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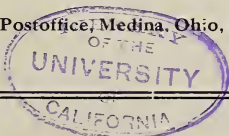
Gleanings in Bee Culture



Apiary of one of Gleanings subscribers in the far North. J. Enelund, Kulla, Hjelstaby, Sweden.

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

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Vol. XXXVI

February 1, 1908

No. 3

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FARMERS' INSURANCE THAT REALLY INSURES.

You may have had other chances to buy accident insurance that would protect you in elevators, on steamboats, and automobiles, but this is *the first chance you have ever had* to get real protection in your ordinary work. This NEW \$500.00 POLICY was secured from the North American Accident Insurance Company, of Chicago, Ill., (Surplus \$331,498.66) the largest company in America handling this class of policies, after long negotiations. It took three months to induce the company to write the special features that were required to make it valuable for rural people. By buying the policies outright in very large quantities, it is now possible to offer it FREE with this remarkable practical combination of magazines.



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a most beautiful, practical horticultural magazine.

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These magazines, if paid for separately, would cost you \$3.75, but we can sell ALL THREE MAGAZINES with the NEW INSURANCE POLICY for ONLY \$2.00. This is because the three publishers have combined for a subscription campaign. If each one sent you a separate letter it would cost us just three times as much as where we offer all three together. THE SAVING GOES TO YOU.

If the policy is not wanted we can substitute any of the following: "Designer," "Housekeeper," "Ladies' World," "McCall's Magazine," "Mother's Magazine," or the Garden and Farm Almanac.

WHY SHOULD YOU HAVE THESE PAPERS?

BECAUSE GLEANINGS IN BEE CULTURE is the great paper in America devoted to bees and honey. If you have bees, or are going to get them (and everybody who lives in or near the country should have bees), you need the most reliable and latest information, and you want at the same time the simplest directions possible. You want the bee business in a nutshell, and that is what GLEANINGS will give you. For the beginner or the most expert it is equally valuable.

BECAUSE FARM JOURNAL is far and away the foremost farm-paper in the world, a boiled-down, practical, helpful, entertaining monthly, built to make the rural homes of America more happy, prosperous, and contented, and already doing it for more than 500,000 homes. For farmers, villagers, or suburbanites.

BECAUSE the most beautiful garden and horticultural publication in the world is the GARDEN MAGAZINE, full of sound sense, beautiful engravings from photographs, and fine printing. It has ten issues at 15 cents each and two at 25 cents each, per year, and the subscriber gets his money's worth twice over. It is a delightful magazine, useful, stimulating, and ornamental.

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Because you are in danger, every moment, of an accident which may cripple you for weeks, months, or for life; because the loss of an eye, a hand, or a foot, may mean destitution for yourself and your family; because this protection, for a full year costs you nothing whatever.

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- Being knocked down in the road by a wagon or automobile.
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- Being hurt while operating corn-sheller, fodder-cutter, etc.
- Being caught in a burning building, house, or barn.

- Being hurt in an elevator or any public conveyance—train, trolley, boat, etc.
- Being injured in a runaway.
- Being frozen or frostbitten.
- Being injured by robbers or burglars.

Should the Assured obtain injuries in the manner specified above, which shall not prove fatal, but which shall immediately, continuously, and wholly disable and prevent the assured from performing each and every duty pertaining to any business or occupation, the Company will pay the Assured FIVE DOLLARS PER WEEK during the time of such disablement, but not exceeding six consecutive weeks for any one accident.

NO DELAY OR EXAMINATION.

The insurance goes into effect as soon as you receive the policy and mail back the coupon attached to it. There are no dues, taxes, premiums, or assessments of any kind whatever to be paid by you. We have paid everything in full.

The three papers will begin at once, and will come to you each month till the time expires. THEN THEY WILL STOP, unless you order them renewed.

Send us \$2.00 by registered mail, or postoffice or express money-order to-day. Money refunded to any dissatisfied subscriber. Address

GLEANINGS IN BEE CULTURE, MEDINA, O.

C. H. W. WEBER

Headquarters for

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**Distributor of Root's Goods
Exclusively, at Root's
Factory Prices**

GIVE ME YOUR ORDERS for the **Best Goods Made**. You will be pleased on receipt of them. You will **save money** by ordering from me. My stock is complete; in fact, I keep **every thing** the bee-keeper needs. Cincinnati is one of the best **shipping-points** in the Union, particularly in the South, as all freight now **goes through Cincinnati**. Satisfaction guaranteed. Send for descriptive catalog and price list. It will be mailed you promptly **free of charge**.

Special Discount on Early Orders

I will buy your **HONEY AND BEESWAX**. I pay **Cash on Delivery**; or if you are in **need of honey**, write for prices and state quantity wanted, and I will quote you the lowest price of any quantity wanted—in cans, barrel-lots, or car-lots—of **extracted or comb honey**. I guarantee its purity.

WANTED=Sweet Clover.

If you have **Sweet Clover**, state if yellow or white, hulled or unhulled, also quantity and lowest price.

C. H. W. WEBER

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

CINCINNATI,   OHIO

Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections well filled, combs straight, firmly attached to all four sides, the combs unsolled by travel-stain or otherwise; all the cells sealed except an occasional one, 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 solled, or the entire surface slightly solled; the outside surface of the wood well scraped of propolis.

No. 2.—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface solled, or the entire surface slightly solled.

No. 3.—Three-fourths of the total surface must be filled and sealed.

No. 4.—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.

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

CINCINNATI.—There is absolutely no demand for either extracted or comb honey at this writing. Lower prices would be no inducement to the buyers, and a waiting game must be played until the trade calls for this commodity. We offer amber extracted honey in barrels at from 6 to 7½; fancy table honey from 9 to 10, in 60-lb. cans. Fancy comb honey, 16 to 18. The above are our selling prices. We are paying 28 cts. per lb. cash and 30 in trade for good to choice yellow beeswax, free from dirt, delivered here.

THE FRED W. MUTH CO.,
51 Walnut St., Cincinnati, O.

Jan. 13.

SAN FRANCISCO.—Honey so far shows no further change, jobbing prices being the same, and no concessions are offered by local dealers, though stocks are larger and prices to growers are weak. We now quote: Water-white, comb, 16 to 17; white, 15; water-white, extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 6½ to 6¾.—*Pacific Rural Press.*

INDIANAPOLIS.—Demand for best grades of extracted honey is good, while the demand for comb honey is not so brisk. Very little honey is being offered by producers at present. Jobbers are offering the following prices, delivered here. No. 1 and fancy comb, 16 to 17, net weight; extracted white clover, 9 to 10. Beeswax, 28 cash or 30 in exchange for merchandise.
Jan. 20. WALTER S. POWDER, Indianapolis, Ind.

ST. LOUIS.—The honey market has not undergone any change since ours of the 10th. Trade is exceedingly slow at the following prices: Fancy white comb, 15 to 16; No. 1, 14 to 15; amber, 13 to 14. Broken and defective honey sells at considerably less. Extracted white, in cans, nominal at 8 to 8½; amber, in cans, 7½ to 8; in barrels and half-barrels, ½ to 1 ct. per lb. less. Granulated honey sells at about ½ ct. less than liquid. Beeswax, 26½ for choice pure. All impure and inferior, lower.
R. HARTMANN PRODUCE CO.,
St. Louis, Mo.

Jan. 20.

KANSAS CITY.—The demand for comb honey is a little better, but there is not much improvement in extracted. We quote: Fancy white comb, 24-section, \$3.25 per case; No. 1 white comb, 24-section, \$3.00 to \$3.10; No. 2 white and amber, 24-section, \$2.75; extracted white, 8 to 8½; extracted dark, 7. Beeswax, 25 cts.
C. C. CLEMONS & Co.,
Kansas City, Mo.

Jan. 20.

CHICAGO.—There have been some heavy consignments of Western honey to this market, both extracted and comb. It must be held by the receivers for some time, as it can not be placed at any thing near prevailing prices. One trouble with which we contend is the limited consumption.

R. A. BURNETT & Co.,
Chicago, Ill.

Jan. 21.

ZANESVILLE.—This market is still well stocked with honey, especially alfalfa. An occasional shipment of clover comb comes in from eastern and north-central States. The demand for honey, both comb and extracted, is still light, though it has toned up slightly since last report. No. 1 to fancy white comb would bring, first-hand, 15 to 16 cts., wholesaling at about 17½ to 18. Extracted, in 60-lb. cans, is quoted at 11 to 12½, wholesale. Beeswax quoted. Would pay 30 cts. in exchange for bee-supplies f. o. b. here.
EDMUND W. FERRELL,
136 W. Main St., Zanesville, O.

Jan. 21.

BUFFALO.—The demand is improving a little for white comb honey. Not very much in dealers' hands here. Extra good demand for white extracted, quick sale on arrival. No. 1 fancy white clover comb, 16 to 17; No. 2, 13 to 15; No. 1 buckwheat, 11 to 12½; No. 2, 10 to 11. White clover extracted, 9 to 11; amber, 8 to 8½; dark, 7 to 8.
W. C. TOWNSEND,
Buffalo, N. Y.

Jan. 12.

DENVER.—We quote: No. 1 white comb honey passes off, 24 sections, \$3.25; No. 1 light amber, \$3.00 to \$3.10; No. 2, \$2.75 to \$2.90; strictly No. 1 white extracted, 9 to 10; light amber, extracted, 8 to 9; strained, 6½ to 7½. We pay 24 cts. for clean yellow beeswax delivered here. **COLORADO HONEY-PRODUCERS' ASS'N.**
F. RAUCHFUSS, Mgr.
Jan. 23.

ST. PAUL.—Fancy white-clover honey, new, per lb., 18; strained, in 60-lb. cans, 10.
W. H. PATTON, Sec.

W. H. PATTON, Sec.

KANSAS CITY.—Western comb, No. 1, per case, \$3.75; No. 2, per case, \$3.50.—*Cincinnati Packer*, Jan. 25, 1908.

THE BUSY BEE-MEN.

It won't be long before the bees
Will need some new abodes.
THE BUSY BEE-MEN sell THE HIVE
MUTH SPECIAL by the loads.

It can't be beat, and costs the same
As any 'in the ring.'
But take a look into our book—
You'll say, "That's JUST THE THING."

Send for our free catalog, and see our MUTH SPECIAL DOVETAILED HIVE illustrated. You can't believe it unless you see it.

THE FRED W. MUTH CO.,

51 WALNUT STREET.

The Busy Bee-Men.

CINCINNATI, OHIO.

Send for our prices on table honey. We have the finest.

Extracted Honey Wanted

We are always in the
market.

If you have any to sell, mail
small average sample to

**NATIONAL
BISCUIT COMPANY**

Purchasing Department,
205 LaSalle St., Chicago, Illinois.

