strenuous times there is nothing that will give such a relief and relaxation to the tired brain as the time spent in the open air attending to a few colonies of bees. It



"To the artistic eye there are interesting possibilities in the arrangement of the apiary."

A. J. JAMES, San Antonio, Texas.

The uninitiated may scoff at the idea of delights in such a pursuit, and think only of stings, sticky fingers, climbing trees on hot days to hive swarms, and so on; but the real beekeeper knows that these things can be controlled to the point where they are not of any great importance. That there is a great pleasure in the ownership of a

is a form of recreation that is within the reach of all. All cannot own an automobile nor indulge in the luxury of golf, but anybody can afford a hive or two of bees. It is not necessary to have a large number of colonies; in fact, such a thing would not be desirable for the amateur. It is better to begin with a few and let the increase of



the bees and the knowledge of them go hand in hand.

For the man with a scientific mind there is an inexhaustible field for study in observing the life of the inhabitants of the hive. While we have some general ideas in regard to what causes the bees to act as they do, yet there is still room for the patient investigator and observer. We do not wish to detract one iota from the great amount of work along this line which has been done by many who have devoted much time and thought to it, but it is a subject of vast possibilities. It also stimulates a love for nature and brings a knowledge of the flora of the vicinity.

For the man with a mechanical bent there is the opportunity to gratify his desire to work with tools by making his own hives, stands, and so on. Of course, as a general rule it is more practical to buy factory-made hives; but an ingenious man can find a great deal of pleasure in constructing his own.

To the artistic eye there are interesting possibilities in the arrangement of the api-

ary. A few hives against a background of vines and plants give a pretty effect. They should, of course, be painted white; for, aside from its attractiveness, white has been found to be the most satisfactory color for hives. Paint will preserve the wood, while the white color does not absorb the heat readily, and thus the temperature of the inside of the hive is kept down during the hot days of summer.

Aside from all these considerations there is the added feature of profit. As experience is acquired and the apiary grows, the income will begin to be of some consequence. In a good season one colony should produce from three to five dollars' worth of honey besides the possibility of giving a swarm worth at least two dollars more.

Much more might be said in this connection; but, in conclusion, as the preacher says, it may be stated without fear of contradiction that for all-around genuine pleasure and interest, beekeeping is one of the best hobbies to be found. If you doubt it, just ask any of your friends who keep bees.

San Antonio, Texas.

## AN AUSTRALIAN BIRD PEST

BY T. RAYMENT

In Australia, especially the far southern portion of the Continent comprising the State of Victoria, apiarists engaged in the breeding of queens sustain some severe losses due to the prevalence of wood-swallows. These birds are scientifically known as *Artamidae tenebrosus*, or shrike swallows (sordid wood-swallow). They are also called bush-martins, summer-birds, etc. The birds are partly migratory and probably American bee-farmers suffer from their depredations.

From November, 1913, to February, 1914, inclusive, a colony of these birds established themselves on the borders of the State Forest of Bow Warrung. We have an outyard in the confines of this forest, and within a stone's throw of the bird colony. At first we paid no atten-

tion to their graceful, hovering flight, as we were busily engaged in getting queen-cells built. We placed in three-frame nuclei about one hundred nice ripe cells, and in a little while we were astonished at the number of missing virgins—about fifty per cent. From



A wood-swallow of Australia represented about to catch a bee. These birds are also called "bush-martins," "summer-birds," etc.



The carelessly made nest of the wood-swallow.

the next batch of cells we obtained no better results; so we cast about for the reason. The martins by this time appeared very quiet, coming right in among the hives and settling close at hand on small shrubs and on the fence-posts. We began to study them. We observed them to make a gliding circular flight over the bee-yard, then rapidly swoop downward and catch a bee. (We have endeavored to depict this in the accompanying water-color sketch.)

Possessing a love for the native birds we were loth to kill them; but so continuous were the onslaughts on the queens and worker bees, we decided to shoot a few for purposes of investigation. On conducting a post-mortem examination we found in each of the birds from ten to fifteen bees. We noted no parts of other insects.

Some time ago a writer stated in the *Australian Beekeeper* that the birds ate only the head and thorax of the bees, rejecting the abdomen, as it contains the sting. Our investigations did not bear this out, as we found some bodies complete with the exception of the sting. This (together with the perching of the bird after catching the bee) leads us to believe the martins squeeze the bee in such a manner as to cause the sting and poison-gland to protrude far enough

to be wiped off on a limb. The hard chitinous substance of the head and thorax would not, without the honey-sac in the abdomen, afford much "meat."

After a week's shooting, the loss of young queens was reduced to normal. Latterly we have taken to hanging the dead birds in various positions in the apiary as a species of scarecrow. This appears to act very well.

Dr. Leach, M.Sc., in his book of birds, mentions the attacks made by the martins upon the bees, and advises the removal of the apiary in preference to killing the birds, as they render incalculable service to the state by the destruction of the insect pests. However, we are of opinion that once the wood-swallows take to the destruction of honeybees they rarely attend to the hunting of other insects.

Some years ago a Queensland resident, under special government permission, occupied a small tropical isle off the coast of the mainland. The island abounded in insect and bird life. There were flocks of birds so great as to darken the face of the sun. The entomologist soon had a small apiary in working order, and the yields of honey recorded read like an account of a record year in Florida. But, alas! the martins came in teeming thousands, and reduced huge colo-





Valentine Uhrich, of Myerstown, Pa., in the apiary where he spends most of his spare time during the warm weather. Mr. Uhrich has been a beekeeper for fully forty years.

nies of bees to nuclei. As the objective of the occupation was to study bird life, the remainder of the apiary was sent over to the mainland, where it has since prospered.

Should an apiary be visited by these birds it is advisable to take precautions. We advise attention to the trees where they roost evenings. They are gregarious in habit, and crowd thickly along the branches, so that a few well-directed shots should have

a very chastening effect. In the other sketch we have shown the carelessly constructed nest of horsehair and small twigs. Usually three or four spotted eggs are laid during the warm months, the young emerging from the eggs about December. In Australia the nests are mostly built in the eucalyptus-trees,\* that is, red gum, stringy bark,† or box-trees.‡

Gippsland, Victoria, Australia.

## A PROFITABLE BACKLOT APIARY

BY ROBERT PESCHKO

Three years ago this month a colony of bees was given me by a friend, and the next spring I increased it to three and took off two half-depth extracting-supers of honey from the parent colony.

The next spring we still had the three colonies, and I killed one queen because I thought she was not doing as well as she ought to, and let them raise another. That mistake cost me a fine crop of honey from that one colony. From the other two I got 100 quarts of extracted honey. I shall never kill another queen unless I have one to run in at the same time.

That summer I increased to six colonies, and last spring I bought three more so we had nine colonies spring count.

Our lot is 50 x 125 ft., so the bees are quite near the house; but they have never

annoyed any one, and they seem quite gentle.

This spring we got one nice half-depth super of fruit-bloom honey. We use only nine frames in a ten-frame super, and find it is easier for extracting. We got no surplus from white clover. There were plenty of clover blossoms; but the bees did not work on them. Basswood gave a surplus of 40 lbs. extracted honey per colony, spring count. We put up all our honey in Mason jars, both the pint and the quart sizes, and retail them ourselves. For the pints we get 30 cts., and the quarts 60. I think the best way to dispose of one's honey is to make a house-to-house canvass. It is hard work;

\* *Eucalyptus rostrata.*

† *Eucalyptus eugenoides.*

‡ *Eucalyptus polyanthema.*

but in that way one can find the people who like honey, and who usually buy it as long as the crop lasts.

Our extracting-house is 8 x 8 ft.—not very large. It is to the left of the bees, so it is just a step to carry the supers back and forth. The bee-escape boards are all made with galvanized screen wire on them. They work fine, and the honey stays nice and warm. We have a Cowan No. 15 two-frame extractor which holds either

two full or two half-depth frames. If I were buying another extractor I would get it a size larger, so that I could put two half-depth frames in each pocket. We use a cold knife for uncapping, and keep it sharp with an emery stick. We have two small

galvanized wash-tubs for uncapping. One rests on the other, the upper one being punched full of 1/4-inch holes for the cap-pings to drain.

Danbury, Ct., Aug. 22.



Apiary of Robert Peschko, Danbury, Ct.

## BIENNIAL YELLOW SWEET CLOVER AHEAD OF THE WHITE

BY F. W. VAN DE MARK

The engraving shows a three-acre field of yellow biennial sweet clover that I have adjoining me here in town. I have found that it is far easier to get a stand of the yellow than of the white, one year with another. It makes a finer hay, stands pasturing better, and will make seed where the white will blast, as it has done here this year. It also gave my bees something to work on

when every one else was feeding. It has paid for this alone; but I have thrashed by hand 553 lbs. of good seed from the three acres. I shall not get any from six acres of white. I have thoroughly tried the annual yellow here, but for this locality it is a failure.

Stillwater, Okla., July 21.



Three acres of the biennial yellow sweet clover in Stillwater, Oklahoma.



## NINE-YEAR-OLD GIRL GRAFTING QUEEN-CELLS

BY WM. GIECK

The accompanying pictures show my daughter grafting queen-cells. She is 9 years old, and these pictures were taken July 15. I raise my queens by the Swarthmore system. She always wanted to try, so this summer she grafted some of the cells for me. She is the youngest girl I have

heard of raising queens. I raise my own queens, and supply some for the neighboring beemen. The honey-flow in this locality was only about half a crop; but the bees worked strong on aster and goldenrod.

Aurora, Ill., Sept. 9.

## ADVANTAGE OF PRODUCING COMB, EXTRACTED, AND BULK COMB HONEY IN THE SAME APIARY

BY BYRON S. HASTINGS

I heard the best joke the other day that I have heard in a long time. I have my bees in the orchard of a Mr. John Craig. The hives are painted white, and are in three rows, two in a place. The other day as I was going out to the apiary I stopped to talk to a neighbor, and during the conversation she said, "The other day we had visitors, and I just had to laugh at one of them. She said to me, 'I never knew before that John Craig had a graveyard in his orchard;' and I couldn't think what she meant until I went to the window and looked over there. She thought your hives were tombstones."

If that lady would stand in front of one of those nice white tombstones some warm August day she would think there were spooks in that graveyard sure.

In planning to make beekeeping my vocation, naturally the question came into my mind whether I should produce comb honey in sections, bulk comb honey, or extracted honey.

I decided to produce all three for a while, any way. Why? Well, I would rather produce section comb honey, because it takes more skill, sells readily, and is, I think, nicer to handle than the others. But not all colonies are suitable for producing it.

I have two colonies that will store as much as any; will build the comb as straight as a board, fill them clear to the wood, and cap them as white as snow. I have two

others that will do as well as the first two every way, except in capping. They cap so that it looks dark and greasy. Some of my colonies are just average—that is, they will do fairly good work in the section, and cap white, but they will not come up to the first two in any way.

I had one colony in which, no matter what I would do, the bees in it would not do a thing in the super, but prepared to swarm. I removed all but one frame of brood, the one with the queen on it, and put them into another hive-body, putting frames



Dolores Gieck grafting cell cups.

with full sheets of foundation in their place. I put a queen-excluder on the hive, the comb super on that, and the brood on that. They filled the brood-chamber with brood and honey, and the other hive body with honey as fast as the brood hatched out, but they would not do a thing in the comb-honey super. I took it off and put another hive-body on, with full sheets of foundation in

the frames, and they went right to work and filled it. The comb-honey super was put on another colony, and the bees entered it at once.

There were other colonies nearly as bad as this one, so you see it is necessary to run them for extracted honey to get any thing from them; and by having drawn combs I can sometimes get some fall honey that I could not get otherwise. Then, too, a person can sort out the combs having much drone comb, and use them for extracting by using them over a queen-excluder.

Extracted honey does not seem to sell as readily as comb honey.

Bulk comb honey sells well, and provides a good way to get rid of sections that are light weight or have imperfect combs or dark cappings. Comb badly stained with propolis will make the honey taste strong and bitter. Be careful what you pack if you want to build up your trade.

So far I have never been able to put much over six pounds of comb honey into a ten-pound pail; therefore I sell about four pounds of extracted with every six of comb. That is not such a bad way to sell extracted, is it?

I have never tried to sell bulk comb honey outside of my own community, because the home trade has taken it all; but I have had people come fifteen miles to buy it, and there were beekeepers in their neighborhood too; but they said they did not like extracted honey, and the honey in sections costs too much. There was only a few cents a pound difference between the bulk comb and that in sections, but a cent looks pretty big to some people.

I have had considerable trouble with the bees putting pollen in the comb honey in frames. Can some one tell us what to do



Examining one of the combs of a mating-hive.

about it? I am using shallow extracting-supers for it.

Brookville, Ind.

[See that there is room for pollen in the brood-chamber, and, if necessary, use an excluder under the super.—Ed.]

## BEES SECRETING BRIGHT YELLOW WAX

BY P. E. WAUGH

Although most observers are of the opinion that bees at times secrete wax involuntarily, a nucleus which I kept during the winter of 1914 has proved it to me so conclusively that I thought it might be of interest. This nucleus, because of the small number of bees, early stopped brood-rearing. They were on four combs two-thirds full of fall honey, and I fed some syrup. Notwithstanding the mild weather of fall and early winter, these bees were in distress before January and would all have died of dysentery had not some warm days come, giving them a flight. After January I placed

the hive on a screen and brought them indoors every time the temperature was below freezing, setting them out again when the weather was favorable.

On a paper under the screen I noticed wax scales; and upon examining the dead bees that fell on the screen quite a number of them had wax on their bodies. This was repeated several times, so I have saved a few of the bees with the scales attached—also a few of the scales, which I am sending you by this mail. These bees had no occasion to build wax, even in the fall, having more comb space than they could fill.





Home and home apiary of E. W. Fox, Fruitdale, S. Da. The honey-house is the building shown in the background among the trees. Mr. Fox has a full equipment, including an auto truck, power extractor, etc.

I had always supposed that wax is without color—clear, transparent. I have seen it many times when a swarm was shaken in front of a hive. Many of these scales are amber-colored, and I am now of the opinion that some of the very yellow cappings on my golden-yellow fall honey is due in part to the yellow wax secreted by the bees, and not entirely to the yellow pollen from the fall flowers. Can you set me straight on this point? The bees sent by this mail are healthy so far as I know. Like the surgeon's patient, "the operation was a success, but the patient died." These bees died from eating too much, but are healthy bees.

Iola, Kan.

[Knowing that Mr. Sladen had made a special study of wax secretion, we sent the above letter to him, together with the specimens which Mr. Waugh furnished. These he examined and reported on as follows.—Ed.]

#### YELLOW WAX SCALES.

Lying loose were 48 scales, of which 29 were white, 16 pale yellow, 3 bright yellow; 9 scales extracted from bees were all moderately bright yellow. The scales consisted as usual of numerous semi-fused laminæ of wax. On splitting three of the pale-yellow scales in two it was found that the inner laminæ—that is, those that were adjacent to the wax plates when the scale was attached to the abdomen—were white, and that the outer ones were bright yellow. On splitting the bright-yellow scales in two it was found

that both halves were bright yellow. It is hardly necessary to add that no pollen could be detected in any of the scales.

It is clear that these bees had been secreting bright-yellow wax. Whether they had also been secreting white wax is not so certain, for the white color of some of the scales may have been due to bleaching, but this I think improbable.

There is no reason to suppose that the bright-yellow color of the wax was due to a distressed condition of the bees. On the other hand, we know that certain honeys are always capped with bright-yellow wax. A well-known instance of this in Europe is the sainfoin (*Onobrychus sativa*), a plant closely allied to the clovers, the honey of which is as light as clover honey. The bright-yellow color of the comb made from sainfoin honey is generally held to be due to some peculiar property of the honey itself. It is hard to believe that added pollen has any thing to do with it.

Your correspondent refers to yellow cappings produced by a certain kind of fall honey. The production of yellow and white wax scales by his bees might be explained by supposing that the bees produced yellow wax when feeding on this fall honey, and white wax (as we know they will) when feeding on the sugar syrup, which he says he gave them. The restricted movement of the bees during the cold weather would make the differentiation possible.

Ottawa, Ont.

F. W. L. SLADEN.

## WRAPPING A ROW OF HIVES IN PAPER

BY E. W. FOX

I am sending a picture of my home and home apiary. The building furthest back is the honey-house. The front of the house is at the right, and the bees are on the south side. The trees are cottonwood, apple, and walnut.

The hives are all super-packed for win-

tering. Those close together in the foreground are all ready for papering. I am placing about ten colonies together like this, and papering around the outside. We now have an auto truck.

Fruitdale, S. Da.

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## HOME-MADE FOUNDATION SPLINTS

BY JACOB ALPAUGH

[The writer of the following article, Mr. Jacob Alpaugh, is one of the most successful beekeepers of Canada and an all-around mechanical genius besides—one of the few inventors who is able to devise something that is practical and useful. A visit to his yard, we are told, reveals many a clever contrivance.

We have long cherished the hope that we might be able to visit him some time, but the opportunity has never come. We have met him a time or two at conventions, and in the course of our interviews he has dropped various hints of some new device that he is using. Among others was the wooden-splint method of staying up foundation, originated by Dr. C. C. Miller. His method of making as well as applying the splints to the foundation itself we consider to be good, and in response to our request to describe it he sends in the following:—ED.]

I make my own foundation-splints, but it took me a year or two to find out how to make them best. I first take a block of pine from one to two inches thick, and with an ordinary circular saw I slice the entire block into pieces a little less than 1-16 inch thick. I now make another block from 30 or 40 of these pieces, tie a string tightly around each end (back an inch from the end), dip each end into glue, and let dry. The block is then turned on one side and sliced again, thus making 30 or 40 splints each cut. The glue holds them together and keeps them from flying all over the shop; but as soon as they are dropped into hot wax they all separate.

I don't use splints as Dr. Miller does. I make them so that they reach about 2-3 of the way down from the top-bar. I split the foundation as nearly vertical as I can, insert the splint, let the cut come together again, which practically covers up the splint on both sides—no sag, no spoiled row of cells by the bees in drawing out the foundation. The foundation is split down only from the top-bar as far as the splints reach.

[Not fully understanding just how Mr. Alpaugh inserted the splints in the slits in the foundation in such a way that it would be completely covered, we asked him to explain a little more fully. He has done so as follows.—ED.]

I make the cut about two-thirds the way down the foundation from the top-bar of the frame. I do it with a very thin-bladed knife; but I make a very beveling cut by holding the handle of the knife toward the end of the frame, and as near down to the

foundation as I can. This makes a cut that will completely cover up the splint when inserted, and allows the cell walls of the foundation to be on both sides of the splints; hence there will be no spoiled row of cells on either side of the comb when drawn out by the bees (I find this very often happened by the Miller plan). After pressing the foundation down firmly on to the splints with the ends of my fingers, I brush a little hot wax on both sides of the foundation directly over each cut. This strengthens the foundation and makes a perfect job. The splints are not quite as long as the cuts I make, so that they are easily inserted.

[Mr. Alpaugh, among his other accomplishments, appears to be a good fisherman as well as a hunter. While what he writes further is a little out of the ordinary beelore, it is too good *not* to publish, even if it is a fish-story. Here is what he writes further.—ED.]

### FISHING FOR SALMON AND TROUT.

I left Innerkip three weeks ago on a fishing and hunting trip. I am now at Barrow Bay, Ont., 20 miles above Wiaron, on the Georgian Bay. For the last two weeks I have been going out with a friend of mine nearly every day trawling for salmon trout; but as the wind often springs up about noon and makes the water a little too rough for a row-boat we pull ashore, clean our fish, take them to the dealer here, as we cannot eat the twentieth part of what we catch; then we get our dinner and go out in the afternoon for partridge or hare, which are also very plentiful here—some sport, believe me. I want to tell you, when a fellow gets





L. E. Gaylord, a mail-carrier beekeeper of St. Paul, Minn.

a 10 or 12 lb. trout on the end of a 175-foot line the world is just about all dead to him except that fish until he gets it pulled in and landed in the boat. The first one I

pulled in two weeks ago happened to be a large one, and my heart was running like a steam-engine when I landed it. Innerkip, Ontario.

