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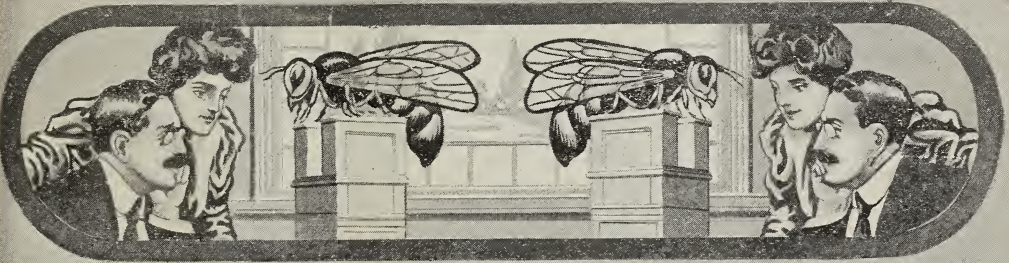


# GLEANINGS IN BEE CULTURE

VOL. 34

SEPT. 1, 1906

NO. 17



A Load of Twin-Mating Nuclei Hauled by a Sting Proof Horse from one Mating-Yard to Another.

**THE A.I. ROOT CO.,**  
MEDINA — OHIO

# BEE-KEEPERS

We carry the largest stock of goods in the Middle West. The low freight rates from

## Toledo

will save you money. We will buy your HONEY and beeswax, and pay highest market price. It will pay you to correspond with us when your crop is ready to market. No shipment is too large for us. Carloads a specialty.

## Queens! Queens!

We have a yard at Toledo with 100 colonies and over, which we use for queen-rearing only; besides several out-yards which we run for honey, also for extra bees and brood, and queens are mailed same day order is received.

## Our 70-page Catalog

is sent free to any one asking for it. No matter whether you keep one colony or five hundred. We also handle a large line of poultry supplies, and sell eggs for hatching. Our 1906 mailing list is sent with every catalog. Don't buy until you have seen it.

## Griggs Brothers

523 Monroe St. : Toledo, Ohio

# APICULTEURS

des pays de langue Française  
Nous vous informons que

## L'Apiculture Nouvelle

Revue mensuelle illustrée,

est tirée de:

## Gleanings in Bee Culture

augmentée et complétée par des collaborateurs Européens, reconnus comme Apiculteurs éminents. L'abonnement d'un an est envoyé franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de 7.50.

Un numéro specimen, ainsi que notre catalogue français de tous les articles de la

## A. I. ROOT CO.

est envoyé gratuitement sur simple demande, adressée à

## Emile Bondonneau,

Agent General pour l'Europe et les Colonies

de A. I. ROOT CO.,

142 Faubourg Saint Denis 142 Paris (10<sup>e</sup>)

France.

L'Édition Française de l'A B C de l'Apiculture est également parue.

# CENTRAL AND NORTHERN PENNSYLVANIA

Distributor of Root's Goods from the  
Best Shipping - point in this State.  
WHOLESALE - AND - RETAIL

I sell at catalog prices, and, with the low freight rates of the competitive railroad companies, I can save you money by way of transportation charges.

In soliciting your orders I will assure you that every inducement consistent with conservative business is afforded my customers.

I also rear Italian and Caucasian queens from the best stock that money can secure. Write for my descriptive price lists of queens and bee-keepers' supplies—both free.

Beeswax taken in exchange for supplies.

E. E. PRESSLER, WILLIAMSPORT, PENN.

**C. H. W. Weber,**

Headquarters for

# Bee - Supplies.

**"Root's Goods at Root's Factory Prices."**

## Honey Wanted.

White clover, extracted and comb Mail sample, and state lowest price expected, delivered at Cincinnati. We pay cash on delivery

## Queens Now Ready to Supply by Return Mail.

Stock which can not be excelled. Each variety bred in separate apiaries, from separate mothers; have proved their qualities as great honey gatherers.

## Golden Italians.

Have no superior, and few equals. Untested, 75c; six, \$4.00.

## Red-clover Queens.

Which left all records behind in honey-gathering. Untested, 75c; six for \$4.00.

## Carniolans.

They are so highly recommended, being more gentle than all others. Untested, 75c; six for \$4.00.

# C. H. W. WEBER,

Office and Salesroom, 2146-2148 Central Ave.  
Warehouse, Freeman and Central Avenue.

**Cincinnati, - Ohio.**

## Honey Markets.

### GRADING-RULES.

**FANCY.**—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel stain, or otherwise; and the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

**PHILADELPHIA.**—Advices from different points are rather conflicting in regard to the honey crop this season, and consequently there is no market price established. Some new arrivals of comb honey sell at 13 to 15, according to quality, and extracted honey at 6 to 7. Beeswax, firm at 28. We are producers of honey, and do not handle on commission. WM. A. SELSER, Aug. 20. 10 Vine St., Phila., Pa.

**TOLEDO.**—The market on honey has not changed since our last quotations. Bee-keepers seem to be holding on to their goods, expecting large prices. Fancy white comb brings, in a retail way, 16 and 17; No. 1, 15 and 16, with no demand for dark. Extracted white clover in barrels brings 6½ to 7, cans the same, but very little has been offered as yet. Beeswax, 26 and 28. GRIGGS BROS., Toledo, Ohio. Aug. 20.

**CINCINNATI.**—Fancy and No. 1 comb honey find ready sale in this market at 14 to 15, and shipments are arriving daily. Lower grades are not wanted at any price. There is a good demand for extracted honey. We are selling amber in barrels and cans at 5 to 6½; white-clover extracted at 6½ to 8. Please do not misconstrue the above prices; they are our selling prices, not what we are paying. Beeswax is wanted at 28 to 30. THE FRED W. MUTH CO., 51 Walnut St., Cincinnati, O. Aug. 18.

**MILWAUKEE.**—Receipts of new-crop honey, both comb and extracted, have been good for the season, and we are pleased to note that there is a marked improvement in the handling as well as the quality of the honey, which certainly is encouraging to the seller as well as the buyer; and we have been able to get good values for the best, which will sell when common grade does not—and we are able yet to maintain quotations, yet buyers are cautious, thinking prices will be less later. We now quote fancy one-pound sections 16 to 17; common grades, 12 to 15. Extracted, white or amber, in barrels, cans, and pails, 7½ to 8½; dark, 6½ to 7. Beeswax, 28 to 30. A. V. BISHOP & Co., 119 Buffalo St., Milwaukee, Wis. Aug. 21.

**CHICAGO.**—The trade in honey is good, and some fine lots are being offered that sell for 15 to 16 when it grades No. 1 to fancy. Off grades from now on will sell at from one to three cents below this. Extracted sells in some volume at 6½ to 7 for white; 6 to 6½ for amber; 5 to 5½ for off flavor. Beeswax, 30. R. A. BURNETT & Co., 199 So. Water St., Chicago, Ill. Aug. 18.

**SCHENECTADY.**—Honey is coming forward quite freely, and selling as well as could be expected at this early date. There is an unusual demand for white extracted from parties who put it up in small glass packages for retail trade. We quote white-clover comb honey at 14 to 15 for fancy, and 12 to 13 for fair quality. Extracted in kegs and 60-lb. cans, 6½ to 7½. No buckwheat on hand yet. C. MACCULLOCH, Schenectady, N. Y. Aug. 20.

**ST. LOUIS.**—The receipts of new comb honey have been quite liberal of late; most of the arrivals consisted of dark amber honey. The demand has been limited on account of large receipts and warm weather. We quote fancy white comb honey at 14; No. 1, 12½ to 13; light amber, 12 to 13; dark and broken, 8 to 10. Extracted honey at 6 to 6½ for light amber California or Spanish needle in cans; Southern new in barrels, scarce and in good demand at 4½ to 5. Beeswax, for prime, 28½; all impure and inferior, less. R. HARTMAN & Co., 14 So. Second St., St. Louis, Mo. Aug. 18.

**NEW YORK.**—The market is well cleaned up of the last season's crop, and expect an early opening. From the present outlook we expect to have a good demand, and advise shippers to ship early to realize the best prices. We quote honey as follows: Fancy white clover, 15 to 16; No. 1, 14 to 15; No. 2, 12 to 13; mixed, 10 to 12; fancy buckwheat, 12 to 13; No. 1, 11 to 12; No. 2, 10 to 11. Extracted white clover and basswood, 7 to 7½; amber, 6 to 6½; buckwheat, 6 to 6½. Beeswax, 29 to 31. CHAS. ISRAEL & BROS., Canal and Watts Sts., New York. Aug. 24.

**DETROIT.**—Honey is not moving very fast at present, and prices still unsettled. Both bee-keepers and commission men seem to be holding off yet. A No. 1 and fancy white comb stands at about 12 to 13; poorer grades at 11 to 11½. Extracted white clover and basswood, 7 to 7½. Reports from bee-keepers in Michigan seem to show alternately total failure and excellent crops. Beeswax, 26 and 28. M. H. HUNT & SON, Bell Branch, Mich. Aug. 20.

**NEW YORK.**—There is a good demand for new-crop comb honey, but arrivals are very small as yet, and may continue so for a week or two to come. We quote fancy white at 15; No. 1 white at 14, and No. 2 white at 12. It is too early as yet for dark or buckwheat. Extracted is in good demand at 6½ to 7 for white, 6 for light amber, and 5 to 5½ for dark; Southern common average grade, 50 to 55 per gallon; better grade at 60 to 65. Beeswax firm at 30. HILDRETH & SEGELKEN, 82-86 Murray St., New York. Aug. 18.

## WANTED

**FANCY COMB HONEY** IN NO-D RIP SHIPPING CASES, ALSO EXTRACTED HONEY. IF YOU HAVE ANY TO OFFER, QUOTE US YOUR ROCK BOTTOM CASH PRICE DELIVERED HERE, AND MAIL US A SMALL SAMPLE OF THE EXTRACTED HONEY. WE BUY EVERY TIME THE PRICE IS RIGHT, AND REMIT PROMPTLY.

**THE FRED W. MUTH CO.**

No. 51 WALNUT STREET,

CINCINNATI, OHIO.

KANSAS CITY.—The demand for comb honey is improving, but receipts light. No new extracted in the market. We quote No. 1 white, in 24-section cases, \$3.00; No. 2 white and amber in same, \$2.75. Extracted, 5½ to 6. Beeswax, 25.  
Aug. 20. C. C. CLEMONS & Co., Kansas City, Mo.

ATLANTA.—The honey trade is picking up, and we are having good demand at following prices: Fancy comb, 13 to 15; No. 1, 11 to 12½. Extracted white, 6 to 6½; amber, 5 to 5½. Beeswax, 27 to 28.  
Aug. 13. J. HEARD & Co., Atlanta, Ga.

WANTED.—Choice white comb and extracted honey; clover preferred.  
B. WALKER, Clyde, Ills.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.  
R. A. BURNETT, 199 S. Water St., Chicago, Ill.

WANTED.—I have a good demand for fancy white comb honey. Those interested please correspond.  
A. H. DOOLITTLE, 180 Perry St., Buffalo, N. Y.

WANTED.—To buy for cash, fancy comb and extracted honey.  
ROBT. A. HOLEKAMP,  
4263 Virginia Ave., St. Louis, Mo.

WANTED.—No. 1 and fancy white comb honey (unglassed), Danz. sections preferred.  
THE A. I. ROOT Co., Medina, Ohio.

WANTED.—Fancy white comb honey, also extracted honey in barrels. Send samples, and name best price delivered here.  
GRIGGS BROS., Toledo, O.

WANTED.—Fancy white comb and extracted honey. I pay cash—no commission.  
WALTER S. POWDER, Indianapolis, Ind.

WANTED.—Extracted clover honey; highest price for the right article.  
C. G. TURNER, Mechanic Falls, Me.

WANTED.—Comb and extracted honey. State quality, quantity, and price.  
JUDSON HEARD & Co., Atlanta, Ga.

WANTED.—Well-ripened extracted basswood and clover honey, light in color; prompt payment on receipt; 7½c per lb., f. o. b. West Bend.  
H. C. AHLERS, West Bend, Wis.

WANTED.—Fancy white comb and extracted honey; must be partly from clover; also beeswax. Will pay in cash or bee-supplies, as preferred.  
E. W. PEIRCE, Zanesville, Ohio.

WANTED.—Beeswax. We will pay 30 cts. per pound for fancy pure yellow beeswax delivered in New York until further notice.  
CHAS. ISRAEL & BROS.,  
486 Canal St., New York City.

WANTED.—Beeswax. Will pay spot cash and full market value for beeswax at any time of the year. Write us if you have any to dispose of.  
HILDRETH & SEGELKEN,  
265-267 Greenwich St., New York.

WANTED.—Honey, steadily from September 1 to April 1. Prices given on application. Suggestions and advice about packing and shipping honey cheerfully given from long experience, close study, and observation.  
H. R. WRIGHT, Albany, N. Y.

WANTED.—Beeswax. We are paying at this date for pure average beeswax delivered at Medina or any branch office named below, 27 cts. in cash or 30 cts. per lb. in exchange for bee-supplies, less transportation charges. We can not use old combs. Pack securely and address plainly. Be sure to send bill of lading when you make shipment, and advise us how much you send, net and gross weights. Ship to home office or nearest branch named below.  
THE A. I. ROOT Co., Medina, Ohio.  
Chicago, 144 East Erie St.; New York, 44 Vesey St.; Philadelphia, 10 Vine St.; Washington, 1100 Maryland Ave., S. W.

FOR SALE.—Fine alfalfa honey in large or small lots and at a very low price. Dealers and others wanting a fine table honey should write for free samples and prices to  
THE DELTA APIARIES, Delta, Colo.

## The Danzenbaker Twentieth Century Smoker

Awarded Highest Prize

**A GOLD MEDAL**

at the World's Fair,  
St. Louis, 1904.



**D. 20<sup>TH</sup> CENTURY**

**UP-TO-DATE,  
STRONGEST,  
COOLEST,  
CLEANEST.**

It has a side grate that strengthens the fire-cup, and holds a removable metal and asbestos lining that keeps it cool, adding to its durability. It has no valves to get out of order or snout to clog.

**Every Thing Guaranteed "Root Quality."**

**ALL THAT IS CLAIMED.**—The General Manager of the National Bee-keepers' Association says:

I have given your Twentieth Century a thorough trial. For convenience in lighting, durability, and long time one filling will last and give ample smoke. I find it all you claim. In the spring I shall want several. I always want the best.

N. E. FRANCE, Platteville, Wis.

**SURPASSES ALL OTHERS.**—"After giving the Danzenbaker Twentieth Century Smoker several trials, I can say it surpasses all smokers it has been my liberty to try; it will not go out until fuel is all consumed, and it produces a cool smoke, a feature very necessary in any first-class smoker."  
GRANT STANLEY,  
Nisbet, Pa.

Prices: By mail, \$1.25; three, \$3.25.

By express or freight, one, \$1.00; three, \$2.50.

For further particulars, see Dec. 15th Gleanings, page 1370; sent free with price list.

**F. DANZENBAKER, MIAMI, FLORIDA**

## EVANS & TURNER, Columbus, Ohio,

are in the market for white comb honey, and especially want some fine stock from Wisconsin, Michigan, Indiana, and New York. They would also like to hear from Iowa producers. Write fully what you have; and if you care to name price, do so, stating about what time you will be ready to ship.

## Chas. Israel & Brothers 486-490 Canal St., New York

Wholesale Dealers and Commission Merchants in

**Honey, Beeswax, Maple Sugar and Syrup, etc.**  
Consignments Solicited. Established 1875.

**FOR SALE.**—Alfalfa honey in five-gallon cans, \$5.00 per can; more than one can, \$4.80 per can, f. o. b. here.  
VIRGIL SIRES, North Yakima, Wash.

**FOR SALE.**—White clover and basswood extracted honey. How much am I offered per pound by the can or barrel f. o. b. Van Wert, Ohio? Sample if wanted. Bank references. N. MURRAY, Van Wert, Ohio,

**FOR SALE.**—5000 lbs. of well-ripened buckwheat honey put up in 60-lb. cans. Sample and price on application. Clover honey all sold.  
G. A. BLECH, Jerome, Mich.

**FOR SALE.**—Well-ripened fancy extracted clover and basswood honey in 60-lb. tin cans, two in a case, at \$10.00 a case f. o. b. here. Sample on request.  
ERNEST W. FOX, Hillsboro, Wis.

**FOR SALE.**—Light extracted honey, good quality; two 60-lb. cans, 8½c per lb., barrel at 7½c; amber, 60-lb. cans at 7½c, barrel at 6c; sample, 10c. We pay 28c for beeswax. I. J. STRINGHAM, 105 Park Pl., N. Y.

# Gleanings in Bee Culture

Devoted to Bees, Honey, and Home Interests

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Editor Home Departments

H. H. ROOT  
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How to Remit.—Remittances should be sent by Draft on New York, Express-order or Money-order, payable to order of THE A. I. ROOT COMPANY, MEDINA, OHIO. Currency should be sent by Registered Letter.

Agents.—Representatives are wanted in every city and town in the country. A liberal commission will be paid to such as engage with us. References required.

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Dunedin, New Zealand. ALLIANCE BOX CO., 24 Castle St. Per year postpaid, 6/.

Other names will be added from time to time.

THE A. I. ROOT CO., Medina, Ohio, Publisher.

Find enclosed.....for which please send me Gleanings in Bee Culture.....months, and.....as per offer..... Please continue sending Gleanings until otherwise ordered.

NAME.....

POSTOFFICE.....

COUNTY ..... STATE .....

DATE ..... If you want Gleanings discontinued at expiration, check here ( )



# RASPBERRY HONEY!

I have produced a crop of extracted honey from the wild red raspberry of Northern Michigan. It would be an easy matter to send this entire crop in a lump to some dealer, but I prefer to give each of my friends an opportunity of supplying his table with this truly delicious honey—a honey with a flavor all its own—a flavor that smacks of the wild raspberry of the forest.

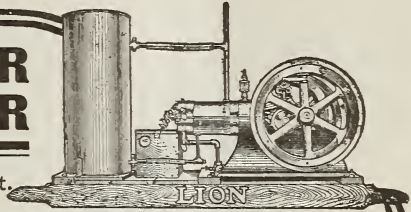
The honey is put up in 60-pound cans, two in a case, and a single case (120 pounds) will be sold at 8½ cents a pound (\$10.20 for a case) and larger orders will be

filled at 8 cents a pound (\$9.60 a case) but not less than that, even though the whole crop should be taken.

If you prefer to taste the honey before ordering, drop me a postal, and I'll mail you a generous sample—enough so that the neighbors, too, can have a taste, and perhaps will wish to join you in ordering a case, if you should not care to take that much yourself.

**W. Z. HUTCHINSON, Flint, Michigan.**

## A READY POWER AT ANY HOUR



That's the kind of a power you want. You do not have to wait for steam, or until the wind blows, before you can pump water, grind feed, saw wood or the hundred and one other jobs about the farm, if you have a **Lion Gas or Gasoline Engine**. Have you ever thought just what a saving of time, labor and money it would be to have such a practical power **always ready to operate** your various machines on the farm, in the shop, printing-office, or—anywhere?

## The LION Engine

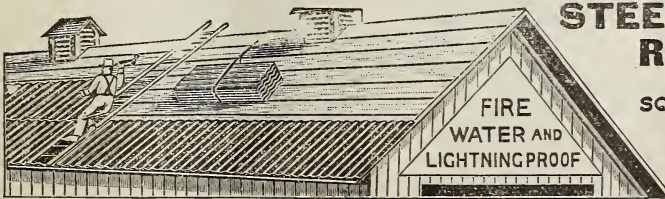


is such a power. It is **simple** in construction, **practical** in operation, and **economical** in the use of fuel. You do not require the services of an engineer, as anyone can operate it. We send the **Lion engine**

### Direct From The Factory

on a **ten days test trial** and give explicit instructions and directions for setting up and operating it. Write now, stating your power needs, for our easy payment plan. Remember, we send the **engine**, not the agent.

**LYONS ENGINE CO., Lyons, Mich.**



**STEEL ROOFING PER 100 SQUARE FEET**

**\$1.50**

**Most economical and durable roof covering known.** Easy to put on; requires no tools but a hatchet or a hammer. With ordinary care will outlast any other kind. Thousands of satisfied customers everywhere have proven its virtues. Suitable for covering any building. Also best for ceilings and siding. Fire-proof and water-proof. Cheaper and more lasting than shingles. Will not taint rain-water. Makes your building cooler in summer and warmer in winter. Absolutely perfect, brand new, painted red two sides. **\$1.50** is our price for our No. 15 grade of Flat Semi-Hardened steel roofing and siding, each sheet 24 inches wide and 24 inches long. Our price on the corrugated, like illustration; sheets 22 inches wide x 24 inches long **\$1.60**. At 2 cents per square additional we will furnish sheets 6 and 8 feet long. Steel pressed brick siding, per square **\$2.00**. Fine Steel Beaded Ceiling, per square **\$2.00**. Can also furnish standing seam or crimped Roofing. **WE PAY THE FREIGHT TO ALL POINTS EAST OF COLORADO** except Oklahoma, Texas and Indian Territory. Quotations to other points on application.

**Satisfaction guaranteed or money refunded.** We will send this roofing to any one answering this advertisement. C. O. D. with privilege of examination if you will send us 25 per cent of the amount of your order in cash; balance to be paid after material reaches your Station. If not found as represented, you do not have to take the shipment and we will cheerfully refund your deposit. **Ask for Catalog No. W-688.** Lowest prices on Roofing, Eve Trough, Wire, Pipe, Fencing, Plumblings Doors, Household Goods and everything needed on the Farm or in the Home. We buy our goods at sheriff's and receiver's sales. **CHICAGO HOUSE WRECKING CO., 35TH & IRON STREETS, CHICAGO**

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Root Co., St. Paul.....	1141	Dadant & Son.....	Back Cover	York & Co., Geo. W.....	1105
Scott & Co., C. M.....	1142	Dittmer Gus.....	1141	<b>Publishers, Poultry-paper.</b>	
Stringham, I. J.....	1147	<b>Fences.</b>		Ohio Poultry Journal.....	1152
Weber, C. H. W.....	1087	Brown Fence & Wire Co.....	1152	Poultry Gazette.....	1152
Woodman Co., A. G.....	1142	Coiled Spring Fence Co.....	1147, 1152	Poultry Item.....	1152
York Honey & Bee Supply Co.....	1139	<b>Honey for Sale.</b>		<b>Wants and Exchanges.</b>	
<b>Bees and Queens.</b>		Hutchinson, W. Z.....	1101	See page.....	
Alley, H.....	1149	<b>Honey-buyers.</b>		See page.....	
Atchley Co., The Jennie.....	1149	See pages.....	1098, 1099, 1151	See page.....	
Cary & Son, W. W.....	1149				

# ADVERTISING TALKS

BY THE AD. MAN.



The ad. man would like to know that every number of GLEANINGS, when received, is immediately placed in a binder. Then every advertisement would have its life more than doubled—meaning more advertising, and, consequently, a better GLEANINGS. The subscriber, too, would be benefited. Every copy would be preserved for present as well as future use. You would take pleasure in referring to your volume of GLEANINGS and showing it to your friends. Its value would be doubled to you.

One reason why binders are not used is because they usually cost almost as much as a year's subscription. We have discovered a binder that meets every requirement—very reasonable in cost, handsome in appearance, its methods of use as simple as tying a shoe. It is well named "The Perfect Pamphlet Preserver." On the shelf it looks just like a book; holds one number or the volume. We have had a lot made specially for GLEANINGS, with its own title stamped in a very attractive form. We are going to sell these "preservers" for a limited time at about the actual cost—25 cts. each; by mail, 7 cts. extra. There is no excuse now for GLEANINGS not being bound.

**EXTRAS.**—If you find some numbers missing when you order your binder, ask the ad. man to send you these and he will gladly do so without charge.

## HELP.

Do you own a lot of bees, and find you have so many other duties that you can't give them all the attention they need? If so, you have surely wanted to find a good man to help you. Our classified columns are do-

ing some excellent things for our subscribers. Read the following, which appeared on page 1090 in our Aug. 15th issue:

**WANTED.**—Good man—married, without children preferred—to run farm of 52 acres near Bristol, Tenn.; ideal location, good profits from poultry, etc.; will make good offer to right party. Place for sale if can not find man. M. D. ANDES, Bristol, Tenn.

On Aug. 22, seven days later, Mr. A. wrote us: "I haven't received my Aug. 15th GLEANINGS; but I have secured my man through my advertisement." Try this method of securing help. The cost is 20 cents per line. No cost if you fail to get replies.

## SELLING HONEY.

In our last issue, page 1038, was found the following advertisement:

**FOR SALE.**—Choice extracted clover honey. Extra choice, selected from all new combs, in round-jacketed five-gallon cans, for family use; \$5.00 per can. Prices on larger quantities in 60-lb. square cans, two cans in case, on application. Sample, 5 cts.

G. A. BLEECH, Jerome, Mich.

We have just received the following from Mr. Bleech, which speaks for itself:

*The A. I. Root Co.*:—My advert in GLEANINGS has brought me more orders than I can fill. My crop of 5000 lbs. of light honey is all sold.

Jerome, Mich. G. A. BLEECH.

We have known for a long time, and have told our readers, that our advertising columns are eagerly read by honey-buyers, and that bee-keepers desiring to sell direct to the consumer, or, in fact, to any buyer through the mail, can usually find a good market by using our Honey Column. This is a good time to sell. We want to show our subscribers what we can do, so send along an adv't for our Sept. 15th issue. Make a definite price on your honey if possible, and keep the adv't under 35 words if you can. The cost is only 20 cts. per line. If you fail to sell your honey, advise us and we will make no charge.

## BEE-KEEPERS' ADVERTISING.

Of course, when a bee-keeper has something to sell to bee-keepers the first medium thought of is GLEANINGS. This is perfectly right, because GLEANINGS reaches the largest number of bee-keepers. But magazine advertising is only a form of publicity. How about booklets, cards, and the like? Also your stationery? Do you know how much effect this has on your possible customer? Don't neglect your printed matter, nor use poor stuff. Honey-labels also add much to the appearance of your product. GLEANINGS does a great deal of printing for its subscribers. Its equipment is the very best, and the work turned out is first-class, and prices reasonable. Tell us what you require and we will give you prices.

# Seasonable Goods!

## Non-drip Cases

The kind we call "Root Quality"—none as good.

## Glass and Tin Packages

for extracted honey. A neat package means a fancy price.

## Honey-extractors

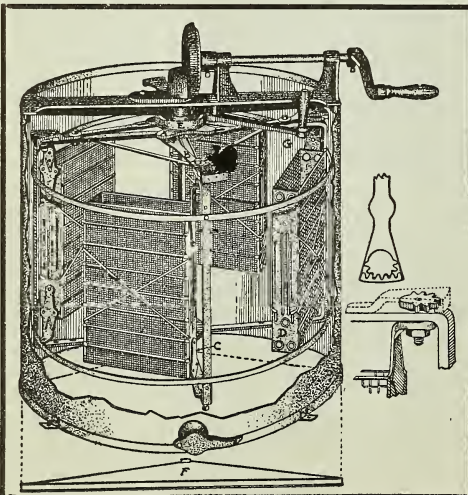
The Cowan No. 15 will give you years of honest service. You need one.