ROOT GOODS FOR THE WEST

Why put up with inferior goods when you may as well have the best? They cost you no more. In many cases I can save you money. In all cases I give the most for the money, quality considered.

They are the ROOT GOODS, which I sell here at the ROOT FACTORY PRICES and DISCOUNTS.

My shipping facilities are unsurpassed anywhere. Practically all points are reached by direct lines, thus insuring lowest freight rates.

Write for estimate for liberal discount for orders sent in now.

JOSEPH NYSEWANDER
506-7 W. 7th ST. DES MOINES, IOWA

WE WILL BUY AND SELL

HONEY

of the different grades and kinds.

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

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NEW GOODS! BIG STOCK!

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Prompt Shipment Low Freight

**EVERYTHING
FOR THE BEE-KEEPER AT
SAVANNAH, GA.**

We are now prepared to furnish promptly a full line of supplies; choice new stock just from the factory.

Bees and Queens!

We have large apiaries of fine stock. Book your orders at once, as there will be a heavy demand this season. Catalog sent free. Correspondence solicited.

HOWKINS & RUSH
241 BULL ST. SAVANNAH, GA.

W. H. Laws says, If there is a queen-breeder who can boast of better stock let him trot out the proof. Testimonials enough to fill this book. Will give you only one. Mr. J. C. King, Washington, D. C. writes, "For two years I have had one of your queens in my apiary. Each season she has given me over 200 lbs. comb honey; last season she actually stored while other colonies starved. I have over twenty strains in my three apiaries, but yours is the best."
Now is the time to get a fine breeding queen; stock up this fall and double your crop of honey the coming season. Single queen, \$1.00; 6 for \$5.00. Extra select breeders, \$5.00. Safe arrival and satisfaction guaranteed.

W H LAWS, Beeville, Bee Co., Texas.

Established
1873.
Circulation
32,000.
72 pages.
Semi-
monthly.

Gleanings in Bee Culture

Devoted to Bees, Honey, and Home Interests.

\$1 per year.
When paid
in advance:
2 years, \$1.50.
3 years, \$2.00.
5 years, \$3.00.

Published by
THE A. I. ROOT CO., Medina, Ohio

J. T. CALVERT, Business Manager

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. Canadian postage is 80c per year. For all other countries in the Postal Union add 60 cents per year postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. The notice should be sent two weeks before the change is to take effect.

DISCONTINUANCES.—The journal is sent until orders are received for its discontinuance. We give notice just before the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. Any one who does not like this plan may have it stopped after the time paid for it by making his request when ordering.

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.

Foreign Subscription Agents.

Foreign subscribers can save time and annoyance by placing their orders for GLEANINGS with any of the following authorized agents, at the prices shown:

PARIS, FRANCE. E. BONDONNEAU, 142 Faubourg St. Denis. *Per year, postpaid, 7½ fr.*

GOODNA, QUEENSLAND. H. L. JONES. Any Australian subscriber can order of Mr. Jones. *Per year, postpaid, 6/.*

DUNEDIN, NEW ZEALAND. ALLIANCE Box Co., 24 Castle St. *Per year, postpaid, 6/.*

\$53,700

Made by O-HI-O Cooker Agents in 1905 selling the

OHIO

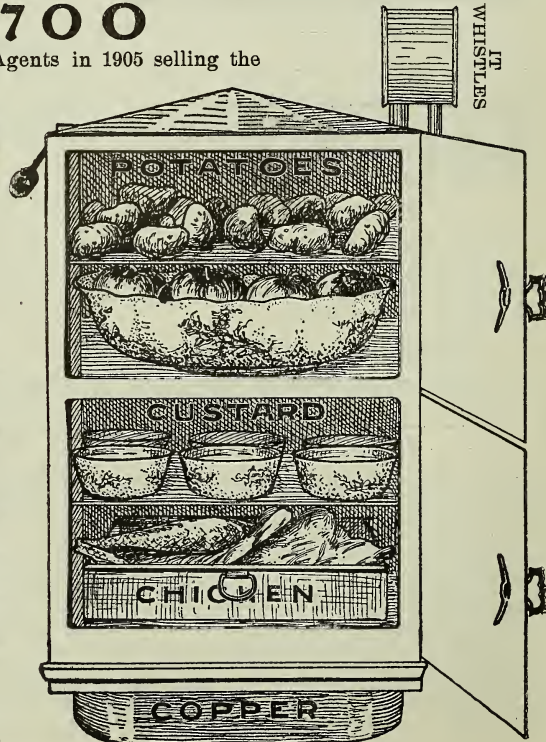
combination
**Steam Cooker-
Baker.**

We have many agents making \$5 to \$10 daily. Write us and we will give you names of agents near by who are making at least \$5 daily. We can easily prove that the "O-HI-O" is the best money-maker you ever heard of, and will make you more money than any thing you ever sold or are now selling. *Write us at once and we will prove it.*

Guaranteed to save 50 per cent in fuel, labor, time, and provisions. A whole meal cooked over one burner on any style stove. It assures you deliciously cooked hot meals; *30 days' trial.* No intermingling of odors or tastes. Fine for use in summer cottages. A necessity every day of the year. The only healthful way to cook foods and breadstuffs.

Handsomely illustrated catalog free.

"O-HI-O" COOKER CO.
908 Jefferson Av., Toledo, O.



Subjects for Discussion!

The cornerstone of successful publishing lies in finding out what readers want, and then giving it to them. With this end in view I asked my subscribers, last September, to tell me what subjects they would like discussed. The list is decidedly interesting and practical. Here are some of the topics:

Which is the best comb-honey super, and why?

How can we make rapid increase the most profitably?

What is the cause and cure for pollen being stored in the sections?

How much can be learned of the conditions of a colony from outside indications?

Give the comparative advantages and disadvantages of shipping comb honey by freight or by express.

What is the best management for the production of honey with only white clover as a source of nectar?

How deep from glass to floor ought a solar wax-extractor to be made to secure the best results?

Is it practical to winter bees successfully in a building wholly above ground?

Is it possible for some bee-keepers to improve profitably the honey-producing capacities of their localities?

Shall we buy bees, or build up a smaller number of colonies, when bees are wanted to start an out-apiary?

Give the comparative advantages and disadvantages of comb and extracted honey production. Would like to hear from R. L. Taylor.

These topics are printed here for two reasons: One to show what topics will be discussed in the Review in the near future, and the other to ask you to send in articles on any of these subjects. Any article that I think well enough of to publish I'll pay for—liberally.

The Review is \$1.00 a year; but just at present I can send all of the back numbers of 1907 free of charge to the man who sends \$1.00 for 1908. In other words, you can get 1907 and 1908 for only \$1.00. Add another dollar and the book *Advanced Bee Culture* will also be sent. Book alone, \$1.20.

W. Z. HUTCHINSON, :: :: :: FLINT, MICH.

The following extract from a recent letter received from one of our advertisers, to whom we had written for certain information regarding their financial standing and their ability to take good care of orders that might be placed with them by our subscribers, speaks for itself:

COLTON CAL., Jan. 13.

Your carefulness in accepting advertising should certainly be appreciated by your subscribers, and this inquiry as to our responsibility has given us a great deal more confidence in the idea that your publication will be a good one for us.

[Signed] CALIFORNIA PRODUCTS Co.

In this connection we desire to call the attention of our readers, particularly those throughout the East, to the advertisement of this concern, which is found on page 175.

OLDS' SEED CATALOG.

We are in receipt of an excellent catalog from the reliable seed-distributors, the L. L. Olds Seed Co., of Clinton, Wis. This, evidently, is a farmer's catalog, for it pays great attention to farm seeds, such as corn, oats, potatoes, clovers, barley, spelt, alfalfa, millet, melons, cabbage, squash, tomato, and other familiar farm seeds. We suspect the seeds recommended by the Olds Co. are just about right for the central and northwestern States, and we know them to be a reliable concern. Of course, they

Give the needed size of a bee-cellar in proportion to the number of colonies it is to contain.

What is the best method of getting honey out of cappings—by draining or by pressure, or how?

What is the best and most simple way for the ordinary bee-keeper to rear any extra queens that may be needed?

Give the comparative advantages and disadvantages of queen-excluders in the production of extracted honey in out-yards.

Those who have had experience in wintering and springing bees protected by tarred felt are asked to report—giving their experience and views.

How can we requeen an apiary to the best advantage when producing either comb or extracted honey, and not lessen the working force nor lose any surplus?

Can the "feeding back" of extracted honey to secure the completion of unfinished sections, or to produce comb honey, be made profitable? If so, how?

How can we improve our bees by breeding? How shall we select the foundation stock? Will stock deteriorate, or "run out," if left to itself? Shall we breed "in and in," depending upon selection for improvement, or is it desirable to introduce new blood occasionally? and, if so, how often? Is any thing gained by crossing varieties? Is there any truth in the statement that bees lose their vigor in the South?

list such flower-seeds as may be necessary for the proper adornment of the rural home. We believe that any one buying from them will receive fair treatment. A postal will secure their catalog by return mail. When you send for it, please mention this journal.

HUMPHREY'S GREEN-BONE CUTTER.

One of the greatest conveniences on a poultry-farm is a good green-bone cutter—one that can be depended on to do the work when required, without extraordinary physical effort. As will be observed by his advertisement on another page, Humphrey, of Joliet, Ill., claims to have just such a machine, and we know he is a reliable man. There is no longer any doubt about the great value of these bone-cutters to the poultryman, more especially the breeder who is conducting an egg campaign. Green cut bone not only produces more eggs, but it is a necessity to fowls which are confined, when it is impossible for them to secure worms and bugs, such as they delight in, and which are necessary to their existence.

Another point that should not be lost sight of is the practical economy of green cut bone, since all it costs is the labor, in most parts of the country at least. The proper use of it will turn a poultry failure into a success. If you require a green-bone cutter, please write Mr. Humphrey, Mine St., Joliet, Ill., for catalog and particulars of his introductory offer.

Gleanings in Bee Culture

E. R. ROOT,
Editor

A. I. ROOT
Editor Home Department

H. H. ROOT
Ass't Editor

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G. M. DOOLITTLE, R. F. HOLTERMANN, "STENOG," W. K. MORRISON.

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KELLOGG'S STRAWBERRY CATALOG.

This is certainly a model catalog, gotten out by a model firm. It is something more than a mere catalog, for it contains a first-class treatise on strawberry culture, such as one would naturally expect to pay 25 cents for. In fact, it looks more like a work on the culture of strawberries than a catalog. The berry business is particularly well suited to the temperament of the average bee-keeper, and no finer occupation can be found. A glance at this fine book will show this to be the case. It is handsomely gotten up, well printed and illustrated on good paper, and, all together, reflects credit on the business and enterprise of the firm getting it out. We believe any painstaking intelligent man could actually learn strawberry-growing from this so-called catalog, and we mean what we say. It is almost needless to add that the firm sending out such a book is reliable, prompt, and satisfactory in all its business relations. Write at once to R. M. Kellogg, Three Rivers, Mich., for a copy. Then take your time to make a selection of berry-plants. Study its wisdom on berry culture, and you will not regret it.