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### \$24.00 A COLONY, SPRING COUNT

BY L. E. GAYLORD

I am a letter-carrier at St. Paul, Minn., and spend my extra time with my bees instead of in saloons. My best year for honey was in 1912, when, from spring count of 18 colonies (increased to 45), I took off 1800 sections of No. 1 honey, and extracted 160

gallons, all of which I sold for \$445, which is a trifle over \$24 per colony, spring count, or nearly \$10 a colony at the end of the season.

I took first prize on white extracted at Minnesota State Fair. St. Paul, Minn.

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### A MYSTERIOUS TROUBLE CAUSING THE DEATH OF A LARGE NUMBER OF BEES

BY P. S. REAVES

There is something wrong with my bees which seems likely to depopulate every colony unless checked very soon. The bees are dwindling rapidly, even though every hive is provided with plenty of stores at the present. Some contain from 50 to 75 pounds.

A little over a month ago I noticed dead bees scattered in front of every hive in the apiary, but I paid no attention to the matter at the time. Yesterday when making preparations for winter I discovered that

nearly every hive had dwindled, and there were only four or five that had any young bees at all. All the colonies had queens.

The past season there was a good honey-flow of every kind except white clover, which was a failure with us as in so many other parts of the country. All colonies, with a very few exceptions, are well supplied for winter.

*Later, Nov. 2.*—The condition of the bees is steadily growing worse; and unless something can be done I am afraid I shall not

be able to winter more than two or three colonies. I have just been looking over the bees, and in only one hive did I find a sign of any brood, and that was in only one side of one comb. Most of the unhatched bees, I find, died just about as they were ready to emerge from the cells. I have seen mature bees dead before the entrance, but still not many more, perhaps, than would die ordinarily from a healthy colony. I have a neighbor in town who has found the same trouble.

There is a large amount of applebutter made, and a good deal of fruit canned and preserved, in this country. Some think the destruction of bees is due to their sucking the juices from decaying fruit thrown out from these places.

I live in a railroad town, and the general shops of the road are located about three-quarters of a mile from my bees. Perhaps some kind of poison from these yards or from the smoke makes the trouble. My neighbor has three colonies about a mile out of town that are not affected.

Princeton, W. Va.

[It is possible that the juice from partly decayed apples may be responsible for the trouble; but we should be more inclined to think that the bees have been poisoned. All the facts presented point that way strongly.

Is it not possible that some one of the number engaged in making applebutter or cider may have put out something to kill off the bees? If this had been done by even a single person it would account for all that has happened. Syrup poisoned with a strong solution of any of the arsenites would very quickly kill off all the bees in an apiary. We do not like to suggest that any one would do this; but we do not know how else to account for this unless there were some poisonous gases from some industrial works that were killing off the bees, the same as has occurred in Denver. This is hardly probable, however.

Here is another possible explanation, and it has occurred at one of our outyards in the swamps: The bees might have been gathering nectar at a distance of three or four miles. These long flights during unfavorable weather would prevent many bees from getting back, and thus cause a rapid decimation of the colony. It would also cause large numbers of bees to be worn out—so much so that their presence would not be tolerated in the hive. When bees fly a long distance through shrubbery or underbrush, their wings will be worn out prematurely. We suggest that you examine the bees carefully to see whether their wings are frayed out.—Ed.]

## CROWNED WITH BEES

BY B. F. SCHMIDT

On the 5th of July of last year I was taking honey from the bees; and while busy at work brushing them from the extracting combs a little swarm came out. Before it had settled, a photographer came along; and by the time he got ready I had the swarm on my hat. I went back to the hive where I was working, and then the photographer took the picture shown herewith.

The wheelbarrow as arranged in the picture with an empty super receives the combs of honey after the bees are brushed off, and then is wheeled to the honey-house.



B. F. Schmidt with bees not in his bonnet but on his hat.

N. Buena Vista, Ia.



## THE SUMMERING PROBLEM IN SOUTH AFRICA

### Ants, and How to Combat Them; the Ravages of Bee-pirates and Bee-birds

BY F. H. COOPER

While never a number of GLEANINGS goes by but we South African beekeepers can learn something of value from it, yet there is one topic—an exceedingly important one to you of North America and Europe—which we of the tropics and sub-tropics do not find of any great interest to ourselves. The problem of wintering is comparatively simple for us here. Snow and ice are almost unknown in the Cape Province; and though we have heavy rains extending over a period of four or five months, there is always a goodly proportion of warm and sunny weather, and the days when bees cannot fly are the exception. All through the winter we revel in a profusion of blossom, including scores of acres of the well-known "sugar-bush" (*Protea mellifera*), and a sequence of two or three weeks of settled warm weather will often enable the apiarist to harvest considerable surplus in mid-winter.

Most of us experience a certain amount of trouble in the excessive moisture which condenses on the inside of hive-covers; and, apart from the bad effect of the wet and cold on the bees, it becomes almost hopeless trying to produce fancy sections, on account of the discoloration. Colonies in double-walled packed hives are far less troubled with this condensed moisture, and I am inclined to think this is the hive that meets most of our requirements.

With the exception of this difficulty from dampness and a few minor worries, however, our wintering question is a fairly simple one, providing colonies are strong.

Now, I dare say you of the bee-cellars and winter-cases will be thinking what a fortunate people are these brothers in South Africa; and when I tell you that foul brood (American or European) is at present quite unknown out here, and that there is a market which pays as much for dark honey in bulk as a good many of your largest producers can get for water-white in flint bottles, some of you may be thinking of selling and coming over to share the spoils. Just a few minutes, though, till I have shown you the other side of the picture, and you will possibly think better of pulling up stakes, and may be you will stay where you are.

To begin with, our supplies cost just about double what you have to pay. All my hives and fittings are of American manufacture, and one cannot get goods carried from

the United States to Cape Town and then further without paying for the privilege. However, I have found from experience that it is far more satisfactory to go to the expense of purchasing imported hives than to try to make one's own, or even to employ a skilled carpenter.

No great wintering problem for us; but wait till summer comes, and then our troubles begin. The weather on the whole is not bad. Occasionally the heat will melt down a few combs in single-walled hives where shade-boards are not used; but there is generally a little rain each month, and the nights are, as a rule, pleasantly cool. The worst meteorological features in the climate of this corner of the Continent are the winds. From October to April the Cape "southeaster" rages intermittently, sometimes for over a week at a time. These winds blow with tremendous force; and when living in a house unprotected from the southeaster, one is continually questioning whether any structure ever built can withstand such power. When I mention that carts have been overturned, and even the train service held up for a few hours by this wind, you will understand that a bee cannot range far in such a gale, however alluring the flowers may prove. No doubt there is a large loss of life among those bees which have traveled down the wind some distance and then attempted to return home heavily laden with nectar or pollen.

After a southeaster there is usually a calm spell for a day or two, when the bees do finely; but from noon to sunset a strong westerly wind blows almost invariably on every non-southeaster day throughout summer. In consequence one notices most of the foraging work is done early in the morning or toward evening, and at midday the flight of bees is small.

Small worries are often the worst worries; and from the giant "southeaster" I descend to the tiny though no less wonderfully untiring (and most tiresome) insect, the ant. We have been given a splendid assortment of these models of industry out here. There is the large white ant that will chew up almost any wood available, and that dearly loves a white-pine beehive. I am glad to say we are spared this fellow in the South, but we have several smaller varieties that are a great nuisance. There is a minute black ant, a lover of sweets; and where he abounds the housewife knows no peace.

Even if all her cupboards and shelves are isolated on tins of petroleum, the ants will frequently find a convenient cobweb across which they will swarm, and any fruit or sugar left a few minutes unguarded is soon black with these little thieves. I have such a high opinion of the perseverance and ingenuity of these insects that I should hardly feel surprised if one day I found them constructing tiny air-ships on which to reach their coveted sweets! Of honey they are particularly fond, and the careless beekeeper is apt to find, one day in summer, a thick stream of these pillagers pouring in and out of the entrances of his hives, and simply walking through any resistance on the part of the inmates. When once things have got to this state, a colony will generally give up the struggle and swarm out.

Something may be done toward checking these small ants by placing a mixture of arsenic and treacle or honey wherever their presence is noted; but the only safe way to keep ants at bay is by making legs for the hives and setting these in tins of water, kerosene, or, still better, axle-grease, or by surrounding each hive or group with a concrete trough. Where these ants abound it will be a saving of time and trouble to plan some such means of isolating one's hives before setting out an apiary. Even with such provision the defenses must be periodically examined to see that no bridges have been formed by fallen straws or spiders' webs.

There is another black ant, considerably larger and stronger than the last named, which also makes itself a great nuisance to the beekeeper. This fellow is not fond of sweets as his smaller relation, and in consequence does not take readily to poisoned baits. What this ant likes is the bee itself; and any heavy-laden worker that drops in front of the hive is immediately seized by a dozen ants and dragged off. When the supply of fallen bees is not sufficient, this ant will climb up to the entrances and drag down the guards. The bees are quite helpless to put up any defense against such enemies; and where a hive is being worried by these pests one hears that peculiar, terrified whine that bees set up when unhappy or discouraged, and there is always danger that, if the trouble remains unchecked, wholesale swarming out will be the result. Here, again, hive-isolation seems to be the only cure, combined with a vigorous destruction of nests by pouring boiling water or kerosene down every hole from which ants can be seen emerging. Fortunate are those apiarists who can manage to locate on ground unfrequented by any ants.

The next pest is one which is, I believe, more peculiar to South Africa. This is the "bee-pirate," of which we have at least two varieties. These insects are species of sand-wasps (fossorial hymenoptera), and belong to the two genera *Palarus* and *Philanthus*, the former being the more troublesome in this part of the country.

The pirates make their appearance as soon as the hot weather sets in, about November or December, and stay till the beginning of autumn. From about 10 A. M. to 4 P. M. they hover round the hives, pouncing upon the heavily laden bees returning to their homes, frequently taking them right off the alighting-boards. When the bee-pirate is present in large numbers the bees apparently become intimidated, and do not willingly leave the hives, and there are cases where apiaries have been entirely wiped out by this vicious little despoiler.

The pirate, which is considerably smaller than a worker bee, but very strong and wiry, appears to spring upon its victim's back and insert its sting in the bee's thorax, death ensuing almost immediately. The bee is then either carried off wholesale or the nectar sucked out of its sac. The pirates I have caught have honey-sacs similar to those of bees, and the majority of these have been quite swollen with nectar. The Dutch will tell one that the pirate mounts on the bee's back and steers the captive to his lair, thus getting a free ride home before killing him, but this theory seems too good to be true.

There is, however, one, and apparently only one, method of keeping down this scourge, and that is by means of placing about the apiary white dishes containing water and a little petroleum. These dishes must be kept quite clean, as there seems some fatal attraction for the pirate in the white glare of the enamel. This has not been a bad year for these insects; but in half a dozen saucers scattered among my hives I have caught as many as eighty pirates some days, which has evidently had the effect of thinning off the total population in the district. There is no doubt that, if these bee-pirates are allowed to continue unchecked, they will become a very serious menace; but I would far rather have this fellow to deal with than any of the ant tribe or foul brood.

Finally, though I will not go so far as to say this is the last of our summer troubles, we suffer big losses each year through the depredations of various birds; and the worst offenders among the feathered foes to be contended with are the swifts. These, again, are seldom seen in winter, but are in their element on windy days in mid-summer,



when they fly backward and forward over the hives with almost incredible speed, snapping up a bee at every turn. They appear in gangs of ten or twenty, and it is heartbreaking to stand and listen to the rapid succession of litle clicks made by the contact of beak and bee. I suppose there is not a faster flyer than the swift among all the birds of the world, and well he knows the fact. Secure in their speed these birds are nothing daunted by noise, objects waved at them, or things thrown at them. Shooting, of course, is equally futile. One might as well attempt to shoot a flash of lightning, and the only plan that might be effective would be to stretch wires at intervals from poles over and across the rows of hives, and even then I believe these keen-eyed folk would dodge the wires with a swerve at the moment they were almost on the danger.

In my case I considered an honorable retreat more fitting than any aggressive measures; and as my apiary was located in too open a situation, and on a piece of stone and sand where there was little shelter and many ants, I resolved to "trek" the whole outfit. I pondered long and deep before deciding on my new choice, but eventually chose a sunny clearing in a pine-wood. Here I am sheltered from the worst winds; the only ant at present in the neighborhood is a variety which lives in quite small families under stones, and keeps very much at home. The swifts cannot pursue their dashing tactics among the thick growth of high timber, and at present I can congratulate myself upon the move.

When winter comes, however, I shall have to plan against floods; nor, I dare say, will that be the end of my troubles, as my apiary is situated most conveniently for honey-

thieves, and these folk, I regret to say, are far from uncommon in this country, for the native seems totally unable to resist two delicacies—ripe watermelon and comb honey.

But it is of summer difficulties I am writing, and I think I have now done all that I can at present to overcome these by finding such a site for my apiary as I have mentioned above. Even with this protection the mortality among the foraging bees must be exceedingly heavy in summer. When one hears the "click, click," as the swift snaps up his victims, and the sad wail of the pirate-captured bee, and sees the ants swarming everywhere, ready to pounce upon any tired worker that fails to reach home, and when, again, one watches the wonderfully courageous struggles of the laden bees coming home from the distant veld against a terrific southeast gale, one ceases to feel surprise at the fact that even the most prolific queens can hardly bring their colonies out of summer as strong as they were at the end of winter. Still, beekeeping is about as pleasurable and probably as profitable as elsewhere, and we do not intend going out of the business, even when foul brood arrives, as I suppose it will some day. The bee is only just beginning to be known as an item of commerce in this country, and we are happy to be among the pioneers of the industry and of many problems hitherto undiscussed in the great bee-journals of the world. Perhaps the unburdening of some of our own particular difficulties, besides relieving us, may interest the readers of GLEANINGS on the score of novelty if for no other reason.

Groot Drakenstein, Cape Province, South Africa.

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## SHOULD ALL THE NECTAR BE SAVED? IF SO, WHERE SHOULD WE SELL OUR HONEY?

BY E. S. MILES

Every now and then a man appears in the beekeeping ranks (usually posing as an apostle of advanced beekeeping) who makes it his hobby to inform the general public how profitable the business of honey production is, always basing his estimates on some certain phenomenally good season. Men who have made honey production a success as a sole business do not, as a rule, become affected by this "good season" microbe. When a man has raised enough honey to bring an adequate income to support himself and family, and accumulate a little for the "rainy day," and has sold the same, he

begins to see that he *must* have a considerable area of territory that does *not* produce honey, in which to sell his production. It is self-evident that, if a man raises his own honey (as some claim every farmer should), *you* cannot sell him any; and if one-half or even one-fourth of the farmers of Iowa raised their own honey in ordinary seasons, a good season such as 1913 would find a large part of them, as well as nearly all the honey-specialists, with a lot of honey that there would be no market for. It is not hard to see that some of this honey would be forced on sale at any price; for any

one knows, who has had experience, that the farmer beekeeper, producing for his own use, not knowing what his honey is costing him, will, when he is surprised with an unusual crop, take whatever offer he can get for his surplus, figuring it as clear gain at any price, since he was not expecting to sell any, but keeps bees for his own use only.

A close observation, extending over a number of years, both good and poor, has convinced me that the ordinary farmer, the man who farms as he should, for all there is in it, can buy his honey cheaper than he can raise it. It is true that there is nectar going to waste; but it is also true that there is just as great a waste of soil fertility going on in Iowa. Would it not be more in order to call for conservation of resources in the production of the necessities of life rather than the luxuries? Look at the prices the honey-producer must pay for his necessities, and then at the price at which he sells what is only a luxury with others, and what they will do without if it goes over a certain figure—butter, 30 to 35 cts.; eggs, 25 to 35 cts.; meat, 15 to 22 cts.; flour, \$3.00 to \$3.25 per 100 lbs., etc., while the beekeeper is lucky to find sales for his honey at 8 to 12½ cents net.

If honey were a necessity, if people *had* to have honey, then the whole situation would be changed. It would only be necessary to hold the surplus of a big crop over until a shorter crop came, when it would sell; and a short crop would make a rise in price commensurate with the shortage; but as it now is, a short crop raises the price a little because but few people like honey well enough to take it at a slight rise, and there it stops. Because the rest think it too high, they prefer to have something else.

I tried once to sell two men 40 lbs. of extracted honey in 10-lb. pails. One of them said he would take two if the other one would take the other two. No. 2 hesitated quite a little, and remarked, "Two pails of honey is a whole lot. If it were *syrup*, I could handle it." Finally I made the deal, and I heard afterward that No. 2 was talking of wanting some more honey. It shows how the market can be extended, you say. Yes, perhaps; but I was barely making wages doing it; and where would I come in if all the nectar in Iowa were being "saved," and two or three other fellows going after this same man? Whoever gets there *first*, or can make the *lowest* price, will sell him the honey, and two or three of us will have to hunt a new man. Can we easily do that? No, it is not *too* easy, right now, to find enough men who like honey to take a crop large enough to support a man

and family. Therefore I am one who thinks the fair way to those already in the business is to let the demand for honey induce a supply.

Let those who have, by years of hard work, built up a successful business, have a fair chance to continue, and *not* use the journals we have helped to support for years to hold up rosy pictures to induce more to enter beekeeping than the demand for honey will justify. I do not consider him a friend who tries to induce, by unfair representations, another man to enter into competition in a special market that I created.

To hold a season like 1913 up to the public as a fair sample of what bees will do in Iowa is about as unfair as it could well be. To be fair, one should say, "If you live long enough, say 25 to 50 years, you *may* see another as good; but it is sure you will see many in which you will not get one-fourth as much."

Before closing I wish to tell something about one particular farmer who has a large farm—who is a real farmer, and has all the work he can attend to without any "side issues." Seven years ago, when I moved to my present location, this man, being one of my new neighbors, I soon found he was quite interested in bees, and I also found why. He is very fond of honey. He was always asking about "the bees," and frequently came over to look around and talk about them. Soon after a party near by, moving away, sold my neighbor two colonies and a couple of empty hives for \$5.00. Then it began to dawn on me that my neighbor, being fond of honey, and having a "beeman" so handy, was figuring that, with what information he could pick up, and this cheap start, he could "raise his own honey." Well, I try not to be a hog, so I did all I could to give him correct information; and not only that, but I went over and took off for him the only honey he harvested. The seasons were running very ordinary those years. I think my neighbor had bees about three seasons; and for the ordinary beeman with ordinary bees, to say that they were buying no autos would be telling the truth, if not the whole truth. Well, my neighbor had the "fever." He ran after every stray swarm in the neighborhood; and about the second season he got up to six or eight colonies. He was so anxious for bees that, like most people in that condition, he put them into whatever was handy. He had three or four in the old hives he got with his purchase, and the rest were in boxes and kegs. The first season was poor, or the bees swarmed wrong, or something,



and he got no honey, but made some increase. The next season was better, or, perhaps, one colony failed to swarm, for he got about 20 lbs. of honey. The first winter he put them in the cellar, and wintered them; the next winter, having more colonies, and his "fever" beginning to abate, he left them out; and several being late swarms, without enough stores, he lost all but one colony.

By the third season his "fever" was about gone. He seldom asked me, "How's the bees?" but his son told mine that they "put four supers on their one hive and that ought to hold 'em down." The next summer, being with him, and another party or two, some one inquired how the bees had done that summer; and after I had replied "fair," my neighbor said, "I had one hive; but when I looked at 'em last spring they were dead. I guess they couldn't make enough to keep 'em over winter." His account would stand thus. Two hives of bees and two empty hives, \$5.00; supers, sections, and foundation (purchased of me), \$5.00;

time chasing swarms and moving same home, \$5.00; total, \$15.00. Credit, 20 lbs. honey at 75 cts. per lb., \$15.00. I will only add that my neighbor has had no bees for three years, neither has he said "bees" to me in that time. He likes honey, and has bought probably 100 lbs. of me since; but on his own motion I never try to sell my near neighbors honey, because I feel that they might think I did not wish them to keep bees, in order that I might do so. If my neighbor can keep bees and raise his own honey, no one recognizes his right to do so better than I; but this is my observation of the way it works with nine out of ten farmers. They have enough to do; most of them are not adapted to handling bees; and to fix up for it, take time to learn it, then take time needed in their fields to tend to a few bees, will make their honey cost them more than it would to buy it of one fixed to raise honey, which includes the *know how*, the aptness, and the liking for bees.