We will have an exhibit of Root's goods at the Michigan State Fair, August 30 to September 7. We will be pleased to have you call on us, and make yourselves known. Bee and Honey Department is under south end of Grand-stand. Bee-keepers' day is Tuesday, September 4.

We Have the  
**Largest Stock of Bee-supplies in Michigan**  
 and all **ROOT QUALITY**

**M. H. Hunt & Son, Bell Branch, Michigan**  
 Wayne County

# The A. I. Root Company's Bee-keepers' Supplies



Illustrate the wisdom of paying enough to secure true economy. There are no better appliances at any price, and those sold for less eventually cost a great deal more. Our catalog tells all about them. . . . .

**The A. I. Root Company, Syracuse, N. Y.**

# SPECIAL OFFERS for Sept. and Oct. ONLY

## Cloth-bound Dollar Books for 60 cents each



DR. MILLER



DOOLITTLE

ALSO

**A 75c Book and a 75c Queen for 25c each  
when taken with the American Bee Journal as  
offered below :**

(To either New or Renewal Subscribers.)

**No. 1** The Bee Journal a year with Dr. Miller's cloth-bound "40 Years Among the Bees" (book alone \$1)—both for \$1.60.

**No. 2** The Bee Journal a year with Doolittle's cloth-bound "Scientific Queen-Rearing" (book alone, \$1)—\$1.60.



**No. 3** The Bee Journal a year with Doolittle's leatherette-bound "Scientific Queen-Rearing"—(book alone, 75c—\$1.25

**No. 4** The Bee Journal a year with a Standard-Bred Italian Honey-Queen (Queen alone, 75c)—\$1.25.

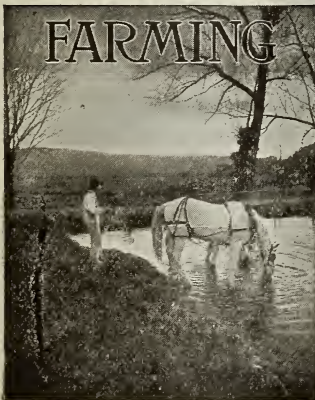
Remember, that each is a separate offer, and must be taken before Nov. 1, 1906, if you want the advantage of these special prices. ●

If more of the same kind of Queens are wanted, order at these prices during September and October: 3 for \$2.00; 6 for \$3.75; 12 for \$7.00. Now is the time to re-queen.

A free sample of the Weekly American Bee Journal on request; or a "trial trip" of 3 months (13 copies), sent for only 20 cents. Regular price is \$1 a year. Address,

**GEORGE W. YORK & CO., 334 Dearborn St., Chicago, Ill.**

All our Special Offers always apply only to the U. S. and its possessions, Canada, Mexico and Cuba.



## A Delightful Combination

GLEANINGS IN BEE CULTURE, \$1.00 per year.  
FARMING MAGAZINE, \$1.00 per year.

PRICE FOR THE TWO, \$1.50.

\*Nothing need be said about GLEANINGS. It is the best publication of its class in the world; semi-monthly, 72 to 80 pages, fully illustrated.

†FARMING is a new publication—a beautiful journal for the man who produces from the soil. It is edited and published by the Doubleday Page Co., the people who edit *Country Life*, *World's Work*, and the *Garden Magazine*, a sufficient guarantee of its merit. Larger than GLEANINGS—fully illustrated. Published monthly.

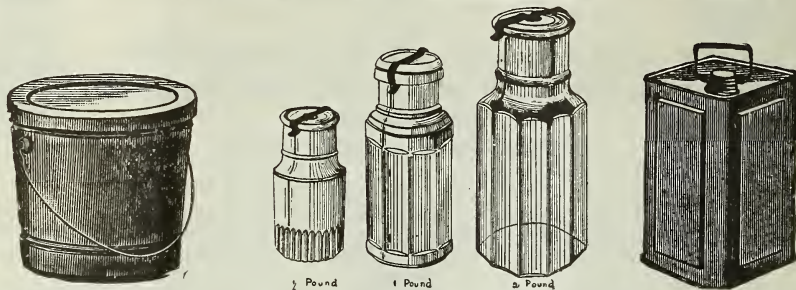
THIS OFFER IS GOOD, EITHER FOR NEW GLEANINGS SUBSCRIPTIONS OR RENEWALS, BUT MUST BE TAKEN ADVANTAGE OF WITHOUT DELAY.

WE CAN ACCEPT SUBSCRIPTIONS FOR THIS COMBINATION AT THIS SPECIAL RATE ONLY WHEN SENT DIRECT TO THE PUBLISHERS OF GLEANINGS.

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

\*Sample copies of either publication will be sent upon request.  
†Publications will be sent to two different addresses if desired.

# THERE IS MONEY IN YOUR HONEY IF PUT UP IN LEWIS PACKAGES



## Lewis Shipping-cases are the Finest in the World



Thousands of the Lewis shipping-cases and millions of Lewis sections, as well as all kinds of honey - packages, now ready for you in the warehouses of ourselves and our agents, as given below. . . . .

## Beware where You Buy Your Beware

ENGLAND—E. H. Taylor, Welwyn, Herts.  
 FRANCE—Raymond Gariel, 2 ter Quai de la  
 Megisserie, Paris.  
 CUBA—C. B. Stevens & Co., Havana.  
 C. B. Stevens & Co., Manzanillo.  
 CALIFORNIA—Chas. H. Lilly Co., San Francisco.  
 SOUTHERN CALIFORNIA.—  
 Fletcher-Doyle Co., San Diego.  
 Fallbrook Co-operative Association, Fallbrook.  
 Paul Bachert, Lancaster.  
 COLORADO—R. C. Aikin, Loveland.  
 Arkansas Valley Honey-producers' Ass'n, Rocky  
 Ford.  
 Colorado Honey-producers' Association, Denver.  
 Fruit Growers' Association, Grand Junction.  
 Robert Halley, Montrose.

IOWA—Adam A. Clark, LeMars.  
 Louis Hanssen's Son, Davenport.  
 ILLINOIS—York Honey & Bee Supply Co., 191-193  
 Superior St., Chicago.  
 Dadant & Son, Hamilton.  
 INDIANA—C. M. Scott & Co., Indianapolis.  
 MICHIGAN—A. G. Woodman Co., Grand Rapids.  
 MINNESOTA—Wisconsin Lumber Co., 432 Lumber  
 Exchange, Minneapolis.  
 MISSOURI—E. T. Abbott, St. Joseph.  
 OHIO—Norris & Anspach, Kenton.  
 OREGON—The Chas. H. Lilly Co., Portland.  
 PENNSYLVANIA—Cleaver & Green, Troy.  
 TEXAS—Southwestern Bee Co., San Antonio.  
 UTAH—Fred Foulger & Sons, Ogden.  
 WASHINGTON—The Chas. H. Lilly Co., Seattle.

# G. B. LEWIS CO.

Manufacturers Bee-keepers' Supplies  
**WATERTOWN, WIS., U. S. A.**

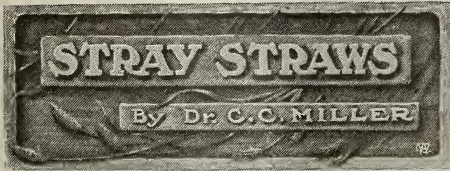
# GLEANINGS IN BEE CULTURE

A Journal Devoted to Bees, Honey, and Home Interests  
Illustrated : Semi-monthly : One Dollar per Year  
Published by The A. I. Root Company, Medina, Ohio

Vol. XXXIV

SEPT. 1, 1906

No 17



PURE MATING is guaranteed with no other bees within five miles, in ad., p. 1087. With three different kinds of bees within that five miles, how is pure mating secured?

"THE NOVICE should distinctly understand that natural swarming does nothing toward renewing or superseding a queen, and that there is just as good a chance for the renewal of a queen if a colony never swarms."—*American Bee Journal*.

THE EDITOR of *Bienenvater* stipulates that in migratory bee-keeping the man who drives the team should be an abstainer, as many a mishap in hauling bees has been due to a drunken driver. Right you are, Herr Alfonso; and abstinence is a good thing for the bee-keeper as well. Among American bee-keepers the man who uses either whisky or tobacco is a *rara avis*.

I AM GLAD to see Mr. A. I. Root interested in bees; but it makes me a bit sad to see him playing with toy hives, so as to favor natural swarming and comb-building without foundation, when that brain of his might be of so much use to those of us with whom bee-keeping is a matter of bread and butter if he would work at our kind of bee-keeping. But I'd rather he would play with them than not to handle them at all.

A. I. ROOT thinks that, to avoid side fins and attachments, bees must be allowed at least some little comb-building in the hive, without foundation, p. 1074. But, but, Bro. Root, if we "have got rid of every bit of

drone comb except in the hives where we want some drones reared," as you advise, p. 1078, will they not be sure to build drone comb if they have no foundation?

PROF. COOK said in *American Bee Journal* that in Dadant and Grimm we got the best Europe had to give. Commenting on this, Herr A. Schroeder asks in *Ill. Monatsblatler*, "How about Wagner, who founded the *American Bee Journal*? and Huber, the blind seer? and Dzierzon, the discoverer of parthenogenesis? and Hruschka, the inventor of the honey-extractor? and Mehring, the inventor of comb foundation? and Leandri, the inventor of the solar wax-extractor?—only to name a few—were these indeed Americans?"

AS EXPLAINED, p. 1048, Mr. Editor, your view of sweet clover is all right, and I heartily endorse what A. I. R. says. It is very hard to get a stand of sweet clover on ground in good tilth, but very easy to get a good stand on the hardest ground by the roadside. It is more easily kept down by cultivation than many weeds. The only place where it will keep its hold is in hay or pasture land, and it is a good thing to have some of it there; but I don't want it on a lawn. [I do not see how it could grow on a lawn, doctor. The frequent cuttings would kill it. Or is it possible I am mistaken? Some of our readers who have tested this, can, perhaps, tell us.—ED.]

DOOLITTLE is right; two staples are enough to fasten bottom-boards when hives are not to be hauled, p. 1070; but instead of putting them midway of the length I prefer them at two corners diagonally opposite—just a little more sure to keep the hive square on the bottom-board. [We have used both ways; but we prefer to put them on as Doolittle does. If the bottom-board is a little out of true, fastening them at the diagonally opposite corners may not close up the gaps, although if the high or low corners were diag-

onally opposite, it might do so. But the middle fastening with us seemed to give better results with the bottoms as they run.—ED.]

AT THE RISK of being accused of lack of conservatism I must confess that I no longer reverse bottom-boards as described by Doolittle, p. 1069. Instead of that I have a two-inch space under the hive all the year round, keeping it filled with a rack of sticks during the working season—good deal easier to put in the rack and pull it out again than to lift the hives spring and fall so as to reverse bottom-boards. It also saves drawing the staples and driving them again. [I have seen this arrangement of Dr. Miller's, and must confess it is a decided improvement over the old way of reversing the bottom-board. It saves some heavy lifting and a good deal of time, because there are no fastenings between the bottom and hive-body to loosen.—ED.]

OUR COW had a large proportion of sweet clover in her pasture, and paid little attention to it. Then came the terrible drouth, leaving pasture grounds as brown as in winter, and she made good use of the sweet clover. The point is, that sweet clover remains green and flourishing when other forage-plants dry up. [Your experience has been duplicated time and time again; and yet there are road commissioners and town councils that, I suppose, will continue to cut down sweet clover because they class it as "a noxious weed."]

That reminds me that the Southwestern Ohio and the Hamilton County Bee-keepers' Association has requested all the railroads leading into Cincinnati not to cut the sweet clover, because of its value as a forage for bees. I understand the big roads are complying with this request, with the result that the amount of sweet-clover honey for the bee-keepers along the said roads has been materially increased thereby. See Editorial.—ED.]

HERE'S A PLAN to shake bees off combs that is used here with much satisfaction: Take hold of one end of the top-bar, with the bottom-bar pointing forward; swing the frame forward, and when six inches or more above the ground let it fall, the lowest end of the top-bar striking the ground in such position that the center of the comb shall be vertically above the point that strikes the ground. We have used it with very light and with very heavy combs without any breaking. If done just right you can clear almost every bee off with one stroke. [I do not quite understand whether you actually let go of the frame when you let it strike on the end of the top-bar or not. I judge not; for if the frame were actually released it would fall on its side, crushing bees and mashing the face of the comb. As I understand it, you grasp one corner of the frame and allow it to swing, pendulum-like, with the exception that the other end of the pendulum on the down stroke hits the ground a sharp blow. The moment the bees are dislodged the frame is lifted from the ground.

It strikes me that this is worth illustrating,

and I am sending you a special camera with the request that your women-folks show this swinging-pendulum act of jarring bees off the combs in three or four different positions while you do the swinging. There is nothing like showing a thing, you know, to understand it fully.—ED.]

"IN MOVING bees, I had a hive burst open, and bees filled the air like a swarm, but did not disturb either myself or horse," says J. D. Coles, p. 1068. I had a hive burst open while being hauled to the Wilson apiary, and had the severest case of stinging I ever had in my life. [Both experiences have been duplicated by others; and I suspect it would be wise to err on the safe side by making the fastenings very secure, for one can never tell what a big "thank you, ma'am" in the road may do. On the other hand, I surmise that hives with entrances that are *not closed*, where the bees can pass in and out, may not cause nearly as much "commotion." When a hive is overcrowded with bees, and bees are struggling to get out, suffering from a want of ventilation—well, when such a hive breaks open, the bees rush out like shot from a gun. Bees that have been struggling to escape, when suddenly liberated are almost sure to attack every thing in sight.

This whole question of moving bees with closed or open entrances is one that will involve a variety of experiences.

If bees can be moved in an automobile, as shown elsewhere in this issue, I should say it would be wise always to leave the entrances open—for strong colonies at least. This will eliminate all possible danger of suffocation, injury to brood, and, if any particular colony *should* become "obstreperous," it would do no particular harm to the apiarist, who could, if necessary, wear a veil and have a smoker handy. Taking it all in all, it will be wise, for the beginner at least, when moving bees, to cover the whole top with wire cloth, and then make the fastenings so secure there can be no possibility of the bees being suddenly liberated.—ED.]

THE EDITOR of the *Bee-keepers' Review* says: "After frames have been in use a few months they must be pried loose before they can be handled, regardless of how they are supported; but the *amount* of strength needed to loosen them is not very great. It requires no more time and no more *appreciable* effort to loosen frames supported upon plain wooden rabbets than it does those on tin rabbets; hence I see no gain in using the latter." I don't know whether Mr. Hutchinson is talking about loose-hanging frames, Hoffman, or what; and I suppose the kind of frame makes a difference. My experience with tin rabbets, not a small one, has been chiefly with the Miller frame, and here's the way the matter stands "in this locality:" The glue affects the moving of the frame but little until it is filled from the bottom of the rabbet up to the top-bar, and it requires a good deal more than a few months to do that. If the rabbet is cleaned out once in three years the average amount of effort to



move the frames during that three years' time on tin rabbets will be very *appreciably* less than with plain wooden rabbets, and will not require more than half the time. [I understand that Mr. Hutchinson refers to the old-style plain Langstroth frame, without any spacing-attachments, the same hanging on wooden rabbets. This is what he recommends in his book. With such a frame a wood rabbet is better, in my opinion, than a tin one. Frames should be fastened just secure enough so that when the hive is picked up and carried across the bee-yard they will not jar loose. But instead of an unspaced Langstroth frame on a *wood* rabbet I personally prefer a Hoffman, or, better, a metal-spaced frame on a *tin* rabbet. That such a frame will not be any harder to release than an old-style loose Langstroth frame on a wood rabbet is true "in this locality;" and, besides, it will have the advantage that, in moving, there will be no danger of the frames getting too close together, mashing bees and killing brood.—Ed.]



SOME of our more discriminating readers will probably discover that this and the last issue of GLEANINGS is printed with a brand-new face of type. The heavy editions printed on the old type had worn it down to such an extent that it would not give a good letter-press effect.

Do not forget that now is the season to advertise honey at your county fairs. Build up your own home market, and do not be afraid to go into the show business. When I say "show business" I mean the handling of bees inside of a wire-cloth cage, bareheaded and barearmed.

#### NOMINATION NOTICE.

The following, from General Manager N. E. France, will explain itself:

Each National Bee-keepers' Association member is hereby requested to mail to office of General Manager, on or before Sept. 29, his nomination for offices now filled as follows:

President, C. P. Dadant; Vice-president, G. E. Hilton; Sec'y, W. Z. Hutchinson; Gen. Manager, N. E. France; Director, Jas. A. Stone; Director, G. M. Doolittle; Director, R. A. Holekamp. N. E. FRANCE.  
Plateville, Wis., Aug. 25.

#### BABY NUCLEI FOR CHILDREN: SOME CHARACTERISTICS OF BABY NUCLEI IN GENERAL.

It is, perhaps, not understood that a baby nucleus will accept virgin or laying queens at

various ages much more readily than a strong colony or a strong nucleus. One of the great points in favor of miniature hives for queen-rearing is that they will treat both queens and the apiarist with kindly consideration. Indeed, almost any child can handle them when it would be unwise for him to tackle a full-sized colony. The fact that these babies can be opened and handled without smoke is another proof of their tractable nature. It is only in rare cases that a smoker is needed at all. While in other ways these babies are difficult to handle, or, rather, I should say, difficult to keep going, they will tolerate extraordinary conditions that a strong colony will not accept for a moment.

Some of our twin nuclei show a record of mating of some 16 to 17 queens after only two months of actual use. This result is made possible in part by caging an extra virgin two days before the other virgin already in the hive (and loose) is ready to begin laying. On the day that she lays a frame of eggs, the slide of the introducing-cage of the captive queen is slipped by, when the bees release her in the matter of two or three hours; so that it comes to pass that not more than a few hours will elapse when there will be no queen running free in the hive. But before another virgin is caged, mind you, the *second* queen is allowed sole possession until she reaches an age when she will probably lay within two days. As the date of expectancy does not always mature, some nuclei will not begin to do as well as others; but it is astonishing even then what they will do.

#### HAULING BEES TO OUT-YARDS, WITHOUT HORSES.

I HAVE already given an intimation to our readers how we were using our automobile in going to and from our out-yards. On the front cover page of this issue, and in an illustration on page 1128, it will be seen how we hauled one load of queen-mating nuclei from the Harrington yard to the basswood apiary, a distance of some four miles. As we were putting up our new building, our horses were all busy; consequently, if the bees were to be moved at all they would have to be moved by the horseless vehicle. Robbers were teasing the baby nuclei at the Harrington yard; and as nearly all the babies were at the basswood apiary we decided to put the whole number in one place, where we could look after them a little closer. We accordingly put on the detachable carrying-box and loaded up some forty twin nuclei with bees or eighty single nuclei. These were packed closely, and cushioned with straw. The roads were none too smooth; but we drove the bees down to the basswood yard, and in the course of a few minutes more every nucleus was placed on its stand, and the entrances opened.

Some of the weaker nuclei were being robbed at the time they were closed before being moved. We shut the thieves in with the bees already in the hive. These, when

moved to the other yard, made a united force of bees for a nucleus that was formerly weak; for the would-be robbers, discovering they were in a new location, naturally went back to the homes they had been trying to despoil.

The horseless carriage had the advantage that it could be driven right up among the bees, without any danger of a fracas; and even if a nucleus should be broken out or tumble out on the road, as did happen in one case, no harm will be done. You see, it was this way: A lot of mating nuclei had been made up at an out-yard, some six miles distant. In hauling home over the rough roads, one of them fell out, bumped over the ground, and dumped all the bees out into the road. Things were lively for a little while; and had a team of horses been hitched on to pull the load, there is no knowing what might have happened. But the horseless carriage stood its ground, when one man was sent up the road to stop a team that was coming, to warn the driver of the danger until the bees could be scooped up and carried away. This was done without any trouble.

The horseless vehicle has come to be almost a necessity in our out-yard work. While the yards are located on street-car lines, yet the cars are often tied up for want of a current, and sometimes clear out of their regular running schedule. But the automobile, as now perfected, enables us to go any time when it does not rain, get to the yards in a very short space of time, and to haul light loads every now and then.

This detachable carrying-box which we have made to fit our machine will carry eight ten-frame colonies or 150 combs or frames of foundation. When a larger load is required we use the team and big wagon.

#### THE JENKINTOWN MEETING IN THE EVENING; CONTINUED FROM PAGE 1061.

AFTER the general field-day work the bee-keepers were invited over to a large hall near by, where they were entertained by a lecture from Dr. E. F. Phillips, of the Department of Agriculture, Washington, D. C. This was followed by a stereopticon lecture by Dr. D. E. Lyon, at the conclusion of which we were entertained by a vaudeville bee performance by E. L. Pratt, or "Swarthmore."

The hall was crowded. The address by Dr. Phillips was listened to with the closest attention. He stated briefly what the government was doing for bee-keepers; how it was taking hold of this question of bee diseases, and what it expects to do in the future. As usual he delighted his audience, for he it said bee-keepers generally are highly pleased with what the government is doing for bee-keeping.

Dr. Lyon then gave his popular lecture on the general subject of bees and bee-keepers, illustrating it with a stereopticon followed by some moving-picture work. The doctor is a natural and easy speaker and a good story-teller. The stereopticon views, mostly

of his own taking, need to be seen to be appreciated. The moving-picture work was then put on the screen, illustrating the handling of bees as it is practiced in old mother England, beginning with the capturing of a swarm of bees, driving bees from a straw skep into a modern hive, ending up with a demonstration of how hives are opened, etc.

The last feature on the program was what might be called "a vaudeville bee performance." Mr. Pratt had prepared, at considerable expense (with the special view of giving it in vaudeville theaters), a mammoth wire-cloth cage with some colored scenery of a neatly kept apiary in the background. Joining on to the picture were the real hives of bees that Mr. Pratt manipulated, explaining as he would to a popular audience the general subject of bees and honey production, illustrating his remarks as he proceeded. At the close of the work he took frame after frame of live bees out of the hives, hung them up to the frame of the cage, making an arch of live bees. The whole effect was quite pleasing, and elicited a substantial encore from the bee-keepers.

Thus closed a day of actual demonstration work among the bees, the like of which had never been attempted before in this country—at least not on so large a scale. In a subsequent issue we hope to present a picture of the veteran Henry Twining, who at this meet made an artificial swarm on his bare arm. My camera did not catch this, but another camera did, and this I will later present to our readers.

#### VIRGIN QUEEN, AND WHAT BECOMES OF HER WHEN SHE ACCIDENTALLY GETS INTO THE WRONG HIVE.

OUR readers will remember there has been a little controversy between Dr. Miller, a comb-honey producer, and myself as a queen-breeder, over the kind of reception accorded a young queen just returning from a mating-flight, when she goes into the wrong hive by mistake. I made the claim that the interloper would, in the great majority of cases, supplant the old queen. Dr. Miller dissented; but, apparently, he was basing his claim on the kind of treatment a virgin would receive when *introduced* in the regular way. I admitted that such queen would generally be killed, leaving the old queen in control as before. Dr. Miller apparently still felt, however, that the conditions would not be materially different when a returning virgin accidentally goes into the wrong hive. In relation to this whole discussion, Mr. J. E. Chambers, a honey-producer as well as a queen-breeder, has this to say. He also offers in this connection a bit of experience on the subject of burr and brace combs. Mr. Chambers' letter is as follows:

*Friend Root.*—Your answer to Dr. Miller's Straw, page 929, is correct according to my experience. I have made many experiments in order to find out for certain whether or not it was practical to requeen in this manner. With the Chambers cell-starting device on the hives I have allowed queens to mate, and have then torn off the zinc and allowed them to go

below, where the old queen was laying. In every case the old queen was found dead within twelve hours. So, too, the same thing happens when a queen returning from her mating-flight goes into the wrong hive, and, just as you say, there is not one chance in a hundred that the intruder will not be accepted. But it is quite different when a strange queen is let into the hive. She is not allowed, in nine cases out of ten, to get a chance at the reigning queen, but is promptly balled. The reason for this should be apparent to any posted bee-keeper. Lately I have been requeening by placing the cell-starting board over colonies, and then introducing virgins to a weak nucleus above; and, as soon as they were mated, remove the zinc and let them go below. It has proven a sure shot every time so far.

I also note you want reports on the building of burr and brace combs between the tops of bars  $\frac{1}{2}$  and thinner. With 3000  $\frac{1}{2}$  top-bars in use I never see a burr or brace comb. I have often been puzzled to account for such complaints as, bees will not go up into supers, or they build burr and brace combs, etc. I can not but feel that something is wrong with bees, man, or hive, when these conditions prevail.

Vigo, Texas, Aug. 15. J. E. CHAMBERS.

#### GETTING THE BIG RAILROADS TO REFRAIN FROM CUTTING SWEET CLOVER WHILE IN BLOOM ALONG THEIR TRACKS.

THE Southwestern Ohio and Hamilton Co. Bee-keepers' Association appears to be an organization that is very much alive. It has not only been active in legislation in matters relating to the subject of foul brood in Ohio, but it started out on a course of action that should meet the hearty approval of bee-keepers everywhere. Last year this organization requested all the railroad companies whose lines run into Cincinnati and vicinity to refrain from cutting down sweet clover during the time of bloom. Strangely enough, a majority of the companies complied with the request, with the result stated—"a great gain to bee-keepers" along those railroads.

This is a move that may well be imitated by other organizations. If the great railroad corporations can be swayed by a comparatively small number of bee-keepers in one locality, those same corporations would be equally willing to heed the request of organized bee-keepers in other places.

THE Southwestern is now preparing to stir up a sentiment among bee-keepers in favor of an anti-spraying law in Ohio (at least not spraying while the trees are in bloom). It is, perhaps, not generally known that there is no such law in Ohio, and the bee-keepers of Cincinnati are very anxious that such a measure shall be put on the statutes-books of this State. They urge the co-operation of bee-keepers all over the State.

#### HONEY TO ALLAY THE SOURNESS AND BITTERNESS OF THIS WORLD.

DOUBTLESS among our readers are many who admire Nathaniel Hawthorne; but probably very few of them are aware that he ever had any thing to say on bees. Our advertising man, glancing through a volume of Hawthorne the other day, came across a gem which he thought so good that it ought to be placed before the bee-keepers of the country. The sentiment is so beautiful that we all can read it with profit. Here it is, right from the pen of Hawthorne:

Multitudes of bees used to bury themselves in the yellow blossoms of the summer squashes. This, too, was a deep satisfaction, although, when they had laden themselves with sweets, they flew away to some unknown hive which would give back nothing in requital of what my garden had contributed. But I was glad thus to fling a benediction upon the passing breeze, with the certainty that somebody must profit by it, and that there would be a little more honey in the world to allay the sourness and bitterness which mankind is always complaining of. Yes, indeed! my life was the sweeter for that honey.