BURPEE'S, THE GREAT SEED FIRM.

We are again indebted to this firm for a copy of their well-known publication, "Burpee's Farm Annual," and, if possible, the present copy is an improvement on its predecessors. It has six beautiful colored plates of specialties with a handsome lithographed cover. In addition it shows sixteen new varieties of vegetables and flowers in their natural colors. It is needless to say that a firm which can turn out such a catalog has enterprise, genius, and financial resources back of it, and, of course, is sure to meet with success in its chosen field.

The Burpee people are responsible for some vegetables and flowers whose names are now household words, in this country at least. For example the well-known Rocky Ford melon is simply Burpee's Netted Gem; and in sweet peas they have had the field to themselves for some years. They have also taken a great deal of interest in developing special varieties of vegetables suitable to the market-gardener, and have been remarkably successful along this line. Catalog is free if you mention Gleanings.

4 PERCENT.

There is Nothing Speculative

about a savings account with The Savings Deposit Bank Company—

It is the one form of investment that does not fluctuate in value—

It is always there when you want it—

It is absolutely sound and secure—

It is the safest, most satisfactory investment your money can find.

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

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TO-DAY

Established 1892 A State Bank
Assets over \$700,000

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BANK COMPANY

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FIX YOUR ROOF

5c Per Square.—We will guarantee to put any old leaky, worn-out, rusty, tin, iron, steel, paper, felt or shingle roof in perfect condition, and keep it in perfect condition for 5c per square per year.

Roof-Fix The Perfect Roof Preserver, makes old, worn-out roofs new. Satisfaction guaranteed or money refunded. Our free roofing book tells all about it. Write for it today. The Anderson Manufacturing Co., Dept. 24 Elyria, Ohio.



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Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free. **COILED SPRING FENCE CO.** Box 101 Winchester, Indiana

Deming Sprayers

Save fortunes every year for farmers, fruit growers, and orchardists all over the country. Well-built, dependable, durable. Eighteen styles. Hand and Power. Our Nineteen Eight Catalogue and "Expert Testimony" will interest you. **THE DEMING CO.,** 545 Depot St., Salem, O. Henion & Hubbell, Agents, Chicago, Ill.

Root's Bee-supplies at Root's Prices

But f. o. b. Baltimore instead of Medina. Write for catalog L. No charge for drayage. ❖ ❖

RAWLINGS IMPLEMENT COMPANY
9 and 11 W. Pratt St. Baltimore, Md.

SAVE EXPRESS! by ordering
SAVE FREIGHT! your supplies
SAVE TIME! in **Boston**
H. H. JEPSON,
182 Friend St. Phone Haymarket 1489-1

THE BEE & POULTRY INDUSTRIES DOVETAIL

and go well together

In poultry culture the main thing is health, and



Conkey's Poultry Remedies

Are the World's Standard

This is the season for Roup and the sneezing, wheezing, swollen headed fowls should be quickly restored to health, usefulness and profit. You

cannot afford to experiment, so use

CONKEY'S ROUP REMEDY

Just a thimbleful in the drinking water and they cure themselves. Our absolute guarantee goes with it, and it means your money back should it disappoint you.

Conkey's Book on Poultry Free for 4c in stamps and names of two others interested. It solves the whole poultry problem and is worth dollars to any poultry raiser. **GET IT TODAY.**

THE G. E. CONKEY CO.
315 OTTAWA BLDG., CLEVELAND, O.
Conkey's Poultry Remedies are carried by A. I. Root Co. at their branches, New York, Philadelphia, Washington, Chicago and Medina.

Poultry Magazine,



Monthly, 60 to 100 pages, its writers are the most successful Poultrymen and women in the United States. It is

The POULTRY TRIBUNE,

nicely illustrated, brimful each month of information on How to Care for Fowls and Make the Most Money with them. In fact so good you can't afford

to be without it. Price, 50 cents per year. Send at once for free sample and **SPECIAL OFFER TO YOU.**

SWINE MAGAZINE

Monthly 24 to 64 pages, best writers and information how to **Make Big Money With Hogs.** It is

The NATIONAL SWINE MAGAZINE

Printed on heavy paper, well illustrated with Prize Winning Animals, Houses, Fixtures, etc. 60 cts. per year. Our Premium Prospectus Agents on these two M agazines enables you to get one or a pair or more of

pure bred pedigreed pigs, 4 kinds, absolutely **FREE** or a big **Cash Commission** if you choose. Write me today for samples of the two papers and full particulars.

R. R. FISHER, Publisher, Box 50, Freeport, Ill.

GREIDER'S FINE Poultry Catalogue



for 1908 is larger and better than ever. Tells all about pure-bred poultry and illustrates 60 varieties. Contains 10 beautiful chromes of leading breeds—pretty enough to frame. Tells of best Louse Killer, how to cure diseases, make money. Only 10c postpaid. Send to-day for a copy.

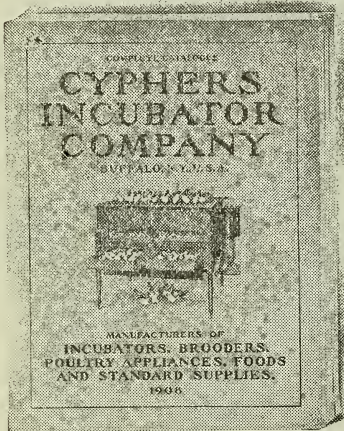
B. H. GREIDER, Rheems, Pa.

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FREE TO OUR READERS—CYPHERS INCUBATOR COMPANY'S COMPLETE 208-PAGE CATALOG FOR 1908.

Herewith is shown a fac-simile illustration of the Great Free Book of Cyphers Incubator Co., Buffalo, N. Y., which will be mailed free to our readers on



request, provided you mention this journal. The new catalog shown in the picture consists of 208 pages, 7 1/2 by 10 in size. It fully illustrates and describes the 72 valuable articles manufactured by

this well-known firm for the use of all classes of poultry-keepers. It also contains photographic views of many of the world's largest poultry-plants, of America's leading egg-farms, and portraits of the most successful poultrymen of the United States and Canada. Write to-day for a free copy of this valuable publication, addressing the nearest office of Cyphers Incubator Co., as follows: Factory and home office, Buffalo, N. Y. Branch houses, 21 and 23 Barclay St., New York; 310 Fifth Ave., Chicago, Ill.; 28-30 Union St., Boston, Mass.; 2325 Broadway, Kansas City, Mo.; 1563 Broadway, Oakland, Cal.; 119 Finsbury Pavement, London, England.

ALLEN'S STRAWBERRY CATALOG.

We have received our copy of W. F. Allen's catalog of strawberry-plants. He now lists other plants and seeds besides. Mr. Allen is a king among strawberry-growers and at one time published a strawberry paper. His place on the Eastern Shore of Maryland is in the center of a great strawberry-growing section where the berries are shipped to New York, Philadelphia, and Boston by the train-load. Mr. Allen ships plants by the carload (express), sending them to all parts of the United States and even to foreign countries.

Almost all berry-growers also grow vegetables as well, and Allen's catalog now contains a fair list of the leading sorts used by market-gardeners. One of the specialties of the Eastern Shore is its sweet potatoes, the soil and climate being just to the liking of this great crop. Another crop which grows with great success down there is crimson (or scarlet) clover. It is very extensively planted in Maryland and Delaware, and flourishes with great luxuriance. It is listed here with other farm seeds. This certainly is a catalog well worth sending for. Write to W. F. Allen, Salisbury, Md., and please mention this journal when doing so.

FROM MAINE TO MEXICO.

Strange it is that some people have an idea that the wants of the readers of a bee-journal are limited to such things as bee-keepers' supplies, queens, etc., forgetting that the average bee-keeper's family requires a varied line of goods the same as the rest of humanity.

In February last we received an order for a single insertion of a five-line advertisement of seed corn which cost the advertiser \$1.00. On July 10 he wrote us:

**CALVIN S. HUNTER,
CROWER
BEST "WHITE SEED CORN."
SINCE 1865.**

SEVEN MILE, O. July 10, 1907.

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

Gentlemen:--

The fruit of my advertisement with your high-class journal reached from Maine to Mexico. I send you a sample order and international money-order in Spanish, which I am sure Mr. Root, Sr., will be glad to see. Tell him I sent this man the finest corn in the kingdom, for I was not looking for an order "from the uttermost parts of the earth."

Very truly yours,

Calvin S. Hunter.

This man is only a chance advertiser in GLEANINGS in our classified columns, and yet he has to report such results as above. He is one of the readers of GLEANINGS lately referred to as being one of the substantial buying class, and is only incidentally an advertiser with us. In looking over his correspondence, we find the following statement from him:

SEVEN MILE, O., July 10, 1907.

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

Gentlemen:--

I have a great respect for GLEANINGS, and, on our table, containing twenty to thirty of the leading journals and papers, it is the gem of the lot.

Yours very truly,

Calvin S. Hunter.

When GLEANINGS stands so high in the estimation of its readers, it isn't to be wondered at that 35,000 of them would constitute a strong buying class.

For many lines which haven't been widely advertised with us as yet, it offers a very fertile field, probably many times better than the overworked columns of the agricultural papers. Particular information regarding the class of people we reach, or any thing relating to the subject, may be secured by addressing

ADVERTISING DEPT. GLEANINGS IN BEE CULTURE, MEDINA, O.

The Danzenbaker Comb-honey Hive

MICHIGAN is one of the leading States for the production of fancy comb honey, and we particularly urge those of our customers interested in this to try the Danzenbaker hive. Read what Mr. Wortman says below:

MORE HONEY.

I have a small apiary in Danzenbaker hives. I have taken more honey from them than four of my neighbors with other styles of hives. I have sold a good many Danzenbaker hives, and every one is wanting more for the coming season. (Signed) HERMAN F. WORTMAN.
Gilmore, Mo., Dec. 1907.

BETTER HONEY.

"I have an apiary of about fifty colonies, from which I secured from sixty to one hundred and forty pounds of the *best* comb honey per colony you ever saw. I use the Danzenbaker super and consider it the best. I love bee-keeping, and believe there is no other business so interesting as keeping a few colonies of bees. (Signed) FRED W. RANKIN.
Cranesville, N. Y., Dec. 26, 1907.

BETTER PRICES.

It is a recognized fact among the users of this hive that the honey produced is much finer in appearance, as stated by Mr. Rankin, and, this being the case, it follows that better prices are secured. This is by reason of a much larger percentage being of a fancy and extra fancy grades which command the highest prices. These grades are never a drug on the market; indeed, many discriminating buyers often make special inquiry for honey in Danzenbaker sections.