Dunlap, Iowa.

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## BRITISH BEEKEEPERS' ASSOCIATIONS HAVE TOTAL ENROLLMENT OF OVER 6000

### Hands Across the Sea

BY JOHN SMALLWOOD

I should like to introduce American beekeepers to our beekeeping associations, the organizations and men who have made apiculture in England, who have dug it out from fossilage and ignorance, and made it an important auxiliary to apiculture, and given it its proper rank among the minor industries. The parent stem from whom all the offshoots, 46 in number, have sprung, is the British Beekeepers' Association; and, counting its affiliated members, it has a subscribers' roll of over 6000. It is managed by a council of 21, elected annually, the president vice-president, and treasurer being *ex officio* counselors. To insure that it is representative of all interests, each branch is entitled to send two representatives, one of whom votes. Council meetings are held monthly, and there are two general meetings, March and October, in each year.

It was in May, 1874, that it was founded. I have the old bee journal of that month and year in front of me, and it is very interesting to turn over its pages, for the names I meet there. They who were the founders of the association are as familiar to you as they are to us. "They were giants in those days."

It was a committee formed to conduct a great bee and honey show at the Crystal Palace in 1874, which was the initiatory council. Among the very first members I notice John Hunter, Frank Cheshire, and Nash Abbott. But the idea had been ventilated previously. In the preceding year the *British Bee Journal* was commenced, and an early correspondent had pointed out how impossible it was for apiculture to be encouraged and taught to the multitude unless there was some organized society who could make it their business.

Their first general meeting was held at the Crystal Palace, Sept. 20, 1874. The first president was Sir John Lubbock, the great authority on bees and ants. Who has not read his books? Among other vice-presidents were Rev. F. Raynor, T. W. Cowan (we have him still with us), and Frank Cheshire. The first honorable secretary was John Hunter. So you see the right men had got the grip of it. They proclaimed their objects to be "the encouragement, improvement, and advancement of bee culture in the United Kingdom, particularly as a means of bettering cottagers and the apicultural laboring classes as well

as the advocacy of humanity to the honey-bee," and religiously and honestly have they kept every word of their program from that day until the present.

I will not give its history *in extenso*. There is enough of it for half a dozen articles. The Board of Agriculture consults it on apiculture. It has this last year obtained from the government a grant to aid in teaching and promoting beekeeping. By the aid of this grant it holds preliminary examinations for proficiency in beekeeping, and sends lecturers all over the country, and has established an apiary and school for beekeeping at the Zoological Gardens, London. Of itself it holds intermediary and first-class examinations, issues certificates for all three degrees which are acknowledged and honored, not only at home but also in our colonies. It has never failed to find sufficient men of public spirit, leaders in thought and science, and business men too, to devote time, without any payment whatever, "to the encouragement, promotion, and advancement of beekeeping," as their original declaration enunciates. This is a good record.

Then there are 46 affiliated branches, representing generally a county, sometimes a district. Their reason for existence is to look after beekeeping in their several terri-

tories by employing teachers and inspectors, generally entitled experts, holding honey shows, giving awards, and diffusing information generally.

Our *British Bee Journal*, too, is a very important factor. This was established in 1873 by Charles Nash Abbott. Although quite separate from the beekeepers' association, it has always worked with it. In the advancement of the craft one is inseparable from the other. There have been other attempts to start bee-papers, but their lives have been short; and representing, as it does, all up-to-date thought and information on the matter, it can have no serious rival or opposition. Mr. T. W. Cowan is the senior editor, and Mr. W. Herrod the junior, who unquestionably are in the very first rank of modern beekeepers. Articles from the best writers of the day appear in its columns, including T. W. Cowan, D. M. Macdonald, L. S. Crawshaw, Colonel H. J. O. Walker, J. Hayes, C. H. Heaps, W. Herrod, G. G. Desmond, etc. It is bright, breezy, and readable, and penetrates to the most remote corners—everywhere, in fact, where there are beekeepers. The junior editor is energetic, and grasps the inexorable truth.

London, England.

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## ODOR AND DISTRESS IN INTRODUCING VS. OTHER FACTORS

BY J. E. HAND

A perusal of beekeeping literature of bygone days reveals the truth of the ancient proverb, "There is nothing new under the sun." It is true that a method occasionally looms up with a flourish of trumpets that savors of a diversion; but a closer scrutiny usually reveals the fact that its history is recorded in the annals of bygone days. For example, the smoke method that is just now being popularized was described in the beekeeping literature of 25 years ago; likewise smoke was used in uniting colonies long before the advent of the movable-frame hive, and the process was described and illustrated in Quinby's book in 1853. Ever since queen-rearing has been known, smoke in some form has been used in queen introduction. More than 25 years ago Henry Alley used tobacco smoke to introduce queens to nuclei, claiming that its virtue lay in the transmission of the smoke odor. This opinion was also expressed by Mr. Quinby more than 60 years ago. Undoubtedly Moses Quinby was one of the closest students of bee nature in America. The mar-

velous accuracy of his deductions are wonderful, considering that he had only box hives to experiment with.

More than 25 years ago Mr. Doolittle recommended smoke and pounding on the hive in the direct introduction of queens, claiming that the excitement caused the bees to fill their sacs with honey, and that the smoke transmitted a uniform odor—a belief expressed by the best authorities in the history of American beekeeping. Meantime the late W. Z. Hutchinson advertised to replace all queens lost by his patrons while introducing by the tobacco-smoke method. He told the writer personally that out of the hundreds of queens sold the loss was purely nominal, amounting to only two or three cases. In the wake of this long procession of American authors comes Arthur C. Miller, also a close student of bee nature, also advocating the smoke method of queen introduction, but standing practically alone in the belief that odor cuts no figure in the transaction, and stoutly maintaining that excitement and distress is the basic princi-



ple in the direct introduction of queens, and that smoke is merely an economical method of producing the desired excitement and distress.

This seems like a rather superficial view of the case, in view of the fact that we don't use smoke merely to produce excitement and distress, but rather to transmit a uniform smoke odor throughout the entire hive and contents, and at the same time excite the bees, thus causing them to fill their honey-sacs. In this condition nature forbids a hostile reaction against an enemy; but smoke does more, for it instantly transmits its own odor to the exclusion of all others, for smoke is a great deodorizer, with an odor so pungent that an overdose will taint honey. In a hive with every thing reeking with the odor of smoke it is impossible for bees whose every act within the hive is guided solely by the sense of touch and of smell to distinguish friends from strangers. This is demonstrated by the fact that a colony recently manipulated with much smoke will fall a prey to robbers without offering any resistance; whereas if the same manipulations are performed without smoke, robbers will be repelled with vigor—showing conclusively that the odor of smoke inhaled by bees deprives them of the sense of smell, thus rendering them incapable of distinguishing between friend and stranger.

Mr. Miller speaks lightly about ignoring the odor theory, as though it were an easy accomplishment; but the only way he can do it is to separate the odor from smoke. When he shall have accomplished this he will have a solid foundation upon which to build the theory of "distress." It is noticeable that most of the similes introduced by Mr. Miller seem rather strained, and some of his claims somewhat extravagant. This refers to his reference to combs of brood, just hatched queens, alien drones, and queenless bees in cages, all of which are exceptions to the general rule, that prove nothing in favor of or in opposition to any theory. There are other factors to be considered besides odor and distress. This refers to an inborn instinct in bees to accept alien drones, combs of brood, and baby queens, unconditionally, except that with

baby queens the colony must be queenless three days or more.

The fact cited by Mr. Miller, that queens from different colonies can be interchanged with impunity when bees are gathering nectar from flowers of like odor, is *prima facie* evidence in favor of the odor theory, being an instance of direct introduction where distress is entirely eliminated. This feature also accounts for the fact that bees and queens often mix with impunity at swarming time. It is proper to state, however, that this condition exists only during a good honey-flow when bees are swarming freely; even then queens are often balled when swarms unite. Try as we may we cannot ignore the fact that smoke is an economical agent for the transmission of odor as well as for the perversion of the sense of smell, hence an economical agent in queen introduction.

Concerning the virgin-queen method of requeening without dequeening, as touched upon, and condemned by Mr. Miller, it, like the smoke method, has a history that dates back 25 years, and is also recorded in Doolittle's book, page 158. Here is the quotation: "If you wish to supersede any queen in your yard on account of old age, or for any other purpose, you have only to put on an upper story with a queen-excluding honey-board under it, place a frame of brood with a queen-cell upon it, in this upper story; and after the young queen has hatched, withdraw the queen-excluder, and your old queen is superseded without your even having to find her." Really and truly, Mr. Doolittle has also covered this subject, and we must go back a quarter of a century to find an economical method of requeening without dequeening, and Doolittle blandly and cheerfully hands it out to all. The question that interests me most is whether Doolittle's book was 25 years ahead of its time, or whether the rest of us are a quarter of a century behind the band-wagon. I am inclined to the latter view, however, for I doubt if a more economical method of requeening without dequeening can be produced. Verily there is nothing new under the sun.

Birmingham, Ohio.

## DOES EUROPEAN FOUL BROOD ATTACK BEES IN APIARIES MORE READILY THAN WILD BEES?

BY ERNEST WEST

Does European foul brood follow painted hives, foundation, and the smoker?

Like many others I am having serious trouble with this disease; and having made

some close observations in the past four years on brood of wild and domestic bees I am taking the liberty to inquire whether you have any suggestions to make. During

the past four years I have taken 36 colonies from trees, old buildings, beer-kegs, etc.; and during that time I have never been able to find one diseased cell. Some of these 36 colonies had been there for from three to five years, and most of them were taken during the month of August, and in four cases they were less than a mile from badly diseased colonies in hives. Aside from these that I took myself, I asked other bee-hunters to bring home brood that I might look it over, and in that way have probably examined the brood from ten or more wild colonies with the same result.

About March 20, 1914, I took a nice colony of Italians from a tree about a quarter of a mile from my home yard; and what brood they had was perfectly healthy. I fed them on sugar syrup, and increased on the Alexander plan; and to-day I find the one with the mother queen badly diseased. They were put on two perfectly clean combs and new foundation at the first start, and in a new and clean hive.

I find the worst cases of foul brood in eight-frame hives every time.

I had a colony of blaëks in an old ten-frame unpainted hive for six years; and after transferring them to an eight-frame painted hive last year they developed foul brood within 30 days; and I fail to see why they should, as they were in fine condition when transferred. Two years ago there were probably 25 beekeepers here who kept from one to forty colonies, and now I do not think there are fifty colonies all told, and I am sure there are not 25 healthy ones. Why the wild bees all around us should be in a healthy condition, and none of the domestics, is one too many for me.

East Hampton, Ct., June 26.

[We referred the above to Dr. C. C. Miller, who replies as follows:]

As you state the case, it does seem rather puzzling. Answering your question whether European foul brood follows painted hives, foundation, and the smoker, I say yes and no.

First the yes. Take a man who has a dozen colonies or more in unpainted box hives, a man who knows very little about bees, and is careless about all he does. While his bees are in box hives, if European foul brood gets into a colony it may stay there a long time without getting into other colonies, and so the disease will be slow about getting into the whole apiary. Then he adopts paint, foundation, and smoker, not so much because he cares for those three things, but because he wants movable-frame

hives, and with this usually go paint, foundation, and smoker. Then when European foul brood gets into one of his colonies he exchanges combs throughout the apiary, and soon all are affected. He could not have done that with fixed combs, so in his case movable combs have favored the disease.

Now the no. Take an up-to-date beekeeper whose hives are nicely painted, and who wouldn't think of doing without foundation and smoker, and when European foul brood strikes him he is ready for it, is careful to do nothing to spread it, and promptly uses the well-known means to conquer it. But to use these means he must be able to lift out the combs, and with fixed combs he would be helpless; so in his case movable combs are not only a help but an absolute necessity in overcoming the disease.

So you see that movable combs—the thing that you represent by paint, foundation, and smoker—may be a great help in spreading the disease, or in overcoming it, depending on how they are used.

Let us turn specifically to each one of the things you name. It may be said in general that the disease comes from the entrance of a particular germ. A worker-bee brings it into the hive. Paint has no influence whatever in favoring the entrance of the bee and the germ, nor do unpainted hives prevent it. I may refer to an example in my own experience. When European foul brood struck me, with one or two exceptions all my hives were unpainted. Yet I made a brilliant success of rapidly spreading the disease throughout the apiary.

As to foundation, just a short time ago a document was published by the apiarian authorities at Washington, showing clearly, from actual experiments, that the heat necessary for making foundation is more than sufficient to destroy the germs of European foul brood.

If smoke is the culprit, then it must have taken 40 years of smoking in my case. Moreover, there are thousands of beekeepers who have been smoking their bees for years, and yet have no foul brood. Clearly that idea must go up in smoke.

It may be well to say here that those who ought to know the most about the disease, the foul-brood inspectors, are a unit in saying they can treat the disease only in movable-frame hives; and this is so emphatically true that in some States it is unlawful to keep bees in other hives.

But why is it that you have found no disease in trees when it is found in surrounding hives? I might reply that others have found it in trees. I prefer to accept



your case without quibble, and quote from the postum advertisement, "There's a reason." A colony badly diseased is so depleted that it does not swarm. So the swarm must come from colonies lightly affected, or not at all. If a colony be lightly affected, the break in brood-rearing caused by swarming will be equivalent to the de-queening treatment for European foul brood, and so we would naturally expect little or no disease in swarms lodging in trees, nor for that matter in hives.

How do we account for the disease attacking that colony that was healthy in the tree, and became diseased when given a clean outfit in a hive? Just the same as we account for the first appearance of the

disease in any colony, either in hive or tree. Simply that the disease-germ was carried in. That's all there is to it.

Those blacks in an unpainted hive for six years, then diseased in a painted hive—bless your heart, my bees were healthy in unpainted hives more than 40 years, and then took sick in the same unpainted hives. Paint or no paint has nothing to do with it.

Why is the disease worse in eight-frame hives than in larger hives? Rightly managed, there is no need it should be so; but if it is, it is because the colonies are weaker in the smaller hives, and so less able to resist the disease.

Marengo, Ill.

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## NO PAINT VERSUS PAINT; WHAT CAUSES ROT OR DECAY IN WOOD?

### Rubber Bands for Transferring

BY E. J. LADD

How long ago it was that the A. I. Root Co. sent their first shipment of Simplicity hives to Portland, Ore., I do not know; but one of these first ones was sold to a man at Camas, Wash., and has been occupied by bees, and it was the writer's privilege to transfer this colony of bees into a modern ten-frame Root hive.

This colony was bought by a friend, an enthusiastic amateur, and when moved was discovered by cutting through a dense growth of wild vines that completely covered and hid it from view. An ax and pruning-shears were effectively used, and after removing many feet of heavy vines the hive was found under leeway of an old rail fence that was also completely hidden. How bees ever got through that tangled mass is a wonder.

For some time the weather had been wet and cold; and when exposed to daylight this hive was wringing wet and saturated—was without cover other than its own, and it was split, but patched up tight with propolis. On inspection we found the bottom-board rotten, but had been nailed, and the hive was apparently in good condition. On lifting, we found it very heavy; and after weighing we found it weighed 174 lbs. We closed it and put a sound board under it, and placed it in the auto. It was taken to Portland, and transferred as an object lesson for the above-noted amateur. We believe it was the best stand of bees we ever handled—well-marked hybrids, and condi-

tion perfect. The combs were built across the frames, but straight. The job took 20 minutes. Only one new frame needed to be filled with pieced combs. The rest were filled completely with fine clean combs without a trace of mold anywhere. Rubber bands stretched around each end of the frames and combs made them safe and sure. Did you ever try the band?

The condition of the hive was superb—not a trace of rot or decay. Though not painted, it was as sound as a dollar. Mine painted and protected are no sounder, and combs frequently mold. Explanations are in order, "paint vs. no paint." I doubt if this hive saw real daylight for 15 or 20 years except in winter, or was ever thoroughly dried out, as the thicket was so dense no one would suspect its occupancy. The former owner says he saw it only in the winter, when the vines were bare of leaves.

Portland, Ore.

[Where wood is kept constantly wet, with no intervals of drying out, it will keep sound almost indefinitely. Timbers in ships that have been sunk for a century are still sound and good. What rots lumber is alternate wetting and drying, and shrinking and swelling. In the case of the hive cited, the use of paint would have made no difference.

Rubber bands for transferring are very handy—much better than strings or strips of wood. They have been mentioned before in these columns.—Ed.]

# Heads of Grain from Different Fields



THE BACKLOT BUZZER.

*Did you ever stop to think what a beautiful word "Honey" was, and how careful you had to be when you said it to the other fellow's girl?*

## Queries Regarding Making Comb Foundation.

Does wax have to be treated with sulphuric acid when one is making medium-brood foundation for his own use? or does the bleaching with the acid improve the quality of the wax?

What is the cause of the wax slipping on the boards? It seems to break loose from the boards and slip a little on the second or third dipping.

Should the water in the tank where you put the boards after being dipped be warmed a little, or cold? The sheets bothered us somewhat by cracking when we put them in cold water.

In Cowan's book, Wax Craft, it speaks of using five per cent of tallow with beeswax to help in the bleaching, five per cent not being considered an adulteration. Would wax thus treated be fit to work into brood foundation?

If you use soapsuds as a lubricant on the rollers of the mill, doesn't the foundation have to be rinsed before it can be used?

Can wax be burnt where steam is used for heating?

Should the wax sheets roll out much longer when they are being run through the mill?

Could wax that had been adulterated with paraffin be used to make foundation?

What per cent of salt should be used in the water where the sheets are tempered before rolling?

Is it necessary to let the sheets lie three weeks after they are dipped before rolling? Does it improve the foundation to leave it to season three weeks?

Brooks Park, Minn., March 16. HARRY BELL.

[You do not necessarily have to treat wax with sulphuric acid that you make brood foundation from; for, aside from the clarifying, there is no particular virtue in the use of the acid. Almost every one who attempts to use the acid uses too much. It is much better to err on the safe side, and use too little. We have often told beginners to take the amount which they thought would be about right, and then throw away nine-tenths of it.

There are two possible causes for the wax to slip on the board so that it might come entirely loose at the second or third dipping. The first and principal cause is that the boards are too wet; the second, that they are too cold. We presume from what you say that your trouble was on account of having the boards too wet.

The water in the tank where the boards are placed should not be too cold—55 degrees would be all right. It warms up somewhat after a little, but does no harm unless it gets entirely too warm.

We do not advise the use of any tallow in the wax.

Soapsuds when used as a lubricant on the rollers of the mill does no harm, for the pressure removes all the excess of the solution so that practically none of it is left on the wax.

It is very easy to make foundation with wax that contains some paraffin, but the trouble is that such foundation will not stand the heat of the hives without sagging badly, and in some cases breaking down entirely, as in case of very hot days in a strong colony when the bees cluster on the foundation in large numbers.

The exact percentage of salt is not important, although the water should not be so briny as to make the boards look white. About one pound of salt to a pail of water is sufficient.

If the sheets can be allowed to season two or three weeks the wax becomes much tougher, and there is less difficulty in milling. Be sure that the sheets are entirely cold on both sides before you pile them up, however. Otherwise there is liable to be considerable sticking.

Wax is likely to be overheated by a dry heat, as over a fire for instance, if the vessel containing it is not surrounded by water. With steam heat there is practically no danger of overheating. At the same time, do not allow a small quantity of wax to remain in the bottom of a large tank subjected to steam heat for a long time, as it will then undergo some change, or there will be danger of it.