Pity that some of the western ranchmen who complain because their neighbors' bees gather the nectar from their alfalfa-blossoms could not look at the matter in the same broad and liberal manner. Pity, too, that there is some sourness in this world that even honey won't sweeten.

Yes, the bee, every time it appropriates a sip of nectar, gives back something in requital that it takes from the garden. It performs a service (cross-fertilization) that is often vital to the perfect growth of the fruit. If this were not so, nature would not have put the nectar there to entice the bee.

#### THE USE OF CONCRETE IN THE CONSTRUCTION OF BEE-CELLARS.

MR. HUTCHINSON, in the last issue of the *Bee-keepers' Review*, discusses the question of building bee-cellars and how best to do it. A good deal will depend on the locality and the cost of building-material; but in sandy soils, by all odds the cheapest way is to mix Portland cement with the sand, and some broken stone or gravel if it can be obtained. If sand only is available, mix the Portland cement and sand in the proportion of anywhere from one to five to one to eight. Do the mixing dry; then turn on the water, and mix thoroughly again. Pour this into a trench or a wooden form.

I expect to illustrate the full process of making concrete walls on a plan that any one can follow, in an early issue of GLEANINGS, for we are now putting up a concrete building, and have gained some experience in this line of work.

#### FALL FLOWS OF HONEY.

IN our own immediate vicinity, in different yards the bees on certain days have been working on red clover or smartweed as heavily as any day in June or July on white clover. At one yard the honey seems to be almost exclusively from second growth of red clover. At another yard, where there is no red clover, but along near the river, is a very luxuriant growth of smartweed. Some days this yields honey quite heavily.

It is many years since I remember any honey from smartweed in this locality; but nearly every year we get a little honey from a second growth of red clover in the vicinity of the yards where it grows. Our neighbor, Mr. Vernon Burt, who has been educating the farmers in his locality for years on the value of clover crops, gets quite a little honey from second-crop red clover, for much of it is grown near him.



#### HOW MANY BEES FOR WINTERING.

"How are Doolittle's bees doing on buckwheat this year?"

"They have not done much till within the last two days, which have been warm and moist, after cool nights; and last night was the first I noticed any smell in the bee-yard as though buckwheat honey were coming in."

"What! can you tell by the smell in the bee-yard when buckwheat is yielding honey or nectar?"

"Most surely we can, Mr. Smith."

"How does it smell?"

"Well, when a light flow is on, the smell somewhat resembles that from a field of buckwheat when in full bloom, only in a more modified form: but when there is a heavy flow on, a flow sufficient to have the bees fall short of the hives from their heavy loads of nectar, and that flow continued for several days, then the odor is less pleasant, reminding one of carrion some distance away. One year when the bees stored nearly 60 lbs. of section honey on an average per colony, in about a week's time, passersby in the road wanted to know what there was near my house that smelled so, saying to me, 'It stinks horrid.'"

"Then that was what I smelled when I was passing an apiary out in Cortland Co. yesterday. I could not think what it was. You know they raise lots of buckwheat around Ripley Hill."

"Yes, I know that ten acres are sown there to where one is sown here."

"Well, I came to have a little talk with you further than a talk we had a year ago, about your plan of making nuclei and colonies of bees by shaking bees into the nucleus box which you have told the readers of GLEANINGS about during the past, and which I have used successfully ever since I read about it in that paper."

"Very well. What do you wish to know further?"

"I want you to tell me how many pounds of bees you would put into such a box, giving a queen; and the next day, when hiving from the box, giving frames of honey, to make a full colony to winter over."

"It is calculated, I believe, that there are about 5000 bees in a pound, where they are taken from the frames without filling themselves with honey, more than there naturally are when not disturbed."

"What! so many as that?"

"Yes. Bees when not filled with honey, and especially during the fall, when no chyle is being prepared for brood, are very light

as to weight, as I have found from many years of observation."

"If one pound will contain 5000 bees it should not take many pounds to form a colony, should it?"

"It is calculated, I believe, that 20,000 bees make a good strong colony four or five weeks before swarming; but at swarming time there may be more than double that number, so that, where we work for comb honey on the non-swarming plan, we usually calculate on from 55,000 to 60,000 bees as making a good strong colony for working in the sections to the best advantage."

"But you do not think that colonies go into winter quarters with any such numbers of bees?"

"No; and I doubt if the average colony for wintering contains even the 20,000. I have reasons for believing that many colonies which are called strong for winter do not contain more than from 12,000 to 15,000 bees—yes, more often the first number than those which contain 20,000."

"But where you use the nucleus-box plan a pound would hardly contain 5000 bees, would it?"

"No; because I always cause the bees to fill themselves with honey before putting them into the boxes; and from considerable experience, by way of experimenting, I am quite certain that the pound of bees taken from the combs in the way they should be to have 5000 in a pound would weigh fully two pounds when filled with honey the way I cause them to fill themselves."

"That would change the condition of affairs quite materially, would it not?"

"Yes. If we call from 12,000 to 15,000 bees the right number for a colony good enough to winter the most successfully, we shall want those in our nucleus box to weigh from five to six pounds, which is about the number of pounds I take when forming a colony for winter, taking the bees from several other colonies."

"About how many bees do you take from a colony?"

"Unless your bees breed very late in the fall, or you are willing to feed to make them so breed, I would not take more than two pounds from any one colony, for fear they might be made too weak for good wintering, or wintering to the best advantage; for it surely can not be advantageous to make a new colony, no matter how badly you wish more colonies to go into winter quarters with, where the making of such colony injures the prospect of successful wintering of two or three others. People become reckless, especially beginners, and seem to think that number of colonies makes success, no matter how weak they are; but from all of my experience of the past, Quinby's advice, given more than half a century ago, to have your colonies in good condition as to bees for wintering, was the best advice ever given to beginners in apiculture."

"Then you would think it best for me not to try to make more colonies this year?"

"Not just that. But if you can not make a colony or colonies this fall without injuring the prospect of those from which you take the bees, *don't make the colonies.*"

"But my bees often breed during the whole of September."

"That may make a difference. In localities where bees breed during September, and where a laying queen is given to the made colony when it is made, as I suppose you intend to do, one-half the bees, or from three to four pounds, will do fully as well as the six pounds would where no bees are reared after the colony is made."

"And if they should not breed as is desired, this breeding could be brought about by feeding, as you have hinted at, could it not?"

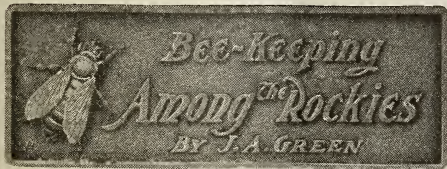
"Certainly. If the person making such colonies has the time, disposition, and means to feed moderately during September, three pounds would do well enough; for by thus feeding, brood would be reared during September in almost any part of the United States."

"By the *means* part I suppose you would buy sugar."

"That is what I would do. Where one has the time, and can afford to buy the sugar, there is nothing in the bee business that gives much more real pleasure than building up colonies of bees ready for winter during the fall."

"How soon will brood-rearing commence after the feeding is begun?"

"In a day or two; and after they have been fed from five days to a week, brood-rearing will commence in earnest. And if you do not have all the combs you wish for these colonies, they will build combs, or draw out foundation in the most beautiful manner for the one who is willing to work along these lines in the right manner; but a half-hearted slipshod person had better not undertake such matters, for such a one is more liable to make a failure of the things than otherwise."



Now plan your work so that you will not have a great lot of unfinished sections at the close of the season. If you can not use extracting-combs to finish the season, have the bees fill combs that you can use to feed any that may be short of stores. If you can not do any better, fill the supers you put on after this date only half full of sections, unless the conditions fully warrant you in giving more room.

#### WASTE OF WAX SCALES.

I think there is always more or less waste of wax by a newly hived swarm, but I never knew before of such an extraordinary waste of wax scales as there has been this season in all swarms, natural or artificial. Wax scales covered the bottom of the hive, and drifted out of the entrance in many cases until the ground in front was liberally sprinkled. This was doubtless due to the very cool nights we have had, and seems to indicate that a better protection of the hive would be profitable.

#### REQUEENING COLONIES.

Now is the time to requeen your colonies. If you have only one apiary, and do not mind having your bees swarm, it may be as well to let the bees supersede their queens themselves; but for the man who is keeping bees in out-apiaries, I think it will pay to supersede all queens after their first season. One of the easiest and cheapest ways, though not the surest, is to put a ripe queen-cell in a cell-protector in each colony needing a new queen. The young queen will in very many cases supersede the old one. If you keep your queens' wings clipped you can tell whether this has been done or not. As you do not have to hunt up the old queens, this plan involves very little labor, expense, or risk.

#### BRUSHES.

I have never bought many brushes for bee-work, especially of late years. I seldom do much brushing of bees; and when I do I prefer a brush made of fresh weeds or grass when I can get it. There are many varieties that make good brushes. Select something that is not too stiff, short, or stubby; do not use too large a bunch, and do not try to brush the bees with the end of the brush. Pick out something that is slender and pliable, and brush the bees with the side of the bunch, not the end. A brush of this kind, used in this way, does not irritate the bees nearly as much as many of the brushes in common use. One of the best features of this kind of brush is that you can throw it away and get another whenever it becomes daubed with honey or otherwise unsuited for the best work.

#### SOWING SWEET CLOVER IN THE SUMMER.

July 18th I gathered some yellow-sweet-clover seed, and several days later sowed it, together with some old seed of both the white and yellow varieties. This was on cultivated ground, and it has been kept well irrigated since. The white and yellow were not treated exactly alike, and it is possible the yellow was covered too deeply. Only a few plants of the yellow have put in an appearance, but there is a good stand of the white. The seed of the white was gathered for me by the field mice. Under a hive at an out-apiary I found about a peck of sweet-clover seed, perfectly clean and nicely hulled. The nest of the mice was occupied by a

bumble-bee, showing that something had happened to the industrious gleaners after they had gathered their winter store, but before they had consumed any of it, so that I found it intact in the spring. Possibly it germinated better because it had been hulled. The seed of the yellow was planted just as it was gathered, with the hulls on.

#### SHEEP IN THE APIARY.

Where it can be managed, the best and easiest way to keep down the weeds in an apiary is to let sheep have access to it at all times. When I came here I located my apiary in a patch of alfalfa. After a year's struggle to exterminate it or keep it down by using the hoe and scythe, I got a couple of sheep. The cow-yard adjoined the apiary, and in the fence between I made an opening through which the sheep could go. They fed in the apiary when they chose; but if the bees became troublesome they could run behind the barn, which was something they soon learned. Since then the apiary has been kept free from grass and weeds, without any attention on my part, until this season, when it became invaded with the "squirrel tail" grass, which even sheep will not eat. Not more than one or two sheep should be allowed in an apiary, unless the hives are a good distance apart. A flock is liable to "bunch" and crowd each other, knocking the hives off their stands and displacing the covers.

#### HOW FAR DO BEES FLY TO GATHER NECTAR?

One of the things that has been borne in on me with increased force this season is the great difference that exists between localities that are only a short distance apart. I bought out several apiaries this spring, and, wherever I could do so conveniently, I left them where they were; consequently with a few less than 300 colonies to start the season, I had six different apiaries. No apiary was over three miles from the next one, and two miles was the usual distance. The whole of them are in a territory seven miles long and three miles wide, and I can visit the whole of them and get back home with only about 23 miles of travel. Yet, closely as they are located, there are great differences in the results at the different apiaries, and the best and poorest apiaries are only two miles apart. There are several factors that enter into the problem, which I have not worked out yet to my satisfaction. All parts of the field are pretty nearly equally stocked with bees; and the amount of sweet clover, from which nearly all the surplus was gathered, does not appear to vary enough to account for the difference. The only moral I can draw from it at present is that, in some places at least, it is a great deal safer to have several apiaries than one.

#### SIZE OF SECTION FOUNDATION.

Many bee-keepers fail to have their sections as well filled as they should be, simply because they do not use as large a piece of

foundation as they ought to. This applies not only to those who use only a small piece of foundation as a starter, but to many who think that they are using full sheets. The regular size of section foundation sent out by some manufacturers is  $16\frac{1}{2}$  inches long. The largest piece of foundation that it is practical to cut from this is  $3.3$  by  $3\frac{3}{4}$  inches, five of which may be cut from a sheet. If this is hung in the section the long way down, there is too much room between the foundation and the sides of the section to secure good fastening. Besides, it does not work as well in the foundation-fastener, as the thin edge of the long sheet is not as easily handled on the hot-plate machines as the edge that has been cut. If the cut edge is used for the top, making the sheet wider than deep, there is a great deal too much space left at the bottom, and many of the combs will not be well attached to the bottom of the section, especially if the honey-flow has been a little light.

A much better size is that adopted by The A. I. Root Co., whose regular length is  $15\frac{1}{2}$  inches. This cuts into four pieces  $3\frac{3}{4}$  square. A sheet of this size will just nicely fill a section; and if put on during a good honey-flow, so that there is no gnawing of foundation, it will result in perfect combs every time. Even if the honey-flow is not good, a sheet of this size will make much better combs than the smaller sheet. It is very important that the comb should be attached to all sides, as such a section not only looks and consequently sells better, but it will ship with much less danger of breakage. To scrimp on the size of foundation used is very poor economy; and in ordering your foundation you should see that you get a size that will cut into full-sized sheets without waste.

Some prefer to use a shallower sheet in connection with a very narrow bottom starter. This doubles the work of putting in foundation—in fact, I think it more than doubles it, on account of the greater difficulty of putting in these small pieces, and, with me, gives little if any better results than the single full sheet, certainly not enough to pay for the extra labor. Perhaps I would think differently if I used the  $1\frac{1}{2}$  section, as I believe the bees fasten the combs to the wood better in the narrow sections I use.

#### SEEDLESS APPLES AND SEEDLESS GRAPES.

This department is supposed to be devoted to bee-keeping; but GLEANINGS is devoted to "Home Interests" as well as to bees and honey, and A. I. Root's crusades against frauds of various kinds have doubtless been appreciated by its readers. An extension of the seedless swindle lately has led me to believe that a word from me might do some good. This is the home of the seedless-apple business, and the reputed originator lives only about a mile from me. I want to say to the readers of GLEANINGS that the orchardists of this locality are not planting the seedless apple, though apple-raising is the principal business here. Of nearly half a million trees planted in this valley last spring, it is safe to say that not one in a thousand was of the

seedless variety, and I do not believe there will be anywhere near that proportion among the trees to be planted hereafter. The apple is of some interest as a curiosity, but in all other respects it appears to be valuable only to its promoters.

It has quite recently come to my notice that an eastern branch of the seedless-apple company is advertising cuttings of the Sultana seedless grape at the modest price of only a dollar apiece, and representing it as something new, and suited to the climate of their locality. The seedless Sultana is a very desirable grape. We have it in our vineyard, and appreciate it highly; but it is one of the tender foreign varieties, belonging to the *Vitis vinifera* family, and is entirely unsuited to the climate of the Eastern States, though it might succeed in some localities with careful winter protection. It is nothing new. It has been raised in California for many years, and doubtless for centuries in Southern Europe. The price asked for cuttings, in connection with their other claims, shows plainly the character of the company. It is one of the common commercial varieties here, and any one who wanted to experiment with it could obtain all the cuttings he wants for a cent apiece or less, and could doubtless obtain rooted vines for ten cents apiece or less from any of the nurseries west of the Rocky Mountains.



## HORIZONTALLY DIVISIBLE BROOD-CHAMBERS.

### The Advantages of the Deep Frames.

BY C. P. DADANT.

[To freshen the memory of our readers I will state that Mr. R. F. Holtermann, on page 365, March 15th issue, presented a strong array of facts in favor of large hives, of not less than twelve Langstroth frame capacity. Among other things, Mr. Holtermann agreed with Mr. Aspinwall that swarming was the bane of bee-keeping. Mr. J. E. Hand, on page 658, May 15th issue, strongly took issue with Mr. Holtermann, arguing in favor of shallow brood-chambers, saying that with such a hive the natural instinct of bees to swarm could be made "a blessing" to the bee-keeper. In the editorial comment I called for the opinion of Mr. C. P. Dadant, Mr. D and his father, the late Charles Dadant, had been pioneers in the advocacy of large hives, practicing what they preached, and opposed to the principle of chopping up the brood-nest into small divisions such as are required by the divisible brood-chamber. Mr. Dadant's comments on this interesting question will be read with unusual interest; and when it is taken into consideration that he is a large producer of honey, and has practically no swarming, it will be seen that our correspondent is not basing his argument on mere theory.—ED.]

Mr. Editor.—Your kind request on p. 658 was duly read by me, and I beg to be ex-

cused for not replying sooner. I have been very busy; but, better late than never.

Permit me to give my views on the subject, without any criticism of the views of others. I only wish to state the matter as I see it. The proof of the pudding is in the eating. The first improved hives that I saw my father use were Debauvoys movable-frame hives. These he discarded, because they had frames that were fitted in the hive-body without bee-space, and would not work when once coated with propolis. The next hives he used were "eke" hives, "ruches à hausses." These hives were made in sections about five or six inches high, two or three of which composed the brood-chamber. Additional ekes were supposed to secure the surplus. The eke hive is an old idea. In Reaumur's work, published in 1740, I find, on page 280, a description, with plate, of a hive divided not only horizontally, but vertically as well, the lower stories being each divisible into halves while the upper stories are shallow tiers of supers. Hamet, in the sixties, recommends the eke hive as the most convenient. It was in favor of this hive, as against the American ideas concerning the Langstroth invention of movable frames, that he took the field in opposition to my father, who was at that time trying to introduce American ideas into Europe. You know how well he succeeded.

Hamet claimed for the eke hive a greater ease in the making of divisions, or in uniting colonies, a greater facility to renew the comb by removing part of the brood-ekes, and a greater result in removing the surplus honey.

In practice, when comparing this hive with the movable-frame hive in one piece, we found:

1. The movable-frame hive, such as the Jumbo, which is nearest to our choice, enables the apiarist to enlarge the hive, one comb at a time, from the very smallest space a colony can possibly fill and keep warm, up to the largest laying capacity of the best queens. It is useless for us to seek a more gradual increase of space than can be given with such a hive and a dummy.

2. In the full-depth movable-frame hive the queen has the greatest possible chance to develop her fertility. All of you who have examined combs of brood have seen that the queen lays eggs in a circle, hardly ever missing a cell, especially if young and vigorous. When she lays in a shallow frame, five to seven inches high, her laying is less regular, because at each round she comes upon the wood, at the top and at the bottom. Time is money with you and me; time is honey with the bees. If the queen is delayed, her eggs drop to the floor like so many ripe fruits, for she can not hold them during the best period of laying, and the time that she wastes in hunting for cells is for ever lost. The damage is less in a deep eke, because the circle that she makes is larger than in a five-inch body. But with a seven or eight inch body you can not enlarge gradually your breeding-room. You may have it single or double. Single, it is too little; double,

it is too large. It is true that you may have recourse to Dr. Miller's method, reduce the brood-chamber again when the crop comes; but that is an increase of manipulations that does not please me. With a very shallow eke, or divisible brood-chamber in several pieces, say three pieces, five inches each, you have your breeding-space cut into a number of apartments. Such were the ekes my father used. We found in practice that the bees often would desert one of them entirely; sometimes it was the lower story; and when we thought we had a strong colony we found all of a sudden that the bottom tier was empty. The queen, finding all the stories equally shallow, would just as readily breed in the upper as in the lower—a thing she rarely does with our deep brood-chamber.

These ekes were not movable-frame hives. But I can not see that there would be any gain in using thirty shallow frames in place of ten deep ones, or even twenty instead of ten. True, it is held that we can handle hives instead of frames; but I can see no chance of handling only hives, when hunting for a queen, when looking for queen-cells, when looking for brood, or for diseased brood, or, in fact, for two-thirds of the necessary manipulations. We must have frames if we wish to keep at the head of the procession; we must still have hives that may be taken to pieces "like a puppet-show" (Hamet), and with the horizontally divisible hives we have twice or three times the number of frames to handle that the original Langstroth idea gave us.

For winter we have found, time and again, that a small colony will winter far better in five frames ten inches deep than in ten frames five inches deep. I have no doubt that dozens of instances may be given me where shallow hives have wintered well, over and over; but I nevertheless hold, for I have tested it, that a shallow hive runs more risks than a fairly deep one. The nearer we can get our brood-nest to the shape of a ball, the better will the cluster winter, for that cluster is naturally made in the shape of a ball. All who have examined the bees in cool or cold weather have noticed it.

If I have a brood-chamber with deep combs, I can enlarge the room of a small colony one frame at a time, two frames if I see fit. But at any rate I need not, unless I wish to do so, increase it faster than a tenth of its ultimate full capacity. If I use a divisible brood-chamber I must increase it by doubling its capacity, or at the very least add a half to its size.

Before we make any radical changes in our methods of bee culture, let us bear in mind what has been repeated over and over, by leading writers: It is because of the Langstroth invention that American bee-keeping has found itself so very far ahead of other countries.

Hamilton, Ill.

[Mr. Dadant brings forcibly to the front one argument that I do not remember he has ever advanced, or any one else, quite so

strongly; and that is, that the instinct of the queen is to lay in the form of a circle. When she finds that this circle is broken up by bridges or gulfs she hesitates, loses time, and skips cells. As her time is the bee-keeper's time, therefore, according to Mr. Dadant, there is a distinct loss. This is an interesting development of this discussion, and we shall be glad to hear from our subscribers, particularly those who are the users of the split-up or double brood-chambers.

The editor takes no sides in this discussion; in fact, he is "on the fence," and has been for years—candidly, not knowing which side has the best of the argument. It may be that we shall have to reduce the whole discussion to the point that localities, circumstances, and the man, will have to decide this interesting question.—Ed.]

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## AN ANCIENT BEE DEMONSTRATION.

### Give Honor to whom Honor is Due.

BY D. M. M.

Your excellent article, Feb. 15, with the admirable accompanying illustrations, should do an immense good in showing a way in which a knowledge of bees and their produce can be brought home to the general public. The more extensively the virtues of honey are spread broadcast through the land the better; and I know no more efficient plan for disseminating this knowledge than open-air demonstrations with live bees. Your reference on page 201 gives honor where it is due; but I write you now to show that it is no modern invention, as it has been practiced in this country for over two hundred years at least.

Away back in August, 1678, an open-air demonstration took place in the Royal Gardens, St. James' Park, London, before King Charles II. and many of his courtiers, among them being many noble and titled ladies. The demonstrator in this case was Moses Rusden, apothecary, and bee-master to the King's Most Excellent Majesty (to give him his full designation, as recorded on the title-page of his book), and the exhibition was a most decided success. Soon after, bee-keeping became all the rage in high quarters. The hives used were of the Gedde type, the first genuine departure from straw hives, and undoubtedly the progenitor of all our modern hives. They were in some cases made "transparent." Mewe, their inventor, says, "A gentleman in Pliny's time endeavored to make their works transparent. I tried, and finished the essay to the satisfaction of myself and others. Every time I view them I see something new. They serve to give me an account of the daily income and expenditure or their negotiations, so that, with half an hour after dinner or supper I know what hath been done all day." Among others who observed bees in these hives was Sir Christopher Wren.

Rusden claims for them in particular that they enabled him to secure "right virgin



honey." and he seems to have had something like a two-pound section, because we are informed he supplied the king with combs of this pure honey measuring 8 inches by 5. Further, he advertised that he kept samples of this comb honey all August and September at his house, Bowling Alley, Westminster. I think I may, therefore, claim for Rusden that he was the first royal bee-master, the first public demonstrator, and the first to advertise pure comb honey.

His ideas on some points, however, were peculiar. He believed every colony was headed by a *king*, and he pictures him in one illustration with a crown on his head. Under him, and carrying out his royal commands, were duces, or leaders, who controlled the plebs, or common workers. Without their king they die out, because they can not breed. Reviving an exploded theory of Virgil's he believed bees gathered "animable matter" from the flowers, into which, when placed in the cells, the king ejects sperm, whence come the young bees. The drone he viewed as a "redundancy of nature," which was of no use unless he might care for the young brood when bees were out collecting nectar. All the same, Rusden had a high opinion of the bee. "As honey excels all other things in sweetness, so doth the bees other insects in art, wisdom, forethought, industry, valor, and loyalty. They are excellent chemists, incomparable architects, and indefatigable workers. Their laws are steady and inviolable, and they govern with prudence, foresight, courage, and fidelity."

Banff, Scotland.

#### WHERE IS THE HONEY MARKET WITH THE BEE-KEEPER?

The United States Census shows that, where there are the Largest Number of Bee-keepers, there is where the Most Honey is Consumed; a Refutation of the Oft-repeated Statement, the Multiplying of Bee-keepers Decreases the Demand for Honey.

BY B. S. K. BENNETT.

Of much interest is the article by George Shiber, page 729, "What is to Blame for the Present State of the Honey Market?" and his sound remedy of bee shows and advertising.

The Root Company is doing more good in this line than most bee-keepers will admit; in fact, many condemn the making of bee-keepers. Why? Have we too much honey? The census gives the annual production at 61,196,160 pounds; the population at 76,303,387—or about  $\frac{3}{4}$  of a pound per capita. Are not new bee-keepers most enthusiastic and great advertisers of honey? We all know that an old bee-keeper rarely speaks of honey, rarer eats it, and is first to suggest its being mixed by dealers.

The United States census figures prove to me that the bee-keeper makes the honey market; that where there are many bee-keepers there the most honey is consumed.

Dividing the United States with a line North and South through Kansas City we find the Eastern half, with a population of 63,803,000, produces 2100 cars of honey, or  $\frac{3}{8}$  lb. per capita, while the Western half, with a much vaster honey floral territory, and 12,500,000 population, produces 790 cars, or 1 lb. per capita. Still the Eastern half is the market for Western honey. Why? Is it not the advertising given the industry by a large number of bee-keepers? Some may say the market is made by demand of greater population.

The States of low production are Massachusetts, with  $2\frac{1}{4}$  million people; she produces  $\frac{3}{8}$  lb. per capita; Rhode Island,  $\frac{1}{2}$  million people,  $\frac{1}{4}$  lb.; Oklahoma,  $\frac{1}{2}$  lb.; North Dakota,  $\frac{1}{10}$  lb., and District of Columbia  $\frac{1}{8}$  lb. These States are few in bees and bee-keepers, and are not receivers of honey, excepting possibly Boston, Mass. Does population make the honey market?

The five eastern States of large production are Tennessee, producing 170 cars of honey; Missouri, 151; Illinois, 135; Kentucky, 130; Iowa, 120. These have an average of 40,000 bee-keepers to the State; and while the production is 1 lb. per capita they are consumers of much Western honey.

Comparing three States of equal production, 100 cars each, for Ohio, Michigan, and Alabama, whose population is 4 million,  $2\frac{3}{4}$  million, and 2 million, we find that Ohio has the largest number of bee-keepers, and her cities furnish the best market for Western honey. In fact, Ohio is the center of development of bees, bee-keepers, and market, of commercial honey-producing, started less than 35 years ago by GLEANINGS, that educator of amateurs.