M. H. HUNT & SON
REDFORD, (NEAR DETROIT) MICH.

TO THE BEE - KEEPERS OF CANADA.

WE are pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we do not offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the **QUALITY**. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, The best is cheapest."

E. GRAINGER & COMPANY,
Deer Park,
Toronto, Ontario, Canada.

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

APICULTEURS

des pays de langue Francaise.
Nous vous informons que

L'Apiculture Nouvelle

Revue mensuelle illustree,

est tiree de:

Gleanings in Bee Culture

augmentee et completee par des collaborateurs Europeens, reconnus comme Apiculteurs eminents.

L'Abonnement d'un an est envoye franco pour tous pays de l'Union Postale, contre l'envoi par mandat poste de 7.50.

Un numero specimen, ainsi que notre catalogue francais de tous les articles de la

A. I. ROOT CO.

est envoye gratuitement sur simple demande,
adreesee a

Emile Bondonneau,

Agent General pour l'Europe et les Colonies
de A. I. ROOT CO.,

142 Faubourg Saint Denis 142 Paris (10e)
France.

L'Edition Francaise de l'A B C de l'Apiculture
est egalement parue.

LET US SEND YOU

An Outfit for Making A Start in Bee-keeping

AN OUTFIT composed of five of our divisible-brood-chamber hives, with Danz. supers in the flat, including a Standard Smoker, Veil, A B C Book, with one year's subscription to GLEANINGS IN BEE CULTURE, can be furnished for an even \$15.00.

This outfit will be shipped promptly by freight or express on receipt of \$15.00.

The A. I. Root Co.,

Syracuse,

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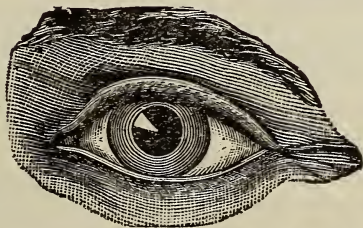
New York.

WE DO NOT SELL ROOT'S SUPPLIES

So many advertisers in GLEANINGS IN BEE CULTURE sell supplies bought from the Root Co. that to explain away a false impression we are compelled to state that we are not jobbers, but *manufacturers*. We make all the Bee-supplies we sell. Minneapolis is the largest lumber-distributing point in America. We buy lumber to advantage; we manufacture by water-power; we have lowest freight rates, and we sell on manufacturer's profit basis. **Let us quote you prices.**

MINNESOTA BEE-KEEPERS' SUPPLY COMPANY
DEPT. 22 MINNEAPOLIS, MINN.

Keep your



on this ad.

We intend to keep a full stock of The A. I. Root Co.'s goods on hand this season, as we have in the past. When in need of bee-supplies, write us. Get our catalog at once.

For prompt shipments and good service, we are at your command.

JOHN NEBEL & SON SUPPLY CO., HIGH HILL, MONTGOMERY CO., MISSOURI.

What's the Matter With Hilton?

WHY, HE HAS A LOT OF SUPPLIES HE WANTS TO LET YOU HAVE WITHIN THE NEXT SIXTY DAYS AT A DISCOUNT, TO MAKE ROOM FOR THE NEXT SEASON'S GOODS. JUST SEND A LIST OF WHAT YOU WANT AND GET ESTIMATE. IF YOU HAVEN'T HIS FORTY-PAGE ILLUSTRATED CATALOG, SEND FOR IT AT ONCE.

CASH OR SUPPLIES FOR
BEESWAX AT ALL TIMES

GEORGE E. HILTON
FREMONT, :: :: MICHIGAN

MAKE UP YOUR ORDER

from any catalog of Root's goods published this year; deduct the early-order discount, and send us the order with remittance to cover amount. The goods will be forwarded to you by the shortest route at once. Our specialty is bee literature. Make a list of the bee books and journals you intend buying this year at publishers' prices. Deduct 10 per cent; or if the total is more than \$10.00, 15 per cent. Send us the net amount and we will send the books prepaid. Catalog and price list of bee-supplies, bee-books, and honey free.

GEO. S. GRAFFAM & BRO., Bangor, Maine

Eastern Bee-keepers

We furnish every thing a bee-keeper uses and allow a liberal discount for early orders. We keep all supplies in stock, and can ship promptly by any route. Let us quote you on what you want? Catalog free.

I. J. STRINGHAM,
Apiaries—Glen Cove, L. I. 105 Park Pl., N. Y. City.

Bee-keepers' Supplies Sold

At the very lowest profit possible. Dovetailed hives, sections, etc.; complete stock, bought in car lots. Subscriptions given with orders. Send for my 32-page catalog, free. **W. D. SOPER, Jackson, Mich.**

THE DANZENBAKER SMOKER

PAT. OCT. 3, '06, JUNE 4, '07

GOLD MEDALS
St. Louis Exposition, 1904
Jamestown Exposition, 1907



IS THE BEST,
STRONGEST,
COOLEST,
CLEANEST,
CHEAPEST,
AND LARGEST
SMOKER SOLD
FOR A DOLLAR

The perforated side grate seen above holds a removable, metal, asbestos-backed fire shell, preventing burning the tin off the outer case, and deflects the air at right angles, preventing back draft to the back and over the top, cools and expels the smoke, fanning the burning fuel at top or side till all consumed, giving cool smoke for hours from one filling. It can't clog. No top-heavy cap to choke with soot; no valve to fail; no holes shedding sparks or hot ashes.

Four years' sales prove its success beyond a doubt, expensive dies making it uniformly perfect as possible to devise. We confidently guarantee full satisfaction or refund the price.

Price, \$1.00; 3 for \$2.50; by mail, add 25c. each

Send address of yourself and Bee friends for 8-page leaflet on "Smoker," and facts about Bees and Queens, 80 pages, free.

F. DANZENBAKER, Norfolk, Va.

1854

1908

Root's Goods always in stock

FOR YOU

Twenty-two successful years manufacturing bee-supplies and raising Italian bees and queens. . . . Root's Goods in Stock.

J. M. Jenkins
Wetumpka, : : Alabama

Dittmer's COMB FOUNDATION

is the best, not because we say so, but because the bees prefer it to other makes.

Dittmer's Process is Dittmer's

It has built its reputation and established its merits on its own foundation and its own name.

We make a specialty of working wax into foundation for cash.

Write for free catalog, and prices on full line of supplies.

GUS. DITTMER CO., Augusta, Wis.

**JOBBER FOR
Central Pennsylvania**
... for ...

ROOT'S GOODS

**TRY THE DANZ.
COMB-HONEY HIVE**

The Danzenbaker hives I got last season have given splendid satisfaction; in fact, I have kept my bees outside this winter, which is seldom attempted in Manitoba, and up to date they have come through in splendid shape. I think the hive did it.
Yours truly, **LAURENCE C. CLARKE.**
Morden, Man., March 5, 1907.

Send for catalog. Best shipping facilities in the State.

Frank W. Prothero
Dubois, : : : Pennsylvania

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.

At St. Louis



On a
to all points in the South and Middle West.

Send for our free illustrated catalog of
Root's Bee-supplies

We sell at factory prices.
Send us a trial order.

Beeswax Wanted.

Blanke & Hauk Supply Co.
DEPT. B.
1009-11-13 Lucas Ave. St. Louis, Mo.

Manufacturers and Jobbers of Dairy, Creamery, Ice-cream, and Poultry Supplies.

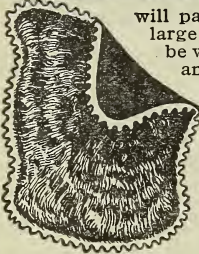
North Texas Bee-keepers

will find Dallas the best point from which to purchase supplies. We have a carload of **ROOT'S GOODS IN STOCK**, and sell them at the Factory Prices. Don't forget that we can furnish any thing in the way of Field or Garden Seeds, Plants, and Poultry Supplies. Our large illustrated catalog for 1908 free on application. Mention GLEANINGS when you write.

**TEXAS SEED AND
FLORAL COMPANY**
Dallas, : : . Texas

HIDES ARE TOO VALUABLE TO SELL

Your horse and cow hides will be worth more to you made up into Fur Robes, Coats, Mittens, etc., than the little money the butcher will pay you for them. A coat like we will make for you from one large hide or two small ones, for from \$9.50 up, will last for years; be water, moth and wind proof, and will keep you snug, warm and dry in the coldest, wettest weather. Robe lined with best plush from \$7.00 up.



No matter where you live WE WILL PAY THE FREIGHT on all hides sent to us to be made into Coats and Robes.



Any color looks well. Our process of tanning makes the skins soft and pliable, and the finished coat or robe will be so handsome it will be a surprise to you if you never saw one of our cow or horse hide garments before. We guarantee workmanship and complete satisfaction—are the largest firm in the country tanning, manufacturing and selling direct to consumer. Don't sell a hide, but write to us for our 40-page catalog giving full particulars and showing the various styles of fur goods we make. It's FREE—write for it today.



NATIONAL FUR and TANNING CO.,
119 Peeler St., Three Rivers, Mich.

This is the Book that will Increase Your Fruit Profits



A DOLLAR BOOK FOR 1 CENT

High Grade Fruit Trees, Vines and Plants

Special low prices on **Plum, Apple, Peach and Dwarf Pear Trees, Roses, also Asparagus Roots, Currant Bushes** and other small fruits. Order trees direct from our nursery and save agent's profits and **half your money.**

Everything you want for Orchard, Garden, Lawn or Park. Send! to-day for Green's Dollar Book on Fruit Growing, also for our Fruit Catalog, and a copy of Green's Fruit Magazine, **all a gift to you.**

GREEN'S SAMPLE OFFER One Elberta Peach Tree, one Red Cross Currant Bush, one C. A. Green New White Grape Vine, one Live-Forever Rose Bush, all delivered at your house by mail for 25 cents.



Plum Trees \$6.00 per hundred.

GREEN'S NURSERY CO.

Rochester, New York

Box

ABC ^{AND} XYZ

of

Bee Culture

By A. I. and E. R. ROOT

New 1907 Edition

NOW ON SALE.

LARGER and BETTER

115,000 Copies have been
Printed

A BEE-KEEPERS' ENCYCLOPEDIA

All the New Ideas

Hundreds of Illustrations to make every thing plain and practical

Nearly 600 Large Pages

PRICES

Cloth-bound \$1.50
 Half Leather 2.00
 Full Leather 2.50
 Postpaid to any Country in the World

THE A. I. ROOT CO.
 MEDINA :: :: OHIO

Only two years have elapsed since we brought out an edition of 15,000 copies of the well-known A B-C of Bee Culture. This brought up the number to 100,000 copies, thereby surpassing in popularity all other bee-books ever printed.

The demand for these has been so great that we were compelled to undertake a new edition at once, and in doing so we took the opportunity to revise and greatly enlarge it again, though it had been generally considered quite a large book.