The foundation is usually quite a little longer than the sheet, the exact increase in length depending on the thickness of the sheet.—Ed.]

## Fastening Foundation in Sections and in Frames

I am getting up 100 shallow extracting-supers, ten-frame. I will wire them. Would it be advisable to use thin brood foundation? How near the bottom-bar should the foundation come? I have some trouble because of foundation coming loose at the top. I fasten it in with a Van Deusen wax-tube fastener. Is there anything that I could apply to the top-bar like rosin or paint? Should I put some rosin in the beeswax? Is it all right to use some paraffin?

In putting these new supers on should I put all the frames in the supers to start with, or would it be better to put two or three in the middle?



I am expecting to fill my sections with full sheets (or nearly full) of foundation. Would you advise full sheets in sections? how would you put it in? My trade is all home trade. Possibly it would not be advisable to use full sheets.

There is some difference of opinion in regard to bottom-starters in the height and the distance between top and bottom starters. What do you advise?

Should I attach the upper starter to the sides? Should they crowd the sides very close?

Waterloo, Ia., Feb. 6. ED. E. RICH.

[For shallow extracting-frames the thin brood-foundation is often satisfactory, although the bees seem to work on the thicker foundation a little more readily.

It is not practicable to put in full sheets, even in shallow frames, if they come nearer the bottom-bar than  $\frac{1}{4}$  inch. When the foundation sags, as it will slightly, there must be some room at the bottom to prevent buckling or a bowing-out of the comb.

We do not recommend rosin for fastening foundation in sections, as the line of rosin is likely to be cut out when the honey is being cut out of the sections for the table, and this edge of rosin on one side gives a bitter taste. However, it may profitably be used when foundation is being put into extracting-frames or brood-frames by the melted-wax plan. Different beekeepers have different proportions of rosin and wax. The rosin takes a rather firmer hold on the wood than the wax alone, and it also is a little cheaper to use. We do not recommend much paraffin in the mixture, although if considerable rosin is used some paraffin may be substituted without bad results.

When getting foundation drawn out, it is customary to use an entire super of foundation at a time, especially if you use full sheets. Some, however, alternate the foundation between fully drawn combs to get them drawn out more evenly.

If you use full sheets of foundation in the sections it really pays to fasten it with melted wax an inch or so from the top on each side, to prevent the tendency of the sheet swinging over when the bees cluster on one side, so that the comb is attached to the separator.

A very satisfactory compromise between the small starter and the full sheets is a large V-shaped starter, the lower point being in the middle from left to right, of course. Many beekeepers use such starters with great satisfaction. It is nearly the natural shape of the comb when built without foundation by the bees.

When double starters are used, the lower starter should not be over  $\frac{3}{8}$  inch in width, and the space between the top starters and the bottom starters should not be over  $\frac{1}{4}$  inch for best results.—ED.]

### Immunity from European Foul Brood

"If European foul brood should rage in a certain locality a few millenniums (possibly a few decades) I should expect the survivors to become nearly if not quite immune," says Dr. C. C. Miller, page 720, Sept. 15. By this am I to understand that I shall have become very aged, or, indeed, an old-timer(?) as a ghost before I can notice this immunity? If this is so, there is no consolation here. But according to my experience it is not quite so bad. It has been like this:

It was eight years ago when the disease appeared in my yard for the first. There were a few colonies already affected when I first saw it; but very soon the entire apiary of over 50 colonies succumbed. This rapid and general spreading was a marked characteristic of the disease at that period. Last year, again, there was a time in early spring when one condition, at least, was similar. The quantity of the disease in the yard was seemingly about the same. There were, say, but two or three colonies

affected, and these in early spring. But there was this difference—the disease this time did not spread, while the few colonies affected rid themselves of it later on. What a great change! Has foul brood ceased to be foul brood?

The third year during this trouble I brought to the home yard about 20 colonies from the adjoining county. Although these colonies were healthy at first, they did not remain so very long. All became diseased. But here is the point: The virulence of the disease was greater in these new colonies than in the old, and the new were not as amenable to treatment as the old had become. Again, all environments otherwise seemed to be similar in the instances cited. Therefore it follows that the change had happened in the bees themselves.

I am glad to say that I have seen the end of the trouble, or at any rate I did not see a vestige of it last summer. In view of this great change, what about the robber or the nurse bee as a primary cause in the spreading of the disease? Hardly consistent. It is quite obvious that there is some other factor in this trouble, of more importance, that time only has been able so far to prevail against. Will some one please tell me what was the matter with the robber bee and the nurse that they were not on their job in my apiary last summer while they had then as much material to work on as they had eight years ago? No: if the disease depends on the robber or on the nurse we should never get rid of it, as these are constant factors.

As a matter of fact, in a yard that is already foul-broody, robbing is not such a menace as it has been taken to be. Instead of extending the boundary of the affected area it limits the same by eliminating the weak colonies and making the strong still stronger—a condition much desired in a foul-broody apiary. I do not mean when I say this to encourage robbing. I merely say it to encourage the apiarist so that he will not worry about a little of it if it should happen. D. ROBERTS.

Plymouth, Ind., Oct. 12.

[Your bees may be immune, as you say; but are you sure that your stock, seven or eight years ago, had not degenerated? It would not be unreasonable to suppose that your present bees, being of strong vigorous stock, might be much better able to resist the disease.—ED.]

### What Hives to Use—Something about T. B.

#### Terry

I am nearly 60 years old (or young), and am just starting to keep bees. I feel that I have lost a great deal by not starting sooner. On last election day I bought three colonies in soap-boxes, and on Thanksgiving day I packed them nicely in chaff in a piano-box brooder. Now, next spring, I want to transfer them to modern homes, increase this year to about five colonies, and eventually to ten, but *no more*. I want all the surplus I can get this year, as well as in years to come—comb honey only.

I want to get five hives and other necessary supplies soon. I have decided just what I want of every thing except the hive. As to that, I cannot decide, and that is why I am writing you. I have read carefully "The Buckeye Hive," and it looks good to me; but the difference in cost is an item to me. My personal adviser in bee culture is a farmer who has about 50 dovetailed hives, and he advises me to get nothing else. He tells me Dr. Miller, Doolittle, Alexander, and all the successful beemen use single-walled hives.

I am taking a correspondence course from our State College, and they advise single-wall hives. Now, would you advise me to get the Buckeye for *my* location and conditions, comb honey only, never to exceed ten colonies? No natural swarming, as I am away every day except Sundays and holidays from 7 A. M. to 5 P. M. Location, I presume, is about

the same as Medina—a little south, but further from the lake.

I took GLEANINGS years ago when I could not keep bees, just for the Home papers. I am not envious, but I do wish I had the power to do good that A. I. Root has, and friend Terry, and others. A few years ago I was just about to go to the hospital to undergo an operation for cancer. As a drowning man catches at straws, I thought of first going to see Mr. Terry. Result was no operation, and am better now than then, thanks to Terry, the simple life, and the great physician.

McKeesport, Pa., Jan. 26. T. T. HIBBEN.

[The choice between single-walled and double-walled hives depends entirely upon whether you have a suitable cellar where the temperature can be kept quite uniform, say between forty and fifty degrees through the winter, and where the ventilation is good. If you have, we do not believe it would pay you to invest in double-walled hives, unless, for some reason or other, you are unable to give the bees any attention through the winter. Bees in the cellar occasionally require some attention, such as opening windows, etc.—ED.]

### The Gasoline Blow-torch—Some Uses

This may be considered the beekeepers' friend, and I will mention some of the ways he may use it. The painter uses it to remove the old worthless paint before the new is applied, and the beekeeper may use it for the same purpose if he wishes as smooth work on his hives as on his own home. It not only helps to remove the paint, but it also removes a measure of dampness from the surface, which is quite desirable before painting. The hives, being near the ground, gather considerable dust, insects, worms, and their webs, which may be quickly removed with the hot flame.

The torch, however, is most often recommended for cleaning hives and the fixtures that have contained foul brood. But it may also be a preventive in the spread of diseases. All hives and fixtures from other and unknown apiaries and conditions must be disinfected by the torch before coming into my apiary. If this were more carefully done there would be less spread of disease through the transfer of old bee-supplies.

As a further caution it should be added that excessive burning of the wood is not necessary. The blaze is so hot that it may be passed quite rapidly over the surface. The torch will also be found useful for many other purposes, like melting wax, thawing out frozen water-pipes, etc. It is a good thing to have at hand ready for use.

Litchfield, Mich.

EDWIN NEWELL.

### Honey from Peas

In the summer of 1894 a great deal of the land here was burned over with forest fires. The following April I sowed a piece of this land to field peas, usually called here Canada peas, and in Canada, golden vines. They made an enormous growth, and yielded 35 bushels to the acre. At that time I had six colonies of bees, and there were other colonies in the neighborhood, besides wild bees. Well, when those peas were in bloom they were simply swarming with bees. I do not remember ever seeing them as thick on a clover-field. At the same time, my bees were storing a peculiar honey which undoubtedly came from the peas. The cappings were the most beautifully white that I have ever seen. The honey was very white, exceedingly thin, and almost tasteless. A local buyer got hold of some of it, and it looked so good that he wanted all I had left, and he got it, and sold it along with a lot more.

Since then I have grown peas many times, but have never seen bees on them, and never had any more of that kind of honey. This year I had three

acres of peas which were in full bloom just after clover ceased, and when there was no nectar coming from any source; but though I passed the field frequently, and watched carefully, I never saw a bee on them.

Had I known in 1895 what an unusual occurrence was going on I should certainly have watched to see how it was done, but, in my youthful ignorance, I supposed it was the ordinary thing.

Coleman, Mich., Sept. 15. F. H. CLARKE.

### Why Swarms Often Cluster in the Same Place

There are many quick guessers in this world; they are sometimes called very intelligent, for they can converse upon almost any subject. What they don't know they guess at. I am inclined to think some of them keep bees.

I found a small swarm of bees to-day; and after they had gone, while examining the place where they had been I noticed some small white specks. I tasted of one of these specks, and found it was wax; and remembering where another swarm had clustered on a chestnut-tree a few days before, I went there to look for wax. As soon as I got near the tree I could smell it. Now, is it not more reasonable to suppose that the bees are attracted by the odor of the wax than by the odor of a queen—especially after several heavy rains?

I was just thinking the other day how convenient it is that all bees are the same size, and that we need only one size of honey-board—163 inches; and now I read of Mr. Calcutt's experiments, p. 498, July 1, trying to raise larger bees. Please have him arrested before he succeeds. Just imagine having to measure all our queens and drones before sending for honey-board and traps! One of the very best things about the business is that the bees are all the same size.

Hammonton, N. J., July 8. C. E. FOWLER.

### My Experience with Honey-clogged Brood-chambers

I remember in my early beekeeping days, when I was located in Northern Vermont, that I used the standard L hives, and for a comb-honey super I used a two-pound section about  $5\frac{1}{4} \times 5\frac{1}{4} \times 2$  inches. This was a two-piece, and nailed. I used starters of nice white drone comb, which was fastened in the center of the top. I used a light low rack to hold these sections. I used no separators, and for a follower against the outside sections I used glass. A colony cast a swarm; and, as I remember, there was a super on the hive. Possibly the swarm was premature, and there were only eggs in the royal cells. At any rate, the young queen was a long time in beginning to lay. On taking a peep at the sections I noticed the drone comb that was built about one-fourth way down, the bees had changed to worker comb. I examined all the sections, and found the lower half of all, worker comb, and about the thickness of brood comb, and left empty of honey, although the drone comb above it was nearly full of honey. I examined the combs below, and found them filled with capped honey; and the bees building new comb in the sections had made there a brood-chamber for the young queen. I closed the hive as it was, and awaited events. Those sections were finished out and filled with honey. When I removed them I took a look at the combs below. The honey was gone, and a fine large brood-chamber. The young queen had driven it above; so it seems that the best thing for a honey-clogged brood-chamber is a good queen.

Several times I have seen a brood-chamber filled with honey one-half way down, and a small brood-chamber in the lower half. I have on different occasions taken out two or three of the fullest combs from the side, and in their place in the center I



have put as many frames with starters only; but in building the new combs the bees would fill the upper half with honey so that the brood-chamber was no larger than at first, showing that this small brood-chamber was as large as the season and nature required.

Yacolt, Wash.

H. E. HARRINGTON.

### Sending Honey by Express in Glass-front Shipping-cases

Speaking of express companies and the manner in which they handle packages, I have this much to say:

About the first of June I sent by express to a friend at Pass Christian, Miss., a 12-lb. regular shipping-case of comb honey. The distance from here is about 625 miles, and the honey changed cars about four times before it reached its destination. My friend informed me that the honey reached him in perfect condition—not a cell broken. How was this for care in handling? Of course this honey was well packed; and with glassed front the fragility of the contents was exposed to view.

I have done quite a little shipping by express, and I always use the greatest care in putting up my honey. As yet I have no first breakdown to hear of; and as this particular shipment went through in such perfect order, I have come to the conclusion that if the beemen do their part the expressmen will do theirs.

I advocate the use of glassed section-cases for the shipping of honey; and where they are used, the honey commands more care in handling than it would if it were in a case without the glass.

A precaution I take in shipping honey by express is to wax every crack and crevice of the shipping-case. Paraffin wax may be used for this operation. In case the combs become leaky the honey cannot get out to make sticky hands. Any package, such as honey, molasses, candy, etc., that becomes sticky in transit will be handled roughly, I assure you. It will get more kicking than it will handling. It pays to pack honey in the best possible way.

S. W. BOSWELL, JR.

Cornerstone, Ark., July 16.

### Colonies of Bees not Insurable

Could you give information as to the insurance company that you insure your bees in? Does any company operate in Michigan? Most companies do not care to insure them.

Bellaire, Mich., Oct. 26. P. W. SOWINSKI.

[We do not carry any insurance on our bees. A year ago we tried to get several companies to insure the bees at Randlett's Landing, near Apalachicola, Fla., but no company that we could get hold of would take the business. We have been informed that no insurance company will insure bees against loss by fire. One company with whom we took up the matter seemed to have the impression that there would be a large salvage, because the bees, the moment that fire broke out in the apiary, would fly out and then could be saved. The company did not realize that the bees would rush right into the fire and be burned of course, like a horse that would rush into his stable when it was on fire.—ED.]

### Plum-trees for Shade, Profit, and Wind-breaks

My apiary of 100 colonies is located on an area of 48 square rods of land. On this plot of ground I have 55 plum-trees, 4 apple-trees, and 3 pear-trees. I find the plum-trees extremely well adapted for shade, and each occupies only a small space. I find also that they are very profitable, as the net income from my plums last season was \$80.

The trees afford a much better windbreak than a board fence. I have tried both.

The returns from my apiary last season were 7000 lbs. of fine comb honey, which sold at 17 cents a pound.

My bees are a cross between the leather-colored Italians and the blacks. I use the old Manum hive. I have five colonies in Langstroth frames, but have never been able to get the amount of honey from them that I have gotten from the Manum hives. After all, it is not so much the kind of hives or frames as it is the kind of man behind them.

Fair Haven, Vt.

I. N. HOWARD.

### Freight Rate on Comb and Extracted Honey the Same in New South Wales

Some time ago the editor asked a question with reference to our freight rates on honey. I overlooked making a reply at that time.

There is no distinction between comb and extracted honey on our merchandise-rates book. I do not think there is sufficient comb honey sent by rail in this state to make it worth a special rate.

Smaller lots than 2 tons go by A rate, which is about 50 per cent higher; still smaller go by "Small Consignments by single-package rates."

	60 lbs.	90 lbs.	112 lbs.	140 lbs.
Up to 50 miles.....	1-0	1-0	1-0	1-0
Up to 100 miles.....	1-0	1-0	1-3	1-6
Up to 200 miles.....	1-3	1-9	2-3	2-6
Up to 300 miles.....	1-6	2-3	2-9	3-3
Up to 400 miles.....	1-9	2-6	3-3	3-9
Up to 500 miles.....	2-3	3-0	3-9	4-6
Additional 100 miles....	3	3	3	3

Honey also goes at half rates by passenger train (stamped parcels).

HERBERT J. RUMSEY.

Dundas, N. S. W., Australia, June 5.

### Paper Hive-numbers.

A good way to number hives is to cut out large figures from calendars and smear a little linseed oil on them. Also put some oil on the hive where you want the number to stay. Put the number on; and after it dries a little put more oil over both, and let it dry. Numbers so applied will neither wash off nor discolor.

Pacific, Mo., April 23.

RALPH A. SMITH.

### Only One Queen Lost by the Smoke Plan.

I have read your editorial of Sept. 1 on introducing queens by the smoke method. I gave it a trial this spring on two dozen queens, and lost but one. I think the smoke method is good.

Antioch, Cal., Sept. 14.

GEO. W. MOORE.

### The Winter of War-time

BY GRACE ALLEN

The winter of war-time has blackened our blossoms; "Brotherhood," "Love," their fragrance has fled; "Friendship of Nations" gone; and our beautiful "Peace upon Earth" is now ruined and dead.

How hopefully, joyously, we had been gleaming

The heavenly sweet of these spirit-sown flowers!  
Now hoarse with our terror, bewildered and beaten,  
We moan at the tragic, embittering hours.

While out in the desolate grip of a winter

That rushes and reels like a storm-driven thing,  
The undismayed bees, clustered close in the darkness,  
Are waiting the thrill of a radiant spring.

Nothing they know of the forces eternal;

Never they ask why the summer has passed;  
True to a light they have known and still dream of,  
They hope through the dark and keep faith to the last.

A. I. Root

## OUR HOMES

Editor

Why beholdest thou the mote that is in thy brother's eye, but considerest not the beam that is in thine own eye?—MATT. 7:3.

And Elijah said, I have been very jealous for the Lord God of hosts; for the children of Israel have forsaken thy covenant, thrown down thine altars, and slain thy prophets with the sword; and I, even I only, am left; and they seek my life to take it away.—I. KINGS 19:10.

Some weeks ago I listened to a sermon that has impressed me a great deal ever since. The minister suggested that Elijah was headlong and vehement in his crusade against the prevailing wickedness and infidelity. He gave it as his opinion that Elijah put to death the priests of Baal on his own responsibility. God answered his prayers, sent down the fire from heaven, and afterward sent the rain; but God did not, so to speak, the speaker claimed, give him any command to put to death those deluded and perhaps to some extent innocent prophets of Baal. As a consequence of Elijah's folly, the Holy Spirit deserted him for the time being, and poor Elijah "got the blues." He tells Jehovah that he has got tired of fighting all alone. He even says, "And I, even I only, am left." He takes it for granted, like some reformers of the present day, that he was almost the *only* good man left; yet Jehovah tells him, in the 18th verse of the same chapter, "I have left me seven thousand in Israel, all the knees which have not bowed unto Baal." Elijah was perfectly ignorant, like some people just now, of the good men and women in our several States and nations who are going to block the way and prevent *every thing* from "going to the dogs." Let me digress a little.

A year ago I told you about the little church up amid the hills in Leelanau Co., Mich. A devoted Christian woman who has been the main prop of the church and Sunday-school for many a long year said to me that *socialism* was breaking up the church, or would break it up if something could not be done to stop it. I know, dear friends, I am in danger of getting into "a hornets' nest" if I fight socialism here on these pages; and it would be out of my province to go into politics and these many "isms." I am sure God has not called me to give space to very much along this line. But let me say briefly that I am a friend of the laborer. I have labored all my life with hoe and spade. I am doing it now every day, or perhaps I should say a small part of every day—enough to give an old man like myself sufficient exercise; and it is no

make-believe, either. If you could see the stuff I carry around to the neighbors as the product of my toil, you would have to admit my work "bears fruit." And I am glad to see the working people (especially those who work outdoors) band themselves together to prevent extortion and injustice; and when the pay that is offered those who work for wages is not what the laborer thinks it ought to be, I am glad to see him ask for more; and if his employer or the company of employers decide they cannot pay more, it certainly is his privilege to quit. But there ought to be a Christian spirit on both sides in settling this matter as to the *amount* of pay. Thus far I think we are all agreed, or at least fairly so. But the man who gives up his place because the pay (as he sees it) is insufficient, has *he* any right to demand that nobody else shall take his place? Has he any right to block the way to prevent some other needy soul from taking the job he has already given up?