Summing the States up in another way we find six western States with a population of 3 million, producing 4 pounds per capita; 13 eastern States with 23 million people, 1 pound per capita; 28 States of 45 million people,  $\frac{3}{10}$  lb., and 5 States of 6 million people,  $\frac{3}{10}$  lb. per capita. The six western States mentioned above are California, producing  $3\frac{1}{2}$  lbs.; Nevada, 4 lbs.; Utah, 5; Colorado, 3; Arizona, 8; Texas,  $1\frac{1}{2}$  per capita, or to each person a year.

Texas is one of the new States in honey-making, yet has 60,043 bee-keepers, ranking first; is first also in production, and, from all reports, is a large consumer, buying honey from California, Arizona, Colorado, and other States. Five eastern States of large honey-production leave one bee-keeper to each 70 people, while 5 far eastern States have one bee-keeper to each 1500 people. Which eat the most honey?

In conclusion I would say, don't fear over-production yet awhile. Let each bee-keeper entuse his neighbor, and get him into the business. What we need most is enough honey so that we don't run short when we do create a market; young bee-keepers to improve the *quality* of the product; and the surplus? When there is a *large surplus* it will take care of itself by finding its way in to the hand of speculators and foreign ship-

pers. We hope for much more; but let us first build the foundation, *more honey*.

Census figures show less than one pound of honey a year for each person in the United States; that where the most bee-keepers are, there the most honey is produced and eaten; that dense population does not demand honey, and that the United States sugar-factories produce 20 pounds of sugar a year to each person, and are still building more sugar-factories.

Los Angeles, Cal.

they would not attack nuclei unless attracted by outside sweets. However, in my future dealings with them I shall adopt the advice, "Trust not the horse, O Trojans!"  
Zanesville, Ohio.

### HOFFMAN FRAMES.

Can the Slats of the Fence Separator be Spaced Further Apart? Bees that Work on Red Clover.

BY C. D. FARRAR.

During the past few years I have noted with considerable interest the controversy over the advantages and disadvantages of the Hoffman frame. My own experience with them has been confined to the past three seasons; and, although our bees collect a large amount of propolis, I should never once think of again using the unspaced frames. There are one or two points about them which, as ordinarily used, I consider great drawbacks, but defects that are easily remedied.

The first and (with me) the most important is where the two outside faces of the outside combs allow so little bee-space between them and the sides of the hive and follower. This space, I find by the use of observatory hives, to be just enough for a scant bee-space; consequently the queen rarely lays on the two outside surfaces; and the space between the top-bar and side of hive is so narrow that the bees are quite inclined to close the space with glue.

Now, I find that a good plentiful outside wall of bees is most essential for the best welfare of the colony, as well as for completing the outside row of sections. Here on these outside surfaces the bees have stored several pounds of white honey, which with loose frames would have been well filled with brood. My experience has been that, in our climate with its cool nights, bees can not rear brood where a single layer of bees is the only protection. Now this trouble can be obviated by simply tacking a narrow strip of section, say  $\frac{3}{4}$  inch wide by three long on the upper inside corner of the side of the hive where the spacer of the Hoffman frame comes in contact with the side of the hive, and using a follower  $\frac{3}{4}$  inch thick with a similar piece of section tacked where it comes against the frame, and then using two super springs in the space between the follower and side of hive where it comes in contact with the frame. While working about a hive I always stand upon the same side—that is, with my right hand nearest the entrance. So I have the strip tacked on the far side of the hive with follower next to me. I have all hives face the southeast so as to bring the single wall of the hive where the sun will strike it early, thus sending the bees much earlier to the fields.

Another point about which I am particular is to have the side of super which contains the springs come over the follower in the hive, as every bee-keeper well knows that

### BLACK ANTS.

How to Protect Weak Nuclei.

BY E. W. PEIRCE.

The article by Mr. O. O. Poppleton, on Florida ants, Feb. 1, recalls some experience I had with ants last season. In feeding up some nuclei the syrup was placed in an empty super over the bees. As the super was a little out of true, quite a crack was left between it and the hive-body. Through carelessness, also a little syrup was spilled on the ground, which soon attracted a multitude of large black ants. These, having licked up the syrup, returned with re-enforcements, climbed up the sides of the hives, dodged through the cracks, and eventually sneaked in at the entrances.

As ants seem not to be accounted a serious enemy of bees here in the North, I was at first disposed to look upon the matter with some degree of indifference; but when I began to realize that A bore to B about the ratio of 16 to 1, and that the latter, though offering a noble resistance, could not long endure against such odds, I bethought myself of an investigation. An examination revealed the fact that not only had the ants left the bees paralyzed with hunger and fear, but, not content with rifling them of their stores, were feeding upon them bodily, as attested by heads and bits of wings deposited in the lids and corners of the hives.

On account of the number of ant-harboring cavities in the old trees of the orchard in which my little apiary is located it was found impracticable to destroy the ants in their nests. The experiment was made of pouring kerosene about the hives, but this proved of no avail. Finally the invaders were circumvented by mounting the hives on improvised scaffolds with spikes for legs, each spike being immersed in a tin-can lid kept filled with kerosene and water. After the nuclei became strong enough to defend themselves they were again set down on their brick foundations.

These ants must be fully as large as those described by Mr. Poppleton, and, like them, "love darkness rather than light, because their deeds are evil."

They, too, have "powerful jaws"—at least the one that took occasion to explore the interior of my nether apparel.

So far as my experience goes, these ants never molest full colonies of bees. Possibly

bees will work much sooner over the brood than at one side.

With this arrangement I have no difficulty in removing the follower by simply removing the springs with a good screwdriver, and loosening the follower with a one-inch chisel.

I often wish the top-bar of the frame were not quite so thick; for, the nearer you can get the section boxes to the brood-nest, the easier it is to get the bees to occupy them. However, there is little trouble in this respect since the advent of bait combs.

I find that warmth is the great essential in the production of comb honey, and that, by using a sheet of burlap over the frames or super, and placing upon this a cushion some three inches in thickness, filled with dry leaves and planer-shavings (as chaff contains too much dust and weed and grass seed), I retain in this way the warmth of the hive, thus enabling the bees to breed much faster and draw more comb than they otherwise could. In fact, this cushion business is the very best thing you can use when hiving a swarm, as it protects the heated bees from the hot sun, and at the same time prevents any direct upward draft, which, I feel confident, any swarm of bees detests. In fact, I began keeping bees in 1879, and have kept them a great part of the time since, and have always followed this method, and never had a swarm come out until this last season, when I tried a few swarms with a single cover and shade-board, and they almost invariably swarmed out, either within an hour or two or the next day, when, upon using the burlap and cushion, upon rehiving them I had no further trouble.

I have never used a frame of brood in hiving before; but without the cushion this season, even this would not always hold them.

The one trouble with this arrangement is that the bees can not seal the super-case to the hive, so a driving rain sometimes beats into the hive; but this moisture seems to be used at once for breeding purposes. Could not the slats of the fence separator be placed a trifle further apart to give freer access to each section, without the surface of the combs being built irregular, as I find many of the spaces which they evidently consider too narrow completely filled with propolis? Such openings I shall rasp out a little wider than the standard distance, and thus prove to my satisfaction what the result will be.

This free communication which the fence separator allows is certainly a great improvement.

During the summer of 1902 I received an Italian queen from The A. I. Root Co.; and, although not a warranted red-clover queen, eight of the twenty-three colonies which I now have of this stock were working finely on second-growth red clover this past season. This is the first time I have ever seen a honey-bee on a red-clover blossom.

Lewiston, Me.

[We have tried tacking something on the side of the hive to provide the necessary half bee-space, which, in connection with the widen-

ed end of the frame furnishing the other half bee-space, makes a full bee-space. But extended experience leads us to feel that we, at least, do not want any thing of that kind. The frames should be tightly squeezed together—as tight as possible—then the follower and the whole set of frames should be placed exactly in the center of the hive. This can be very readily done with a hive-tool, leaving a full bee-space on each side of each outside frame.

I should like to place the strongest emphasis possible on the value of top protection against both heat and cold. I verily believe the time is coming when not only the top but the sides of all comb-honey supers will be protected by an extra shell or wall, and in addition some form of packing between.

We know ourselves how it feels to be under a low shed with a single thickness of boards for a roof, on a hot day—how there will seem to be a pressure of heat on the crown of the head; but if that roof is made double, with an air-space, how much more comfortable!

It would not be practicable, as we have learned by experience, to place the slats in the fence further apart, as you suggest. Better not increase the width of the opening or you will be sure to regret it. Wide openings cause a ridgy or washboard effect on the face of the comb honey. The slats should be far enough apart to allow worker bees to pass between and no more. If too close the bees will gnaw at the openings; and when they *once get started* to gnawing they will ruin the fence.

Your report in regard to the red-clover bees is only a sample of many that we get. I hesitated about giving it here in the reading-columns, as it savors too much of advertising; but there are many who question whether the honey-bee, no matter what the strain, ever gets any honey from red clover.

A great deal depends on the locality, much on the strain of bees, and every thing on the character of the season, whether bees will work on red clover or not. When we are asked whether we will guarantee that our strain will work on red clover, we always reply in the negative. All we can honestly say is that they will work on red clover if any strain will; and even then only when conditions are favorable.—ED.]

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## THE SIZE OF SECTIONS.

Please the Public and your Fortune is Made.

BY F. B. RICHARDSON.

Mr. E. R. Root wonders on page 277 why there has not been more of a demand for the 1½ square plain section. One great reason in Massachusetts, so far as I have been able to learn, is the "eye deception;" that is, people think they are getting more for their money when they buy a 4×5 section, because they *see* a greater surface. You know the demand of the times is "something for nothing," and buyers of honey think (I

am informed by sellers) that they are getting that very thing—something for nothing—when they buy a 4×5 section, because they actually see more of their goods. It seems to bee-keepers a foolish idea; but to the store-keeper it is a stern reality, that his 4×5 sections are cleaned out before his 4½ square begin to sell. One man told me that, if there was a section made that showed 5×8 or so, and weighed only 14 oz., it would be preferred by the generality of people. Very few people in the city or in large villages know much about the weight of a section of honey. Of course, there are people who do, but they are few and far between. If a section looks large it is all they ask, and, strange as it may seem, a good many people think they are being cheated to pay a few cents more for a full pound of chunk honey than to buy a section containing sometimes one or two ounces less than a pound. To me it shows lack of care in providing; but in a city, so few housekeepers know the kind or weight of any thing that is served on their tables that it is hard, so far as they are concerned, to reach or convince them.

Of course, the store-keeper wants what sells best; the wholesaler wants what sells best, and the bee-keeper wants to produce what sells best in his market.

At a recent bee meeting held in Worcester, Mass., by the Worcester County Bee-keepers' Association, there were two sections of honey that were examined by quite a few people, one a 4½×4½, the other a 4×5. Almost to a man (also woman) the 4×5 was pronounced heavier; but actual weight showed little if any difference. This is, of course, only one example; but it goes to prove what we are all aiming at—"please the public and your fortune is made."

West Medford, Mass.

[If very few, as you say (and I think you are right), know the weight of a section, much less associate the idea of a pound with a box of honey, then there is and can be no deception. If an oblong package is more popular than a square one, furnish what is called for.—Ed.]

## MEASURING BEES' TONGUES.

### A Simple and Automatic Device for that Purpose.

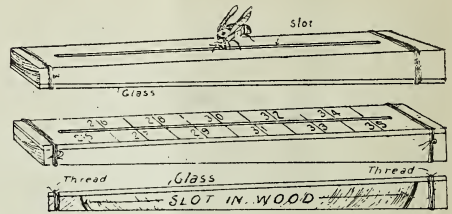
BY F. A. POWERS.

I have an instrument for measuring the length of bees' tongues which is a success, as it is comparatively accurate and takes but little time to use it. The idea is original with me, but I do not know whether the principle has been used before or not.

I take a piece of fine-grained wood, about 6 inches long, 1 inch wide, ½ inch thick at one end, and ⅜ at the other end, and make a saw-kerf through it, through the thin way of the block. The saw-kerf is ⅛ inch wide,

very smooth, and extends the length of the block except ¼ inch at each end. The slot should be made with a small circular saw.

Take a piece of window glass, 6×1, and put the crowning side next the block, and tie it tightly with linen thread around the glass and block at each end past the slot in



the block. But before tying on the glass measure very accurately the thickness of the block near the thin end, and make a mark across the block just where it is ⅜ inch thick, also make a mark across it near the thick end where it is ⅞ inch thick; now divide the space between these marks into 10 equal spaces, making marks across the block with the point of a knife. Number the marks with a lead-pencil from 25 to 35, then tie the glass on over the marks and figures as described. Now put it in a vessel with some beeswax and set it on the stove and melt the wax, and let it soak into the wood 15 minutes or so. After you have drained the wax out of the groove, scrape the remaining wax out of it with a stick and it is ready for use.

To use it, fill the groove with honey; place it on the flight-board of a hive whose bees' tongues you wish to measure (there should be but little or no honey coming in at the time). The bees will eat the honey out of the groove as far as they can reach, in half an hour or so. You can then take the instrument, and, by looking at the glass side, you can see how far the bees have licked the honey off the glass, and the mark at this point will indicate the length of the tongue in 100ths of an inch.

Of course, the bee's jaws will go into the groove some distance, I think about ⅜ inch; but you can get the relative length of the tongues, which is good enough for practical purposes.

Parma, Idaho.

F. A. POWERS.

[A device for measuring bees' tongues that was quite similar to this was illustrated a couple of years ago.—Ed.]

## BUILDING COMBS UPWARD.

Did you people ever have or hear of a swarm of bees starting to build combs from the bottom up? They did not stand up very well. A neighbor has such a colony.

Apollo, Pa.

H. R. RICHARDS.

[Yes, bees will sometimes do this, but when they can get a good point of attachment overhead they prefer it.—Ed.]

**THE FERRIS SYSTEM OF PRODUCING COMB HONEY, AND SWARM CONTROL.**

**The Hive-handling Machine and its Uses.**

BY A. K. FERRIS.

All will agree, no doubt, that the exceedingly strong colonies, in large hives, produce more honey proportionately than the small colonies in smaller hives; but the question that always arises with large hives is the hard labor in handling them; so in using the twelve and fourteen frame hive the question of lifting and operating them is a serious one when considered without proper aid; but with the device described in the following, and illustrated in Figs. 13, 15, 16, 17, it is mere pleasure to handle these extra-large colonies.



FIG. 13.—HIVE-HANDLING MACHINE; FRONT VIEW, AS READY TO BE SHOVED UP TO A HIVE.

When it becomes necessary to manipulate the brood-nest of a four, five, or six story colony without help it is enough to make one sigh; but with this device you simply roll it up, lock the wheels by stepping on the cogwheel brake (see Fig. 17), shut the gate, blow a little smoke in the entrance, and begin lifting.

When the weight of the stores above is removed, pry the bottom one off and smoke them a little more, and then hoist them out of the way and leave them hoisted while you are manipulating. When through simply loosen

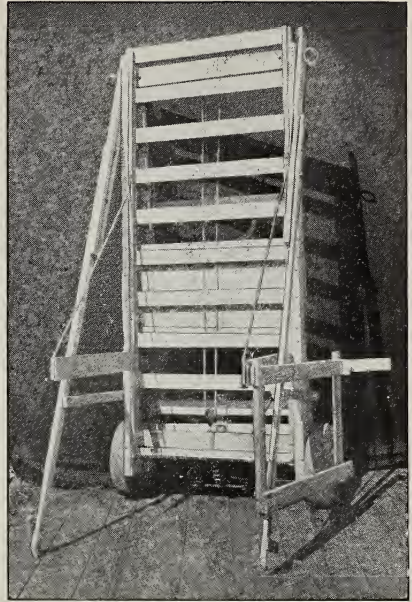


FIG. 13.—ANOTHER FRONT VIEW.

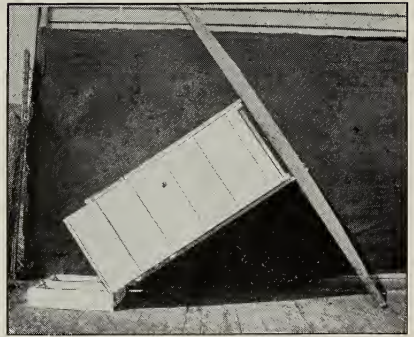


FIG. 14.—HIVE-TIPPING DEVICE AS USED FOR EXAMINING BROOD-NEST FOR QUEEN-CELLS.

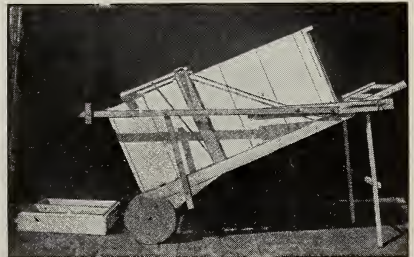


FIG. 15.—HIVE-HANDLING MACHINE AS USED FOR EXAMINING BROOD-NEST FOR QUEEN-CELLS.

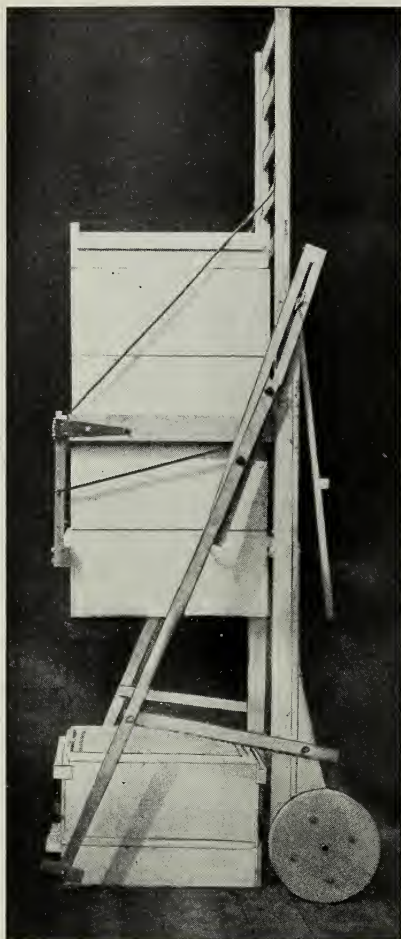


FIG. 16.—HIVE-HANDLING MACHINE IN POSITION FOR BROOD-NEST MANIPULATION; RIGHT VIEW.

the crank-catch, and let the stories gently down on the bottom story, brushing the bees off so as not to crush them. In examining for queen-cells I have illustrated two devices in operation—see Figs. 14 and 15, which need little comment.

The hive-tipping device is easily made, quickly adjusted, and put on to any number of stories up to six. It holds them all in place by spring pressure while being tipped back, so that, with a little smoke, the entire brood-nest can be viewed for cells in a few moments, as the queen is confined to the lower story.

With the hive-handling machine the hive can be laid down nearly flat if desired, as seen in Fig. 15.

When we desire to take off honey, all we need to do is to distribute our bee-escape boards, then take our machine and proceed to lift the stories you wish to take off; slip

in the bee-escape board, and then the next day, rain or shine, you can go along with your truck or wheelbarrow, and roll in the honey. This makes bee-keeping to the strong or weak a pleasant occupation rather than a task.

#### THE HIVE-HANDLING MACHINE AND SWARM CONTROL.

In the preceding subjects we have considered swarm prevention, and noted some of the fundamental causes. By prevention of these causes, swarm control can be effected without the loss of honey; therefore, whenever possible, so operate your colonies as to prevent the development of the swarming fever. This is accomplished by the foregoing method in making the brood-nest extend the whole length of the hive at the commencement of and during the flow, so making them contented, and it even stimulates them to build comb.

In this method the comb honey is placed in the center of the hive, and each story is slipped under the last one until the flow is about over, when a story of extracting-combs is placed above to catch the overflow after

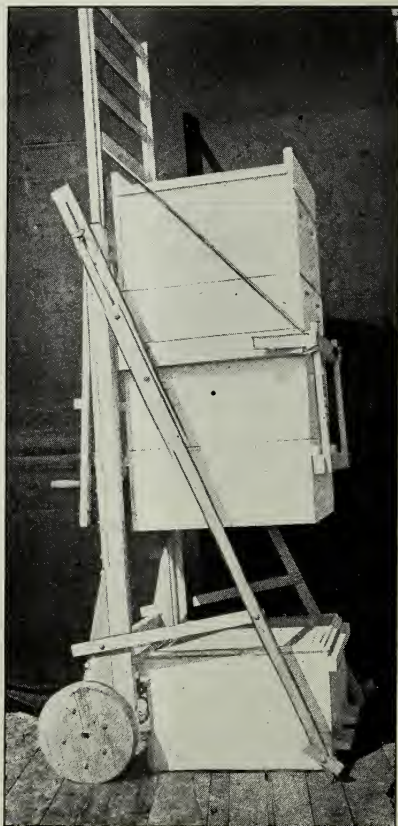


FIG. 16; LEFT VIEW.



FIG. 17.—MACHINE AS USED IN THE SIBBALD METHOD OF SWARM CONTROL.

the sections are full. This does away with half-filled sections, and secures through these devices practically all fancy comb honey, and the amount that would be otherwise is in the extracted form.

With bees of a decided temperament to swarm, or when conditions are especially favorable to induce it, such as excessive heat or some other known or unknown cause, it often becomes very necessary to have some easy way to control them absolutely, even after the fever has been already contracted.

For this alone the hive-handling machine will pay for itself in a very short time. By going through the yard and tipping the hives as shown in Figs. 14 and 15, we are able to examine 25 or more five or six story colonies an hour, without other help. When one is found preparing to swarm, simply remove the brood-nest and place it on another bottom, as shown in Figs. 16 and 17. If the colony has contracted the fever for lack of room, simply give it a story prepared as described in Fig. 11, using a clean comb of brood on either side of the attachment, and by keeping some frames of foundation in the brood-nest these will always be available; or a story of frames with starters or extracting-combs can be given instead, and one frame of brood from the brood-nest. In this way the large colony can not swarm, as they have no queen and but little brood, and soon

lose the fever. The large hive is returned so that it looks just the same as before. All the field-bees, together with quite a large number of the nurse-bees and comb-builders, will return; and as there is practically no nursing brood they soon become fielders. On the other hand, the brood-nest and queen being deprived of all fielders, and having no honey coming in, soon lose the swarm fever. In a week or ten days this story can be returned to its old place with both parts cured. Only the cells on the combs of brood in the large hive must be torn down, as they will have them on account of being queenless. The bees in the brood-nest division will have torn down their cells, as they have already concluded that, as no honey is coming in, it is no time to swarm.

This has been described by others; but as I consider it a very effective way of destroying the fever after it has once been contracted, and it is so easily accomplished by this device, I feel it deserves being mentioned for those who have not happened to know it.



FIG. 18.—MACHINE AS USED IN PUTTING ON BEE-ESCAPE BOARDS.

The shook-swarm method will also accomplish the object; but with such large colonies as we secure by this system it is very tedious, and costs the loss of considerable honey.

## HIVE-LIFTING DEVICES.

### A Simple and Cheap Apparatus.

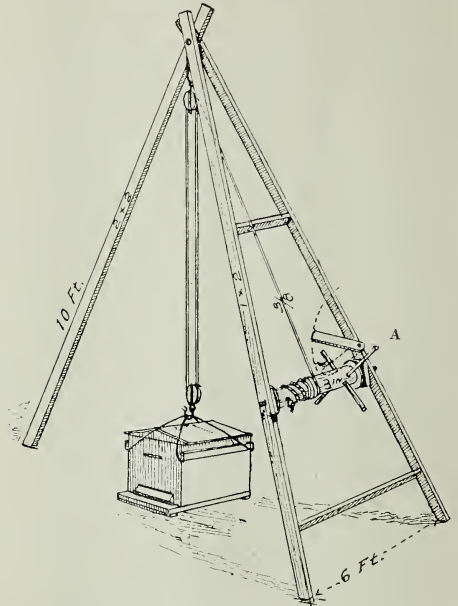
BY JOHN BAILEY.

I enclose a sketch of a hive-lifter which I use with great satisfaction in my apiary. It is a great labor-saving apparatus—away ahead of lifting a hive off and setting it on the ground to do the work with it that is necessary.

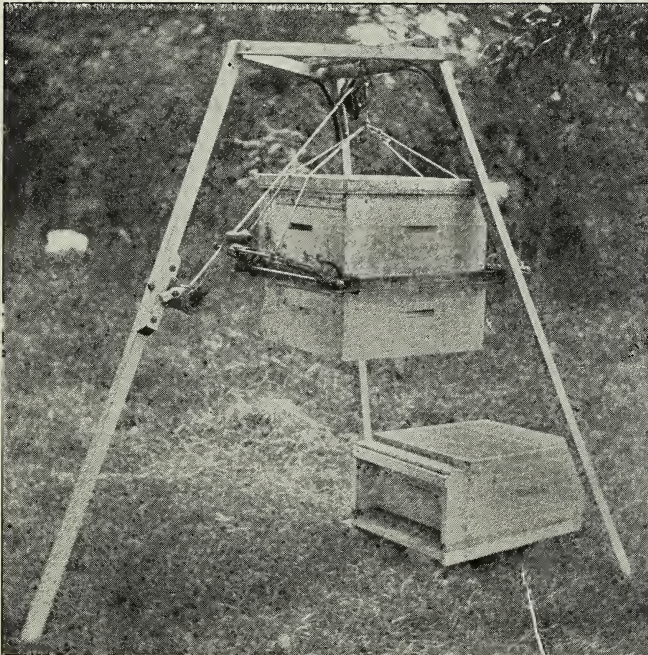
It is simple in construction, and can be made with ease by almost anybody. It is made of two pieces of 1×2 pine and one piece of 2×2 pine, all 10 ft. long, bolted together at the top with a 2×2 piece in the center, which admits of its moving out or in to regulate height, or for moving a hive back or forward. The two pieces of 1×2 are strapped together by a piece of 1×2 above, and below a three-inch roller, as shown in the sketch. The roller is about 3 ft. from the ground, and is 4 ft. long with two pieces of  $\frac{3}{4}$  stuff rounded put through from opposite sides to act as handles for turning the roller. A clevis hangs from the bolt at top, and on it is hooked a double-reef block and tackle, with the end of the rope securely fasten-

ed to the roller. Use two-inch blocks and  $\frac{3}{4}$  rope. The gudgeons of the roller are  $\frac{3}{4}$  iron.

Desiring to lift a hive, place the lifter over it to the height desired (regulate the height



BAILEY'S HIVE-LIFTING DEVICE.