In doing so we brought in new blood to assist us, give new ideas, and otherwise enable us to produce as good a book as it is possible to make at a popular price. If you will carefully examine a copy you will be prepared to admit the new volume is quite an improvement on its predecessors. To keep pace with improvements it contains nearly 100 double-column pages more than the previous edition.

The new methods of queen-rearing have been carefully reviewed, and the main points incorporated in the new edition, so that the practical bee-keeper who possesses a copy will have the best ideas of the subject constantly by his side for reference.

The new methods of wax-production are treated in an exhaustive fashion; and as this subject is now of more importance than formerly, more space has been devoted to it.

The new power-driven automatic extractors are amply illustrated and described. The subject of diseases has received entirely new treatment to keep pace with the new discoveries of the last few years. The laws relating to bees have for the first time received full treatment. No other bee-book treats of this very important subject. Honey, sugar, nectar, and glucose are carefully defined in accordance with the demands of our new pure-food laws.

In accordance with the ideas of its first author, A. I. Root, the new A B C and X Y Z is *eminently practical*.

German edition (new), paper covers, \$2.00; cloth-bound, \$2.50. Postpaid anywhere. This is the famous A B C in the language of the Fatherland, to suit our many German friends.

French edition (new), cloth-bound, \$2.00, postpaid. This is another edition, translated into the beautiful language of France.

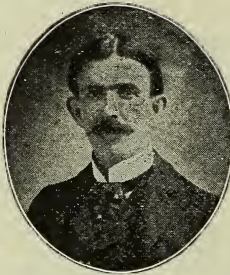
**"If goods are wanted quick, send to Pouder."
Established 1889.**

A Humming Business

By the Bee Crank.

Panics and near-panics have no terrors for the bee-man. His business is always a humming one. His tireless workers know little of hard times and care less for them. They are always busy during their season.

And their season is not faraway. Now is the time to get ready for it. My warerooms are full of fresh new goods, and orders will receive as always, the kind of attention you want them to receive.



I handle Root's goods at Root's prices. Can make immediate shipment of metal-spaced Hoffman Frames, Danzenbaker Hives, Dovetailed Hives, Section Honey-boxes, Weed-process Comb Foundation, Bee-veils, Smokers, and every thing used by bee-keepers.

HONEY. Particular people are sending here for finest white-clover honey. If interested, write for quotations.

Chicago, Ill., Jan. 16, 1908.

Walter S. Pouder:—Kindly ship another 120-pound lot of your superior white-clover honey. This honey is so delicious that a mere taste makes one hungry for more, and I have a number of small orders awaiting. I am proud of your honey, and would offer it to President Roosevelt with the same feeling that I offer it to my neighbors.

Thanking you for favors,

HARRY LEBNER.

Beeswax Wanted. I pay the highest market price for beeswax. Ship by freight or express according to amount. New catalog free.

Walter S. Pouder,

513-515 Massachusetts Avenue, Indianapolis, Ind.

GLEANINGS IN BEE CULTURE

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

E. R. ROOT, EDITOR
H. H. ROOT, ASST. ED.

A. L. BOYDEN, ADVERTISING MGR.
J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

Vol. XXXVI.

FEBRUARY 1, 1908.

No. 3



SOME SAY honey is a luxury, some say it is a necessity; but I rather like M. V. Facey's idea that it's both. He says, p 86, "It is a luxury, but where constantly supplied it is a necessity."

RIGHT YOU ARE, Louis Scholl, in thinking producers should have more to say about prices of honey, p. 87. But let me whisper in your ear that, even in the North, some of us set our own prices.

LATELY I saw a queen-excluder advertised, I think it was in a German catalog, about the same as the Marbach, only it was of wood. One would think it wouldn't last long, but it might take the bees some time to gnaw the round wood at the right places.

J. L. BYER, after reading what you say, p. 98, I have a word of advice for you. Please remember that I am older and more experienced than you. My advice to you as to the matter of feeding in the fall is to *keep right on the way you have been doing*

OF MANY A MAN it is true that he preaches better than he practices. I am glad to say that the reverse is true of my good friend G. M. Doolittle. Notwithstanding his shaky preaching about bees holding the heat in the cluster, his practice, as given p. 83, is sound as a dollar. Shake, Gilbert.

I DON'T KNOW what Louis Scholl means, p. 87, by saying a *nail* to hold a hive-tag "would soon be driven into the wall of the hive-bodies when these are handled," for in all the years I have used them I have never known one to be thus driven in. I must say, however, that I like the looks of his arrangement.

THAT PLAN of stretching the cord down tight and fastening with a safety-pin, as

shown at Fig. 5, is especially to be commended to ladies. Indeed, it is the invention of a woman not a thousand miles from Marengo. [Yes, it is true that Miss Wilson suggested to us the use of the safety-pin in a bee-veil as described in our last issue.—Ed.]

DOOLITTLE SAYS that, in his locality, a colony which has stored comb honey is rarely short of stores for wintering and springing. Likely that is true of any locality *if* hives are large enough, and I suspect he is talking about ten-frame hives; at any rate, with eight-frame hives last spring I should have suffered heavily had I not had an extra lot of heavy combs of honey.

I READ GLEANINGS, Jan. 15, as far as p. 80, and then I stopped and wrote three letters. To Dr. Wiley I wrote, "Hearty thanks for insisting that glucose shall be called glucose." To President Roosevelt and to Secretary Wilson I wrote, "If glucose is glucose, please don't let it be labeled any thing but 'glucose.'" [Good! If others have not already written, let them do so at once.—Ed.]

AS FOOTNOTE to that veil article, p. 98, it might be said that, where one works much with bees, it is well to use a permanent beehat with veil sewed to the edge of the brim instead of having a rubber band hugging the crown. Where a rubber cord is used at the lower edge of the veil it is better to have a hem of white material to avoid crocking the clothing. [Yes, and the veiling could be sewn half an inch or one inch from the edge of the hat-brim. The purpose of this is to keep the sun from striking the veiling at such an angle as to interfere with the sight.—Ed.]

THE LONGER the honey remains in the hive, the less sucrose (cane sugar) will be found, page 81. Please explain. [If we are correct, the process of inversion continues after the honey has been sealed in the combs. The older it becomes, the less there will be of sucrose or cane sugar. Apparently the process of inversion, after the bees get through with it, is not entirely complete; therefore the United States standard allows us a small per cent of sucrose in normal honey. But that does not mean that some one else may put in cane sugar; for the cane sugar of com-

merce is different from the cane sugar or sucrose found naturally in honey. The modern honey-analyst, at all events, is able to detect any foreign ingredient put into honey, even cane sugar.—Ed.]

"SOME RESIDENTS of the buckwheat country consider buckwheat honey the best honey sold, and . . . there is every thing in getting our tastes educated to a certain flavor," p. 78. I think the prevailing honey is the one generally preferred in each locality; but I feel quite sure that there is a decided difference in taste aside from locality or education. In this locality, where buckwheat honey is rare, a few people strongly prefer it to white clover. A member of my family prefers a certain fall flavor to white clover, while the very smell of it is offensive to me.

I WONDER if something unusual in transit or otherwise had not happened to that sample of heather honey received in Medina, p. 78. I think I never sampled heather honey except once, and I surely did not call it *vile*. It was from Scotland, and may have differed from your English heather. [We do not know how to explain it; but we presume the sample sent to us was fine to those who were consumers of that kind of honey. For example, we consider Colorado alfalfa or California sage as very fine honey; but there are some who do not like either—especially those who like strong-flavored dark honey.—Ed.]

"I TOLD YOU SO. I wanted you to put that in, and you wouldn't do it." That's what my assistant said to me upon reading what Mr. E. F. Atwater says, p. 82, about the behavior of a single piece of foundation fastened top and bottom. But I couldn't say it with the same authority as Mr. Atwater, not having had his experience; yet the fact remains that it was just because I wanted to avoid the unpleasant behavior of the single piece fastened at the bottom that I invented the bottom starter. That fastens the section at the bottom just as securely as the single piece fastened top and bottom, *but does not give the same opportunity for sagging*. Bottom starters require no extra machinery, and any one can try them.

E. H. BRADLEY must live in "the land of contraries," p. 91. When a colony swarms he keeps the strength as much as possible with the mother colony, and depends on it for surplus; elsewhere the swarm is thus used. In his locality the bees of a swarm seem to return to the parent stock, only "enough will remain to take care of all the eggs the old queen can lay;" elsewhere no bees of the swarm return to the parent. Unless he takes precautions the swarm may swarm again, making a virgin swarm; elsewhere no precautions are considered necessary to prevent a virgin swarm. With him it is no trick to produce prize honey over the black combs of the mother colony; elsewhere, if there is any difference, finer sections can be produced over a swarm with new combs.

REFERRING to p. 78, I think the Miller escape has the advantage that it is cheaper of construction, and takes less time in using,

while the bees may more readily desert the Whitney. But if I preferred the Whitney I would go back to the kind I used before the present Miller; mosquito-netting on all sides, instead of the Whitney box, and a cone at the top. The cone may be of wire cloth, or netting held up by two bent wires. That's away ahead of the Whitney or Miller for letting in light on all sides; but I prefer the Miller on account of convenience in using. Would not one large cone be better than the several small cones in the Whitney? [We do not know whether a lot of cones is better than one or not. An actual test will determine the point.—Ed.]

ALL THAT, however, is aside from the main point. My request was that you tell us on what ground you base the objection that "very young bees are unable to get back to the hive." You do not reply to that, merely repeating, "It would be my opinion that some young bees will be lost." Please tell us *why* that would be your opinion. [If your pile of supers with your bee-escape is placed at some point remote from the hive or hives, then we do not see how it is possible for the young bees to go back to the hive whence they came. If the pile is placed near the entrance of some colony, then it is conceivable that they might crawl into such colony.—Ed.]

THANKS to Louis Scholl for helping to keep the word "section" from being overworked, p. 88. I can hardly see the objection to "brood-chamber" that he does. Still less do I see the objection to the word "story." To be sure, story means a "full-depth hive-body." Well, what of it? Is there any fixed depth for a full-depth hive-body? A Jumbo hive-body is full-depth, so is any hive-body in use, so long as only one story is used, isn't it? Now, suppose two Jumbo bodies are used—one on top of the other—is not each body a story? Suppose two bodies ten inches deep are used; is not each a story? Go on down shallower and shallower, and where will you draw the line and say any thing shallower than this is not a story? and *why* is it not a story? Let me start from another quarter. If a man uses a single Heddon hive-body you would call that a story. Now, why isn't it just as much a story when he puts another story on it? [When we write about "divisible hives" or a "shallow hive" or a "sectional brood-chamber," is it not commonly understood that such hive or brood-chamber is about half the depth of an ordinary Langstroth hive? Langstroth depth is standard in this country. When we speak about a shallow brood-chamber it is understood that we mean about half the depth of the standard. When we say "Jumbo" we mean something deeper than the standard. When we talk of a short man we mean one considerably less than six feet tall. When we speak of a tall man we mean one who is nearly six feet or something above it.