Right here in our nation of peace and good will we have come pretty near civil war in several instances. Just recently United States troops have been called on because the State militia could not handle the insurrection or rebellion, and I am afraid the matter is not yet entirely settled while I write.\* Let us now go back for a moment to that little church among the hills where I (years ago) helped to establish a Sunday-school.

The good brother who carried me over to catch the train argued quite at length to convince me that it is contrary to Bible teachings, and *wrong*, to receive interest for the use of money. He maintained that the man who has more money than he can use profitably should let his neighbor have the use of it without interest. I tried in vain to convince him he should pay something for the use of *money*, exactly as he would pay rent, either in cash or a part of the crop for the use of the land.

From what I have seen of socialism the promoters of it are not happy people. I maintain that every son and daughter in the United States has a *right to be happy*. We should present a smiling face to our friends and neighbors, especially those whom we

\* After the above was in type I find in *Our Commonwealth* an article from F. O. Burdick, M. D., President of the Associated Charities of Boulder, Colo., from which I clip the following: "They are not only determined not to work themselves, but they are equally determined no one else shall mine the coal so essential to the public welfare."



have not seen for a long time. If socialism makes people cross and unhappy, soured, and always grumbling about the wickedness of the great wide world, then there is something wrong, I am sure, with socialism. You remember Pollyanna told a poor discouraged minister that the Bible tells us *over 800 times* to "rejoice and be glad." Yes, dear friends, it is a Christian duty to rejoice and be glad, even if the war in Europe has not yet ceased, and even though our State of Ohio does *not* vote dry. You will please notice I am dictating this paper Oct. 8—three weeks before election.

Well, when I last visited that Sunday-school in the little church up among the hills I was asked to take charge of the Bible class. I shook hands with all the friends I had not seen for some time back, and received a genial hand pressure and smiling faces and pleasant words from almost every one. Years ago it was my pleasure to get quite a number of these friends to come forward at a revival meeting. There was one young man of considerable ability who went forward at my solicitation, if I remember correctly. I expected a good deal of him; but if I am correct he did not at that time unite with the church, and I think he has not yet done so. I plead with him, and wondered what kept him back, but I could not get at the trouble, if there was any. When I met him in that Bible class he seemed a little reluctant about taking my hand, or at least I imagined so, and he gave me no smile, or at least a very faint one. As he is a beekeeper, and takes GLEANINGS, and has for years past, I wondered why he should hold me off, as it were, at arm's length, for it was something very remarkable and *unusual* when I meet any one who takes and reads GLEANINGS. Finally it came out where the trouble was; and as I have his permission I will give his letter below. You will notice I kept it several months before deciding to print it, and I do so now with a prayer that good and not evil will come of it. Here is the letter:

A. I. Root:—I am going to surprise you a little, because you think you are trying to be such a just man, by sending you something to read; and if after you have read it you don't begin to see daylight in some other direction than what you have been wont to uphold (which is the present system of business and Christianity), I shall not be afraid to bet my soul (if I have any) that you will ever get even within an imaginative distance of heaven.

I have been reading your writings for some years back, and expect to read them for some time to come; but if it has taken you forty years to advance as far as you are now on the problem of high cost of living and Christianity, I might better quit for I don't believe, and, furthermore, I *know* you will never live long enough to get down to bedrock.

In one of your Home papers you made the re-

mark that you were not a socialist yet. You could understand electricity to some extent and predict its usefulness, but you cannot understand socialism, nor even see wherein it can be any good, and all because of that "dollar;" for if we had socialism you could not shine so far above the rest by the amount of wealth you can pile up. You have always been harping for the laborer to have a back yard and raise something for his own use, and thereby make a short cut between producer and consumer. Now, don't you know that, if you do that, somebody else has got to lose just that much? Well, if that is a good thing (and in some respects it is) why not have the laboring man go to work and dig up some of the dirt in the back yard of his brains and grow a little *common sense*, and then use that common sense for his own good by studying the different political parties and the system they stand for; and as he goes along he can learn the multiplication table; and when he gets down to subtraction, for example, let him take the Republican and Democratic parties, and also the Progressive, and subtract one from the other, and *vice versa*, and he will find he has nothing left but the Socialist party.

Haven't you got head enough on you, and a heart big enough, so that you can see that a man cannot be a strictly honest man and make or be come a millionaire? If a man eats his bread in the sweat of his face he doesn't eat it in the sweat of somebody else's.

We are going to have revivals down at the little church among the hills for a while, and I expect to go some of the time, and invite the ministers up, for I am wanting to tell them some things which they don't seem to know. If you want to write any thing about this in some of your papers, do so, and don't be afraid to use my name.

W. E. BOONE.

Traverse City, Mich., March 10.

You will notice, friends, our good brother (for I call all beekeepers brothers) seems to doubt God's providence as well as to lose faith in his fellow-men. The printed matter he asked me to read was much after the style of the letter above. It did not commend itself to me at all. If where he uses the word "dollar" he means to imply that I am myself giving my life in pursuit of the dollar or the dollars, I appeal to the readers of GLEANINGS if this is not unkind and untrue. It is true that God has blessed my labors in many ways, but I think I speak the truth when I say that my life has been spent in an effort to give employment to needy ones, more than to get the dollars for myself. If you could see how Mrs. Root and I live in order that we may have more to give to the cause of missions and other benevolent enterprises, I think you would declare me "not guilty." So far as wanting to "shine" above the rest of humanity, I want to plead *again* not guilty. Yes, friend Boone, I *have* been harping on raising chickens, potatoes, and garden stuff in the back yard; but it has never occurred to me that by so doing we could harm anybody else, as you put it. If you mean that the middleman has been thrown out of business, I reply that he should get out in *his* back yard and grow stuff as we do. There is a plea just now

that if Ohio goes dry all the saloonkeepers' business will be destroyed. Let *them* also, with their wives and children, throw away their diamonds and jewelry, and keep chickens and raise potatoes in the back yard.

Just now it occurs to me that I saw in one of the papers that the Socialists or one of the unions, one or both, as a body rejected State-wide prohibition because a great lot of men who belong to the union are employed by brewers, and the union, out of sympathy for these few, could not consistently vote dry.

In my Home talks so far, or so far as I can recall, I have never advised nor even discussed, unless it was very indirectly, the principles of the different political parties. I have held up *prohibition* first, last, and always; but I have criticised the Prohibition party, perhaps more than any other political party, because they did not seem to show a Christian spirit toward other temperance organizations.

The emphatic statement that a man can not be strictly honest and yet become a millionaire, seems to me is pretty severe. If I am correct, our good friend Thomas A. Edison is a millionaire, perhaps several times over; but if any citizen of the United States has ever, during his busy life, assailed Edison's honesty and integrity, I have never heard of it. Every great city, and every town and village, and I might almost say every home, is being blest just now by Edison's discoveries and inventions. When he comes to die I predict he will get the thanks of the people in a way, perhaps, no other one man has been remembered and revered. Edison is one of the busiest men the world has ever produced. He hardly takes time to eat and sleep. Even now, at the age of 67, he is giving employment to thousands of workmen; and I think the Lord that a man of such wealth and influence as Edison has had the courage to come out against the cigarette habit and put his decision in black and white on the front of his factories.

My good friend Boone (for I still wish to call him friend, notwithstanding the above letter) seems to intimate that I have more wealth than I ought to have. Perhaps the readers of this have a right to know that The A. I. Root Co., composed of myself, two sons, and three sons-in-law, are all together worth only about half a million dollars. Divide this sum into six parts, and consider that we give employment to nearly 300 hands, men and women, the year round; then can anybody say we have more than our share when we are expected to carry

on and maintain an establishment like ours? On the front of our main building, carved in sandstone, is the motto, "In God we trust." And another little motto that has been in my heart for many a long year, and I am sure it is the motto of every member of our family, the good wives as well, is, "Do good and lend, hoping for nothing again."

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#### MISSIONARY WORK IN NEW MEXICO, ETC.

In our issue for June 15, page 20 of the advertising department, I made mention of the missionary talk by a lady from New Mexico, Mrs. Frances N. Hawkenmeyer (now of Hudson, N. H.). Our printers unfortunately got it "a few *years* ago" when it should read "a few *days* ago." Now, shortly after that journal came out two persons protested, declaring no such thing was going on in New Mexico, etc. The letter was forwarded to the lady herself, and she replied at length, besides sending in a large number of tracts (some of them dated March, 1914) in regard to the mission work in New Mexico. I should be exceedingly glad to give her letter and extracts from said tracts, but it would take too much space. Briefly, there is going on at the present time a sort of worship—I suppose that is what they call it—by a class calling themselves "Penitentes." This custom has been going on for ages among these ignorant and superstitious people. Their idea is that they can commit all the sins they choose for a whole year, and at Christmas time they not only confess their sins but make an atonement, as they call it, by scourging themselves with cactus thorns, etc. After the blood has started they dip their scourges in pails of salt water to make the smart and pain more excruciating. They also bear huge wooden crosses, I suppose in commemoration of the way the Savior bore his cross.

Now, some of you may call this all a "fish story;" but my own brother, some years ago, in a trip to New Mexico witnessed exactly what I have described, and he asked me what it all meant; and he wanted to know if that could be classed among the *religions* of the world. Well, now, these tracts I have mentioned (there are over a dozen of them) describe the change that is being brought about by our missionaries. The transition from superstition and savagery is indeed wonderful; and the pictures illustrating the change from savagery to the gospel of Christ are indeed astonishing.

May God speed the missionaries, and abundantly bless the work that they are do-



ing right here in the United States. It is evident from the letters embodied in these printed tracts that this sort of self-scourging work and carrying of heavy crosses barefoot, over ground covered with sharp flints, is still going on, although it may not be true just now that the crucifixion described is at present going on, for the missionaries (now pretty well scattered over New Mexico) are making such a protest that these deluded people are waking up.

SOMETHING FROM OUR GOOD OLD FRIEND MRS.  
SARAH J. AXTELL.

I am sure the following will be read with much attention, especially by those who remember Mrs. Axtell's history in the past. As I have made frequent references to her (see p. 695, Sept. 1) no further introduction will be necessary.

Mr. Axtell and I are still plodding on, caring for our little fruit-farm of 18 acres, though much of the work is done in weakness. I am sure if we were to give up work and "move to town" we should not have the strength we now have. We have three acres of blackcap raspberries, and from six to eight acres in peach-trees that require a good deal of trimming, cultivating, etc. The fruit is very large, budded, and sells itself. We let people come here for the fruit, and pick that and the berries. The latter bring ten cents a box, and peaches net \$1.00 a bushel.

Our little farm last year, including the bees, brought in about \$1900 besides our living. We had only eight hives of bees last spring, as they all died two years ago. We increased them to 16 colonies, and got about 100 lbs. from each of the eight old colonies.

The year they died we had a very large peach crop, and many peaches rotted on the ground; and as there was but little honey in the fall flowers, the bees gathered a good deal of the peach juice and stored it in their hives. As we toiled so hard to save our peach crop and apple crop as well, we were so *worked* out that we did not have strength to extract their combs and give sugar syrup; but we thought that, if we fed quite largely of the syrup, they would use it in winter first, and perhaps not die (as we had done so the year before); but *every colony* died; and some that had only sugar syrup died also. They all seemed drowsy or stupid all the fall and winter.

The bees last summer and fall did not work on the peaches at all. They seemed to gather white honey until frost, and hence they have wintered finely. We have been greatly helped by reading your Health Notes, and we try to follow them a good deal; and Terry's book, too, has helped us much.

If we cannot go to sleep we go to manipulating all over—face, neck, and all—till sleep comes; and if I sleep all night I take some time before arising in the morning. Deep breathing also helps much; and with large jugs of hot water, and a row of them at the back of the bed, which helps us to keep warm, we can have our doors and windows open all night, which I am sure helps us to good refreshing sleep.

Some are afraid to use jugs of hot water for fear of the corks coming out. Yes, *corks* will easily come out; but corneoes used for corks will swell and not come out. We set the jugs on top of the stove with a nail under them to keep them from breaking, and

thus they will last several years. If a *crock cracks* and leaks, and a little milk is put into it and boiled for a while, it will be all right again for months. But:

"Our hopes are built on nothing less  
Than Jesus and his righteousness;  
We dare not trust our sweetest frame,  
But wholly lean on Jesus' name."

MR. AND MRS. L. C. AXTELL.

Roseville, Ill., April 2.

If I am correct, whenever bees work around cider-mills, or gather the juices from fruit left to decay on the ground, there is more or less trouble in wintering. I would suggest that, if it is a possible thing, the windfalls should be picked up and either be used for making cider vinegar or for feeding to the pigs, etc., and thus avoid as much as possible letting the bees get into the *habit* of working on fruit.

This matter of insomnia among elderly people interests me greatly—not because I am troubled by it, but because Mrs. Root has had trouble in that direction almost all her life. Exercising the limbs just before retiring, giving the body a thorough rubbing, and finishing off with a sponge bath, I am sure is a great help. But I know one often feels too tired, and neglects this; but after the blood is caused to circulate briskly you will forget all about "that tired feeling."

For some time back, as soon as the weather gets cold I have been troubled with cold feet. I have before mentioned that, after a good drying-off, a warming-up of the feet before an open grate is a splendid remedy; but as the nights keep growing colder, a great many times I have been awakened by finding my feet "as cold as a frog," as the expression goes, or perhaps a good deal colder. At times it has seemed almost *impossible* to warm them up. The hot foot-stone or hot-water jug mentioned will warm only one side; and while that was warming, the other would get cold. I have learned by experience that it is quite important that the feet be thoroughly warmed in some way. Right here comes in another of my "discoveries;" and I know pretty well beforehand that when I tell it a lot of you will say with a grin, "Oh! that is as old as the hills." It is simply this:

When your feet actually *refuse* to be warmed up, put them into a bowl or pail of water as hot as you can bear it comfortably. After I made this discovery I felt like saying to those stubborn and contrary feet, "Tell *me* you *won't* get warmed up, you contrary toes and heels and ankles." The explanation is, that the heat makes a perfect contact all around and all over the feet and ankles at once.

Some of you may suggest that it is lots

of bother; but if "lots of bother" helps to "defer old age" I think we can well afford this bother. Old people especially should have access to a warmed-up bath-room every hour and every minute in the day. Let me say to you younger ones, if your old father and mother have no such arrangement get right about it and fix up one for them. I was going to suggest it as a "Christmas present;" but Christmas is too far away. Make it a Thanksgiving present. Since natural gas was brought to our premises, a little heat in the basement heats the bath water; and in our bath-room there is a little radiator that cost only a trifle, and this is always hot. Now, I do not want *hot* water nor very warm water for bathing all over. Water at about 60 or 70 is to me more agreeable, and I am sure a *moderately* warmed sponge bath is more helpful. Well, after I have been washed and scrubbed all over I put on my night dress and draw off into the bath-tub a little hot water, and stand in it. When both feet are made hot I slip on some flannel bed stockings that cost only eight or ten cents a pair. When I get tolerably well warmed up in body I can easily push these stockings off; and if

the weather is very cold we have a hot soap-stone for "emergencies."

I have thus gone into details because I know there are hundreds of old people reading GLEANINGS and profiting by every thing that not only helps to defer old age, but which helps us to care for ourselves so we shall avoid as long as possible being a burden on the younger generation. I wish all of our readers would learn to repeat, or, better still, *sing*, the beautiful hymn with which Mrs. Axtell closes her kind letter.

Below is a clipping taken from the *New York Weekly Witness*, which Mrs. Axtell inclosed in her letter:

KICKING THE RHEUMATISM OUT OF BED.

On Tuesday in the Senate, Senator Tillman (S. C.) gave a dissertation on the conservation of health, and describes how he kept himself alive four years after his obituary had been written, and invited them to come to his office for further instruction as to details. He remarked, when he saw some of his audience smiling, that he would bury some of them yet. The four things to which he attributed his restoration to health after a severe paralytic stroke were: careful diet, deep breathing, physical-culture exercises, and drinking hot water (of which he drinks at least three quarts a day). He described his method of exercise as lying on his back and kicking the headboard of his bed. By this means he said he had "literally kicked the rheumatism out of bed."

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## HIGH-PRESSURE GARDENING

### FALL-BEARING STRAWBERRIES, ETC

Last spring I had about a dozen plants, highly recommended, the Superb and the Progressive. For some reason—I rather think improper soil for strawberries—I lost about half my plants. After I got irrigation, however, they took a start, and during October I had some very nice berries. My near neighbor, Mr. Henry Horn, had about 60 plants of the Superb, and he brought me about as fine a dish of strawberries yesterday, Nov. 3, as I ever saw. To-day, Nov. 4, he has a large amount of green berries, some just getting ripe. In the spring he prepared a piece of ground (about ½ acre) for strawberries, and gave it a very heavy fertilizing of bone meal. The season got so late, however, that he did not get his plants put out. To avoid losing the use of the ground he sowed it to purple-top flat turnip, and just now he is pulling and selling a most prodigious crop of beautiful turnips. One of them weighed fully 11 lbs., and measured 32 inches in circumference. When I suggested that it was the heavy application of bone meal, he said that when he pulled them up he found the bone meal adhering to the roots. We have

just had a part of one for dinner, and the quality is excellent, even if they are so large.

Just a word more about fall-bearing ever-bearing strawberries. It has now been pretty well demonstrated that just as nice berries can be grown in the fall, especially when the frost holds off, as in the summer time. It has, however, been suggested, and I think with some weight, that people will not be so eager to buy the berries, no matter how nice they are, when peaches and other kinds of fruit are so plentiful. Strawberries come in May and June, and are about the very first fruit, when there is almost no other fruit to be had; and yet strawberries grown in Florida, so as to be ready by Thanksgiving, are often sold at high prices. It looks now as if we should soon be able to have *strawberries every day in the year*.

### FROM THE FLORIDA HOME.

We have just had a beautiful rain, and our garden looks fine. We have four trees of oranges, one of tangerines, luscious persimmons, kumquats, and one big pineapple—*our own growing*—paypayas (muskmelon tree) galore, one 19 inches around and a



foot long, and not done *growing* yet. There may be 100 bushels of dasheens and cassava "too numerous to mention." Our 56 chickens laid one egg yesterday and *two* to-day.

You see they are on the "up grade." Ducks are doing about the same. You see they were all waiting for the "boss" to arrive and give them "inspiration."

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## POULTRY DEPARTMENT

### CHICKENS IN FLORIDA; BUTTERCUPS, ETC.

When I said we got only two eggs a day I omitted mentioning that eggs here are 50 cts. a dozen and scarce at that. Even duck eggs bring 40 cts. I found only two duck eggs, but Wesley went after me and found eight more in the same nest, covered up, so the ducks are not doing so very badly. Today, Nov. 10, we got six eggs. Neighbor Abbott was just over, and he says he has two Buttercup pullets that laid 53 eggs in October, or 26½ eggs in 31 days. Mrs. A. thinks they did nearly as well in September, but no count was made. When I asked about moulting he said they had not moulted yet. I forgot to ask their age, but very likely they were hatched so late they will not moult this season, and here is a hint: If we can have young pullets laying when the older hens are moulting we can get the big prices, even if the eggs are a trifle small. Should I give the above without explanation, it might look like a boom for the Buttercups. Let me mention that the prettiest Buttercup hen in our yards is a very poor layer, yet she is always following me around in the yard, and "wanting to talk," but she lays only once in three or four days, apparently. Pullets of any non-sitting strain can be hatched so as to lay during moulting time.