R. F. HOLTERMANN'S SUPER-LIFTING DEVICE.

by moving the 2×2 leg in or out), and put a piece of rope over the hand-holds and draw the rope together on top. Providing you have a hive with either one or two supers on, you fix your rope with a loop in one end big enough to slip over the top of the hive, and put a hook on the other end, and also one about the center, between the end and the loop. Put the loop over the bottom hive, then run the other end over the top of the supers and hook into the loop on the other side. If you have only one super, use the middle hook; if two supers, use the end hook, and so on. You can put in as many hooks as you like, according to the number of supers on the hive. The whole cost of the hive-lifter is from \$2.00 to \$3.00. Hook in your



block and turn the roller, thereby raising the hive. When the hive is up a sufficient height, drop in the anchor shown in the sketch at A, which holds the roller from turning. The hive is then hung up and you can examine it for queen-cells from the bottom, or put in a super, or do any thing you desire, without help. When you have finished your examination, raise out the anchor and lower the hive to place. If you desire to move a hive a piece from its former position, lift the 2x2 leg from the ground and carry it either forward or back, as desired, and the hive will move with it.

I consider this apparatus a great labor-saver, as one man performs the operation much easier and better than by any other way I know of.

The lifter shown is of sufficient strength to lift any weight to 400 lbs. Mine has been subjected to greater weight. Care should be taken to have material free from knots of any size, especially in the legs.

Bracebridge, Ont.

#### ANOTHER SUPER-LIFTING DEVICE.

It is strange how often several men having an apparent connection of thought will have an idea at about the same time. Owing to the back-breaking work of lifting supers, I decided, two years ago, to have a hive-lifter made, with the result as shown in the illustration. A year ago last May I paid a visit to Mr. F. J. Miller, Vice-pres. Ontario Beekeepers' Association. Just as I was leaving, Mr. Miller said to me, "I have another idea" (he had shown me several labor-saving devices) "but it will be of no interest to you." So I went to his beehouse and here he had a device for raising supers from the brood-chamber for separating and tilting up the upper half of a Heddon divisible brood-chamber. So I told him

I was very much interested and what my ideas were. That such labor-saving devices will come into much more general use I have no doubt.

Brantford, Ont. R. F. HOLTERMANN.

[Mr. Holtermann comes very near striking at the truth when he says he thinks that these labor-saving lifting-devices will come into more general use in the bee-yard. A good deal depends on the strength of the bee-keeper and the lay of the land where his



FIG. 1.—A SWARM THAT CLUSTERED ON A LIMB THIRTY FEET FROM THE GROUND.

hives are situated. A person, for example, who can lift a load in a stooping posture of fifty or one hundred pounds, without danger of straining his back, would probably not need any derrick. But not every one is built with the sinews of a giant; and we very often see workmen who have been crippled from overlifting, when a little intelligent application of common sense would have saved a lame back and not wasted any time either. As my old grandfather used to say, we boys needed to learn how to get the advantage of a load. In our last issue, G. M. Doolittle showed how to lift a whole super of combs without putting any strain on the back.

But here is a case where over half the hives have been tiered up three or four stories high, and we find it necessary to get into the brood-nest. How shall we manage? Nothing short of lifting the hives off one by one will permit of examination of the brood-nest unless we use a derrick to suspend the load at a convenient height while the brood-nest is being examined. While the Ferris derrick is the most expensive, it is apparently the most portable and the quickest to apply. The other devices here shown are cheaper, but I should suppose would require more time in setting up and getting ready for business.

Some of the old veterans may ridicule these lifting-appliances; but they should not forget that there are some men and a good many women who are physically incapable of doing any heavy work in the bee-yard

without some simple device of the kind here shown. It is to this class that these appliances will appeal.

Possibly some honey is yet to be taken off the hive, and probably a good deal of extracted. We should like to have those who have such honey to take off try one of these appliances and report what they think of it.

Mr. R. F. Holtermann is one of the most extensive bee-keepers on this continent. He is fully six feet tall, and capable of lifting with the average man; but if he finds that a machine enables him to do more and better work with less fatigue, some of the other veterans may well consider whether it may not be money in their pockets to join the crowd who have less of the giant strength at their command.—Ed.]



FIG. 2.—THE PARENT COLONY AFTER ALL QUEEN-CELLS BUT ONE ARE REMOVED.



FIG. 3.—AN ENLARGED VIEW OF QUEEN-CELLS; DRONE AND WORKER.

## A BEE EXPERT WHO TAKES CARE OF ALL THE BEES IN HIS VICINITY.

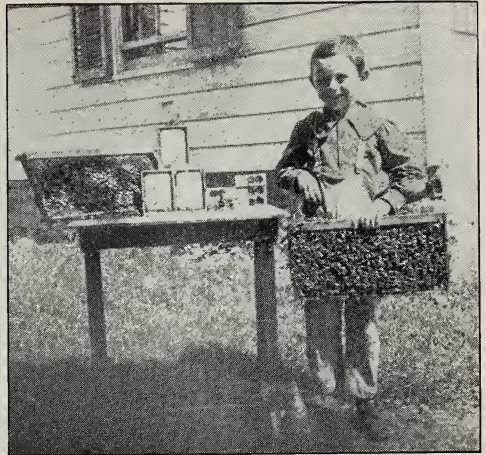
### A Prime Swarm from a Prime Swarm in the Same Year.

BY M. L. BREWER.

For a quarter of a century I have kept bees in a small way. My text books have been the A B C of Bee Culture, Cook's Manual, and GLEANINGS, with such side lines of study as came in my way. I use a hive somewhat similar to the Danzenbaker, which I make for myself and others, as I do a small supply business. I also use Hoffman frames, and for myself full sheets of wired foundation, thereby insuring straight worker combs as well as more rapid work of my colonies. All these have been worth more to me than I can tell. I usually have charge of most of the farmers' bees in a radius of five or six miles, they preferring to pay me rather than do the work themselves.

This year, May 28, I was called to hive a prime swarm after they had hung up thirty to forty feet on a limb all night. July 10 I was called back after being told swarm No. 1 had cast a swarm which also hung over night. It was my first experience of this kind, and I was anxious to know why. On examination I found they had made all due preparation, and it was all in the regular way. Is not this a little out of the ordinary, especially in a poor year? Their brood-nest was not complete by one side frame. I removed all queen-cells started, and put them back where they came from after smoking both them and the hive well; and now, July 18, all is still satisfactory.

I am always interested in the methods of the notables, especially on prevention of after-swarms and keeping down increase when not desired, and so have been working some while studying methods of others.



"WHO'S AFRAID?"

The camera and I are partners, and it will help me tell my method.

#### MY METHOD OF PREVENTING SWARMS.

June 25 our first prime swarm issued (I say *our*, for, like A. I. Root, I believe a good wife should have an equal share). After ignoring all low trees they clustered on a limb fully thirty feet from the ground. No. 1 shows conditions after the descent. No. 2 is a few hours after, when all queen-cells but one were removed, by which method we never had an after-swarm; and to prevent increase our method is to double back, which has worked for us whenever tried, keeping all working force gathering and storing honey. No. 3 shows something of what we found in No. 2—queen-cell in building, larval queen, and cell complete, with a drone and worker bee.

I have spent some time in farmers' institutes trying to show our farmers the value of bees as fertilizers, as well as honey-producers.

Philo, Ill.

[The idea of having one bee-expert for a locality is excellent. If this were done in more localities where there were small bee-keepers, especially of the farming class, the results would be much more satisfactory. Too many farmers have too many irons in the fire already to do some of their work well.—Ed.]

## TWO YOUNG BEE-KEEPERS

Who Have Started out Well in the Business.

BY G. BRUNDAGE.

I am sending you the photo of a young bee-keeper and queen-breeder, George Gregory Brundage, of Salisbury Mills, N. Y. He has helped his father in his apiary of 340 colonies for the past two years. He can cage



"I DON'T WANT TO HAVE MY PICTURE TAKEN, 'CAUSE I GOT A SWELLED EYE."



A BEE-KEEPER'S PART IN AN INDUSTRIAL PARADE.

queens and bees, and can pick up bees nearly as fast as a hen can pick up corn. We have two out-yards five miles from home, and it is very seldom that he does not go along and help do some light work at the out-yards. Ever since he could talk, if anybody asked him what kind of a man he was going to be he would always say, "A bee-

man;" and ask him how many bees he expected to keep he would nearly always say fifteen hundred; sometimes would get as high as eighteen hundred; so you see he intends to do something.

In the morning of the day his photo was taken he helped his papa cage some queens. While he was working that morning a bee



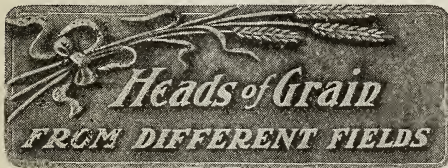
MOVING A LOAD OF BABY NUCLEI FROM ONE MATING-YARD TO ANOTHER. SEE EDITORIAL.

got up under his veil and stung him, but he did not run as Prof. Bigelow did at the convention in Jenkintown, June 26, when the stingless bees ran him off the stage, and he did run for sure; but instead of running you see him holding a frame with hundreds of live bees on it, and he seems to look happy, as he always is when working with bees. This boy is large for his age—not six years old; and I think if nothing happens to him he will be heard from later as one of New York's large bee-keepers. At the same time, George's little brother, J. Stephen Brundage, 3½ years old, had his photo taken. He, too, is a bee man, and comes into the home apiary of 200 colonies nearly every day.

Salisbury Mills, N. Y.

[GLEANINGS offers its congratulations to the little man who is not afraid to go among the bees and help papa. As an expression of our good will we are sending him a 1907 Root smoker that he is to have all for his own.

We especially admire the spirit in the young lad who aims at high things. While a small boy never comes up quite up to his own aspirations, yet show me the boy who does not aim high and I will show you a man who in after years never rises very high in the world. If the three-year-old boy can come up to the same proficiency of his older brother, there is a smoker awaiting him also.—Ed.]



#### AN INDUSTRIAL PARADE.

I am sending you under separate cover a picture of what we had in the industrial parade here on the Fourth—a wagonload of hives with smokers on top and Alley traps on back end, and two observatory hives. It did not pretend to be much of a float; but as there were a good many thousand strangers in town that day I thought it a good opportunity to call attention to this branch of our business. The picture does not do justice to the new wagon and team, which are making their first trip with the hives. Back of the rigs you catch a partial view of our store; third story is devoted to bee-supplies.

DuBois, Pa.

F. W. PROTHERO.

#### CAN A DRONE-LAYING QUEEN BECOME AGAIN A GOOD ONE?

The report of Mr. Whitney, p. 1239 of last year, would be more interesting could he prove that superseding had not taken place in the spring of 1905. This is possible only

when he has marked the queen (cutting off a wing); otherwise his story tells nothing at all. I ask, therefore, did Mr. W. mark the queen? and when was it that good brood again appeared in the hive? It is doubtless because the operations of June, 1903 and 1904, affected the queen strongly, forcing her to lay more eggs than a queen normally does; and it is no wonder that she became a drone-layer. But I doubt highly that the bright orange-colored fresh plump queen was the same he bought of A. I. R.

#### HIVING SWARMS WITH A LOOKING-GLASS.

It may be about ten years since the recipe of the looking-glass was given, and for the last five years I have always used the looking-glass when a swarm went out, and it is very much used in Switzerland, *always with the best success*—not that you can force the bees to settle anywhere you like, but at all events you can keep the swarm down, and it will settle much quicker than without that instrument. To perform this you take your place so that the swarm is between you and the sun, and with proper movements of the looking-glass you let fall the reflection of the sun downward on the swarm. I think this is the best means against absconding swarms if you come early enough.

Zurich, Switzerland.

DR. BRUNNICH.

[As the great majority of swarms that go out will settle, or at least 95 per cent of them, before going to the woods, it would be hard to believe that the looking-glass has any thing to do in causing them to alight; but when we spray water on the bees we put up a mechanical obstruction, making their flight laborious, and perhaps making the bees think it is raining. I have seen the looking-glass tried, but could never see it had any perceptible effect.—Ed.]

#### ITALIANIZING A LOCALITY.

I think it best to requeen every two years at least, as I have often left it to the bees, and lost lots of honey by the queen failing in the honey harvest. I keep Italians, buy some queens, and rear some. I do not keep a swarm of blacks long. I have Italianized my neighbors' bees just by keeping a good strain of Italians.

Roseville, Ohio.

H. B. TERRILL.

[It is true that, if one keeps nothing but pure Italian stock in his locality, that stock will soon yellow up the bees for a mile or two around.—Ed.]

#### CLOVER HAY FOR SMOKER FUEL.

I should like you to try well-dried clover hay as a fuel for a smoker. It need not be a fine quality—just so it is well cured. Be sure it is well lighted in the beginning. I should like your opinion of it. Cutting it as for chops is necessary before using it.

Washington, D. C.

W. W. CONNER.

[It undoubtedly would work well, but we prefer greasy waste, which can be got for the asking.—Ed.]

A PLAN FOR GETTING PLENTY OF CELLS ACCEPTED AND FINISHED WITHOUT DEQUEENING A COLONY OR BORROWING BEES.

This plan which I am about to describe does not stop the colony from storing honey nor interfere with the queen in any way. It is not necessary to have bees queenless for several hours to get them to accept prepared cells and build them out properly, as some claim. The plan is as follows: Having already fastened my empty cells in a frame I remove from its stand a good two-story colony with excluder on, and put in its place a bottom-board, then take the body of combs from over the excluder and put on this bottom, and put the cover on; then shake the bees from two or more combs from the brood-chamber in front, and let the bees run in (of course, be sure not to get the queen); then close the old colony by putting back the cover, and set behind, facing the opposite direction. You are now ready to go and put the jelly and larvæ in the cells; and by the time you do this, which takes only a few minutes, your bees are ready for the cells, which you slip into the center of this hive-body on the old stand. In two to four hours later you can go and put the brood-nest back in its old place and put the body with cells back over the excluder for the bees to finish. I usually give 20 cells to a colony treated thus, and they usually accept every one if properly prepared. With me this is by far the best and quickest way of getting plenty of fine cells of any plan I have ever tried.

Montgomery, Ala.

D. R. KEYES.

[I believe your plan will give good results.—ED.]

A FEW EXCELLENT RECIPES FOR MAKING CANDY.

Believing you will appreciate a good thing and another way to make a small demand for honey, I send you the two following candy recipes that are original with me. All I have let sample ours have pronounced it superior to almost any candy you buy, and it is easy to make.

TAFFY.

Granulated sugar, 3 cups. Extracted honey,  $\frac{3}{4}$  cup. Hot water,  $\frac{3}{4}$  cup. Boil all together until it "spins a thread" when dropped from a spoon, or some hardens until brittle when dropped in a cup of cold water. Pour into a greased vessel deep enough to hold; put in a spoonful of any preferred flavoring. Let it cool until one can handle. Pull until white. Here's a finer one:

HONEY NOUGAT.

Granulated sugar, 3 cups. Nut meats,  $1\frac{1}{2}$  cups. Any kind is good, but English or common walnuts and hickory are fine. Strained honey,  $\frac{3}{4}$  cup. Hot water,  $\frac{3}{4}$  cup. White of one egg, beaten stiff. Boil the sugar, honey, and water together until they make a rather hard ball when dropped in cold water; remove from the fire; pour in the beaten white of the egg, and beat briskly

with a silver fork. After beating awhile, pour in the nut meats and beat until it begins to get a hard creamy mass. Then pour into a buttered dish and let cool. You will have no trouble in giving this away if you can't eat it yourself.

LaDue, Mo.

Mrs. W. M. BURKE.

HOW TO TAKE CARE OF UNFINISHED SECTIONS.

At the close of the season, finding I had some unfinished sections on hand I got a small box with a sliding lid from the grocer's. I fixed this so that I could easily insert and place in it three or four sections, and close it so that only one bee at a time could enter it. This box I placed with the opening to the hive on the entrance-board, having removed the board so as to have the contracted entrance underneath. A little block of wood enabled me to contract the entrance so that sufficient room was given for ingress and egress to the hive, at the same time enabling the bees to go in and clean out the sections without being troubled by other bees. I placed the sections in the box at night, and the next evening found them all cleaned out as nice as could be, so that I have some excellent sections of empty comb ready for next season. Will not such a plan enable one to feed up any colony requiring help in the fall, without inciting stronger colonies to rob? You can thus give the benefit of the unfinished sections to the colonies most in need of such help.

REV. W. L. PALFORNON.

Mt. Brydges, Ont.

[Your plan is all right, but it would require some labor to attach a set of sections to an entrance in such a way that there would be communication between the receptacle for holding the sections and the hive.—ED.]

HOW TO MAKE A SWARM-CATCHER.

I have all my queens clipped; but occasionally I have a second swarm, and if they settle high up in some valuable fruit-tree I can get them without climbing or cutting the tree. To make a good swarm-catcher, get a small light pine box, 8×10 inches. Knock off two sides, and replace with wire cloth, which will make it still lighter. Fasten two small hinges to the top for a lid. Now get a light pole 18 ft. long; fasten the box to the end of the pole. Attach a short rubber band in such a way that it will tend to keep the cover closed. A stout cord should run from the lid over the top of the pole, and down to the bottom.

To use the swarm-catcher, push the box up to the swarm; pull the cord to raise the lid, and give the pole a quick push up against the limb. The bees will fall into the box. By releasing the cord the rubber band will close the box. Dump the bees in front of a hive; and if all the bees are not caught, repeat the operation.

I also have an 18-ft. pole with a hook on the end; and if bees persist in going back to the limb of the tree, I hook the pole over the limb and keep shaking until all come down and go into the hive with the swarm. I like this arrangement better than any other I have ever seen.

S. G. KILGORE.

London, Ohio.

#### THE ALEXANDER PLAN OF BUILDING UP WEAK COLONIES.

I wish to ask a question concerning the Alexander plan of setting weak colonies of bees over strong ones with a zinc excluder between, as spoken of by Q. A. Pearce, page 581. Does it require a zinc queen-excluder the full size of the hive, or will, say, a one-third size of hive do with a wood frame around it?

IRA SHOCKEY.

Long, W. Va.

[[The smaller pieces of zinc will probably do just as well.—Ed.]



#### CHAPTER XII.

It is now the 17th day of November; and as there has been no storm for the past five days the bee-hives are dry and nice for cellaring. Then the mercury stands at 40, which allows of taking the hives from the stands without any prying up, and thus disturbing the bees, as always is the case when the hives are frozen down, which will generally be the case if they are left out very late in the season. So I again call my partner of the home yard and in the queen-rearing business (he has no interest in the out-apiary) into service, as I did in setting out, as two can do the work of carrying the bees to and from the cellar much more easily than one, especially where there are cellar stairs to climb and go down, as is the case at this out-apiary. After seeing that the platforms in the cellar, on which the hives are to be piled, are all safe and in readiness, we go to No. 10 on row 3 to commence. And why do we commence there? Because we set the hives in the cellar in rotation, so that they may be set out in the same way. In this way hive No. 1, on row 1, is the last one to go in, and consequently the first one to be set out in the spring. If the reader will turn back to visit four he will see why it is always best to commence all work with the bees (but this setting in the cellar) at No. 1, row 1. And in no part of our work is this more true than in setting out in the spring, and the consequent first flight of the bees, as it puts each hive on the stand it occupied the year before, in such a way that there is little or no

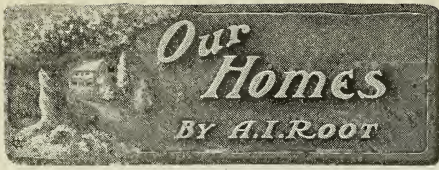
mixing of bees, and the carriers do not come in range of the flight of the bees from any hive, when they are going out in a rush for their first spring flight; nor are any of the later-carried-out colonies set down in front of another which is now in full flight.

If there is any thing which causes bees great annoyance, outside of careless manipulation, it is the putting of something right in line of their flight as they go to and from the entrances of their hives. It is well to be always on the alert in avoiding this, as much as possible, so we begin at hive No. 10 on row 3.

While Mr. Clark adjusts the carrying-rope under the cleats to the hive I carefully remove the galvanized entrance-protector from the front, thus exposing the whole mouse-guard, and then take hold of "my side" of the rope. We now start for the cellar, the hive swinging by the rope between us, and in this way the bees scarcely know that they are being moved. Arriving in the cellar, the hive is put on the first platform in the corner of the same, with the entrance toward the wall, and as close up to it as the three-inch projection of the bottom-board will allow, this being done to exclude the light from the entrance of the hive, as much as possible, as the farmer opens the doors and windows, and uses his cellar just the same in every way as he did before I had an out-apiary on his premises, no restrictions being placed upon him other than *his* vegetables and cellar require.

No. 9, on row 3, is next brought in and set on No. 10, when the same is done with No. 8, thus making each pile of hives three hives high, which is as high as heavy hives can be piled with any comfort. No. 7 is set on the next platform, immediately beside No. 10, but not so as to touch it; for did the piles touch, or were they all on one platform, then any jar on one hive would arouse all the colonies in the cellar, which is to be avoided if we would meet with the best success. By piling them as here given the most that can be aroused by the hitting, or any thing falling on one hive, will be three colonies. No. 6 is set on No. 7, and so on till all are in, when the work for the twelfth visit, and the last one for the year, is done, after picking up and storing away the galvanized entrances and giving a general glance over things to see that all is left in good shape for winter.

One or two of these visits might possibly be combined so as to make the whole number for the year only ten; but I doubt whether this would be good economy in the end. Just at present there seems to be a great desire on the part of some to make the visits to the out-apiary just as few as possible; which, undoubtedly, is the thing to do where a large number of colonies are to be worked in each out-apiary; but I would not consider it a wise thing to carry this to such an extent that a consequent decrease in the prospects of our success would be the result. There is such a thing as being penny wise and pound foolish.



For what glory is it, if, when ye be buffeted for your faults, ye shall take it patiently? but if, when ye do well, and suffer for it, ye take it patiently, this is acceptable with God.—I. PETER 2: 20.

These words of the apostle have been repeated so many times I fear they often fall on our ears without any particular meaning; but the real devoted follower of the Lord Jesus Christ will bring out the meaning if he strives earnestly to carry the spirit of it right along with him through all his daily life. Professing Christians, deacons in our churches, yes, and some of our ministers, fail or forget to make a practical application of these beautiful words, many times, when they are suddenly confronted by somebody or some *thing* that seems spiteful, malicious, and unkind. To illustrate what I mean, I wish to make a quotation from a recent issue of *The American Bee-keeper*:

At the recent meeting of the Pennsylvania Beekeepers' Association held at Jenkintown, Pa., one of the "exhibits" which created much amusement was an old man who went about introducing himself as "I am Blankety Branch" (we omit his real name) and seeming much surprised and disgusted if the recipient of the "honor" did not show due delight and adoration. His egotistical antics added much to the entertainment of the visitors. The boys who stay away from the conventions often miss rare enjoyment.

I did not see the above till one of the boys called my attention to it. I do not know whether they thought it would hurt me or worry me or not; but I am glad to say it took my attention for only a few moments until I afterward considered that it is calculated to mar the harmony and pleasant relations that have existed between the editors of all of our bee-journals of late, with some little exception. Of course, my name is not mentioned in the above at all; and perhaps I am somewhat in a hurry to—"put the coat on." Well, it is possible it had no reference to me at all; but it certainly referred to somebody; and if somebody must wear it, I think I will save further trouble by putting it on. My shoulders are not very broad, it is true; but I think they are broad enough to wear the above becomingly. A good many years ago my beloved pastor, Rev. A. T. Reed, said in his morning prayer before the church, "O Lord, we thank thee for our enemies, because they will tell us our faults when nobody else will." On the same ground I can thank this same brother bee-keeper for telling me of *my* faults, even if he did not do it with very much brotherly kindness. By the way, while he was about it why did not the writer say, "a stoop-shouldered old man," instead of just saying *old man*? On page 1002 there is a picture of myself talking

about the Caucasian bees. Well, now, that picture is going to do me a lot of good. The minute I saw it I said to myself that I would have given somebody a five-dollar bill if he had just clapped me on the shoulders and told me to "straighten up"—at least while my picture was being taken. If Mrs. Root had been present, *she* certainly would have reminded me that I am getting *stoop-shouldered*, and that I fall into the habit when I do not know it. Well, now, that picture is going to do me a lot of good. Every time I look at it or think of it I involuntarily straighten up and throw my head back. Now don't you think, friends, it sometimes does us a lot of good, not only physically but spiritually, to be held up before the world as "others see us"?\*

It is true, dear friends, that I made a little more effort than usual to be genial and good-natured and sociable with the great number of friends I made in Jenkintown. Before I consented to go, the boys told me there were many people in the East who were anxious to meet *me* particularly, at least once in their lives; and I hardly need tell you I found it true. I do not know that I ever in one day shook hands with so many people, and listened to so many kind words, while I made an effort to recollect their names and places of residence. I remember that at one time when I was shaking hands with a little group one person stood right before me, apparently unnoticed. After I had shaken hands with the rest I said, extending my hand, "And who is *this* brother? I am A. I. Root." He put out his hand with some hesitation, but did not seem very much pleased to meet me. If I made a mistake, I am sure God will forgive me, and I guess the rest of the friends will. The brother is certainly mistaken, however, in saying that I was surprised and disgusted because I did not receive the same amount of attention everywhere; and God knows I do not want "adoration," much less do I take any "delight" in it.

It is not my nature to be obtrusive. I am naturally diffident; and it is very unpleasant for me to be obliged to push myself into any place where I am not wanted. I sometimes go into saloons; and if they know who I am *they* certainly do not want to see me. By the way, I believe it was Prof. Cook who taught me more than anybody else to get over my diffidence and make an effort to get acquainted with the people. Dr. Miller, also, while traveling, has been very helpful to me in that way. He has a peculiar grace and gift for making the great outside world smile and look good-natured; yes, and so had our dear departed brother Dr. Mason a gift in the same way. When folks were inclined to look sour and unsociable he would set them all to laughing; and in this way he honored and glorified, *not* himself, but the Lord Jesus Christ, whom he was trying to serve.

Sometimes when in traveling when I am

\*On the front cover of last issue, I am glad to notice I "straightened up" a good deal better.



tired, perhaps hungry, it is a hard matter for me to be sociable; but feeling it to be a Christian duty to lose no opportunity of lending a helping hand I have dozens of times overcome this feeling of wanting to be let alone, and tried to extend a helping hand to some fellow-traveler. On the way home from this same Jenkintown meeting I rode many miles in a car that was almost unoccupied. Finally I crossed the aisle and sat down by a stranger, as I supposed, and asked him some questions about our destination. He replied, and pretty soon dropped some remark indicating that he was a bee-keeper and had been at the Jenkintown meeting. I presume he felt a little hurt to think I had not recognized and spoken to him and remembered him among the crowds I met there. Well, we had a real pleasant chat for an hour or two. I forgot my weariness and hunger, and he told me about my connections, and where I could get a lunch without patronizing saloons. He told me about his home, church, Sunday-school, etc. Now, would it have been Christianlike for me to travel several hours without making *any* effort to find out whether there was not somebody in the car whom I ought to know and have a talk with? I do not think the word "disgusted" belongs to me, especially when traveling. I greatly enjoy traveling; and whenever I am tempted to feel disgusted or disappointed with any thing unexpected, I try to keep it to myself and overcome it.