We see no objection to the phrase "divisible" hive or "sectional" hive. The latter,

certainly, can not mean a hive full of comb-honey sections, unless one is woefully ignorant of apicultural terms.—Ed.]



LIVE-BEE HANDLING AT THEATERS.

EVIDENTLY some one else is doing stunts in handling live bees before an audience. The following advertisement appears in a Philadelphia daily, and reads as follows:

NINTH AND ARCH DIME MUSEUM.

Always ahead! First Philadelphia appearance of Barrett the bee-king and his countless thousands of bees. Unique stunts by curious winged artists. The most novel exhibition ever presented. Instructing, interesting, entertaining. What do you know about bees?

This dime museum will exhibit all over the United States, we are told. Perhaps some of our bee-keeping friends will be glad to see this.

DETROIT SECURES THE NATIONAL CONVENTION.

The following, received from Secretary Hutchinson, will explain:

By a unanimous vote the executive committee of the National Bee-keepers' Association has decided to hold the next annual convention in Detroit, Michigan. The exact date has not been decided on, but it will be after the hot dusty busy season is past, but before the cold of winter has come—in those glorious days that come only in the autumn. The National has met in Detroit only once, nearly a quarter of a century ago; but that meeting was well attended—practical, enthusiastic, and harmonious.

The majority of bee-keeping specialists—those who attend conventions—live in the northeastern part of the United States and Canada, and Detroit is very nearly the geographical center of that district. It is easily reached from the middle South, from the East, from the middle West, and from Ontario; hence a great crowd of practical men can be gathered at that point.

W. Z. HUTCHINSON, Sec. N. B. K. A.

LABELING THE WEIGHT.

BEE-KEEPERS in Nebraska will have to take notice in future of the State pure-food law which compels venders to state on the outside of a package the weight of the goods inside. According to a ruling of Deputy-Attorney-General Rose, this feature of the law is sound and constitutional, and must be enforced.

It looks as though comb honey would have to bear a label certifying to the weight. For the benefit of readers who have to do with this law we append the opinion of Mr. Rose.

In my opinion your interpretation that the contents, weight, or measure must be correctly stated on the outside of food packages sold in Nebraska is in harmony with both the spirit and the letter of the pure-food law. It is no answer to this construction to cite the national pure-food act. The Nebraska statute requires the contents, weight, or measure to be branded on the outside of packages of food, if sold for use in this State, while the act of Congress contains no such requirement. In this respect the federal statute did

not meet the approval of our legislature and can not be invoked to determine its meaning.

Every label or stamp will probably have to have a blank space in which the exact weight can be shown, in pencil or pen. W. K. M.

SUCCESS INSTEAD OF FAILURE.

At the convention of the Michigan Bee-keepers' Association Mr. W. J. Manley, Sandusky, Mich., gave a most entertaining talk on "winter losses," in which he made the remarkable statement that he saved only one swarm out of 125 last spring, and made 400 per cent on his investment. He remarked that a winter loss with him is almost as good as a honey-flow. He explained the same by saying that his is an excellent locality for honey, but winter losses are heavy on account of the aster honey that the bees deposit late in the season, and on which they would not winter well. In the spring he melts up his old combs, sells the wax, buys bees by the carload, and turns apparent failure into success. He also explained his method of rendering wax on a large scale.

In a locality where the fall honey does not give good results as a winter food, we would advise the substitution of sugar syrup, properly made. It would at least save such great losses during the cold weather.

A WORD TO THOSE WHO EXPECT TO QUIT KEEPING BEES BECAUSE OF POOR SEASONS.

LAST week we had a visit from Mr. F. A. Salisbury, of Syracuse, N. Y. While here he told how one bee-keeper came to his place and said he guessed he would quit the business, as the seasons were getting to be too poor. Said Mr. Salisbury:

"Mr. Jones, you say you are going out of the bee business. Will you tell me if there is any other rural pursuit that, for the *money and time invested*, will begin to give the returns that one can get from bees when intelligently handled? Now just stop and think. A colony of bees will earn more clean money than the same money invested in general farming."

Jones thought a minute, then a smile began to play over his face, and he said:

"I guess you are right, old man—I guess you are right. But I thought that, because I had not done as well as *I used to do*, it did not pay me to keep bees."

"But really," said Mr. Salisbury, "have they not earned for you more than any thing else on the farm?"

"I guess that is so," said Mr. Jones.

In counting up the profits and losses in keeping bees, \$100 worth of syrup given to 100 colonies looms up *awful big*; but an average of only 10 lbs. of honey will cover this up. An average of 25 lbs. will leave a comfortable margin of \$100 of clean money. An average of 50 lbs. ought to give an earning capacity of \$4.00 per colony after expenses have been paid. Now, \$100 in the apiary does not begin to take the amount of time that the same investment does in general farming operations.

Suppose one has had two poor seasons with no surplus, as was the case with very many last season; has it not happened over and over again that one good year will more than make up for the two poor ones? Do not give up the bees yet; or at least before you do, figure up what you have got from them, and then consider whether it pays to "let 'em go galager."

Just recently we learned of a college student who, with a few bees, is paying his way through college. During the summer he works the bees for all there is in them; then during the fall and winter when they require very little attention, he, with the money earned, is getting a college education. This is not an isolated case, by any means.

THE APPALACHIAN FOREST RESERVE.

AN effort will be made at the present session of Congress to secure legislation which will give the Department of Agriculture the necessary powers to acquire a vast tract of country around the tops of the mountains in the Appalachian chain. The object of the government is very largely to save the forests which now grow on the slopes, but which are in danger of being totally destroyed by the lumber butchers.

The government would also conserve and control the water, either for supplying cities or for power, and at the same time save the mineral resources for the benefit of the whole people.

The Appalachian is a beautiful mountain country, a sort of playground similar to the Adirondack region of New York. In a few years the whole reserve would become a perfect summer resort if properly cared for, as it would be.

It is a hard-wood region, many of the trees (such as sourwood) being prominent bee-keepers' trees. Much of the underbrush is composed of sheep-laurels and rhododendrons, which are excellent nectar-yielders; in fact, the whole territory is a natural bee country, so that the bee-men have a particular reason for wishing the government to acquire the land. If conducted as a forest reserve, bee-keepers would be allowed to place their apiaries there without charge, and yet overstocking would not be allowed. As a matter of fact, it would constitute a bee-keepers' preserve. Instead of deteriorating in the hands of Uncle Sam, its value for bees would in all likelihood increase.

The territory involved would make a fair-sized State as regards size and resources; but it will really do the whole United States more good to set it aside as a forest, because the factories in the valleys must have lumber at reasonable prices or their industries will cease to exist. With a forest reserve, almost their entire supply of lumber is assured for ages to come. Much of the water power can be utilized for electricity, and other uses of the reserve will appear from time to time. The idea now is to prevent land-grabbing and the rapid and total destruction of valuable beautiful forests with which nature has

adorned and enriched the country. You are requested to write to your Senators and Representatives to support the measure when it comes up.

W. K. M.

THE PARCELS-POST STRUGGLE.

HERE is what President Roosevelt had to say with regard to the proposal to establish a parcels-post service in the United States:

I commend to the Congress the consideration of the Postmaster-General's recommendation for an extension of the parcel post, especially on the rural routes. There are now 38,215 rural routes serving nearly 15,000,000 people who do not have the advantages of the inhabitants of cities in obtaining their supplies. These recommendations have been drawn up to benefit the farmer and the country store-keeper. Otherwise I should not favor them, for I believe it is a good policy for our government to do every thing possible to aid the small town and the country district. It is desirable that the country merchant be not crushed out.

In spite of the kindly sentiments expressed in the foregoing paragraph, a tremendous agitation has been developed against this modest effort to make life more pleasant for the farming population. Offices are being maintained in the principal cities of the country to combat parcels post. It will be remembered, however, that an equally fierce agitation was maintained against free rural delivery; but in the end the farmers won. They can win parcels post too if they will only make up their minds to have it.

All sorts of wild and unreasonable statements are being printed, and the mails flooded with them, inflaming against the Postmaster-General's idea. One of the stock arguments is that parcels post does not pay in Europe, when as a matter of fact it pays handsomely, and the people like it so much they could not possibly be induced to change it. In the British Islands the postoffice pays a handsome sum every year in net profits, which goes into the imperial treasury to help pay the expenses of the army and navy.

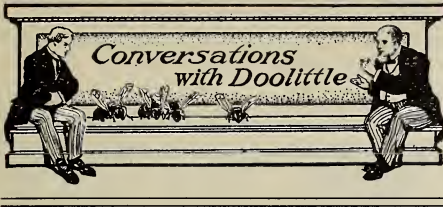
As to the argument that parcels post will injure the small merchant, there is assuredly nothing in it, because in Europe this individual makes great use of parcels post. He not only sends goods to local customers, but he receives considerable quantities by the same means. Valuable goods such as silks, jewelry, drugs, etc., are often sent by the parcels post from the wholesaler to the retailer.

Back of all this agitation are the express companies who know the parcels post is a great success in Europe, and they have succeeded in frightening the country merchant till he is in a condition to join hands with his old enemies the express companies.

The farmers can have parcels post if they will all write their congressmen to the effect that they want parcels post, and want it soon. For the women folks the arrangement proposed by the President would be a wonderful convenience; for by using the telephone they can order goods from town and have them delivered at the door on the same day.

Get your husband or brother to write a letter to your Representative at Washington, insisting on a parcels post at an early date. Don't delay.

W. K. M.



TOO MUCH DRONE COMB.

"Say, Doolittle, can there be too much drone comb in a hive for the bees to prosper?"

"Too much drone comb in the brood-chamber is a very serious damage to the honey crop, as drones are only useless consumers, so to speak, being of no value except to fertilize the queens, or, perhaps, to keep up a little warmth in the hive at times just after swarming when the workers are few in numbers because the great bulk of them went with the swarm."

"But I am told that lots of drones should be reared so that the queens need not go far from home to mate."

"Such talk as that belongs to the past; for in these days of progress no person can afford to allow a promiscuous production of drones. One or two square inches of drone comb is all that should be allowed in any hive except one or two containing the best drone-breeders, and these should have enough drone comb to rear all the drones needed for the fertilization of all the young queens, which also should be reared from the very best mother. The time has passed with the thoroughgoing apiarist for allowing his queens and drones to be reared from haphazard stock."

"But colonies will have some drone comb any way, will they not?"