### INDIAN RUNNER DUCKS IN FLORIDA.

I have said so much in favor of the Indian Runner ducks that I felt loth to report that when eggs were down to 20 cts. last April no one wanted duck eggs here in our market. It was no use to say they were "just as good," and "much larger" than hens' eggs, etc. Nobody wanted them. I managed, however, to get about 15 cts., but after I was gone Wesley reported no one wanted them at all. Then I wrote him to sell the ducks for whatever anybody would give; but he replied no one would give any thing for the ducks. The women said they were "hard to pick," etc. As I have told you, I found it hard to own up all this after I had praised the ducks so much. Now, this isn't all. Soon after he said the eggs wouldn't *sell*, he wrote it didn't matter; for when the hot weather came on they all *stopped laying*, and this was the condition

of things when I reached here Nov. 7. I found hens' eggs 50 cts., and few or none at that price; and even duck eggs were in demand at 40 cts. As the hens are about all in full moult I couldn't get *them* to lay; but the duck doesn't seem to mind moulting time, and I am now getting six eggs a day from 12 ducks. Where are the rest of my big flock, do you ask? Well, the *alligators* decided if nobody else wanted ducks *they* wouldn't mind having a few, and they took all of Dr. Morgan's, and about half of mine. *Moral*.—Just now, while duck eggs bring 40 cts., my ducks are not for sale; and shall we not keep ducks just to have eggs in moulting time?

### EGGS FROM CHINA, ETC.

Not only do the Chinese succeed in producing eggs cheaper than we can here in America, but I suppose we shall have to admit that they succeed in getting them here to the United States, especially on the Pacific coast, in very fair order so as to compete with home-grown eggs. Good honest authorities have declared the Chinese eggs compare very favorably with the cold-storage eggs of our large cities. Just now I found the following in the *Pacific Poultryman*:

#### LABEL THE CHINESE EGGS.

A recent item in the daily press stated that a customs inspector had held up a shipment of Japanese toothpicks because they (each toothpick) was not labeled "made in Japan." The importers protested to Washington, and we are still awaiting the government's decision. If the customs inspector is upheld, the rule should also apply to imported Chinese eggs.

The above is a pretty good joke in regard to the toothpicks. No matter if the Chinese eggs *are* just as good as those in cold storage, the consumer has a perfect right to *know* if the eggs he buys are brought from China. Then he can decide whether or not they are just as good as the home-grown cold-storage eggs. Of course the Chinese eggs should go at a lower price. There is still another point to be considered: If these imported eggs are equally wholesome, may they not be a benefit to poor people? I hope and pray that the present war will not prevent China or any other nation from being benefited by honest traffic across the seas.

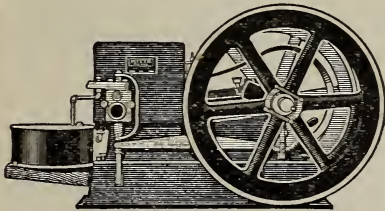


# A WITTE

**Engine to Earn  
its own cost  
while you  
pay for it!**

I AM making lower engine prices than this country has ever seen. And I am delivering engines that can't be beat.  
Ed. H. Witte.

**WHY** take chances on a poor or an unknown engine for any price when the WITTE costs so little and saves you all the risk?



## WITTE ENGINES

### Kerosene, Gasoline and Gas

Made in sizes of 2, 4, 6, 8, 12, 16 and 22 Horse-power. 25, 30 and 40 H-P. Stationary, Portable, Skidded and Sawrig Styles. Standard the world over for all shop and farm power uses. Over 27 years ago I made my first engine, and gave it my name, and ever since I have kept the active building of every WITTE engine in my own hands. I know every engine I ship, inside and out. That's why I sell every engine under my binding and liberal

### Liberal 5-Year Guaranty on Efficiency and Durability

### Note These Present Low Prices

2 H-P. \$34.95; 4 H-P. \$69.75; 6 H-P. \$97.75; 8 H-P. \$139.65; 12 H-P. \$219.90; 16 H-P. \$298.80; 22 H-P. \$399.65. Portable and sawrig outfits proportionately low.

### SEND COUPON for MY NEW OFFER

Let me send you my Free Book, the finest in the whole engine business. Learn the cost of past high prices, and why I can undersell the whole field, and giving unmatched quality. Let me tell you by return mail, how easily you can earn a WITTE.

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### WHILE YOU TEST THIS STOVE FROM KALAMAZOO

That's one way that you can take advantage of our part payment plan—use the stove 30 days—then decide—we pay the freight and quote a wholesale price that saves you \$5 to \$10. Write for the Kalamazoo Stove Catalogue and take your pick from 500 styles and sizes.

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Wm. Galloway, Pres., Wm. Galloway Company  
765 Galloway Station Waterloo, Iowa

## 20 Reasons Why You Should Investigate the SANDOW Kerosene Stationary ENGINE

It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices based on enormous output.

30 Day Money-Back Trial—10 Year Ironed Guarantee. Sizes 1 1/2 to 18 horse power. Send a postal today for free catalog which tells how Sandow will be useful to you. No go-betweens. Pocket agent's and middlemen's commissions by dealing direct with factory.

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*"The Masterpiece of the Largest Manufacturers of 2-Cycle Engines in the World"*

It isn't the first cost of an engine—IT'S THE RUNNING COST THAT COUNTS. Economy of fuel and the sureness with which they run have made Bessemer Kerosene Engines the greatest little wonders in the world. No carburetor troubles because the famous Bessemer Universal Fuel Feeder feeds automatically for a light or heavy load, thus preventing any waste of fuel. Non-cranking, only 3 moving parts, change of speed, etc. 2 to 8 H. P. 30 days free trial. Immediate shipment. Write for Catalog "K."

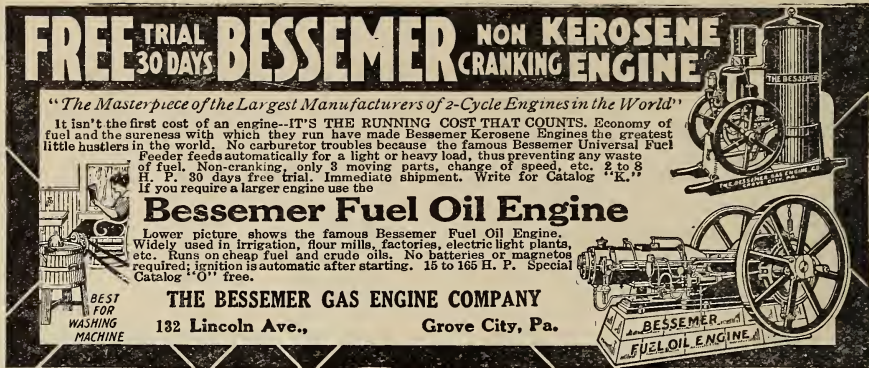
If you require a larger engine use the

## Bessemer Fuel Oil Engine

Lower picture shows the famous Bessemer Fuel Oil Engine. Widely used in irrigation, flour mills, factories, electric light plants, etc. Runs on cheap fuel and crude oils. No batteries or magnets required; ignition is automatic after starting. 15 to 165 H. P. Special Catalog "O" free.

**THE BESSEMER GAS ENGINE COMPANY**  
132 Lincoln Ave., Grove City, Pa.

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## One Barrel of "Scalecide"

Will Spray as many Trees as Three Barrels of Lime Sulfur

"Scalecide" has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the *Good Results from Using*

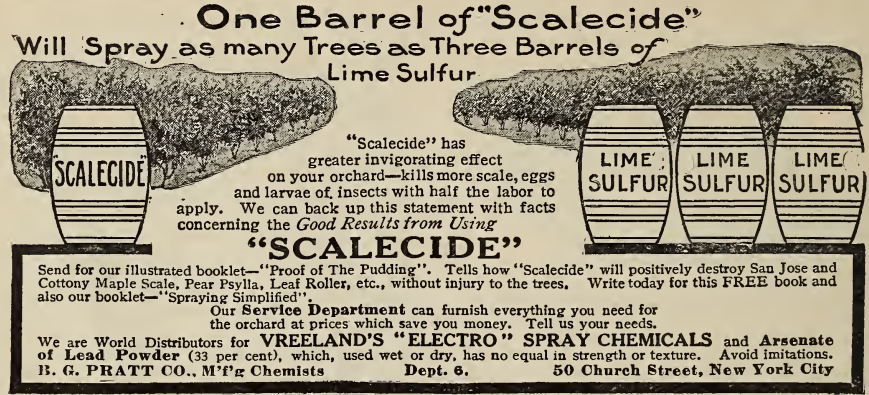
### "SCALECIDE"

Send for our illustrated booklet—"Proof of The Pudding". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Simplified"

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### Bees by the Pound and Full Colonies

From a superior strain of **THREE-BANDED ITALIANS**. . . Hardy, gentle, and they are hustlers. . . . Guaranteed to please you.

Send for My 1914 Descriptive Catalog

I have a large stock of modern BEE SUPPLIES always on hand. **ROOT'S GOODS** at factory schedule of prices, packed and delivered to my station. All orders will receive prompt and careful attention.

**Earl M. Nichols, Lyonsville, Mass.**

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Honest grades and full market prices. Shipments held separate on request. I pay charges on lots worth \$10.00 or over. . . You get value received when you ship to

**GEO. E. KRAMER, . . . VALENCIA, PA.**  
Ask for price list, and mention GLEANINGS.

**Spray Your Trees**

**KANT-KLOG SPRAYER**

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted. Rochester Spray Pump Co. 207 Broadway Rochester, N. Y.



## Join World's Champions

13 more championships won by owners of Belle City hatching outfits. Makes

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now and all winter, too, if you feed your hens The Humphrey Way—fresh bone prepared in a

### HUMPHREY BONE CUTTER

with its Always-Open Hopper. If you have 10 hens or more, write for our offer and a copy of our profitable book, "The Golden Egg."


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Gleanings in Bee Culture, 1 Year, \$1.00	} ALL THREE
Everybody's . . . . 1 Year, \$1.50	
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Total Value . . . . \$4.00	

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This special offer—and it is a remarkable bargain—is the result of a contract we have just closed with the publishers of Everybody's and The Delineator. By dividing the expense among the three, this low price is possible and you will save \$1.30 in the purchase of the three magazines that you will perhaps enjoy more than any others this year.

**EVERYBODY'S.**—Frederick Palmer's exclusive monthly resume of the war—Owen Johnson's brilliant new novel of New York life—The first plays of George Bernard Shaw ever published in an American Magazine—Mary Roberts Rinehart's new mystery novel—Articles by William Hard and Hugh Black. Everybody's is one magazine that does not print "Tainted fiction."

**THE DELINEATOR** is one of the fashion authorities of the world. In each number is a display of advance styles, supplemented by practical, helpful suggestions for materials, linings, trimmings, etc. Good stories in generous measure, a splendid home department, interesting and timely special articles, all superbly illustrated—in addition to the fashion display—make the Delineator most enjoyable and most helpful.

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**The A. I. Root Company, Medina, Ohio**

This offer is not applicable in Canada nor in foreign countries because of the additional postage required on all the publications.



## Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the Classified Columns or we will not be responsible for errors.

### HONEY AND WAX FOR SALE

HONEY LABELS.—Lowest prices. Catalog and price list free. PEARL CARD CO., Clintonville, Ct.

FOR SALE.—Extracted clover honey, fine quality; 9 cts. per lb. JOE HANKE, Port Washington, Wis.

FOR SALE.—Choice extracted honey in new 60-lb. cans at 9 cts. per lb. J. P. MOORE, Morgan, Ky.

FOR SALE.—Extracted buckwheat honey in 160-lb. kegs. N. L. STEVENS, Venice Center, N. Y.

\$19.20 gets a carrier of 8 24-lb. cases of new light-amber Florida partridge-pea honey. J. J. WILDER, Cordele, Ga.

FOR SALE.—2000 lbs. of buckwheat and amber honey, 7 cts. in 60-lb. cans. GEORGE RAUCH, Orange Mountain Bee Farm, Guttenberg, N. J.

COMB HONEY.—No. 1, choice, and No. 2, Colorado standard grades. Carload just in. State quantity wanted. DADANT & SONS, Hamilton, Ill.

FOR SALE.—3500 lbs. baker stock of extracted honey at only 6 cts. per pound. Have you a baker to supply? E. D. TOWNSEND & SONS, Northstar, Mich.

FOR SALE.—Light-amber extracted honey in carload lots at 5 cts., by Tulare Co. Beekeepers' Association. C. W. TOMPKINS, Sec., Tulare, Cal.

FOR SALE.—8000 lbs. white alfalfa sweet-clover honey, 7 cts. per lb. for the lot. T. H. WAALLE, Nampa, Idaho.

FOR SALE.—Choice aster honey; has very rich and delicious flavor, in 60-lb. cans, two cans per case, at 7 cts., F. O. B. Brooksville, Ky. H. C. LEE.

FOR SALE.—Best quality white-clover extracted honey in 60-lb. cans. State how much you can use, and I will quote price. L. S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—50,000 pounds light extracted honey, well ripened and mild flavored, 7½ cts. by the case of two sixty-pound cans; in ten-case lots, even seven cents per pound. H. G. QUIRIN, Bellevue, Ohio.

FOR SALE.—Beautiful white-clover-basswood blend of extracted honey in new 60-lb. net tins. Carload or less. Ask for a sample, stating how much you can use. E. D. TOWNSEND & SONS, Northstar, Mich.

EXTRACTED HONEY.—Best water-white and nice amber alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. DADANT & SONS, Hamilton, Ill.

Dealers in honey, ask for a late number of the *Beekeepers' Review*, containing a list of 75 members having honey for sale. Address THE BEEKEEPERS' REVIEW, Northstar, Michigan.

FOR SALE.—400 cases of No. 1 comb honey in 4 x 5 sections, 24 sections to case. White, \$3.35; light amber, \$3.25, f. o. b. here. Honey is equal in flavor to white-clover honey. Extracted, 10 cts. in 60-lb. cans. H. A. ROSS, Evansville, Ind.

FOR SALE.—Pure honey, California sage, water-white, 120 lbs., 10 cts. per lb. Light-amber honey, 120 lbs., 9 cts. We have honey of several flavors. Price in gallon cans upon request. Sample, 10 cts. each. I. J. STRINGHAM, 105 Park Place, New York.

FOR SALE.—Highest quality comb and extracted honey. Write for prices.

THOMPSON BROS., New Glasgow, Va.

FOR SALE.—Raspberry, basswood, No. 1, white comb, \$3.00 per case; fancy, \$3.25; 24 Danz sections to case, 9 cases to carrier. Spanish needle, heartsease, No. 1, light comb, \$2.85 per case; fancy, \$3.00. W. A. LATSHAW Co., Carlisle, Ind.

### HONEY AND WAX WANTED

WANTED.—Comb, extracted honey, and beeswax. R. A. BURNETT & Co., 173 So. Water St., Chicago.

WANTED.—Comb honey. Give full description and price. A. I. ROOT Co., Des Moines, Ia.

WANTED.—Extracted honey. Give full description and lowest price. W. HICKOX, Forsyth, Mont.

WANTED.—Beeswax and honey. Write us. SUPERIOR HONEY CO., Ogden, Utah (also Idaho Falls, Ida.).

WANTED.—Dark baking stock honey. State quantity, source, and price. A. G. WOODMAN Co., Grand Rapids, Mich.

WANTED.—Honey, extracted and comb, also beeswax. Will pay full market value. Write us when you have any to dispose of. HILDRETH & SEGELKEN, New York City.

WANTED.—Buckwheat comb and extracted honey. Comb to be produced in standard sections, where fences or separators have been used. We prefer to have it packed in new shipping-cases of 24 sections each. All sections to be free from propolis, and well graded. Extracted to be heavy in body, of a good flavor, not mixed with other fall honey. We prefer it shipped in new 5-gallon cans or in small barrels. We want early shipments. State cash price for all grades delivered in Medina. THE A. I. ROOT CO.

### FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Full line of Root's goods at factory prices. E. M. DUNKEL, Osceola Mills, Pa.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. Co., Greenville, Tex.

FOR SALE.—Tennessee hams, bacon, and lard; comb and extracted honey; sun-dried apples. Write for delivered prices. J. E. HARRIS, Morristown, Tenn.

White-sweet-clover seed, 10,000 pounds unhulled at 12 cts. per lb.; 8000 pounds hulled cleaned seed at 20 cts. per lb.; sacks 25 cts. extra. Immediate shipment. B. F. SMITH, JR., Cowley, Wyo.

FOR SALE.—500 Hoffman self-spacing frames in flat, new, \$13; 20 10-frame dovetailed comb-honey supers, taking 4 x 5 sections, complete, nailed, painted, used one year, no foul brood, \$1.00 each. LEROY LINCOLN, Rt. 3, Worcester, N. Y.

The *Beekeepers' Review* is now owned and published by the honey-producers themselves. It is the paper that all honey-producers should support. Twenty-one months, beginning with the April, 1914, number, for only \$1.00. Sample copy free. Address THE BEEKEEPERS' REVIEW, Northstar, Mich.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1914. Our catalog and price list will be mailed to you free. Order early and get the discounts. C. E. SHRIVER, Boise, Idaho.

**REAL ESTATE**

FOR SALE CHEAP.—40 acres good irrigated land, also 150 stands bees and extracting-outfit.  
WM. MCKIBBEN, Ontario, Ore.

VIRGINIA FARMS, small and large, \$15 an acre and up. Easy payments, mild climate, fertile soil. Ideal for fruit, stock, or general farming. On railroad with big markets near by. Write for list, maps, etc. F. LABAUME, Ag't Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

**WANTS AND EXCHANGES**

WANTED.—100 to 500 colonies of bees, will pay fair price.  
E. D. SIPPLE, Mason, Ky.

WANTED.—To buy or rent from 100 to 200 colonies of bees in good location, in South or North.  
CARL ERIKSON, Nora Springs, Ia.

EXCHANGE FOR BEES.—Four lots, worth \$500 in Grand Rapids, Mich., for bees delivered here.  
JAMES MCKEE, Riverside, Cal.

**BEES AND QUEENS**

Bees for rent and sale. OGDEN BEE AND HONEY Co., Ogden, Utah.

FOR SALE.—200 colonies of bees in white tupelo district. Good bargain. J. B. MARSHALL, Big Bend, La.

FOR SALE.—2000 colonies of bees; pure-bred poultry; sweet-clover seed.  
W. P. COLLINS, E. C. BIRD, Boulder, Colo.

FOR SALE.—Golden Italian queens that produce good bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.00; 6 for \$5.50. WM. S. BARNETT, Barnett's, Va.

FOR SALE.—450 colonies of bees, extra hives, supers, and other accessories that go to make a complete up-to-date bee business, all in fine condition.  
H. B. HETHERINGTON, Cherry Valley, N. Y.

Golden Italian queens that produce golden bees, the brightest kind, gentle, and as good honey-gatherers as can be found. Each, \$1.00; six, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.  
J. B. BROCKWELL, Barnett's, Va.

California Italian queens, goldens and three-handers. Bees by the pound a specialty; also nuclei and full colonies. Orders booked now for the early spring months. Circular free. J. E. WING, 155 Schiele Ave., San Jose, Cal.

**POULTRY**

EGG SPOCK.—Pure-bred pedigreed Barred Rock cockerels and hens. Mothers laid over 200 eggs in 10 months. Sires have 15 years of pedigreed breeding for eggs behind them. Grandmother laid 217 eggs in third year of production. Pen of my hens stand eighth among 100 pens in Missouri Egg-laying Contest. Eggs in season. Speak quick.  
B. F. W. THORPE,  
358 S. Yellow Springs St., Springfield, Ohio.

**MISCELLANEOUS**

If you want to make sure of an eight-pound "Trinidad Dasheen-seed" shipment, in time for spring planting, send me \$1.00 now.  
M. LEIDERSDORF, Daytona, Fla.

\$\$\$\$ IN PIGEONS! Start raising squabs for market or breeding purposes. Make big profits with my Junbo pigeons. We teach you. Large, free, illustrated, instructive circulars. PROVIDENCE SQUAB Co., Providence, R. I.