Such unkind words as the above sometimes do us good in another way. They help us to have a higher appreciation for our friends. They help us to enjoy kind words in a way that we perhaps could not otherwise. Sometimes in life I am obliged to be present where low-lived, slangy, and blasphemous conversation is going on. Of course, I try to stop it when there seems to be any possible way of doing so. When not, I try to bear it as well as I can; but, oh how such experiences do help me to appreciate the companionship of clean, pure, intelligent Christian people! I have often said to myself that I did not know how much I *loved* people who try to be good in God's sight until I had to mix in with those who were all for worldly things and self.

As an illustration, just contrast the following letter from a dear brother whom I have never seen, with the extract from that bee-journal:

*Mr. A. I. Root.*—I wrote to Medina for your present address. You must long ago have become used to praise, and I've for a good while had the desire to bestow some of it upon you, but have kept saying to myself, "He does not need it—doesn't know me personally, any way;" or, "So many have said fine things to him that he doesn't care for mine."

Well, I looked upon your picture in a recent GLEANINGS, and then meditated: "Now, that picture is ten years old, and here I've not written to Mr. Root yet, and either he or I will die one of these days and then I shall never have said my few kind words to him."

In the word we have a picture both of neglect and lost opportunities in the sentence, "The harvest is past, the summer is ended, and we are not saved." My lapse I can not call neglect, for I have blessed you every two weeks for twenty years or more, upon the arrival of GLEANINGS. It is rather a fear of being a little too presumptuous, seeing I never came nearer you in a material way than in annually purchasing

some apiarian supplies either at the Home or in Philadelphia.

Really I will try to say only a little, Mr. Root, but I mean it all. It is that I want to tell you how much I have thought of you for the high-minded, vigorous, honorable methods you have pursued in your now greatly increased business, and call your attention not only to what it all means right now, but for the future, also, in getting your sons and sons-in-law in the correct track of life's doings. Your works will follow you in theirs. The boys have their own high mindedness and honor as personal traits, and I don't think they will mind my giving you credit for steering them into the best paths. You should be proud, not only of what you started and struggled to maintain for years, but of the noble way in which the boys are continuing. "A good man leaveth an inheritance unto his children's children." So the sons and daughters should be grateful too, and in the best way proud, for no inheritance in this world is the equal of that from fathers and mothers of integrity and Christian character. Improved by them, it is treasure in heaven. It can not be rusted, stolen, wasted, nor lost. It is real saving," laid up in store for *themselves* against time to come."

Please let me tell you, also, how much I think your semi-monthly discourses on moral and religious themes must have meant to hundreds of plain homes, where people take no distinctively religious paper. I have been a pastor for twenty-five years, and know that, while *some* people, like Gallo, "care for none of these things," they *all* come at last to me for baptisms, marriages, funerals, and, in time of sickness, distress, or loss, for religious comfort and "the eternal fervent prayer." So we can and must not stop for those who want all material and no spiritual while all goes well with their health or their bees, but go on "casting our bread upon the waters," "sowing beside all waters." We get it back with greater interest than any bank but heaven's pays.

May the Lord bless you and your beloved Mrs. Root. She may take her good share of what you have been and are to past and present patrons of your house and to readers of GLEANINGS. If you are like me you will be giving her credit, next to the Lord himself, for what you have been prompted and enabled to do.

T. C. POTTER.

Glasgow, Delaware, March 19.

Of course, the dear brother who writes the above greatly exaggerates what I have done for bee-keeping or for the world; but I do not know but it is allowable, occasionally, for those who have worked hard for years, to let the world see the encouragement we get in the way of kind words for these lives we are living.

On another page in that same journal there is an intimation that our institution is charging greater prices to bee-keepers than we need to; also a suggestion in regard to our "eloquent silence" in the matter. Permit me to say that if any other manufacturing establishment can supply the bee-keepers of our land with any goods at lower prices we will try to rejoice with all the rest of you; for God knows that I, and, I think, every member of The A. I. Root Co. are seeking the greatest good to the greatest number of bee-keepers in our land. On page 755 (June 1) I told my neighbor I should be just as glad to find that those nice maple-trees came on his side of the wire as to find they came on my side; and God helped me to make my words true. Now, if you can buy your stuff for less money, or, on account of freight, get it cheaper by purchasing near your home than to buy of us, I will in like manner try to be just as glad as if the order came here; and if I am not living up to what I profess in the above, may God help me in my *efforts* to live up to it.

Just a word in closing, in regard to the wisdom of putting any thing in print like

this extract from that journal. So far as *we* are concerned, if it hurts us, let it hurt. It will do us good in the end. But I fear it will hurt and damage the journal that gives it place. Ask the business men whom you know if they have ever seen a business built up by unkind flings at their rivals or those in the same kind of business. Is a business ever built up by tearing your neighbor down? I think the general verdict will be that the spirit of our text, to love even our *enemies*, if we have such, is by far the best policy; and those of us who have lived to see quite a number of bee-journals started, most of them to go down after a short existence, can well remember that unkind flings at the older journals have never seemed to recommend themselves to the bee-keepers who patronize periodicals devoted to our industry. May God be praised for the brotherly love, for the kind Christian courtesy, and for the good fellowship that seems to exist among the bee-keepers of our land, large and small, high or low, rich or poor; and may God help us in our efforts to have the journals representing our industry maintain this same Christian courtesy of peace and good will, that we may set the example before the younger ones, to love even our enemies, and to try to do good to those who hate us and spitefully use and persecute us.

Just as I finished dictating this Home paper the following came to hand from our good friend Frank McGlade. It seems to me it is very appropriate for any of us when we feel like criticising and finding fault with other people. If we could only have the grace to put ourselves right side by side with the sinner, it might be a little more hopeful for "earth" as well as "heaven." Friend McGlade says it came from the pen of Will Carleton originally.

Ah, me! it makes a sinner wondrous blue  
To see so many other sinners too;  
When I rake o'er *my* faults, and then  
See just the same in other men.  
It makes me much surprised and sad  
That heaven should see earth turning out so bad.

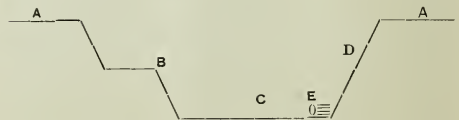


#### TILE DRAINAGE—A NEW KINK.

The kink may not be new to all of you, but it is new to me, and new so far as I know. The water had a fashion of getting into one corner of our cellar after severe rainstorms. After trying in vain to keep it out, and not succeeding, I decided that the corner of the cellar should have a special tile drain that would let the water out and keep it out; and as this drain had to be cut right

through our lawn, Mrs. Root and I greatly disliked to have a lot of clay mud thrown out and an unsightly disfigurement made in the lawn that would be visible even after the ditch was finished. We had had some experience of that kind before, and the memory of it was not pleasant. So I figured out a plan that has succeeded so well I want to tell you about it. I got one of our best men, an expert in handling a spade, especially under-draining-tools. He first stretched a line, and then with a very thin flat spade cut out squares of sod, say a foot long and 8 inches wide. After cutting all around the sod with his thin spade he took a tool that is used for cleaning out the bottom of ditches in laying tiles. This is bent so while standing up the blade lies pretty nearly flat or level on the ground. With this he cut into the squares of sod so as to lift them up and put them in regular order at one side of the ditch. This was all done with very little damage to the lawn. Then he commenced up near the cellar wall and dug down deep enough to get a four-inch tile under the wall and under the bottom of the cellar. To do this, of course quite a lot of dirt had to be piled up by the side of the ditch against the wall. Then after carefully grading the bottom of the ditch be put in two one-foot tiles besides the one that went under the wall. Now, when he came to dig out the dirt for the next two lengths of tile, instead of throwing it upon the bank as is usually done in draining, he threw it on top of the two lengths of tile. These had been carefully leveled with a spirit-level, using a level long enough to cover partly three lengths of tile. The dirt was tramped and pounded down on these tiles clear up to the surface; and then one of the squares of sod was put on top of the dirt, letting the sod stand an inch or two above the line to allow for settling. You see this saves handling the dirt twice. Instead of throwing it on the side of the ditch it is thrown on the tiles already laid; then two more lengths are put in, carefully leveled with a slight down grade, and dirt thrown over them as before.

The thing that was one of my happy surprises in this transaction, and the one that decided me to have it put in print, is that he dug the ditch and laid the tiles faster than I ever had anybody do it who threw the dirt outside of the ditch and then shoveled it back again. The diagram below will make it a little plainer.



Let the upper lines A A represent the surface of the ground. B is a shelf to stand on, made by slicing down one length of the tile-spade. C is the bottom of the ditch, part of it being covered with dirt. When shoveling on the dirt you always want to leave one end of the tile exposed; and when you put in

the next two lengths let your spirit-level rest on the end of E. D is the uneven surface of dirt piled on the tiles.

Now, some of you will object, saying you can not get a nice grade in this way. Well, we had four-inch tiles and a pretty good fall, so there was no difficulty in laying the tiles so they would work perfectly. In case you want something more exact, just stretch a line of wire or even very strong twine over your head, with just the amount of fall you want the bottom of the drain to have. This cord or wire should be high enough to clear your head while digging on the surface of the ground. When you have got it on just the incline you want it for the bottom of your ditch, cut a stick that will just reach from the top of the tile E to the wire overhead; or, if you choose, from the bottom of the ditch where the tile is to lie, to the wire overhead. Keep this stick right along with you while you dig, and you can easily tell when you have got the bottom just right. The wire overhead should be pulled very tight, and supported at frequent intervals. In order that the supports may be out of the way, drive two long stakes each side of your ditch, say three feet away on each side. This will make the stakes six feet apart. Now nail a cross-piece from one stake to the other, the exact height you want it. Wind the wire around this cross-piece and have these supports near enough so that, when you sight through from end to end of your wire, there is no visible sag. As a matter of course, when you get to the end of the ditch you will have some tiles uncovered, and the dirt that you threw out must be wheeled from the end where you started; or if your line of tiling is too long, get some more dirt from a nearby place.

It may be urged that, if a rainstorm comes on, your ditch will fill up with water and have no outlet. This can be obviated by commencing at the outlet instead of up to the wall of the house as we did. In that case, if your ditch gets deeper into the ground as you progress, you would have to leave little piles of surface dirt to be taken away or moved up to the point where you stop. Throw this dirt on some boards, an old door, or, better still, a piece of canvas, and then you can pick it all up quickly without disfigurement to your lawn or other grounds.

Now I submit the matter to those who have done a good deal of tile-laying. Is it not worth while to adopt a plan whereby the dirt may be handled *but once*? And then there is another thing: When you have the ridge of dirt piled up along your ditch, and a severe rainstorm comes on, it is a nasty mess to get back again. If you wait until it dries off, then it is a good deal more work to handle than to handle fresh dirt. If it is thrown on to grass or weeds it is still more difficult to get it all back into the ditch again. Of course, where you have a big job you can plow the dirt back with a team. I am familiar, I think, with most of the short cuts in tile drainage—not only those given in our own book, but by other authors—and I

have never seen my plan of moving the dirt but once (and having the job all finished, as you go along) mentioned. Once before when we were laying some 18-inch sewer-pipe I adopted the same plan—had the man who was digging throw the dirt on top of the two-foot piece that he had just placed in the bottom of the ditch.\*

A couple of weeks have now passed, and we have had several good showers since the ditches were laid through our lawn; but the job was so well done that one can hardly find the place where the ditch was made through. In fact, no one would ever notice there had been any disfigurement unless you took pains to point out to him where the ditch had been cut through.

#### SELECTING YOUR SEED POTATOES AT DIGGING-TIME, TO BE PLANTED ANOTHER YEAR, ETC.

In our last issue I gave you a glimpse of what wonderful things have been accomplished by the use of better seed in planting corn. Our Ohio Experiment Station has issued a little bulletin, dated June 15, 1906, No. 58, on the early and late blight of potatoes, and how to combat them. Well, this circular strikes on doing the same thing with potatoes that Prof. Holden recommends for corn. In our potato-book I gave the results of selecting seed from certain hills that stayed green after all the rest were withered and dead. This seed, when planted, gave us entire rows of potatoes that remained green when all the rest were dead. Here is what the Experiment Station says in regard to it:

When dug and weighed it was found that the average total yield of the resistant rows was 25 per cent greater than of the non-resistant row, and the yield of marketable potatoes was 40 per cent greater.

Besides the selection of blight-resistant varieties, there is no doubt that much can be done in the way of building up varieties which will be resistant to the early blight by selecting seed from resistant hills. All of the extra labor necessary is to go over the rows, when most of the vines are badly blighted, and drive a stake at each hill which shows a resistant tendency. These hills to be dug by hand and saved for seed.

When digging, all hills which are poor in yield, even though they may have been very resistant to blight, should be thrown out. By planting the seed and saving all of the product to plant for seed another year, a sufficient quantity can be secured in two or three seasons to plant a considerable area. In the Station tests, the seed from resistant hills has retained that characteristic for three years.

#### HOW IT PAYS TO SPRAY FOR BLIGHT.

In regard to the benefit of spraying for blight, the same circular gives us the following:

Soon after the spraying of August 5th had been made, the vines on the unsprayed area were blighted very badly. The difference between the sprayed and the unsprayed vines became more marked each day until the first of September, when the unsprayed vines

\*The steeper you pile the dirt on the line D, the less distance you will have to pitch it; and you could put in three tiles at a time instead of two if you do not object to throwing the dirt a little further. In the diagram, I have represented cutting down two steps in depth; and with good soil and a nice slender (20-in. blade) tiling-spade you could get down three feet by making only two steps. If you prefer, however, to make three it will do just as well, but you would have to throw the dirt a little further on the first spading.

were dead and the sprayed vines were blighting very little.

At digging-time it was not practicable to dig the sprayed and unsprayed area of each of the plots separately. Instead, a cross-section one rod long was marked off on the sprayed and unsprayed parts of each of nine plots, which were well distributed over the area. The potatoes in these sections were dug by hand, and weighed. The average gain of the sprayed over the unsprayed portion was 36 per cent, or 89 bushels per acre.

The Geneva (New York) Station has been conducting co-operative experiments with farmers in different parts of that State. The following is taken from the summary of Bulletin 264 of that Station:

"In fourteen farmers' business experiments, including 180 acres, the average gain due to spraying was 62½ bushels per acre; the average total cost for each spraying, 93 cents per acre; and the average net profit, based on the market price of potatoes at digging time, \$24.86 per acre."

#### GRASSHOPPERS.

On p. 874 Mr. J. A. Green asks what can be done with grasshoppers. J. C. Pratt, of Glenellyn, Ill., says try turkeys. Our friends who have read the tomato-book will remember Mrs. Cummins' flock of turkeys for tomato-worms. Well, a bee-keeper in Missouri some years ago told me he had a flock of turkeys that would rid a field of grasshoppers by spreading out a rod or less apart, and marching across the field in a systematic way; and it was my pleasure one afternoon to see them cross the field in just that way. Now, where grasshoppers are very plentiful, as I have seen them, it would take a big flock of turkeys to do the work; but turkeys are good property after they have gobbled up the grasshoppers. Can somebody tell us more about it?

#### COTTON'S CONTROLLABLE BEE-HIVE.

Our older readers will remember all about Mrs. Lizzie E. Cotton and her "Controllable" bee-hive, of West Gorham, Me. Well, in the past few months inquiries have come in regard to a bee-hive advertised to give wonderful results in yields of honey. It now comes from C. B. Cotton, of Gorham, Me. The price of drawings, specifications, measurements, etc., for making this wonderful hive is \$4.00. I sent the money as soon as I saw the advertisement; and after waiting quite a while they came to hand. Now, I do not wish to say any thing against any brother who claims to be a rival to our establishment in the manufacture of hives; but it seems to me \$4.00 is a very high price to charge for what can be printed on *two small sheets of paper*. Of course, a little book comes with the specifications; but this book has only 42 small pages; and \$4.00 ought to purchase quite a library of the best bee-books—yes, and a journal or two included. I judge friend Cotton does not succeed in finding many purchasers at \$4.00 for his meager instructions, for last June he reduced the price to \$2.00; and a letter containing various circulars has just been sent me, asking if I would advise sending *only \$1.00* for the whole outfit. A label is pasted on the circular, which reads as follows:

"Price reduced to \$1.00 for 30 days from July 18."

Now, the price might be reduced to ten cents and still make a profit—that is, if one has plenty of customers. Mr. Cotton does not advertise in any of the bee-journals. This of itself is a little significant. Another thing, whenever you think of going into a new industry—especially any thing pertaining to agriculture—by all means first subscribe to some of the standard journals regarding the business, or purchase some of the standard books that are offered at a fair price. The books and the journals will certainly contain every thing that is new and valuable in regard to any industry on the face of the earth.

Like Mr. Ficklin, Mr. Cotton claims that he has a new invention for preventing swarms from going off into the woods. This invention consists in taking a slab of hemlock or other wood, with the rough bark remaining on it. It is supported on two stakes driven into the ground, with the bark side down. He says if several of these slabs are placed 20 or 30 feet in front of the hives, the bees will not cluster on any thing else. Now, if this is true it may compensate me in part for the \$4.00 I sent. The drawings and specifications contain nothing that is not well known. The hive is simply a very large bee-hive containing a large number of section boxes above and at the sides of the hive. Even after having paid \$4.00 there is not a good picture of a finished bee-hive anywhere in the specifications or pamphlet. One of the secrets of getting great yields of honey is by heavy feeding until just before clover comes in, so that they will be ready to put the whole crop into the sections. He says, give a single colony from 5 to 10 lbs. every night for ten or twelve days. No doubt this sort of treatment, just before the yield from clover commences, would give a big yield of honey, but I should be afraid some of this hundred pounds or more of sugar *might* get into the boxes; but even this is no new thing.

Since the above was in type we find the following in the *American Issue*:

Every family that has a farm or garden can keep honey-bees in Controllable hives, and raise honey for family use or for market. One hundred dollars profit from one Controllable hive of bees in one year. Lots of honey and lots of money keeping bees. No stings. No trouble in swarming time. No loss in winter. Something new in bee management. For particulars, write C. B. COTTON, Gorham, Me.

Friend Cotton will surely not object to our giving his advertisement free of charge.

Now read the clipping below, which comes from Mrs. Cotton's circular printed just 27 years ago:

Drawings and illustrations, with printed directions for managing bees on my plan, with recipe for feed, every thing so plain as to be readily understood. All sent by mail to any part of the United States or Canada on receipt of four dollars.

MRS. LIZZIE E. COTTON, West Gorham, Me.

Dec. 1, 1879.

And yet the new advertisement says, "Something new in bee management." You will notice that the price then was \$4.00, just as it is now.

## Temperance.

### PROHIBITION KANSAS.

I take pleasure in giving the following, which I clipped from the *Medina Gazette*:

How is that in prohibition Kansas there are 33 counties without a poorhouse, and almost as many without a man in jail? In Ohio you can not name a county that has not a poorhouse and whose jails are empty. It is up to the young men of to-day. Stay away from liquor as you would from a deadly snake; and when you have grown up, fight it as hard as you can that our country may become clean. I hope to live to see that day.—*Congressman Webber.*

A good deal of fun has for years past been poked at prohibition Kansas; but may God speed the day when we shall have more States that can give us such a record as the above.

### THE OUTLOOK FOR TEMPERANCE FROM THE STANDPOINT OF THE ENEMY.

We clip the following from the *American Issue*:

#### THE LIQUOR TRAFFIC SEES THE HANDWRITING ON THE WALL.

To be honest and not deceive ourselves, if we glance over this great country we find that prohibition, local option, high license, and unjust liquor restrictions are in the ascendancy, and growing more popular in the different States at the present time than ever before. Peer into every city, town, and hamlet; then read the city ordinances; visit the council chambers in the various cities; visit the different legislatures and halls of congress of the United States; consult with your lawmakers, and you will be astonished at the combinations arrayed against the traffic that we represent. The truth is, the enemy is gaining ground rapidly upon us, and we are being overpowered by the tremendous forces battling against us; and just as rapidly as they are gaining ground, just that rapidly we are going into decline, and being surrounded and hemmed in by these adverse forces.—*Recent address of President of National Liquor Dealers' Association at Pittsburg.*

Perhaps the speaker did not expect that we would give him so much publicity; but truth is mighty and will prevail, no matter where it comes from.

### WHAT WHISKY DID FOR ONE OF THE BEE-KEEPERS.

The story below carries such a moral with it that it needs to be given publicity; but yet out of respect to the bereaved friends I omit names and address.

I have read several of A. I. Root's letters on temperance and will relate how my neighbor bee-keeper came to his death. He went to a certain man to borrow \$25 to send to Mr. Jenkins for bee-supplies. He was drunk while the money lasted. Then he met another man and asked him to lend him 50 cents to pay his fare home. The man told him to go to a certain place and get the 50 cents, and have it charged to him. He went and procured \$2.50 (instead of 50 cts.) and spent it for whisky. Then he walked home and got a lot of honey ready, took it to a neighboring city, and was drunk there three or four days. Then he took a boat for home, and by mistake landed at the wrong place with a quart bottle of whisky. On the road home he fell and struck his head on the stub of a pine log, and died right there. His body lay in the road about 24 hours before he was found. He had over 100 colonies of bees and plenty of honey. Whisky is the root of evil, I think. Mr. Root's letters are such as I enjoy reading.

Caswell, Ala.

With a fervent prayer that the above true story will prove to be a warning to other bee-keepers, even though they drink just a little, we send it out.

## Special Notices by A. I. Root.

### MODERN METHODS OF TESTING MILK AND MILK PRODUCTS.

The above is the title of a new book just published by the O. Judd Co. It contains over 200 pages fairly well illustrated, bound in cloth; price 75 cents postpaid. I looked it all through in hopes I should find something in regard to methods of preserving and caring for milk in the average home; but the purpose of the book seems to be mainly to head off all sorts of adulteration and swindling in the milk business. When we take into consideration the fact that the very lives of the little babes in our land depend on giving them pure unadulterated milk, you can see that the matter is one of vast importance, especially to those who live in cities, and are liable to be victims of these fiends in human shape who would rob these little ones of their lives in order to make a few more pennies.

The book not only treats of methods of detecting adulteration in milk, but considers also testing and detecting fraud in butter and cheese. It considers especially methods of deciding which is real butter and which is oleomargarine or any of the adulterants of dairy products. We can mail the book from this office.

### ALL ABOUT CUCUMBERS.

Bulletin 254, from Washington, D. C., is all devoted to cucumbers. I was especially interested in the description of growing cucumbers for early market in cold-frames. The illustrations make me think of my chapter in the tomato-book on how to support a family on a quarter of an acre, and some of the suggestions I judge to be quite valuable. Forcing cucumbers in greenhouses is also considered and well illustrated. Under the directions for pollination by hand they state that "in large establishments where hand pollinating is out of the question, a colony of bees is put in the house to accomplish the work." And this reminds me that I saw a very successful cucumber greenhouse at our Ohio Experiment Station a few days ago. A colony of bees was placed up under the ridge, and they seemed to do the work very effectually in pollinating the blossoms. When the weather got to be warm enough they lost a good many bees by their going out of the ventilators. Of course, they would get back into their hive all right if the ventilators were open; but when they happened to be closed toward night some of the bees were lost. Everybody interested in the growing of cucumbers should have this cucumber bulletin. Address Secretary of Agriculture, Washington, D. C.

### BATTERY-TESTERS.

Some time ago I mentioned a little instrument for testing the power of a dry battery, such as is used in automobiles, gasoline-boats, or gasoline-engines in general. The manufacturers told me they have received quite a good many orders for the little instruments, especially from the South, to be used on gasoline-launches. Well, there has been so much inquiry we have decided to keep them in stock. No two dry batteries hold out exactly alike. One may fail in a few weeks, and another may hold out for almost a year. Without a battery-tester you have no means of telling which are the weak ones; and a good many throw out the whole set and put in a new battery when the most of them may be still capable of doing a lot of work. I am well aware that ammeters costing four or five dollars are generally used for this purpose; but after carefully testing a good ammeter by the side of one of these cheap battery-testers, I very much prefer the latter, which cost only \$1.00 postpaid. It requires no instructions whatever. It can be carried in the vest pocket; and all that is necessary to test a weak battery is to make connection with the two poles. A good battery will make the little coil of platinum wire quite bright, like a little electric lamp. If the battery is weak, the wire will show just a little red; and if it does not get red-hot at all, you can throw the battery out. A cheap electric alarm-bell, costing only 25 cents, will answer somewhat the same purpose; but it is a good deal more cumbersome to carry about, and does not indicate the exact strength of the partially played-out battery. All who use dry batteries for running a gasoline-engine, or for any other purpose, for that matter, will save money by having one of these little testers. You see one battery with a tester is all you need to carry on a trip, in place of carrying a whole set.

# FAIRS

Why not make the fairs you attend profitable as well as instructive? Make a good honey exhibit and secure awards. Then use your time to advantage soliciting subscriptions to **Gleanings in Bee Culture**.

Gleanings makes very liberal inducements in regular commissions besides large cash prizes. This matter is worth looking into.

## County and State Fair Contest Prizes, \$10, \$5, \$3, \$2.

To induce bee-keepers generally to enter our Fair Contest we make the following very liberal prizes over and above the regular commissions earned. For the party sending the largest list of subscribers, \$10; for the second largest, \$5; for third largest list, \$3; for the fourth largest list, \$2; fifth to tenth, a cloth-bound copy of the A B C of Bee Culture. Subject to the following

### CONDITIONS

First.—That subscriptions entered in contest are obtained at the fair on dates named in application below, or obtained as results of work during fair.

Second.—That yearly subscriptions may be either new or renewal taken at our regular rates. Two trial subscriptions (new names, 6 mos.) are equivalent to one year's subscription.

Third.—That contest closes Nov. 15th, and announcement will be made in Dec. 1st GLEANINGS.

Fourth.—That only one agent will be appointed for any one fair.

Fifth.—That advertising matter sent is to be carefully distributed to best advantage.

=====**CUT HERE**=====

Date.....

*GLEANINGS IN BEE CULTURE, Medina, Ohio:*

*Fair Contest Department.*

*Please send agents' terms and enter my name as contestant in Fair Contest. Send to my address, at proper time, advertising matter which will aid me in obtaining subscriptions. I have read conditions, and agree to them.*

Date of Fair..... Name.....

Name of Fair..... P. O.....

I can use.....sample copies of Gleanings. State.....

# GOLDEN Opportunities!

**E**XIST in the South, and the Seaboard Air Line's monthly magazine will point them out to you. If you are thinking of changing your location, engaging in other business, want a winter home, a summer home, or a place for all-the-year-round residence, want an orange-grove, a banana plantation, a pineapple grove—in fact, anything, and want it in Virginia, the Carolinas, Georgia, Alabama, or Florida, the magazine will assist you.

Sent free on request, together with other handsomely illustrated literature descriptive of the South and its wonderful resources and progress.

**J. W. WHITE**

Gen. Indus. Agt., Portsmouth, Va.

Seaboard Air Line Railway

## JOSEPH HORNE CO.

Pittsburgh, Penn.

### A Note to Needleworkers!

Women who do fancy work will be interested in this news. Our Art Needlework Department is under the supervision of a lady who is known as an authority on needlework in this country—a graduate of a famous European Fancywork school.