"Yes, most colonies will have a little drone brood any way, even if they have to cut down worker comb to get a place to build the drone size of cells; but if we allow each colony from three to four square inches of drone comb it seems to satisfy them just as well as a whole frameful, and in this way we can have very nearly our own way in this matter."

"But if I have a hundred colonies with from three to four square inches of drone comb in them, will not these colonies raise from such comb, in the aggregate, more drones than will my two choice colonies with two or three frames of drone comb in their hives?"

"Yes, if you allow the drones to mature and fly from your hundred colonies."

"Well, how am I to keep them from doing this?"

"Keep the drone comb confined to just *one* frame in any hive, except those containing your breeders; and if you put this one frame next to the outside of the hive the queen will be slower in laying eggs in the cells, while the bees will be just as well satisfied. Then if you will paint red the top-bars to the

frames containing this drone comb you can see them as soon as you open the hives, and thus you will know right where this comb having drone-cells is without having to hunt the hive over for it. Now, if you will lift this frame every 21 days and shave the heads off all the capped drone larvæ you will have little trouble in keeping down all the drones in the apiary except those from the breeding queens."

"But that would make a lot of work."

"Not as much as you think, inasmuch as it will be near the swarming season before any drone brood will be capped, if the frame is kept next to the outside of the hive; and, besides, if left there the bees will be likely to fill this comb with honey as soon as a good yield from the flowers comes on. Then, as soon as swarming is over, the young queens will very rarely lay in the drone-cells where a comb is kept next to the side of the hive, and so three times is sufficient any season for decapitating drones, while, as a rule, once or twice is enough."

"But nearly all of my hives have several patches of drone comb in them, and some whole frames full. How am I to get rid of this?"

"The nicest way is not to have drone comb built, by giving frames of foundation in the start to such colonies as will not build all worker comb."

"That sounds well; but my frames are already built full of comb."

"In such a case, if you wish the slickest job done you ever saw you will cut out the drone-cells and give the frames so fixed, one at a time, to nuclei, or weak colonies having a young prolific laying queen. Such colonies will 'patch' up such combs so you can hardly tell where you cut out the drone-cells. By having one such weak colony or nucleus to every ten combs you wish patched, you will get them all changed to nice *all-worker* comb in one summer season."

"But is there no way that I can do this patching myself during the winter months when I am not so driven with work as in the summer time?"

"Yes, if you have the combs away from the bees and you do not care for quite so nice a job as the bees will do."

"Well, I am not so particular as some, and I have a lot of combs with more or less drone size of cells in them stored away in my comb-closet now, which I could work at just as well as not these stormy days."

"That being the case, you can cut the drone comb out and fit worker-comb in its place. If there is a large patch of drone comb in any frame, cut it out with a sharp narrow-bladed knife, after which you can lay this frame over another one having some drone comb in it also, so as not to spoil a good comb. Lay it so that the empty space comes over the worker-comb, when the lower comb is marked a 'hair' larger than the space to be filled, after which the marked piece is cut out and pressed into the place where the drone comb came from. If you happen to get any piece a little too small, a

few drops of melted beeswax will hold it till the bees fasten it."

"But some of the places in my combs have only an inch or two of the drone size of cells. Will it not be a big job to fix all of them?"

"For small patches, from one to four inches in diameter, you can use punches of the proper size, made of old fruit-cans. These can be found about hotels and eating-houses, if canned fruit is not used in your own family, and need not cost any thing. For the smaller sizes old empty baking-powder cans are just the thing."

"But how am I to fix these so I can use them?"

"When you have collected your different sizes, place them on a hot stove, when the solder will melt, thus letting the bottom drop. In the same way melt off the top. After the tops and bottoms are melted off, make the whole circumference of one end sharp with a file or grindstone, sharpening wholly from the outside. Now lay the comb down on a smooth board, and with the right size of punch cut out the patch of drone comb by twirling the punch or can around as you press down upon it. Now push out this piece of drone comb, and with the same punch, and in the same way, cut out from some discarded comb a piece of worker comb, which will, of course, exactly fit the place from which you took the drone comb. In this way it is no great task to rid all of the frames of drone comb, especially if you have the combs away from the bees so you can do it on stormy winter days."

"But a part of my frames have honey in them, so I can not tell just where the drone comb is situated. What of these?"

"If you do not wish to warm them up and extract the honey from them, the better way is to leave them till the bees can take the honey out in the spring, when they can be fixed in the same way."

"I have a few combs that were drawn out from foundation in wired frames. Some of these, on account of mice, or because moths or moldy pollen caused the bees to cut out portions of them, have either holes or drone comb in them. Is there any way I can fix these during the winter?"

"Such combs I prefer to leave for the bees to fix, as I told you about at first; but even these can be fixed in the winter. After the drone comb is out, cut away the cells all around the hole about one or two cells back, cutting only just down to the septum, on one side. Then cut a piece of foundation the size of the place and lay it down so that it will cover the hole and the cutaway cells as well. Now put a few drops of hot beeswax about the edges—just enough to hold the foundation in place. The bees will draw out the foundation into comb next summer, fixing it as good as new, providing you give such combs to the bees just at a time when they are securing honey enough to build comb. If you give frames of comb, patched in this way, to a colony when no honey is coming in from the fields, or not

enough so that wax is secreted, the bees are likely to tear away the edges of the comb or foundation, on the principle that 'Satan finds some mischief still for idle hands to do.'"



THE VALUE OF BEES AS FERTILIZERS OF FRUIT-BLOSSOMS.

The Ontario Agricultural and Experimental Union, with over 7000 experimenters, consisting of many of the best agriculturists in the province, at its annual meeting at the Ontario Agricultural College, Guelph, Dec. 9 and 10, passed a resolution requesting the Minister of Agriculture to arrange to have a series of experiments carried out to determine the value of bees in the fertilization of blossoms such as fruit, clover, and buckwheat. Prof. H. L. Hutt, B. S. A., Horticulturist at the college, is strongly impressed with the value of bees for his line of agriculture. He gave the following extract from his recent report to the Fruit Experiment Station Board:

In closing this report I wish to call attention to some of the conditions which have materially affected the fruit crop of the province during the past season.

In the first place, the weather has been exceptional. The winter was not severe, and fruit-trees as a rule wintered well. Bloom was abundant; but during the time the trees were in bloom the weather was cold and windy, and unfavorable for the working of bees, which are the most active agents in the pollination of the blossoms. In fact, there were only two bright warm days, and these several days apart, during the whole season of bloom when the bees worked at all freely. Mr. Murray Pettit informed me that he noticed two distinct settings of the fruit on his cherry-trees, which he believed corresponded to the two good days the bees had for pollination.

In the second place, there was an unusual scarcity of honey-bees this year to do all the pollination necessary to the setting of a full crop of fruit. I was informed by a leading bee-keeper that not more than 20 per cent of the honey-bees of the province were wintered successfully last winter. This being the case, it is easy to understand the effect that a scarcity of bees with unfavorable weather for their work had in giving a light crop of fruit. I have noted repeatedly in various parts of the province that some of the most productive orchards have been those in which honey-bees are kept, and there is no question in my mind but that it would pay fruit-growers well to keep a few hives of bees merely for the purpose of insuring fertilization of fruit-blossoms. In sections where fruit-farms are close together, as they are in the Niagara district, the growers within a radius of one or two miles might cooperate and employ a competent bee-keeper to look after a good-sized apiary.

PLURALITY OF QUEENS.

At the Harrisburg convention and in other places I have expressed doubts that the presence of two or more queens in a hive will prevent swarming. It was pointed out that in running for extracted honey, and removing the honey from the supers as soon

as the bees begin capping, the conditions for swarming would not be favorable with one queen. So far as I know, all who have reported no swarms with a plurality of queens have had favorable conditions for non-swarming.

In the December number of the *Bee-keepers' Review* Mr. H. S. Philbrook, Oxnard, Cal., states, "In my experience two or more queens in one hive will not always prevent swarming. I had one last year, with two queens, that produced nearly 800 pounds of extracted honey; and then, just at the close of the season, it swarmed."

I am still of the opinion that it is more practical to improve in every feasible manner the conditions favorable for one queen to do her best, and stop at that.

LIQUEFYING HONEY.

An ideal way to liquefy honey is to bring the entire mass all at one time to the proper temperature. While this is scarcely practical, yet present methods may be much improved. With ordinary methods there is danger of scorching the honey on the outside of the mass while the center is still granulated.

You know, Mr. Editor, that the best way to melt beeswax is to allow it to run away from the solid part as fast as it melts. This principle, I am sure, is the best for liquefying honey. There are many, however, who can not do this; but there is a method that almost any one can follow whereby a great difference between the temperature of the center of the granulated block and that on the outside can be avoided. This method will also reduce the amount of work necessary, and the danger of scorching the honey nearest the source of heat is lessened. Such a method consists in keeping the honey in a warm room (the warmer the better up to 100°), until the very center of it has the same temperature as the room. A comb of granulated honey put into a hive with a strong colony in some position where the bees will have no desire to replace it with brood offers us a fine object-lesson in liquefying honey. Exposure to a temperature not higher than that of the hive brings it back to the liquid state, and does not impair the quality.

[We regard this suggestion of our correspondent as a valuable one. With the ordinary method of liquefying, there is always danger of overheating the honey and thus spoiling the flavor. A large can or vat to hold the hot water is necessary, and it requires considerable hard work to liquefy in that way.

With the hot-air method, on the other hand, there is little danger of overheating. If a stove can be set up in a very small room there would be no need of further apparatus. Or it should not be difficult to confine the heat about a stove, even in a large room, to keep the temperature of the air surrounding the honey somewhere near 100°.

It may be that some kinds of honey could not be liquefied at a temperature of 100° with-

out wasting too much time and fuel. Alfalfa honey, which candies with a very coarse "grain," and therefore liquefies easily, requires about 24 hours' exposure to air heated to a temperature of 100°. Candied white-clover and basswood honey, which are much more solid than alfalfa, would probably require a much longer time, and possibly a higher temperature.

We should be glad to receive reports from any who may have tried the hot-air plan of liquefying.—Ed.]



HOW BEES DISTINGUISH COLOR.

I have been accused of being like the fellow from Missouri, "You got to show me." I do not like to jump at conclusions, but enjoy giving a good fair test before believing it. I have sometimes been amused by a long argument as to just how certain things ought to turn out; but when you try them they just won't work. The trouble with too many theories is that the theorist does not take into consideration all the circumstances. I had the pleasure of trying an experiment the other day that gave, as I think, conclusive results. It has been claimed that bees dislike black, and will sting any thing black much quicker than any thing of a different color. I have believed this also, as I thought the bees were crosser with me when I had on black clothes. The following experiment removed all doubts in my mind.