**HELP WANTED**

WANTED.—Assistant apiarist. Must be handy and accurate. Full particulars first letter.  
H. C. AHLERS, West Bend, Wis.

WANTED.—For season of 1915, a beeman, between the age of 21 and 45; must have had previous experience. Work will begin in January. Give age and experience in first letter.  
J. W. GEORGE BEE Co., Imperial, Cal.

**SITUATION WANTED**

WANTED.—Middle-aged German of good habits, like to work in apiary where he could learn the business, special comb honey and queen-rearing; have some experience. JULIUS W. SCHINNER, Box 292, Scotia, Cal.

**BEEKEEPERS' DIRECTORY**

Well-bred bees and queens. Hives and supplies.  
J. H. M. COOK, 70 Cortlandt St., New York.

Nutmeg Italian queens, leather color, after June 1, \$1.00 by return mail. A. W. YATES, Hartford, Ct.

QUEENS.—Improved red-clover Italians bred for business June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.  
H. C. CLEMONS, Boyd, Ky.

**A KIND WORD FROM AWAY OFF IN QUEENSLAND.**

Since coming here I have taken an added interest in what A. I. Root has to say with regard to dasheens. I should be glad to know whether it is identical with what goes by the name of "taro" here, and which the natives prize as the best food they have. This neighborhood is particularly good for its growth, and we have a particularly fine strain. I get quite a good deal for my own consumption from the natives.

It may be of interest to Mr. Root to know that I am out here engaged in industrial missionary work. It is the object of the interest I represent to educate the natives industrially as well as spiritually. To that end we have two plantations upon which we employ natives, and at the same time we are able to have a very good influence upon them. I am here in charge of a 250-acre cocoonant plantation which is proving at this date a splendid opportunity to get an uplifting hold upon the natives; and later, as things develop, these opportunities will increase. All the workers engaged by the board go out as missionaries, and take salaries only of the same amount as is given by other societies. Seeing that the industrial development of these very backward races is of second importance only to their spiritual welfare, and also that almost nothing is being done by the strictly missionary societies, I feel (and I think Mr. Root will agree) that this work in which I am a helper is one of first-class importance.

It is my hope to re-enter the fraternity of beekeepers before long. I do not as yet know where I shall get my bees, though I think once here they would be able to get a good deal of honey.

T. REEVES PALMER.

Daru, Thursday Island, Queensland, May 13.

[Friend P., the taro is of the same family as the dasheen, and perhaps nearly identical, as you will notice by the former report in our pages. May God bless and prosper your undertaking to elevate the native while you teach them honest industry and keep them busy.—A. I. R.]



### Convention Notices

The Michigan Beekeepers' Association will hold its next annual convention at Lansing, December 9 and 10. E. MORSE, President.

The annual meeting of the Kansas State Beekeepers' Association will be held in the Commercial Club rooms, Topeka, Dec. 4 and 5. Mr. Frank C. Pellett, of Iowa, will deliver a lecture on wintering. We are preparing a splendid program. All persons interested in bees are urged to attend these meetings. Topeka, Kan. O. A. KEENE, Sec.

The National Beekeepers' Association will hold its annual session at Denver, Colorado, some time during the month of February. The exact date and program will be announced later. Denver being situated in the center of the producing country, and many of the largest producers of the country within easy reach we may well expect a meeting of "live wires." Present indications promise well for a big attendance. Come and "get together and boost." Redkey, Ind. GEO. W. WILLIAMS, Sec.

There will be a meeting at Akron, Erie Co., N. Y., on Tuesday, Dec. 15, 1914, at the American Hotel, commencing at 10:30 A. M., and closing at 3:30. Some of the best beekeepers in western New York will be there to speak. There will also be other discussions on bee culture. This meeting, coming soon after the Syracuse meeting, will give those residing in western New York a chance to learn the latest in beekeeping, and also a chance to form a branch of the N. B. K. A. Akron is well situated, being but 20 miles east of Buffalo. It has good railroad accommodations and two State improved highways. The American Hotel is an ideal place for such a meeting, offering first-class accommodations at a reasonable rate. The large hall is free to all. Come and get acquainted; learn something new; see what the other fellow is doing; get together, talk it over; have a good time—take a day off. It will pay you in the end.

#### THE CHICAGO NORTHWESTERN BEEKEEPERS' ASSOCIATION.

The eighteenth annual meeting of the Chicago Northwestern Beekeepers' Association will be held at the Great Northern Hotel, Thursday and Friday, December 17 and 18. An extensive program has been arranged; and as several large beekeepers, such as N. E. France, E. S. Miller, and others have signified their intention of being present, a good meeting is assured. The program follows:

##### THURSDAY A. M., DECEMBER 17.

- 8:00. Social hour.
- 10:00. President's Address, C. F. Kannenberg.
- 10:30. Reading of minutes and report of Secretary-treasurer.
- 11:00. American Beekeeping, Past and Future, L. A. Aspinwall.

##### Crop reports.

##### AFTERNOON SESSION.

- 1:00. Shipping Bees North and South, H. C. Ahlers
- 2:00. Country-wide Advertising to Increase the Sale of Honey, G. E. Bacon.
- 3:00. Report of Delegate to National Convention, E. J. Baxter.
- 4:00. Bee-cellars, E. S. Miller. Question-box.

##### THURSDAY EVENING

Sweet Clover, Prof. J. G. Mosier, University of Illinois.

##### FRIDAY A. M.

- 9:00. Social hour.
- 10:00. The High Price of Sugar and the Honey Market, F. C. Pellett.
- 11:00. The Foul-brood Problem, N. E. France.

##### AFTERNOON SESSION.

- 2:00. Brood-rearing for Crop Results, E. L. Hoffman.
- 3:30. Comb Honey—Preparing for the Crop, A. L. Kildow.
- 4:00. Beekeeping as a Business, E. H. Bruner.

The twelfth annual convention of the Missouri Beekeepers' Association will be held December 7 and 8, 1914, at the Commercial Club Rooms, St. Joseph, Mo. The following is the program:

##### MONDAY, 10:00 A. M.

1. Address of President—J. W. Rouse, Mexico.
2. Report of Secretary-treasurer—J. F. Diemer, Liberty.
3. Appointment of Committees.
4. Reception of Members. 1:30 P. M.
5. Rearing of Good Queens—J. F. Archdekin, St. Joseph.
6. How to introduce them, and the smoke method described—C. P. Dadant, Hamilton, Illinois, Editor *American Bee Journal*.
7. Artificial Increase—Dr. G. Boher, Chase, Kan. Fifty Years' Experience.
8. Management of bees during a good 'honey-flow'—L. E. Altwein, St. Joseph.
9. Disposing of the Honey Crop—M. E. Darby, Springfield (State Inspector of Apiaries). 8:00 P. M.
10. Preparing Bees for Winter—Frank C. Pellett, Atlantic, Ia. (State Inspector, and Vice-president National Association).
11. Sweet Clover—S. P. Halsey, Nemaha, Co., Ka. Question-box.

##### TUESDAY, 9:00 A. M.

12. L. Haseman, Columbia, Mo., Entomologist and Chief Inspector of Orchards and Nurseries, will tell us about the interdependence between bees and horticulture.
13. Dr. C. R. Woodson, Superintendent of the Woodson Sanitarium, St. Joseph, Mo., will tell us about orchard spraying, etc.
14. C. D. Baxter, of Nauvoo, Ill., a very extensive fruit-grower and apiarist, will tell us about bees and fruit—do bees open fruit? etc.
15. A. V. Small, of St. Joseph, will read a paper on shook-swarming.
16. O. S. Mullin, Holton, Kan., on Carniolans.
17. N. M. Jennings, Franklin, Ind., a veteran, will describe his method of wintering.
18. Report of standing committees, incorporating, etc.

It will be well worth your time and money to attend this meeting. To the novice, wintering bees is the hardest problem. Frank C. Pellett, of Iowa, and N. M. Jennings, of Indiana, will tell you how it is done.

##### OFFICERS FOR 1914.

President, J. W. Rouse, Mexico; Vice-president, Henry C. Gadbury, Miami; Secretary-treasurer, J. F. Diemer, Liberty.

Every one on the program has promised to be present. Big guns from Indiana, Illinois, Iowa, Kansas, and Missouri. Good topics well handled, interesting and instructive. What you don't know may be some one else will. Beekeepers, horticulturists, supply dealers, and the ladies are invited, or any one interested in bees or honey.

All exhibits may be shipped to H. D. Ennis, Secretary Commercial Club, Corby-Forsee Bldg., St. Joseph, Mo.

## SPECIAL NOTICES

BY OUR BUSINESS MANAGER.

#### FOUR PER CENT DISCOUNT FOR DECEMBER CASH ORDERS.

To those who buy now for next season, sending remittance with the order during the month of December, subject to the conditions named below, we allow 4 per cent discount.

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows:

Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee-books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order, the discount may be deducted from the whole order, including these items which are otherwise excepted.

#### SUNDAY SCHOOL TIMES.

Mr. Root, in his writings, has frequently referred to the *Sunday School Times* as a most valuable weekly religious paper for the family. The regular subscription price is \$1.50; but is furnished in clubs

to Sunday-schools at a special rate of \$1.00 if five or more copies are taken. The best rate they will make to us for clubbing with GLEANINGS is \$1.25 a year.

We send in our Medina club about the middle of December. Any of our readers who do not have the opportunity to join a local club at \$1.00 a year may send their name to us with \$1.00, and we will send it in with the Medina club. If you take advantage of this offer you should do so before the end of December because club subscriptions must all expire at the same date. December is the month when many renewals to GLEANINGS and other periodicals are made. In sending your renewal to GLEANINGS add a dollar for the *Sunday School Times*, and enjoy a treat for the year 1915.

**LARGE HEATING BOILERS.**

In overhauling our steam plant a year ago we took out two large tubular boilers which are in good condition. Because they do not conform to the high standard of specifications required by Ohio laws they cannot be set up again in this State for power purposes requiring high pressure; but they would be permitted for heating purposes. They might also be allowed in some other States for power. One is made by Erie City Iron Works, Erie, Pa., 54 inches in diameter, 14 ft. long, with 48 3 1/2-inch tubes, 3/8-inch shell, 1/2-inch heads, half-arch front fixtures. When last inspected a pressure of 40 lbs. was allowed. We offer this on board cars for \$50.00. The other boiler is made by Gem City Boiler Co., Dayton, Ohio, 54 inches by 14 feet, with 44 3 1/2-inch tubes; dome and full flush front, with fixtures. The pressure allowed on this at last inspection was 80 pounds. We offer it on board cars for \$75.00.

**TEN H.P. UPRIGHT ENGINE.**

We have for sale at bargain prices a number of pieces of machinery which have been set aside by changes of one kind and another in our large plant. One of these is an upright engine, ten h.p., made by the Racine Engine and Iron Works, Racine, Wis.,

5 1/2 x 6 steam cylinder, center crank, automatic on subbase, 25 x 6-inch fly-wheel and Rites inertia fly-wheel governor, normal speed 400 revolutions per minute. This was used several years in running a small generator for evenings and mornings, furnishing light and power when the big engine was not running. This was replaced by a gas-engine because it could be run more economically. The engine is in good condition. We offer it for \$50.00—one-third of its appraised value.

**STEAM-PUMPS.**

In overhauling our fire-fighting apparatus a larger size of pump was required, displacing a Hughes Steam Pump Co.'s 14 x 7 x 12 duplex brass-fitted steam-pump with a capacity of 500 gallons per minute. This is appraised at \$485. We offer it for sale at \$125, on board cars Medina. We need the room more than we do the pump, and it would serve a good purpose for some one needing a pump of its capacity.

**SPECIAL NOTICES**

BY A. I. ROOT

**SPECIAL NOTICE TO ALL MY GOOD FRIENDS.**

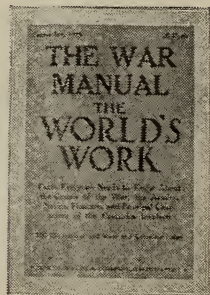
Send all requests for dasheen tubers, Rainbow corn, printed leaflets ("The Defeat of Injustice"), catalogs, etc., to *Medina, Ohio*, and not to me here in Bradentown, Fla. I have no stock of any thing here—nothing to sell, nothing to give away (except "advice" on an *addressed postal card*). If you send *here* it will cause delay, for I shall have to forward your letters to Medina, Ohio, where there are plenty of clerks (young and spry) ready to do your bidding with the aid of an up-to-date well-equipped business office. It is true, dasheen tubers will be marked here; but the wrappers are addressed and stamps put on in Medina.

# The WORLD'S WORK AND THE WAR

THE WORLD'S WORK, recognized as the great interpreter of progress, is now invaluable as a sane guide in this time of world stress.

## The Great War Manuals

The First War Manual of the WORLD'S WORK in September gave all the facts about the causes of the war; the Second War Manual in November covers The Conduct of the War; and the Third War Manual in December will be devoted to The Arts of Peace and Reconstruction; The Effect of this War on America; and America's Effect on the World. These War Manuals are so comprehensive and informing that they will be kept for years as reference books. Thousands of them have been bound in cloth and sold through the bookstores.



World's Work, regular price \$3.00 a year } Club Rate **\$3.15**  
 Gleanings in Bee Culture, \$1.00 a year } for Both . . .

Offer not applicable in Canada nor in foreign countries because of additional postage required to mail these publications. Postage rates quoted on request.

**The A. I. Root Company, . Medina, Ohio**



# Gleanings in Bee Culture

## Clubbing Offers with Other Publications

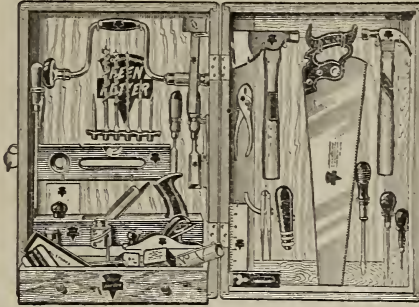
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GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$2.25</b>
YOUTH'S COMPANION,	1 year \$2.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$3.15</b>
WORLD'S WORK,	1 year \$3.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>All for \$2.70</b>
DELINEATOR,	1 year \$1.50,	
EVERYBODY'S MAGAZINE,	1 year \$1.50,	
(Everybody's and Delineator must be sent to the same address)		
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$2.00</b>
GARDEN MAGAZINE,	1 year \$1.50,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.50</b>
MODERN PRISCILLA,	1 year \$1.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.25</b>
HOME NEEDLEWORK,	1 year .75,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.75</b>
RURAL NEW YORKER,	1 year \$1.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.25</b>
FARM JOURNAL,	5 years \$1.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.75</b>
FLORIDA GROWER,	1 year \$1.50,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.15</b>
GREEN'S FRUIT GROWER,	1 year .50,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.15</b>
SOUTHERN FRUIT GROWER,	1 year .50,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.50</b>
AMERICAN POULTRY JOURNAL,	1 year \$1.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.50</b>
THE PRACTICAL FARMER,	3 years \$1.00,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$1.15</b>
WESTERN POULTRY JOURNAL,	1 year .50,	
GLEANINGS IN BEE CULTURE,	1 year \$1.00,	<b>Both for \$2.35</b>
SUNDAY SCHOOL TIMES,	1 year \$1.50,	

Because of additional postage required, these offers DO NOT APPLY IN CANADA, NOR FOREIGN COUNTRIES, NOR TO RESIDENTS OF CITIES IN WHICH THE MAGAZINES ARE PUBLISHED if extra postage is required to mail the publication to such subscribers. All orders handled very promptly. Subscriptions to begin with the first possible issue unless otherwise stated.

**The A. I. Root Company, Medina, Ohio**

Tool Cabinet No. K5, complete with 28 tools.  
Price \$20.00



**A Rare Gift That Will Last**  
is this fine Keen Kutter tool cabinet—a gift with the quality that commands appreciation. For that good husband or that boy buy a

# KEEN KUTTER Tool Cabinet

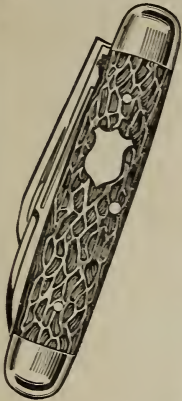
and get the very top notch of quality and endurance, of materials and workmanship. If you want to spend less, one of these fine, strong Keen Kutter pocket knives, a Keen Kutter Junior Safety Razor, a Keen Kutter Strop and Strop, will be right for any man. All sold with the understanding that the dealer is authorized to refund the price of any piece that doesn't prove satisfactory.

*"The Recollection of Quality Remains Long After the Price is Forgotten."*  
Trade Mark Registered. —E. C. SIMMONS.

If not at your dealer's, write us.

**Simmons Hardware Co.**

St. Louis New York Philadelphia Toledo  
Minneapolis Sioux City Wichita



Pocket Knife No. K3878  
3 blades  
Price \$1.25



Pocket Knife No. K03533  
2 blades  
Price \$0.85



Keen Kutter Junior Safety Razor No. KJ10 with extra package of blades and case.

Price \$1.00



Automatic Strop with strop, No. K600  
Price \$1.00

# New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE

**10 Days FREE—Send No Money**

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 14 leading Universities show that it

**Burns 50 Hours on One Gallon** common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

## \$1,000.00 Reward

will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin? **GET ONE FREE.** We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one free.

### MEN WITH RIGS

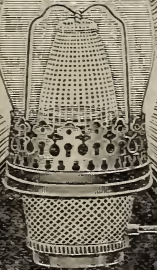
Make \$100 to \$300 per Mo. Delivering the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days. Another says: 'I disposed of 54 lamps out of 31 calls.' Thousands who are coming money endorse the Aladdin just as strongly."

**No Money Required**  
We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

**TWICE THE LIGHT ON HALF THE OIL.**

**MANTLE LAMP COMPANY, 608 Aladdin Building, Chicago, Ill.**  
Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World

BURNS  
94%  
AIR





# The Best Time to buy Supplies

Early-order cash discounts apply here just as they do at the factory. We give exactly the same discount that is granted by the manufacturers of these famous goods, and the prices in our special catalog are the same as their own. There is a special saving in ordering from us—FREIGHT. Better give this careful consideration before sending elsewhere.

---

**THE CASH DISCOUNT ON EARLY ORDERS  
PLACED DURING THE MONTH OF  
DECEMBER IS 4 PER CENT.**

As usual we have a large and complete stock on hand, which places us in a position to take care of your orders promptly. By ordering now you will receive your goods promptly, avoiding the rush in the spring, and you can put them together in your spare time, thereby saving extra expense when you are badly in need of them.

---

## **WEED'S NEW-PROCESS COMB FOUNDATION**

We have a big demand for this product, and are turning out comb foundation of unexcelled quality. Include what you will need for the opening of next season in your early order, and the same will be held subject to your convenience if desired; but get your order in now and save four per cent.

---

**Toepperwein & Mayfield Co.**  
Nolan and Cherry Sts. San Antonio, Texas

# 4% December Discount on "Falcon" Bee Supplies...

How much per cent interest do you get in the bank? Wouldn't it pay you to invest in bee supplies now and save the 4 per cent? You'll have your money tied up only a few months.

"Falcon" foundation and supplies have the quality, and with the superior workmanship back of them make them perfect.

If you have never used "Falcon" supplies send a list of your 1915 requirements and let us quote. Some of the old veteran beekeepers who purchased "Falcon" hives when we first started manufacturing supplies about forty years ago, tell us that the hives are in good shape yet. In some cases they tell us the hives have not been painted for about twenty-five years, which goes to show that "Falcon" supplies have the QUALITY.

Remember we are the manufacturers of that sweet pure "Falcon" foundation. We have OUR OWN plant and our own process for making foundation. Samples will be gladly sent for your inspection.

Dealers Everywhere.

Red Catalog, Postpaid.

"Simplified Beekeeping" Postpaid.

**W. T. Falconer Manufacturing Company, Falconer, New York**  
Where the good beehives come from

## YOU BELIEVE IN GOD

If you wish to honor him, read faithfully the only book he ever wrote, or ever will write unaided by man, **THE GREAT BOOK OF NATURE.**

*"A physical fact is as sacred as a moral principle. Our own nature demands from us this double allegiance."*—Louis Agassiz.