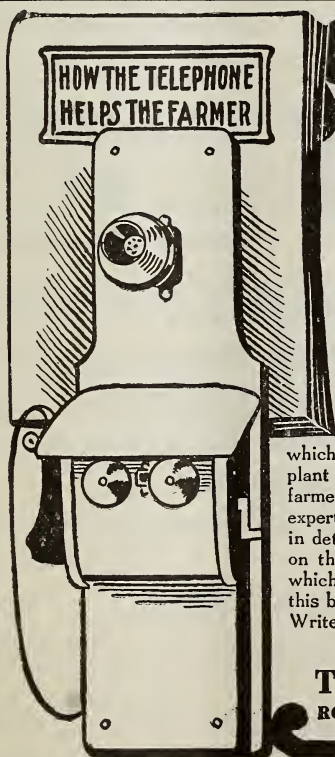
Consequently you can count upon our supplying you with every thing for fancywork, embroidery, and lace-making.

Ladies' Corset Covers, stamped for eyelet embroidery—on sheer nainsook—materials included for working—also paper pattern; 50c for outfit.

"Home Sweet Home" pillow-top—beautifully tinted on art ticking, ready to embroider, 25c.

Porch Cushion-covers and Pillow-tops—tinted ready for use; a large variety of designs—15c.

Address M. O. D. Department



## You Want This Free Book

Of course you need a telephone. You need it for business, for the family, in sickness, in case of fire, or in danger of any kind. The question is—how can you get one on your farm? This little book which we send free the same day we get your request answers the question perfectly and tells you how to get the greatest convenience of the twentieth century so easily and cheaply that it becomes a positive saving and a money-maker, instead of an expense. It tells all about

### Stromberg-Carlson Telephones

which are made in the largest independent telephone plant in the world. These are the best instruments for farmers' lines, because they have been constructed by experts for this particular purpose. They are described in detail in the booklet, together with full information on the organization of farmers' lines, the manner in which they are built, cost of material, etc. You want this book, F36 "How the Telephone Helps the Farmer." Write for it today.

**Stromberg-Carlson  
Telephone Mfg. Company**  
ROCHESTER, N. Y. CHICAGO, ILL.

## Fire Sale Bee and Poultry Supplies

Come or send, and save 25 to 50 per cent on slightly damaged goods. NEW LEWIS GOODS at factory prices by return freight. Golden Italian or Red-clover queens by return mail. Untested, 75c; select untested, \$1.00; tested, \$1.25; select tested, \$2.25. Full colonies in up-to-date hives, and nuclei.

**H. M. Arnd, Propr. York Honey & Bee Supply Co. (Not Inc.)**  
Long Distance Telephone, North 1559. 191 and 193 Superior St., Chicago, Ills

**"If Goods are wanted quick, send to Pouder."**

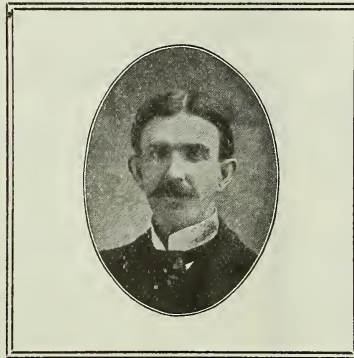
Established 1889

# Bee-Keepers' Supplies

Distributor of Root's Goods from the best shipping-point in the Country. My prices are at all times identical with those of The A. I. Root Company, and I can save you money by way of transportation charges.

## Special Notice!

During this month (September) I am offering a special discount of seven (7) per cent for cash orders for Bee-supplies for next season's use. After October 1st the discount will be six per cent.



New Metal-spaced  
Hoffman Frames  
are Here in Stock

Headquarters for the  
Danzenbaker  
Hive

**Dovetailed Hives, Section Honey-boxes,  
Weed-process Comb Foundation,  
Honey and Wax Extractors, Bee-smokers,  
Bee-veils, Pouder Honey-jars, and,  
in fact, Every Thing used by Bee-keepers.**

## BEESWAX WANTED!

I pay highest market price for beeswax, delivered here, at any time, cash or trade. Make small shipments by express; large shipments by freight. Always be sure to attach name to package.

If you wish to secure finest grades of Honey with which to supply your neighbors, write for my market Quotations of the Indianapolis honey market, free.

Catalog Free

**Walter S. Pouder**  
513-5 Massachusetts Av., Indianapolis, Ind.



# Bee = keepers!

Are you aware that we are manufacturers, and can supply you with every thing you need in the apiary?

## Good Goods, Low Prices and Prompt Shipments

are the POINTS in our favor. Our customers say so. Convince yourself by sending us your order. Ask for our free Illustrated Catalog and Price List.

Page & Lyon Mfg. Co., New London, Wis.

## Northwestern Bee-keepers!

We are headquarters for the ROOT supplies for the States of Montana, Minnesota, the Dakotas, and Western Wisconsin.

You can save freight by ordering from this branch. A complete line of bee-keepers' supplies always in stock.

Secure a catalog at once.

BEEES and QUEENS.—Your orders will be attended to.

**The A. I. Root Company**

H. G. ACKLIN, MANAGER

1024 Mississippi Street, St. Paul, Minn.

## DO YOU KNOW

That the sale of Dittmer's Foundation has increased so much that we were forced to double our melting capacity in order to fill orders promptly?

### There is a Reason for This

It is because Dittmer's Foundation is tough, clear, and transparent, and has the natural color of beeswax.

#### AGENTS FOR DITTMER'S FOUNDATION

W. D. Soper.... Jackson, Mich.  
Bee and Honey Co..... Beeville, Texas  
E. H. Taylor, Welwyn Sta., Herts, Eng.  
E. Grainger & Co.... Toronto, Ont., Can.

Our warehouse is well stocked with all kinds of bee-keepers' supplies.  
Beeswax always wanted.

Gus Dittmer, Augusta, Wis.

# BEE-SUPPLIES

We manufacture every thing needed in the apiary, and carry a large stock and great variety. We assure you the best goods at **LOWEST PRICES**, and our excellent freight facilities enable us to make prompt shipment over fifteen different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the Alternating, Massie, Langstroth, and the Dovetail hive.

Our prices are very reasonable; and, to convince you of such, we will mail you our free illustrated and descriptive catalog and price list upon request. We want every bee-keeper to have our catalog. **SPECIAL DISCOUNTS** now. Write to-day. Address

**Kretschmer Mfg. Co., Council Bluffs, Iowa.**

Muscatine Produce Co., Muscatine, Iowa.  
Trestler Supply Co., Lincoln, Nebr.

Shugart-Ouran Seed Co., Council Bluffs, Iowa.  
T. B. Vallette & Son, Salina, Kansas.



## Michigan Distributors

—FOR—

**G. B. Lewis Co.'s Beeware,  
Dadant's Foundation.**

With an enormous stock, and the best shipping-point in Michigan, we are in a position to give you the very best service.

**ADVANCED BEE-VEIL.** Cord arrangement, absolutely bee-proof, best on earth. Made of imported French tulle veiling. Cotton, with silk face. **50 CENTS, POSTPAID.**

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

*Dear Sirs:*—Your advanced bee-veil just arrived, and is, as advertised, the best on the market. Find enclosure for ten more veils. Platteville, Wis., April 14, 1906. **N. E. FRANCE.**

**A. G. Woodman Co.,**  
Eeswax Wanted. **Grand Rapids, Mich.**

## We Manufacture

the finest, whitest, no-drip basswood **SHIPPING-CASE** on the market to-day. Covers and bottoms are of **ONE PIECE**. Everything is **POLISHED** on both sides, and a better case can not be had at any price. We can furnish them in single or carload lots to fit any number or style of section. Large quantities of all the standard sizes on hand. . . . As a special offer we will sell you 25 cases to hold 24 sections, complete with **NAILS, PAPER, and GLASS** at \$4.00. Write for prices on larger quantities. Furnish corrugated paper if desired. We can furnish you with any thing you need in the apiary. Our catalog is free. . . . **PROMPT SHIPMENT and SATISFACTION GUARANTEED.**

**Minnesota Bee-supply Company**  
Nicollet Island, No. 20, Minneapolis, Minnesota

**Bee Supplies. Lewis' Goods at  
Factory Prices.**

Best of everything the bee-keeper needs. Large and complete stock. Fine Italian and Caucasian queens. Prompt service. Catalog free. Get our prices before ordering.

**C. M. Scott & Co., Indianapolis, Indiana**  
1004 East Washington Street

Established 1881

YES!

Same Place 1906

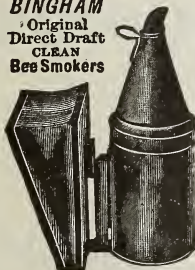
# THIS IS THE MAN

## WHO HAS HANDLED ROOT'S GOODS ALL THESE YEARS

and is now selling at wholesale and retail at Root's catalog prices. He has carloads of the finest sections, of all kinds and sizes; the Danzenbaker hive, the best single-walled comb-honey hive in use; all kinds of single-walled hives shown in catalog, and supers that match; the Hilton double-walled hive, of which more are used in Michigan than any other. It has stood the test for thirty years. We can't name them all, but send for his 36-page illustrated catalog, and that will tell it all and give prices. Cash or goods in exchange for beeswax at all times of the year. ❖ ❖ ❖ ❖ ❖

Geo. E. Hilton, - Fremont, Mich.

**BINGHAM**  
Original  
Direct Draft  
CLEAN  
Bee Smokers



Pat'd 1878, '82, '92 & 1903

## Pretty Recognition

A lady to whom I sent a Smoke Engine to order per mail sent this delicate recognition, "I am pleased," and signed her name.

We have made hundreds of thousands of smokers in the last twenty-eight years. They always please and last; don't split fire; don't go out; don't daub themselves all over. We are the most extensive exclusively bee-smoker makers in the world.

T. F. Bingham - Farwell, Mich.

Chico, California, October 28th, 1905.

Dear Mr. Bingham:—Enclosed find money-order for a honey-knife and smoker. I can't do business without a Bingham Smoke Engine.  
J. M. RANKIN.

## Third Photo Contest

We want bright interesting photos to illustrate GLEANINGS. Send in those you think suitable, and you will stand a chance of one of the prizes below.

### PRIZES

Class A.—Photos of general interest, excluding swarms and apiaries. Prizes: First, \$5.00; second, \$3.00; third, \$2.00; fourth, A B C, cloth.

Class B.—Photo of swarms. Prizes: First, \$3.00; second, \$2.00; third, A B C of Bee Culture; fourth, GLEANINGS one year.

Class C.—Photo of apiary. Prizes: First, \$3.00; second, \$2.00; third, A B C of Bee Culture.

Special.—Photos that do not win prizes but which we can use will be awarded a prize of \$1.00 each.

### CONDITIONS

Contest closes November 1st.

All photographs should be marked "For Contest," and have name and address attached. Prize-winning photos become our property. No photo returned unless stamps are sent. We prefer unmounted prints toned to a light-red-dish color on solio paper.

## The A. I. Root Company

Photo-contest Department  
Medina, Ohio, U. S. A.

## Swarthmore Books!

**BABY NUCLEI** (2d ed.)—The second edition of this popular treatise is off the press. This book thoroughly covers the field of small mating under management. The experience of twenty years in mating young queens in baby nuclei is given. A delightful little book—good printing, enjoyable reading, and easy understanding. Price 25 cts. postpaid.

**SIMPLIFIED QUEEN-REARING**.—A revised edition of this book just out. It tells the honey-producer how to rear queens by the very simplest method ever published. Good queens for little money and little trouble, in just an effective and economical plan for the bee-keeper who works for profit. Price 25 cts. postpaid.

**INCREASE**.—Don't depend entirely upon swarming for your increase. It's too slow and uncertain. Swarthmore tells of a way in his delightful little book entitled "Increase"—a natural way, simple and safe, no labor, little trouble. Colonies formed on this plan will work like prime swarms, and store a surplus. Price 25 cts. a copy postpaid.

**CELL-GETTING**.—The plan that has revolutionized queen-rearing throughout the world. The entire process is fully explained and illustrated by photos from actual life. Price, postpaid, 50 cts.

**SWARTHMORE QUEEN-REARING TOOLS**.—Complete outfits or separate parts. Write for price list.

FOR SALE BY

## The A. I. Root Company

ALL BRANCHES AND AGENCIES

## BANKING BY MAIL

Depositors in all parts of the country find our method of sending deposits by mail satisfactory in every way, for the reason that they not only receive

### 4 PER CENT INTEREST

but they obtain the greatest safety by having their money in the care of a responsible and safe banking institution.

Our booklet describes our methods and management, and explains the advantage of our simple banking-by-mail system. Write for the booklet to-day.

## THE SAVINGS DEPOSIT BANK COMPANY

MEDINA, OHIO

A. T. SPITZER, Pres.      A. I. ROOT, Vice-pres.  
E. B. SPITZER, Cashier.

## BEE-KEEPERS OF NORTHERN NEW YORK

Buy your shipping-cases, etc., of

A. H. Reeves, Perch River, Jefferson Co., N. Y.

and save freight charges, and time. A complete stock on hand ready for shipment. Comb honey wanted in no-drip cases; also beeswax.

## CARNIOLANS our SPECIALTY

WE HAVE been breeding this wonderful race of bees for over twenty years, and during all this time we have been making very careful selections, and we now claim to have one of the best and purest races of Carniolan bees in this country.

They are very gentle, hardy, and prolific; the best of workers; they come out of winter quarters healthier and stronger in bees; they build up very rapidly in the spring, are great comb-builders, and their sealed combs are of snowy whiteness.

### Also Breeders of Golden and Leather Italians

No foul brood or other bee-diseases here. Bees and queens guaranteed to arrive in good condition at your postoffice in the United States or Canada. Descriptive price list free.

PRICES.—Untested queen, 75c; six, \$3.90; doz., \$7.00. Tested, \$1.25. Best breeding, \$2.50. Best imported,

F. A. Lockhart & Co.,

## 10 per cent Discount During September!

In order to liven up business during the dull months we will give ten per cent off all supplies, in the catalog, wholesale or retail, during September for goods for next year.

### Jobbers for Central : Pennsylvania — for — ROOT'S GOODS

Now's the time to save money on goods for next season. Send for catalog. Best shipping facilities in the State.

Frank W. Prothero  
Dubois, : : : Pennsylvania

## Something New in Honey-jars...

Cook's Square Jar combines a new feature that improves the package and reduces the cost, and is the best and cheapest one-pound glass package made. Send for circular and full catalog of hives, bees, and useful implements.

J. H. M. COOK, 70 Cortlandt St., New York

The Oldest Supply-house in the East, and only Reliable goods sold. 10 cents brings sample jar by mail.

\$4.00. One L-frame nucleus, 75c; two-L-frame nucleus, \$1.50; three-L-frame nucleus, \$2.00. Add price of queen wanted to nucleus. Special prices quoted on large orders to dealers.

### Banater Bees from Hungary

This wonderful new race of bees takes the lead over all other races, all points considered, that we have seen. The three colonies we are testing are strong in bees; do not offer to swarm; are great honey-gatherers; build snowy white combs, and are very gentle; in fact, no smoke is needed to handle them. They resemble the Carniolans in color, though somewhat darker. We have never seen a race of bees with so many desirable qualities. We shall breed a limited number of queens for sale, and have started a queen-rearing apiary five miles from other bees, and expect to have laying bees ready to mail by July 15. Price \$5.00 each. Pure mating and safe arrival guaranteed.

Lake George, New York

# \$33.00 to the Pacific Coast

---

From Chicago, every day from September 15 to October 31, inclusive. Only \$33, Chicago to San Francisco, Los Angeles, Portland, Seattle, Tacoma, and many other points on the Pacific Coast. \$30 to Ogden or Salt Lake City. Low rates to hundreds of other points. . . . Name your exact route—the

---

## Chicago, Milwaukee & St. Paul and Union Pacific---Southern Pacific Line

---

Tickets good in through tourist sleeping-cars. Rate for double berth, Chicago to Pacific-coast points, only \$7. Through tourist-cars to California leave Union Station, Chicago, at 10:25 P.M. daily. For complete information (free) about rates, routes, tickets, and reservations write to-day to

---

**F. A. MILLER, General Passenger Agent,**  
**CHICAGO.**

# HONEY-JARS!

A neat package is a great help to the sale of your extracted honey. A glass jar is the favorite for many markets. Some retail trade demands one style and some another. We can supply you with what you want.

### Simplex Honey-jars

This is a new jar with glass screw-top and rubber gasket fitted to the taper screw on jar, which seals absolutely airtight. We consider it the handsomest jar we sell for one pound of honey. Your honey in these jars is sure to attract attention and have a ready sale in any grocery.

We are now prepared to offer Simplex jars in partitioned cases of two dozen each, ready to reship, when filled, at \$1.00 per case; ten-case lots or over, at 95 cts.; fifty-case lots at 90 cts. We can ship either from Medina, Chicago, New York, Philadelphia, and, after Sept. 1, from Mechanic Falls, Me.



SIMPLEX JAR

### Tumblers

There seems to be an increasing demand for a cheap tumbler to put up a half-pound of honey to retail at 10 cts. We have secured a stock of such tumblers at a price which enables us to offer them at \$4.00 per barrel of 24 dozen. This is less than 1 1/2 cts. apiece. For less than barrel lots we can not repack them for less than 25 cts. a dozen; or we will put them up 4 dozen to the case with partitions ready to reship when filled, at \$1.00 a case; 10-case lots at 95c.

### Mason Fruit-jars

These are very largely used for canning fruit, and are often used for honey as well. As we buy them by the carload, we can make the following prices at Medina, all put up complete with porcelain-lined caps and rubbers, in cases of one dozen:

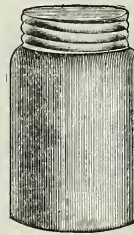
SIZE	Doz.	6 doz	12 doz
Pint .....	\$ 52	\$3 00	\$5 75
Quart .....	55	3 10	6 00
1/2-gallon .....	75	4 10	8 00

Triumph wrench for Mason caps, 15c each; by mail, 25 cts.

Ball's waxed rings, better than rubbers, 5c dozen; postage 3c.

### No. 25 Jars

This is our standard jar—holding one pound of honey. We have sold this jar for years, and in larger quantities than any other honey-package we ever handled. It has opal cap with rubber ring and tin screw rim. Put up in re shipping-cases of two dozen. Prices same as Simplex jars quoted above.



NO. 25 JAR

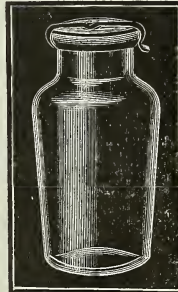
### Sample Mailing-blocks

Price each, 6c; by mail, 8c.

These are small wide-mouthed glass bottles, which hold 1/2 oz., with cork, put up in a mailing-block, with top which screws on and is easily removed.

### Tip-top Honey-jars

This is a new-style jar sealed with a rubber ring under rim of a glass top held securely with spring-top fastener. This fastener is applied to a great variety of bottles and jars used for different purposes. We have selected two styles among them all as being most suitable for honey. The one and two pound square jars may be had with spring top fastening instead of cork at 75c per gross extra. We furnish in two sizes. Half-pound, 45c per dozen; gross, \$4.50. One-pound, 50c per dozen; gross, \$5.00.



TIP-TOP JAR

### Honey-labels

We print them in large and small lots; over fifty styles. Write for sample-book and prices.

### Prompt Shipment

All of our branches and agents are well supplied. Write the one nearest you.

## The A. I. Root Company, Medina, O.

BRANCH OFFICES IN THE UNITED STATES

44 Vesey St., New York City  
144 East Erie St., Chicago

10 Vine St., Philadelphia, Pa.  
Mechanic Falls, Me.  
1100 Maryland Avenue, S. W., Washington, D. C.

1635 Genesee St., Syracuse, N. Y.  
1024 Miss. St., St. Paul, Minn.

# At St. Louis

A complete line of Root's Bee-keepers' Supplies. Unexcelled shipping facilities for reaching the Middle West.

ADDRESS

**Blanke & Hauk  
Supply Co.**  
202-204 Market Street  
St. Louis, Mo.

ALSO MANUFACTURER OF AND DEALER IN

**Dairymen's  
and Poultrymen's  
Supplies**

Low freight. . . Prompt shipments.  
Factory prices. . . Write for catalog.

**Send Us Your Order**

# Northeastern and New England BEE-KEEPERS

Order goods now. Don't delay. Have them ready when you need them. We keep a full line in stock at Medina prices. Save both time and freight by ordering of us. Beeswax wanted. Bees and queens furnished in season.

**J. B. Mason, Mechanic Falls, Maine**

MANAGER OF THE A. I. ROOT CO.'S N. E. AGENCY

## LEGAL ADVICE BY MAIL!

Two dollars our only fee. Right your wrongs. Understand your liabilities. Safeguard your property. Secure your interests. Protect your family. Relieve your mind of trouble, worry, uncertainty, doubt. Absolutely confidential. Advice under laws of any State. NATIONAL LEGAL BUREAU, 38 Court Sq., Boston.

### Jelly-tumblers at Reduced Prices!

You can double your money from your honey crop by using **Jelly-tumblers of correct style**, as containers, and keeping your market supplied. No other glass so economical. Write for quotations.

**OREL L. HERSHISER,**  
301 Huntington Av., Buffalo, N. Y.

# BEES and QUEENS

**BY RETURN MAIL.**  
The Three-banded  
Long-tongued Strain  
of Italians.

We are breeding exclusively the above strain of bees, as from years of experience we consider them the best all-round bees that can be had. We have been making, from time to time, very careful selections for the following

### Superior Qualities.

Honey-gathering, size of bees, non-swarming, docility, uniform markings.

Our selection of bees awarded diploma at the PAN-AMERICAN EXPOSITION for being the best bees there. And we guarantee them the equal of any bees anywhere at any price

### Quality Our Motto.

1300 colonies to select from.

Untested queens..... 75c; 6, \$4.25; 12, 8.00  
Select untested queens..... 1.00; 6, 5.00; 12, 9.90  
Tested queens..... 1.00; 6, 6.00; 12, 11.50  
Select tested queens..... 1.50.  
Breeding queens, \$3.00 to \$5.00.

Yours for best service,

**The Victor-Knolle Apiary Co.,**  
Hondo, Texas.

# YEARLING QUEENS

of doubtful mating, J. P. Moore Red-clover strain, 35c each. Also single-comb Buff Orpington cockrels for sale at \$1.50, \$2.00, \$3.00. Root German wax-press, \$5.00.

**A. H. Kanagy, - Milroy, Penn**

**DAUGHTERS** from my famous \$100.00 Red-clover breeder, also Golden Italians, 50c; tested, \$1.00. H. A. Ross, 1709 Up. Second St., Evansville, Ind.

### Queens from 50 Cents Up!

Bred from Root's Imported Italians. Write for prices, stating wants. . .

**C. M. Church, Arnold, Pa.**

# HONEY-JARS

No. 25, with burnished cap, heavy clear glass, per gross, \$5.00; 3 gross, \$13.50.  
11-ounce nickel-cap jar, gross, \$4.00; 3 gross, \$11.00.  
1-lb. square jar with cork, gross, \$5.00.  
Heavy cartons, \$5.50 per M.  
Italian queens, 75c. Catalog free.

**I. J. Stringham**  
105 Park Place, N. Y. City  
Apiaries at Glen Cove, L. I.

## Better than an Island

This place is just as good as an island for breeding queens, for there are no other bees within five miles, and so pure mating is guaranteed. It is better than an island when you order queens, for the fastest trains stop here, and hence queens are not away from the colony long enough to impair their usefulness. Safe introduction is guaranteed if you follow my special directions. The best bees known are the Banat Caucasians. The gentlest bees known are the Caucasians. The nicest bees known are the Golden Italians. Banat Caucasian queen, \$3.00; Caucasian queen, \$1.50; Golden Italian queen, 75 cts.

**Dele Collins, Ph. D., Emporium, Pa.**

## Superior Queens!!!!

(Before June 15) (After June 15)

Italian and Carniolan

Untested.....	75c; \$8.00 per doz.	60c; \$6.50 per doz.
Tested.....	\$1.00; 11.00 per doz.	75c; 8 00 per doz.
Select Tested...	1.25; 12.00 per doz.	1.00; 11.00 per doz.
Caucasian		
Untested.....	\$1.00; \$11.00 per doz.	75c; \$8.00 per doz.
Tested.....	1.50; 16.00 per doz.	1.00; 11.00 per doz.
Select Tested...	2.00; 20.00 per doz.	1.25; 12.00 per doz.

Write me a postal card for my circular.

**Chas. Koeppen, Fredericksburg, Virginia**

## MOORE'S - STRAIN - OF - ITALIANS

as Red-clover Workers

W. T. Davison, Velpen, Ind., says: "When other bees are loafing, your bees go to work on red clover, and they seem to have a kind of get-up about them that the other bees don't have. They have never failed to work on red clover, and many times I have found them on it when there was plenty of white clover."

Untested queens, 75c each; six, \$4.00; dozen, \$7.50.

Select untested, \$1.00 each; six, \$5.00; dozen, \$9.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free.

I am now filling orders by return mail, and shall probably be able to do so until the close of the season.

**J. P. MOORE, Morgan, Pendleton Co., Ky.**

### IMPROVED

## Red - clover Italians

for honey-gathering, hardiness, and non-swarming can not be surpassed. I breed for business the bees that will fill your hives with honey. Untested queens, 60 cents each. Safe arrival and satisfaction always guaranteed.

**H. C. Clemons, - Boyd, Ky.**

## Queens - Italian - Queens

and bees from Root's Red-clover stock and Golden Italian queens. Better than ever.

Untested..... 60c each; six, \$3.50

Selected untested..... 75c " " 4.00

Tested..... \$1.00 " " 5.00

Selected tested..... 1.25 " " 7.50

Two-frame nuclei with untested queen... 2.00

Orders filled in rotation. Send orders to

**E. A. Simmons, Greenville, Ala.**

## ITALIAN QUEENS

Bred from best of honey-gatherers, either three or five banded or Golden races. Untested, 65c each, 3 for \$2.00, 6 for \$3.75, 12 for 7.25; tested, \$1.00 each, 6 for \$5.00, 12 for \$9.00; select tested, \$1.50 each; breeders, \$3.00 each.

**J. W. Taylor, Beeville, Bee Co., Texas**

## Orders Filled Promptly by Return Mail

Queens from our fine strain of three-band Italians will not disappoint you. Bees are gentle, and the best of honey-gatherers. Queens are large and prolific, and every one guaranteed. Untested, 50c; \$6.00 per dozen. Tested, \$1.00.

**J. W. K. SHAW & CO.**

**Loreauville, Iberia Par., Louisiana**

## The Best Stock

Nice three-banded Italians that are guaranteed to please, or money refunded. The Robey queens now go to nearly all parts of the globe. They are being used by many of the largest honey-producers of this and other countries, who pronounce them to be very superior strain of bees. I have spent 21 years in building up this strain of bees. Warranted purely mated, in any quantity, 60 cts. each; selected warranted, 75 cts. each

**L. H. Robey, Worthington, W. Va.**

## Untested Queens!

Golden Italian

75 cts. each; six for \$4.00; an extra fine one for \$1.00. Warranted purely mated and good queens.

**J. B. Case, Port Orange, Fla.**

## Italian and Caucasian QUEENS

A special discount is now offered on all queens and bees to be delivered before the close of the season of 1906. Pure stock, pure mating, and excellence of grade guaranteed. Address

**Robert B. McCain, R. F. D., Yorkville, Ills.**

## DOOLITTLE & CLARK

will send CHOICE QUEENS the remainder of the season at the following prices:

Grade.	One	Three	Twelve
Untested.....	\$1.00	\$2.50	\$9.00
Select Tested.....	1.50	4.00	14.00
Tested (1905 rearing).....	2.50		
Select Breeding.....	5.00		
Extra Select Breeding.....	10.00		

Now is the Time to Requeen

**Borodino, Onondaga Co., N. Y.**

## MOORE'S LONG-TONGUES and GOLDENS

Select untested queens, 75c; six, \$4.00; twelve, \$7.50. Tested, \$1.25; six, \$6.00. Twelve, \$11.00. Best breeders, \$2.50. Safe arrival guaranteed.

**W. H. Rails, - - Orange, Calif.**

## Red-clover and Italian Queens!



Average untested, 65c; two for \$1.00. Select untested, 75c. Fine tested queens, \$1.00 each. Four-frame nuclei, fine queen, in painted hive, \$3.75. Remember we guarantee our queens to work red clover as well as white clover. Get my circular.

Queens sent in rotation; 50 and 100 at special prices.

**G. Routzahn, Route 3, Biglerville, Penn.**



# QUEENS

By Return Mail at the Following Prices for the Balance of this Season Golden or Leather-colored Italian.

Our folks say that your queens are extra fine. The A. I. Root Co., Medina, Ohio

We have good reports from your stock from time to time. George W York & Co., Chicago, Ill.

On every hand I hear good words of Quirin's queens. B. S. K. Bennett, Los Angeles, Cal.

Your queens did finely. It was one I purchased last year that gave me over 600 pounds of honey. J. L. Gandy, Humboldt, Neb.

The breeder is surely a very fine one; her daughters do grandly. Campbell & West, Hartstown, Pa.

I had a queen of you last year which produced bees that beat anything ever seen in this part of the country. E. L. Messenger, New Haven, Conn.

The nuclei you sent J. A. Adams did just splendidly. Each colony stored at least 75 pounds of honey. F. P. Merritt, 13 Breckenridge St., Lexington, Ky.

A few years ago I bought a queen from you which proved to be the best I had for years. H. C. Shirley, Cashier of Liberty Bank, Liberty, S. C.

I have had the pleasure of seeing the results of your queens at Mr. George W. Stanley's apiary, at Scuffletown, Ky., and that is why I am ordering this half-dozen. C. W. Brenner, Newburg, Ind.

I bought a queen from a neighbor last year who said he got her from you. She made me 193 sections of honey after July 4th—the best my other queens did was 64 sections. C. E. Woodington, St. Anne, Ill.

With great respect I write to you in regard to your dealing and queens. If you want any references you can refer to me, as I can't recommend you too highly. Your queens are the best I ever saw. I have one hive of bees among my 45 colonies containing a queen from you that \$50.00 will not buy. Morris Coon, Route 2, Locke, N. Y.

The two-frame nucleus you sent me was put in a hive May 25th. In July I brushed a swarm; had a swarm in August, and took off 75 boxes of honey. I consider this a wonderful record. I had four nuclei from different parts of the country, and yours was far superior to any of them. They are very gentle, easy to handle, hustlers to work. All bees and queens needed by me will hereafter come from Quirin—the queen breeder, Bellevue, Pa. S. A. Peck, Box 124, Northumberland, Pa.

	1	6	12
Select queens .....	75	\$4 00	\$ 7 00
Tested queens .....	1 00	5 00	9 00
Select tested queens .....	1 50	8 00	15 00
Breeders .....	3 00	15 00	
Straight five-band breeders .....	5 00		

Safe delivery and satisfaction guaranteed of all queens. Any queen not satisfactory may be returned any time inside of sixty days and another will be sent gratis. Address all Orders to

**Quirin-the-Queen-Breeder**  
Bellevue, Ohio.

## Italian Queens of - the - Purest - Strains

I offer this race of queens, bred from select red-clover and five-banded breeders, at the following prices: Untested, 75c; select untested, \$1.00; tested, \$1.50; select tested, \$2.50. I will guarantee safe arrival and satisfaction.

**H. M. PARKER, Jr.**  
James Island, South Carolina

## Same Old Place

is where you get the best of queens; untested, \$1.00; \$4.25 per 6; \$8.00 per dozen. Tested, \$1.50; best breeders, \$5. Absolute satisfaction and safe arrival guaranteed. Carniolans, Cyprians, Holy-Lands, Italians.

The JENNIE ATCHLEY CO.,  
Box 18, Beeville, Bee Co., Tex.

## Golden-All-Over ITALIAN - QUEENS

I have a few choice untested Golden-all-over Italian queens, reared from Pratt stock, by Pratt's methods, and will be able to supply a limited demand for balance of the season at 75c each.

**Wm. A. Shuff, Philadelphia, Pa.**  
4426 Osage Ave.

## SUPERIOR STOCK.

I make a specialty of long-tongued Italian red-clover honey-queens. Untested queen, 75 cts. each; 1/2 doz., \$3.00; tested, \$1.00; 1/2 doz., \$5.00. Bees for business, is my motto.

**FRED. LEININGER, Ft. Jennings, O.**

## Yellow from Tip to Tip!!!

My Adel bees and queens are very handsome. Every queen a breeder, and guaranteed to produce golden queens and beautiful bees; non-swarmers, very gentle, and hustlers for honey. Each queen, \$1. Catalog ready.

**H. ALLEY, - - - Wenham, Mass.**

## When a Thing Needs Doing

NO *W* is the time to do it. How about those worthless queens? Will you tolerate them for another season, when the best of stock can be obtained so readily? Laws' bees and queens are bringing the best of reports. I could fill many pages of testimonials, but give you only one. Mr. T. P. Robinson, of Bartlett, Texas, says: "Dear Sir.—The car of bees shipped June 20th are now all safely landed, and I have overhauled the entire lot. The bees are from 25 to 40 per cent better than contract, and you ought to hear my wife's exclamations of delight at seeing those fine yellow bees so quietly nestle between the combs at the very approach of smoke. I can certainly recommend you. . ."

Leather and Golden Italians, Holy Lands, and Carniolans—single queen, \$1.00; six for \$5.00. Quantity lots, prices on application.

I also manufacture the Hoffman frames, both new and old style, at \$16.00 per M; single-story eight frame hive complete, 75c; 1 1/2-story for extractor, \$1.00. Price list on application.

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

## If You Wish

to get better results another season you should purchase some young queens and requeen all colonies that have old or poor queens. We are breeding some choice Red-clover and Leather-color Italian Queens, and would be pleased to supply you. Prices for September:

Grade—	1	6	12
Untested.....	\$.65	\$3.75	\$7.00
Select Untested.....	.90	4.75	9.00
Warranted Purely Mated.....	.75	4.25	8.00
Select Warranted.....	1.00	5.25	10.00
Tested 1906 queens.....	1.25	7.00	
Select Tested .....	1.50	8.50	
Extra Select Tested.....	2.00	11.00	

All orders accompanied with cash are booked and filled in rotation. Safe arrival by mail guaranteed. Send for price list of bees and supplies.

**W. W. Cary & Son, : : Lyonsville, Mass.**

## Wants and Exchange.

Notices will be inserted under this head at 15 cts. per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in this department or we will not be responsible for errors. You can have the notice as many lines as you like, but all over five lines will cost you according to our regular rate. This department is intended only for bona-fide exchanges. Exchange for cash or for price lists, or notices offering property for sale will be charged our regular rates of 20 cts. per line, and they will be put in other departments. We can not be responsible for dissatisfaction arising from these "swaps."

**WANTED.**—Bee supplies in exchange for 300 colonies bees. Ad. elsewhere. Manufacturers write if interested. LEO F. HANEGAN, Glenwood, Wis.

**WANTED.**—Photos for our third contest. For particulars see ad. on page 1143.  
THE A. I. ROOT CO., Medina, Ohio.

**WANTED.**—To book your order for an untested clover queen (next spring delivery) and GLEANINGS one year for \$1.00 W. T. CRAWFORD, Hinson, La.

**WANTED.**—Refuse from the wax-extractor, or slumgum. State quantity and price.  
OREL L. HERSHISER,  
301 Huntington Ave., Buffalo, N. Y.

**WANTED.**—To correspond with parties that will need a first-class man to handle bees the coming season. J. LAWRENCE,  
141 First Ave., Station B, Dallas, Texas.

**WANTED.**—To rent or sell good fruit and berry farm with or without apiary; good markets; soil unsurpassed and good location for bees.  
A. E. WOODWARD, Rt. 1, Rexford Flats, N. Y.

**WANTED.**—To exchange a aid-up scholarship pin the electrical department of Scranton Correspondence School (I. C. S.) with drafting outfit, for bees, supplies, hives, etc. W. D. K. DEUEL,  
223 Adam St., Tonawanda, N. Y.

**WANTED.**—To exchange 50 new ten-frame hive-bodies complete with Hoffman frames, wired and nearly all full sheets foundation, for portrait camera and lens 8x10 or over, or offers in this line. Speak quick, as this will appear but once.  
W. B. VAN GRAVEN, Box 604, Nampa, Idaho.

**WANTED.**—Sealed bids for any part of two carloads of hives and supplies located at San Antonio, Texas. The right reserved to reject any and all bids. If not sooner disposed of, the whole lot will be sold at auction, piece-meal, during the next session of the National Bee-keepers' Association, San Antonio, Nov. 8, 9, 10. W. H. PUTNAM, River Falls, Wis.

## For Sale.

**FOR SALE.**—400 acres choice citrus fruit land.  
ALBERT GUNN, Céspedes, Camaguey Prov., Cuba.

**FOR SALE.**—First-class second-hand 5-gallon honey-cans, two in the case. OREL L. HERSHISER,  
301 Huntington Ave., Buffalo, N. Y.

**FOR SALE.**—My apiary complete in the great irrigated alfalfa belt; no failure yet. See GLEANINGS of Dec. 15, 1903, page 1051. C. K. C., Lovelock, Nev.

**FOR SALE.**—Eight acres fruit and market garden; good house, buildings, and water; 15 colonies of bees.  
J. HARRIOTT, Stamford, Ontario.

**FOR SALE.**—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1906 send your name and address to FRANK S. STEPHENS,  
(Root's Goods.) Paden City, W. Va.

**FOR SALE.**—Seeds of honey-plants—seven-head turnips, motherwort, catnip at 5c a package, postpaid. still a few sections at reduced price; 24-lb. shipping-cases, complete, 14c. H. S. DUBY, St. Anne, Ills.

**FOR SALE.**—A good bee-supply business in one of the largest cities of the Southwest. A fine opportunity for one who has from \$3000 to \$5000 to invest in a business already well developed. Address  
T. S., care of GLEANINGS.

**FOR SALE.**—\$1000 annual income can be made from my two-acre strawberry and truck garden, with 35 colonies of bees in this city; a large house, extensive waterworks; an elegant home. Price \$5000.  
J. NIPE, De Funiak Springs, Fla.

## Bees and Queens.

**FOR SALE.**—Twenty hives of bees in Root's hives at \$5.00 each; very strong.  
THE HORSESHOE APIARY, Horseshoe, N. Y.

**FOR SALE.**—400 colonies pure Italian bees in lots to suit. Write for prices. F. A. GRAY,  
Redwood Falls, Minn.

**FOR SALE.**—Queens. I breed a superior strain of fine golden-all-over Italians. Untested, 75c; tested, \$1.00. T. L. McMURRAY, Ravenswood, W. Va.

**FOR SALE.**—50 full colonies of Italian bees in 10-frame Root Dovetailed Langstroth hives at \$3.00 each EARL BAKER, 3309 Monroe St., Sta. B, Toledo, O.

**FOR SALE.**—Queens; Northern imported stock; untested, 60c, or two for \$1.00; tested, \$1.00; breeders, \$3.00. B. F. SCHMIDT, Rt. 1, No. Buena Vista, Ia.

**FOR SALE.**—As I am trying a new race of bees and doubling up my colonies, I offer fine Italian queens at 35c each; three queens for \$1.00.  
C. A. HUFF, Clayton, Mich.

**FOR SALE.**—275 colonies of bees in good condition. Also can locate you on first-class homestead claim under Gunnison tunnel, one of Uncle Sam's biggest reclamation projects. Address Box 782, Montrose, Col.

**FOR SALE.**—500 colonies of bees located in the best sweet-clover belt in the U. S. Will take \$1500 for the outfit. Reason for wanting to sell, too much other business. If I do not sell shall want a good man to run them next season. W. N. CANNON, Greenville, Ala.

**FOR SALE.**—225 colonies of bees in ten-frame two-story Langstroth hives in good condition; good location; can remain where they are; honey-house, tanks, extractors, and fixtures; \$3.50 per colony. I must go east. MILO SMITH,  
842 North Fair Oaks Ave., Pasadena, Cal.

**FOR SALE.**—About 300 strong colonies of Red-clover stock in ten-frame Dovetailed hives—mostly three bodies—with every thing needed for running same; good 16x16 honey-house; nice five-roomed dwelling-house, etc.; 20 acres of land; no disease, no failure yet; no better location anywhere; expect to make 40,000 lbs. this year. Reason for selling, can not get responsible help. Price \$3,000; if needed, more land at \$10 per acre. R. M. MCMURDO, Cauto, Cuba.

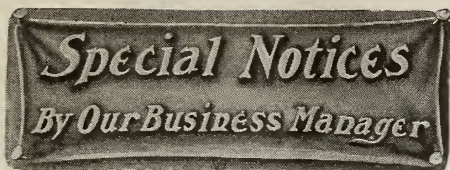
## Poultry Offers.

**FOR SALE.**—Choice poultry. Ten leading varieties for the farmer or the fancier. Circulars free.  
A. H. DUFF, Larned, Kan.

**FOR SALE.**—Alger's rose-comb Brown Leghorns hold the world's record; first at Chicago International, St. Louis World's Fair, exposition at Portland, Oregon. Italian bees—Root strain direct. Flemish Giant hares, very large. Red Belgians from 16-lb. buck. Get circulars. FRED ALGER, Waukau, Wis.

## Blacks and Hybrids.

**FOR SALE.**—At 25 cents each, mismatched Italian queens. C. G. FENN, Washington, Conn.



**HALF-POUND TUMBLERS.**

After the notice in July GLEANINGS regarding these tumblers we found that it would make a much more symmetrical package to pack 4 dozen in a case instead of 3 dozen. Therefore we have not put up any 3 dozen to the case, as we at first proposed, but we put 2 dozen in a tier and two tiers to a case, making a package practically the same size as the case containing two dozen Simplex jars, and uniform in price with that. It also holds the same quantity of honey, and may be sold at the same price per case, filled. We include also parchment-paper disks of the right size to place over the tumbler before putting on the cover, which makes a tight seal. Price \$1.00 per case; 10 cases at 95 cts. for either the ½-lb. tumblers, Simplex, or No. 25 pound jars.

**PRICES FOR THE COMING YEAR.**

The cost of materials entering into bee-keepers' supplies has advanced during the past year from 5 to 20 per cent. The average advance is about 10 per cent. Compared with prices two years ago the advance is not quite so much on some lines. Pine lumber has never before reached as high a point as during the past eight months. For some of our stock we have paid 20 per cent more than a year ago, and the average advance is about 12 per cent.

Basswood lumber has been lower than it was two years ago, but the price is back up again, very nearly to where it was. The advance in tin plate and steel is about 10 per cent, while in pig tin, lead, and zinc the increase has been greater. Beeswax is a trifle higher than it was a year ago.

Last year we reduced the price of comb foundation two cents a pound, and gave a more liberal early-order discount than usual. This year we have already announced some reduced prices on honey-packages where we have a large surplus stock and have secured favorable prices on fresh supplies.

As we have a large surplus stock of No. 2 plain sections we have marked the price of these down 25 cts. per 1000. Aside from these few changes the same retail prices will be continued for the coming year. We may have to increase somewhat our wholesale and jobbing prices on some items to save us from loss in view of the increased cost of materials.

We reduce the early-order discount to what it was two years ago—namely, 7 per cent for cash order, before Oct. 1, and cutting off one per cent a month as the season advances.

**EARLY-ORDER DISCOUNTS.**

The discount for early cash orders this year will be:

7	"	"	"	Nov. 1.
6	"	"	"	Nov. 1.
5	"	"	"	Dec. 1.
4	"	"	"	Jan. 1.
3	"	"	"	Feb. 1.
2	"	"	"	March 1.
1	"	"	"	April 1.

The discount will not apply to tin and glass honey-packages, scales, glass, paint, bushel boxes, hot-bed sash, labels, printing, comb-foundation machines, books, and other special or miscellaneous goods except where a few such items not exceeding ten per cent of the entire order, are included in a general order. The discount is intended to apply to hives, frames, sections, comb foundation, section-holders, separators, extractors, smokers, shipping-cases, zinc, and miscellaneous implements used in bee-keeping ordered early for use the following season, and only when cash accompanies the order, or is paid before the dates named.

**REVISED PRICE OF PLAIN SECTIONS.**

For the coming season we will furnish 4¼x4¼x1½, 4x5x1½, and 3½x5x1½ plain, or no-beeway sections, as follows:

- 1000, No. 1, \$4.75; No. 2, \$4.00;
- 2000, No. 1, 9.25; No. 2, 7.75;
- 3000, No. 1, 13.50; No. 2, 11.25;
- 4000, No. 1, 17.50; No. 2, 14.50;
- 5000, No. 1, 21.25; No. 2, 17.50;
- 10,000, No. 1, 40.00; No. 2, 32.50.

Our No. 2 grade of sections is superior in workmanship to what any of our best sections were made 15 or 20 years ago, or to the best sections put out to-day in some factories where they lack skill and experience in this very delicate piece of workmanship. We will continue this reduced price on No. 2 only as long as we have a surplus stock of this grade; and if many who now use No. 1 realized how good these No. 2 grade sections are, the surplus stock would not last many months.

**Convention Notices.**

**SIOUX CITY INTERSTATE FAIR.**

Bee-keepers expecting to send an exhibit to the Interstate Fair (Iowa, Minnesota, South Dakota, and Nebraska) at Sioux City, Sept. 10-15, are requested to advise the superintendent of this department on or before Sept. 1.

On Thursday and Friday, Sept. 13, 14, there will be a bee-keepers' convention afternoon and evening of each day. R. A. MORGAN, Supt. Vermilion, South Dak.

The annual meeting of the Southern Bee-keepers' Association will be held in Atlanta, at the State Fair grounds, October 11 and 12. All interested are invited to attend. Further particulars may be had of the president, J. J. Wilder, Cordele, Ga.

**Fruit Growers and Farmers.**

Thousands of the best fruit-growers and farmers read the **Southern Fruit Grower** because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 10c and 10 names of fruit growers and get it six months on trial. Sample free.

The Southern Fruit Grower, Box 1, Chattanooga, Tenn.



**CHOICEST FRUIT**

and Ornamental Trees, Shrubs, Roses, Plants and Bulbs. Catalogue No. 1 free to purchasers of Fruit and Ornamental Trees. No. 3 free to buyers of Holland and other Bulbs, Hardy Plants and Vines, Roses, Ferns, Araucarias, Palms and Greenhouse Goods in General. Try us. Will give you a square deal and guarantee satisfaction. Correspondence solicited. 53 years; 14 greenhouses; 1200 acres.

**THE STORRS & HARRISON CO.**  
Box 274, PAINESVILLE, OHIO.

**EGGS FROM BONE**

Green cut bone doubles egg yield. More fertile eggs, vigorous chicks, early broilers, heavy fowls.  
**MANN'S LATEST MODEL BONE CUTTER**  
10 days free trial. No money in advance. Send it back at our expense if you don't like it. Cat'g free.  
F. W. MANN CO., Box 37, Milford, Mass.



**FENCE Strongest Made**

Made of High Carbon coiled wire. We have no agents. Sell direct to user at factory prices on 30 days free trial. We pay all freight. Catalog shows 25 styles and heights of farm and poultry fence. It's free. Buy direct. Write today  
**COILED SPRING FENCE CO.**  
Box 101 WINCHESTER, INDIANA.

# PATENTS.

Twenty-five Years' Practice.


**PRINDLE & WILLIAMSON,**

Second Nat'l Bank Bldg. Washington D. C.

Patent practice in Patent Office and Courts.  
Patent Counsel of The A. I. Root Co.

## SPRAY PUMPS

**'TAKE OFF YOUR HAT TO THE MYERS'**

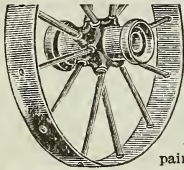


**MYERS**

The Pump that pumps easy and throws a full flow. The cheapest pump is the best pump, that's a Myers. Pumps, Hay Tools & Barn Door Hangers. Send for catalogue and prices.

**F. E. Myers & Bro.**  
Ashland, Ohio.

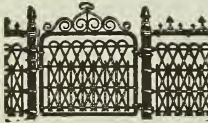
**ASHLAND PUMP AND HAY TOOL WORKS**



## STEEL WHEELS

with wide tires don't lie the usefulness of the farm wagon. We furnish them any size to fit any axle. Cheaper than repairing old wheels. Catalogue free.

**EMPIRE MFG. CO., Box 91A Quincy, Ill.**



## LAWN FENCE

Many designs. Cheap at wood. 32 page Catalogue free. Special Prices to Cemeteries and Churches. Address **COILED SPRING FENCE CO., Box 448 Winchester, Ind.**

## No. 602 Bee-keepers' Pocket-Knife Tool Kit.

Made in America



Every one has use for a Knife, Reamer, File, Saw, Chisel, or Screwdriver. This outfit is practical, yet so small, being contained in a Leather Pocket-Book 4 1/2 x 3 1/4 inches, is, by carrying it in your pocket, always at hand for immediate use, whether Camping, Boating, Teaming, Driving, in the Shop, Factory, Office Store Warehouse, Automobile, on the Farm, Bicycle, or around the Home.


Any Tool firmly attached or detached to the Pocket-Knife in a second.

Sent postpaid on receipt of price, \$2.25.

Use it five days and if not satisfactory return it and I will refund your money.

**U. J. ULERY CO., W7 Warren St., New York, N. Y.**

## THE "BEST" LIGHT





The only light that makes and burns its own gas at the extremely low cost of 2c per week and gives perfect service with **NO GREASE, DIRT, SMOKE OR ODOR.** Every burner equal to 100 candles burning at one time. Think of it—brighter than electricity or acetylene and cheaper than kerosene. You cannot afford to be without it. Over 100 styles. Every lamp warranted. Agents Wanted Everywhere.

**THE BEST LIGHT CO., 306 E. 5th St., Canton, O.**

## SAVE HALF YOUR FUEL

BY USING THE

### Rochester Radiator



Fits any Stove or Furnace. Guaranteed to do all we claim or money refunded. Write for booklet on heating homes.

**Rochester Radiator Co.,**  
50 Furnace St., Rochester, N. Y.

Price from	\$2.00 to
	\$12.00

For hard or soft coal, wood or gas

## BROWN PAYS THE FREIGHT

### HEAVIEST FENCE MADE

All No. 9 Steel Wire. Well Galvanized. Weighs 1/2 more than most fences. 16 to 35c per rod delivered. We sell all kinds of fence wire at wholesale prices. Write for fence book showing 110 styles. The Brown Fence and Wire Co., Cleveland, Ohio.

## You Need It. . . . .

- If you have only a few chickens;
- If you are at all interested in poultry;
- If you are breeding for fancy points;
- If you cater to the market trade;
- If you are in the business on large scale, you need

## Ohio Poultry Journal

the paper published in the interest of the farmer, beginner, and small breeder, with plenty of pointers for the experienced fancier. Each month is especially edited for the needs of that special season of the year. Regular price is 50 cts. **AT HALF PRICE** for a short time to introduce it to readers of Gleanings. Send 25 cts. and get it a year; or if you send us \$1 for a year's subscription to Gleanings in Bee Culture we will send you Ohio Poultry Journal for a year free. Address Ohio Poultry Journal Dept. 14, Dayton, Ohio.

## \$1.00 WILL PAY FOR TEN YEARS!

120 copies and no less than 3840 pages (size 8x 11 1/2 inches) of valuable poultry, pigeon, and pet-stock reading, costing us thousands of dollars to procure. Also your name and address in the "Poultry-breeders' Directory" for 10 years; revised yearly. Send \$1.00 to-day, and arrange

Poultry Item. Sellersville, Bucks Co. Pennsylvania

## DO YOU RAISE CHICKENS?

If so, you will find the Poultry Gazette a welcome monthly visitor to your home. A down-to-date, practical poultry magazine that is the acknowledged leader of all Western poultry papers; ably edited; profusely illustrated. Subscribe now, while the price is only 25 cents a year. If you have poultry to sell, The Poultry Gazette can sell it for you.

The Poultry Gazette, Dept. B. Clay Center, Neb

Save Money on Your

## BEE-SUPPLIES

I ship several cars of  
the celebrated Root  
goods to Kansas City

every year, and save hun-  
dreds of dollars for our cus-  
tomers in Kansas, Nebras-  
ka, Missouri, etc. Let me  
save you a few dollars on  
your goods. Write me at  
Main Office. Catalog, in-  
formation, etc., sent free.

**Carl F. Buck**

Augusta     - -     Kansas



Italian

Queens

Untested Queens, 75 cts. each; six for \$4.25.  
Select Untested, \$1.00. . . . Tested, \$1 00.  
Breeding Queens, \$3.00.

## Bee-keepers' Supplies

Send for our new revised catalog,  
Root's Supplies are what we handle.  
A full line always on hand.  
We give you prompt service.  
Freight rates are reasonable.

**John Nebel & Son Supply Co.**

# MR. TEXAS BEE-KEEPER

I would like to talk to you *personally*.

First, I want you to know about my supplies. I handle Root's Goods, of course; for I believe in giving my customers complete satisfaction—for that's *better* in the long run than low prices. My place of business is on the S. A. & A. P. Ry., just opposite the passenger depot, where I have built a warehouse 40×250 feet, and I have filled it full to the brim, for I handle Root's goods by the carload. This means I can furnish you supplies with the utmost promptness.

Then, too, I have installed a complete Weed-Process Foundation factory. I can turn out 500-lbs. a day. I can work your wax into foundation. In fact, my facilities in this line are not surpassed in Texas.

My can business is increasing by leaps and bounds. That is because of the quality of the goods. It will save you dollars to get my prices. Better write for them to-day.

Nothing pleases me better than for bee-keepers to make their headquarters at my office when at San Antonio. You are *always* welcome. I have fitted up my office with plenty of desks and chairs, with writing material, a reading-table, and all the bee journals on hand. Consider yourself invited.

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