Send 25c for four-months' trial subscription to

**THE GUIDE TO NATURE**

ARCADIA:

Sound Beach, Connecticut

## "Root Quality Peirce Service"

THE COMBINATION THAT INSURES SATISFACTION TO THE BEEKEEPER.

Everybody knows what ROOT goods are—the established standard of excellence. Next in importance to quality is the matter of service. Supplies must be properly packed or breakage may result. They must be had when needed or vexation and loss will ensue. Then there is the personal element—appreciation and intelligent interpretation of your own individual order, courteous treatment, and willingness to make explanations or to rectify errors. All of this you have in the service we offer—best goods, most prompt and careful packing, best shipping facilities, and best treatment.

During the duller season of the year, a careful reading of our catalog will be to your advantage. Possibly some of the smaller articles or appliances may have been overlooked during the busier months. These can now be forwarded very cheaply and expeditiously by parcel post. Nor is it too early to anticipate the coming season's requirements in the way of hives, sections, foundation, etc. All cash orders received during December are subject to a discount of 4 per cent from catalog prices.

To customers, actual and prospective, and to our many loyal friends, we wish the highest degree of Christmas cheer and New Year prosperity.

**E. W. Peirce, Zanesville, O.**  
22 South Third Street.

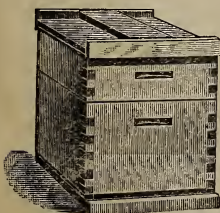
EARLY-ORDER DISCOUNTS WILL

## Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . .

Write for our illustrated catalog and discounts today.

LEAHY MFG. CO., . 95 Sixth St., . Higginsville, Missouri





## HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

### NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES Adopted at Cincinnati, 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. *No. 2*.—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 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 12 ounces.

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

In describing honey, three words or symbols 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; 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.

### HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

**FANCY WHITE**.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

**No. 1**.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

**CHOICE**.—Sections to be well filled; comb firmly attached; not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

**No. 2**.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more, also of such sections as weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

**EXTRACTED HONEY**.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

**STRAINED HONEY**.—This is honey obtained from combs by all other means than the centrifugal extractor, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

**BOSTON**.—We quote comb honey at 15 to 17 cts.; white extracted, 10 to 11; amber, 8 to 9.  
Boston, Dec. 2. BLAKE-LEE Co.

**LIVERPOOL**.—The honey market is quiet, with a large stock of Chilian. No sales have been made. Value, pile 1, \$7.20 to \$7.44; pile 2, \$6.72 to \$6.96; pile 3, \$6.00; No. pile, \$5.28. Californian is quoted at \$9.60 to \$11.28 for old crop, and \$12.00 for new. Beeswax market is steady. Chilian brings \$38.88 to \$42.48; African, \$34.02 to \$40.08, and Cuban, \$29.16 to \$38.88.  
Liverpool, Nov. 21. TAYLOR & Co.

*Honey reports continued on page 5.*

# PERFECTION IN WAX RENDERING

has been reached by our process. Ship us your OLD COMB AND CAPPINGS, and secure highest returns. . . . Write for prices and full information.

**THE FRED W. MUTH CO.**

"The Busy Bee Men"

204 Walnut Street

Comb and Extracted Honey Wanted

Cincinnati, Ohio

# The Best Time to Buy

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## Supplies

---

The season just passed has demonstrated more clearly than ever the necessity for being prepared for a honey-flow BEFORE it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. 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 new 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—4 per cent for cash orders sent in December, the discount lessening 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 has as yet 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.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

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**C. H. W. Weber & Co.**

2146 Central Avenue

Cincinnati, Ohio



# Combination Offer!

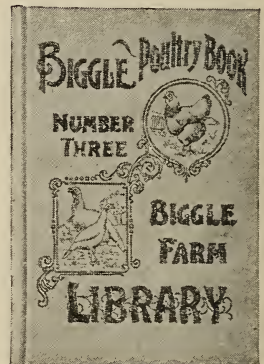
**Gleanings in Bee Culture, 1 year**  
**FARM JOURNAL . . . 5 years**  
 Choice of any ONE of the volumes of  
**"The Biggle Farm Library"**

**\$1.55**

Books of Biggle Farm Library: { Biggle Garden Book  
 Biggle Orchard Book  
 Biggle Bee Book  
 Biggle Berry Book  
 Biggle Poultry Book  
 Biggle Pet Book

In conciseness of statement and in the thoroughness with which the ground has been covered, the Biggle books have won praises on every hand. The boiled-down common-sense method, which characterizes the pages of the Farm Journal, has been carried out in their preparation.

The books are well illustrated and are printed on a good quality of paper; bound in cloth.



If you wish to make your poultry, orchard, garden, or your farm pay better, send for one of these books in connection with subscription to the FARM JOURNAL for FIVE years and GLEANINGS IN BEE CULTURE for one year.



Postage in Foreign countries, \$1.10 extra  
 Postage in Canada, . . . . . 80 extra  
 Postage in Philadelphia, . . . . .50 extra

**The A. I. Root Company**  
**Medina, Ohio**

*Honey Reports continued from page 2.*

INDIANAPOLIS.—Owing to the warm weather we have been having during the last few days, the demand for honey is rather unsatisfactory, especially comb. We quote No. 1 choice white at \$3.50 to \$4.00 per case; choice Cuban comb at \$4.00; best white extracted in 60-pound cans, 9½ to 10½; California sage, 10 to 11. Producers are being paid 30 cts. cash for beeswax, or 32 in exchange for supplies.

Indianapolis, Dec. 3. WALTER S. POWDER.

ST. LOUIS.—The demand for honey is only fair. Stocks here are quite ample for the demand, especially in extracted honey, which has not been largely reduced. We are still quoting No. 1 white clover at \$3.35 to \$3.50; No. 2, \$3.00 to \$3.25; light amber, \$2.50 to \$3.00; extracted honey, 5 to 7, according to quality and quantity. Beeswax, 28 for prime; impure and inferior, less.

St. Louis, Mo. R. HARTMANN PRODUCE CO.

BUFFALO.—There has been hardly any comb honey coming into our market. There is call for white comb and buckwheat; would be a good demand for the white of good quality; other grades would sell slow; no call for extracted. Times are hard, and it would not take much honey to cause a slow market. We quote fancy white comb honey at 18 to 19; No. 1 ditto, 17 to 13; No. 2 ditto, 14 to 15; No. 1 buckwheat ditto, 13 to 14. No price on extracted. Beeswax, 30 to 32.

Buffalo, Dec. 8. W. C. TOWNSEND.

CHICAGO.—The comb-honey market is steady, with practically no change in prices during the past two weeks. Best grades bring from 15 to 17 cts. per lb., with the off grades ranging from 1 to 3 cts. less, according to what they are. There is very little cheap comb honey on the market. Extracted white clover, linden, and water-white sage sells at from 9 to 10, with other white grades bringing between 7 and 8. Ambers of fine flavor bring 7 to 8. The demand is chiefly for the table grades, others being difficult to sell. Beeswax ranges from 31 to 33.

Chicago, Dec. 3. R. A. BURNETT & Co.

## The Management of OUT-APIARIES

72-page book by the well-known writer G. M. Doolittle, New York

Non-swarming, or the control of swarms in the home yard, is a comparatively easy problem; but the securing of perfect control of the swarming impulse in four or five yards located some distance from your dwelling is not so easily accomplished. The author tells how he secured this and an average of 114½ lbs. of comb honey in a poor season. His latest methods are fully described in the fourth edition of the above. Price 50 cts. postpaid. Order now from the publishers.

The A. I. Root Co., Medina, O.

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**ASSETS OVER ONE MILLION DOLLARS**

## How to Keep Bees

BY ANNA BOTSFORD COMSTOCK

This is an excellent book for the beginner. Nothing better. We cordially recommend it to all who are learning beekeeping by their own effort. Having commenced beekeeping three times, the talented author is in position to furnish the right kind of advice. You cannot go wrong in getting this book. It is charmingly written and easily understood. Price \$1.10 postpaid.

THE A. I. ROOT COMPANY, MEDINA, OHIO.



# Gleanings in Bee Culture

DEVOTED TO HONEY, BEES, AND HOME INTERESTS

Established 1873

CIRCULATION 35,000

Issued semi-monthly

A. L. BOYDEN, Advertising Manager

## ADVERTISING RATES

Twenty-five cents per agate line flat. Fourteen lines to the inch.

SPACE RATES. To be used in one issue; Fourth-page, \$12.50; half-page, \$25.00; page, \$50.00.

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Cash discount if paid in ten days, 2 per cent.

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Columns to page 2 (regular magazine page).

Forms close 10th and 25th of each month.

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# Hotel Warner

Overlooking Lake Michigan  
Homelike Surroundings

33d Street, Cottage Grove Avenue,  
and Groveland Park

## CHICAGO

Wabash Avenue—Cottage Grove Car  
Line direct to Business and Amuse-  
ment Center—20 minutes ride

### 320 Rooms--200 Private Baths


Rooms with Private Bath at \$1.00  
per Day

2 and 3 Room Suites with Bath \$2.00  
to \$3.00 per Day

First-class Restaurant at Moderate  
Prices

Table d'Hote Dinner 50c

**Chicago's Best Hotel at the Price**



**Wanted, 20 Tons Beeswax**  
at 28c cash, 30c in trade, f. o. b. Ogden  
**Ship What You Have**  
**SUPERIOR HONEY CO.**  
OGDEN, UTAH  
Manufacturers of "Superior" Foundation  
(Weed Process)

### When Ordering Supplies

remember we carry a full stock and sell at  
the lowest catalog price. Two lines of railroad—  
Maine Central and Grand Trunk. Prompt ser-  
vice and no trucking bills.

**THE A. I. ROOT CO., Mechanic Falls, Maine**  
J. B. MASON, Manager

### CANDY For WINTER STORES

Why not be sure your bees have enough for winter by  
giving each colony one or two plates of candy! We have  
it in large paper plates weighing about two pounds—  
enough to last a colony 3 to 4 weeks. Can send by post.  
Write for prices. A full line of supplies always in stock.

H. H. JEPSON

182 Friend Street

BOSTON, MASS.

### The Beekeepers' Review Clubbing List for 1915

In the following combinations we offer periodicals  
of sterling worth. Remember you are not receiving  
some premium of questionable value, but a saving  
of dollars and cents on your 1915 reading matter.  
The combination offers with the reduction we are  
able to allow, is as follows:

The Review,	\$1.00	
Woman's World,	.50	ALL FIVE \$1.25
Household,	.50	THE BARGAIN
People's Popular Monthly,	.50	OF THE
Farm Life,	.50	SEASON.
Total value	\$3.00	

#### Here is Another Good One:

The Review,	\$1.00	BOTH FOR
The Youth's Companion,	2.00	ONLY \$2.25.

#### Save \$1.30 on This Combination:

The Review,	\$1.00	\$4.00 WORTH
Everybody's	1.50	ONLY \$2.70.
The Delineator	1.50	

#### Another is:

The Review,	\$1.00	BOTH FOR
Reliable Poultry Journal,	.50	\$1.25.

#### The Following are of Sterling Cash Value:

The Review,	\$1.00	BOTH FOR
American Bee Journal,	1.00	ONLY \$1.50.
The Review,	\$1.00	BOTH FOR
Gleanings in Bee Culture,	1.00	ONLY \$1.50.
The Review,	\$1.00	\$3.00 CASH
Gleanings in Bee Culture,	1.00	VALUE FOR
American Bee Journal,	1.00	ONLY \$2.00.

#### Special Offer to New Subscribers:

To those ordering early, before the supply is ex-  
hausted we will send in connection with any of the  
above combination, the last eight months of the *Re-  
view* for 1914, which contain the National convention  
report with many valuable papers read at said con-  
vention, besides other articles of value not appearing  
in other papers. Address with remittance.

The Beekeepers' Review, Northstar, Mich.

## PATENTS

25  
YEARS'  
PRACTICE

Chas. J. Williamson, McLachlen Building, Corner  
Tenth and G Sts., WASHINGTON, D. C.

Patent Practice in Patent  
Office and Courts

Patent Counsel of  
The A. I. Root Co.

## SUPPLIES AND BEES

We now allow a liberal discount on supplies. Let us  
quote you. No. 25 jars, heavy glass, \$4.60 gross; discount  
on quantity. Honey, 8 1/4 to 10 cts. lb. Catalog free.

I. J. Stringham, 105 Park Place, N. Y.  
Aptarles, Glen Cove, L. I.



### Latest Book "Profitable Poultry"

Finest published, 128  
pages practical facts, 180 beautiful pictures.  
Tells how to breed, hatch, feed and market by  
latest improved methods. All about **Runner  
ducks** and 52 other pure-bred varieties. This  
50 cent book and lowest price list of best fowls,  
eggs, incubators, supplies, etc., only 5 cents.  
BERRY'S POULTRY FARM, Box 97, Clarinda, Iowa



### KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts  
or stops instantly—saves solution and  
work. *Send for catalog.* Agents wanted.  
Rochester Spray Pump Co.  
207 Broadway Rochester, N. Y.

**SAVINGS BANK.** Registers pennies, nickels, dimes,  
quarters and halves like a cash reg-  
ister. Opens after amount reaches \$10.00. Splendid for chil-  
dren. Sent on receipt of \$1.50.  
JOHN F. VOLKERT,  
6808 Green St., Ctn., Philadelphia, Pa.



# FOUR PER CENT DISCOUNT

. . FROM . .

## Root's Catalog Prices for December Cash Orders

For Root's Goods in Michigan, write

### M. H. Hunt & Son, Lansing, Mich.



### Bingham Bee-smoker. . .

Nearly Forty Years on the Market

The original bee-smoker was invented and patented by Mr. T. F. Bingham in 1878, '82, '92, and 1903. The Bingham smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey-producers of the world. No one other invention in apiculture has been so important as little could be accomplished without the bee-smoker. For sale direct or at your dealer's. Postage extra.

- Smoke Engine, 4-inch stove; weight 1 1/4 lbs. . . \$1.25
  - Doctor, 3 1/2-inch stove, weight 1 1/4 lbs. . . . .85
  - Conqueror, 3-inch stove, weight 1 1/4 lbs. . . . .75
  - Little Wonder, 2 1/2-inch stove, weight 1 lb. . . . .50
- Two largest sizes with hinged cover.

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

### The Southern Fruit Grower

Chattanooga, Tenn. Published monthly; illustrates successful fruit-growing and gardening in the South. 50 cents per year. Sample copy free.

### BEE SUPPLIES

in January.

Send your name for new 1915 catalog out

Dept. T, CLEMONS BEE SUPPLY CO.,  
128 Grand Ave., Kansas City, Mo.

"Griggs Saves You Freight"

# TOLEDO

"Griggs Saves You Freight"

### HONEY CASES, CANS, AND BARRELS

We have a good supply of Cans, all sizes (second-hand cans); also Wood Honey-cases, Barrels of 52 gallons capacity (alcohol), the best package to ship extracted honey in—takes third-class rate, and is cheaper than cans.

**HONEY! HONEY!**

If you need honey, write us. We have several kinds of the choicest in barrels or cans. State quantity you wish to buy. Comb honey in wood cases; fine quality.

**BEESWAX WANTED**

S. J. CRIGGS & CO., - 26 NORTH ERIE STREET, - TOLEDO, OHIO

"Griggs Is Always on the Job"

# Goods Now Arriving for Season 1915

We would like you to send in to us your list of supplies needed for 1915. This winter will be the time to nail and paint. When the season of 1915 arrives you will not be hurried. Why not do this, and be one of the forehanded beekeepers?

---

**The A. I. Root Company**  
Syracuse, New York

## The WORLD'S WORK AND THE WAR

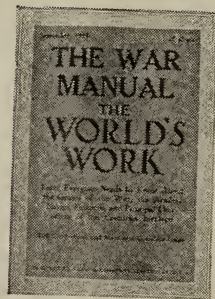
THE WORLD'S WORK, recognized as the great interpreter of progress, is now invaluable as a sane guide in this time of world stress.

### The Great War Manuals

The First War Manual of the WORLD'S WORK in September gave all the facts about the causes of the war; the Second War Manual in November covers The Conduct of the War; and the Third War Manual in December will be devoted to The Arts of Peace and Reconstruction; The Effect of this War on America; and America's Effect on the World. These War Manuals are so comprehensive and informing that they will be kept for years as reference books. Thousands of them have been bound in cloth and sold through the bookstores.

World's Work, regular price \$3.00 a year } Club Rate  
Gleanings in Bee Culture, \$1.00 a year } for Both . . . **\$3.15**

Offer not applicable in Canada nor in foreign countries because of additional postage required to mail these publications. Postage rates quoted on request.



**The A. I. Root Company, . Medina, Ohio**



## These Experts Have a Hand in All the Lewis Beeware You Buy Is This Worth Any Thing to You?

When You Consider Buying Bee Supplies, Ask Yourself These Questions:

- WHERE CAN I BUY (NOT THE MOST) THE BEST FOR MY MONEY?  
WHAT KIND OF MATERIAL WILL I GET?  
WHAT SORT OF WORKMANSHIP WILL BE FURNISHED?  
HOW WILL THESE GOODS BE PACKED?  
WHO ARE MAKING AND STANDING BACK OF THESE GOODS?  
WHAT ARE THEIR FACILITIES FOR DISTRIBUTION?

### HERE IS THE ANSWER:

THE G. B. LEWIS COMPANY HAS BEEN IN THE BUSINESS OF MANUFACTURING BEE SUPPLIES FOR FORTY-ONE YEARS. IT HAS GROWN FROM CARPENTER SHOP TO A PLANT COVERING NEARLY SIX ACRES OF GROUND WITH AN ANNUAL OUTPUT OF 30,000,000 SECTIONS AND 100,000 HIVES. During all these years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality; BUT IT HAS STEADFASTLY STOOD BY ITS GUNS, MAINTAINING ONE STANDARD OF QUALITY AND WORKMANSHIP. LEWIS BEEWARE is the same to-day, was the same yesterday, and will be the same to-morrow.

NOW, HOW ABOUT THE WORKMANSHIP IN THESE GOODS? What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Beehive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis section machinery and output for twenty-nine years. These men represent the skill, the brains, and the conscience that go in the goods. We ask you again—DOES THIS MEAN ANY THING TO YOU?

A WORD ABOUT LEWIS PACKING. The Lewis Company also makes a business of packing boxes; therefore they know how goods should be packed. A patent woven wood-and-wire package, made only by the Lewis Company, is employed largely in packing. This makes the package light, compact, and damage-proof.

WHO IS BACK OF THESE GOODS? THE LEWIS COMPANY has for forty-one years stood back of every transaction it has ever made. On examination of Lewis goods, if they are not as represented, you are not asked or expected to keep them. This is our guarantee, and applies to Lewis distributing houses as well as the factory. The Lewis Company has a reputation for fair and square dealing second to none.

LEWIS BEEWARE may be obtained almost at your own door. Thirty distributing houses located at convenient points throughout the United States and foreign countries are there to serve you.

OUR 1915 CATALOG WILL BE READY FOR DISTRIBUTION AT THE USUAL TIME. Send for one, giving name of distributor nearest you.

**G. B. LEWIS COMPANY, WATERTOWN, WIS., U. S. A.**  
Manufacturers of Lewis Beeware

# AMERICAN BEE JOURNAL

Announces

## TWO BIG FEATURES

Beginning January, 1915

FRANK C. PELLETT, well-known lecturer, naturalist, and State Inspector for Iowa, will write a series of articles well illustrated on "HONEY FLORA OF THE UNITED STATES."

QUEEN-REARING IN ITALY. While in Italy last year, C. P. Dadant had the opportunity to visit a modern queen-rearing establishment. He states that it is the finest and best-kept apiary and queen establishment he has ever seen. Full particulars with illustrations in January number.

*We try to improve with every number.*

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**American Bee Journal, Hamilton, Ill.**

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