I was out among the bees when out came a black dog belonging to one of the neighbors. In a minute, out came a brown dog from another neighbor. I was dressed in gray. Now I thought I would see which dog the bees would sting more. This seemed a little cruel, but I thought that, as long as I took my chances with the other dogs, and we all had an even break, there would be no kick coming. I called the dogs in front of a hive and began to bark at them and play with them. We all jumped and tore around in front of the entrance at a great rate. I kept a little nearer to the hive so as to see that the dogs got a fair deal. In a moment some of the bees began to lodge in the black fur of the dog, and stick there like cockle burrs. They went clear around me and the brown dog. At last one got Rex (the black dog) where the hair was short—i. e., on the nose. He withdrew to the brush to sneeze a little. I had determined to give three trials, then count up all the stings, average it up, and see just what per cent madder a bee got at a black object than it did at brown or gray.

Rex subjected himself to this second test with more or less reluctance; but by dint of hard coaxing and barking I induced him to forget the past and have another romp. We kept getting nearer and nearer to a hive of doubtful repute when I called a halt long enough to give the hive a little jar. Then I jumped in front with the other dogs, and began to jump around with them. At least a dozen bees took a bee-line for Rex and got next to his feelings at the very first dash. Rex never said a word, but turned around and skeedaddled for home. He never thought to yelp. His mental capacity was occupied in the discussion of two important points—first, how he might insert space between himself and that hive; and, second, how this might be accomplished without occupying too much time. I did not know exactly what to call that test, the color line or the race problem. Rex arrived at the door a little ahead of time, and never stopped to knock, but smashed against it. It was shut, but it opened with a bang as Rex came against it. In he went, and crawled under the kitchen table. This was the second trial. The black dog had all the stings, and the brown dog and I had none. The third trial—well, that never came off. Rex positively refused to subject himself to further experiment, even in the interest of science. I do not consider him sentimental.

I thought some of continuing the experiment between the brown dog and myself, but—well, it was getting late, and we might both look black to them, and then there might have been some cranky old maids among them that were color-blind and lacked proper discrimination; and if any of them should show me any discourtesy I would have to say "stung," so, all things taken into consideration, I concluded to be satisfied with the results as they stood.



ENEMIES OF BEES—THE ROBBER-FLIES.

These are two-winged flies, and are, I believe, next to the bee-moth and ants, the most to be dreaded of all the foes of our bees, among insects. There are two types of these predaceous flies—one that resembles the bumble-bees very much, both in size, form, and color, and the other much longer, and with long pointed abdomens. These latter are generally black, though one of them that is quite common here about Claremont is ash color. As these dart about on the ground in pursuit of their victims they are aided by their sober colors, as they can come near the desired prey without being discovered. These robber-flies have a very

strong beak, and, like all mature flies, suck as do also the bugs. They have also powerful legs, and I think they must also have such horny bodies that the bee is not able to inflict great harm with its sting, else would not the flies learn quickly, as do we, to be very wary how they grasp these well-armed insects? Is it possible that they have learned to hold the bee in such fashion that the latter can not use its poisoned dart? However it may be, the robber-flies do capture and suck bloodless many of our worker honey-bees. In some sections of the South they are so destructive that I have been told that bee-keepers at times have engaged boys to capture and kill them. I have never known them to be sufficiently common in Michigan, nor even here in California, where they abound much more than in the north-eastern States, so that they give serious concern to the apiarist. This is the more true as they kill many of our insect foes. Unfortunately they do not always rightly discriminate, as I once saw one capture and begin to suck the blood of a fierce tiger-beetle, one of our good insect friends. This shows how formidable these robber-flies are. The tiger-beetle, like the honey-bee, we should suppose would be more than a match for any two-winged fly.

I made one observation here at Claremont that will interest our readers. I saw the California bee-martin, or king bird, close by the bee-hives, and thought that here was a chance to learn whether the bees sting this bird, as they do the toad, in the throat, as they were swallowed. I saw the birds as they swooped down toward the hives, and soon, after he had darted forth several times, shot him, and, upon examining his stomach, found not any bees, but three of these robber-flies, so that, in this case, the king bird was befriending the bee-keeper rather than working against his interests. May be the king bird is usually more a friend than an enemy.

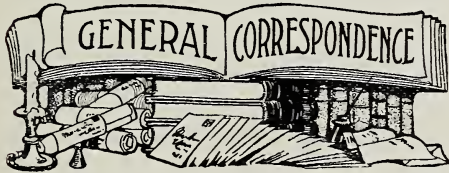
DRAGON-FLIES.

The lace wings, the old *Neuroptera* of Linnaeus' classification, are so preëminently predaceous, and such recognized destroyers of our insect foes, that we are not surprised to find that one of them, the dragon-fly, or spindle, as it is sometimes called, is often a foe of the honey-bee. I have never seen the Devil's darning-needle, as it is often styled, do this evil work in Michigan nor here in California, where, however, owing to the scarcity of standing pools (their breeding-places) they are not a very common insect. In the Southern States, however, they are reported to be quite a serious pest at times. I have been told that boys have been hired to kill these and the equally rapacious robber-flies by the use of a whip with a long lash. It is said that they become quite skillful in thus circumventing the evil of the great insects. I have often thought I should like to see this performance. I should almost think the report "fishy" had I not had it from good authority. As in the other cases, we must remember that these swift

graceful insects are always in quest of our insect enemies, and so do much good as well as some evil.

THE PRAYING MANTIS.

These curious insects are limited in our country to the South and West. They belong to the order that includes the crickets, locusts, and grasshoppers, and so we might expect them to be voracious feeders on plants. They are the only exception, and feed exclusively on insects. Like the stinging bugs they have the front legs modified to serve as grasping organs. These, however, are long; and as the insect rests on these great jaw legs it looks as if it were on its knees. As it raises these same legs it has much the attitude of the minister as he pronounces the invocation—hence the name, though it might well be *preying* mantis, as the insect is a fierce destroyer of other insects. I have never seen these insects killing bees here, where they are quite common, though not as large as the ones I have from Florida. It is also true of these that they do much more good than harm.



THE MILLER IMPROVED INTRODUCING-CAGE.

Tinned v. Black Wire Cloth for Introducing.

BY DR. C. C. MILLER.

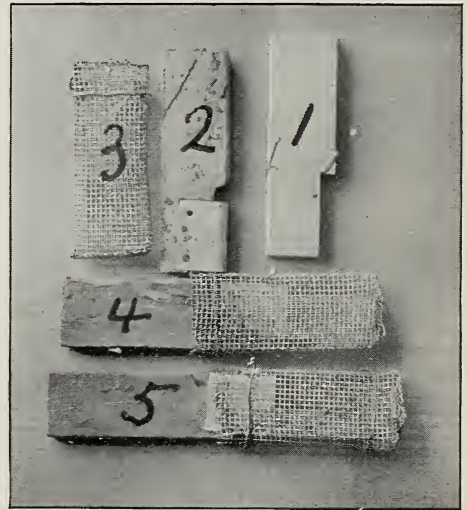
The Miller introducing-cage, gotten up some years ago, has been very kindly received, and has found its way for some time into supply catalogs. A few years ago I discarded it for what I thought an improvement, and this improvement has in its turn been thrown aside for the one shown in the illustration. A trial of some 50 of these for a year or more has confirmed the belief that they are much better than the Miller cage in more than one way, and more up-to-date in meeting the requirements of present-day practice.

With the aid of the illustration I'll tell you how one of these cages is made. The block, 1, is $3\frac{1}{2} \times 1\frac{1}{2} \times \frac{5}{8}$, the part that is cut out being $1\frac{3}{8} \times \frac{1}{4}$. On this, as shown by 2, is fastened a piece of tin $1\frac{1}{2} \times 2$ inches. The tin is bent so as to leave a space to be filled with candy; and to make sure that this space is not too small, a round lead-pencil is held in it while two small wire nails are driven through the wood and tin, and clinched. Holes are punched in the tin on the side where the nails start in, but they are not needed on the other side. The block is laid

on a smooth pine surface, and mere driving sends the nails through the tin on the under side. The diameter of the pencil is a little less than $\frac{1}{8}$ of an inch, which, as you see, makes a very slender pencil. A larger space could be used, but it must be remembered that, the more slender the candy-passage, the longer it takes the bees to gnaw through.

When you have got thus far you will see that the queen will have to turn a pretty sharp corner to get out. She would probably make it all right; but to make it easier for her, cut away a little more, beginning back $\frac{1}{8}$ or $\frac{1}{4}$ inch, and making a slanting cut. Of course, the block might be cut so in the first place.

The cage proper (3) is made of extra-heavy bright wire cloth, which costs five times as much as common painted wire cloth, but it will last ever so much longer, and is not so easily crushed out of shape, and the cost for



THE LATEST FORM OF THE MILLER INTRODUCING-CAGE.

each cage is so little that it is economy to use the better kind. Cut a piece $3\frac{1}{2} \times 4$; wrap it around a stick $1\frac{1}{2} \times \frac{5}{16}$, and perhaps 4 inches long (unless you wrap it a little loose, better have the stick $\frac{3}{8}$ thick), letting the wire cloth project over the end of the stick about $\frac{3}{8}$ inch. About $\frac{1}{2}$ inch from the other end tie around a wire, then fold in the projecting ends and batter them down. That completes the cage.

At the open end there should be a selvage edge, or else the edge should be folded outward about $\frac{1}{2}$ inch. In the latter case, of course the piece should be cut enough larger to allow for the folding.

It is well known that we sometimes want a queen to be caged in a hive for a time without allowing the bees opportunity to liberate her, and at other times we want them to have that opportunity. This is especially the case in the up-to-date plan of having two queens

in a fertilizing hive, one free, and the other a virgin in a cage awaiting the removal of the first, and sometimes we do not want this latter to be freed for several days.

If we want a virgin, or, for that matter, any queen, to remain in a hive without being liberated, all that is needed is to shove in the block as shown at 4, and the bees can not get at the candy. Then when we want the bees to eat out the candy, all that is necessary is to draw out the block as shown at 5, so as to expose the candy to the bees.

The cage may be held in place suspended by a wire supported by a nail resting across the top-bars; or the cage may be merely pinned to the comb by a pin $1\frac{1}{4}$ inches long, called a bank-pin. You can get half a pound of these pins for 21 to 25 cents, and the women-folks will be delighted to get what you don't need for the bees. In pinning a cage on a comb you will, of course, run the pin through the meshes of the wire cloth. Don't run the pin in level, but a little slanting, letting it point downward as you push it in. It will thus hold more securely.

Marengo, Ill.

[For the purpose of comparison we present here an illustration of the original queen-cage bearing your name, which cage has been listed in nearly all the bee-supply catalogs for years. We have carefully compared this with your new model, and in our minds the old one is just as good, and in some respects superior. It is true, the new model has a very simple plan by which the bees may be shut off from the candy, and this in itself is a good feature, because it is often (and generally) desirable to keep the bees away from



the candy a day or two before they are permitted to eat it out and release the queen. But we accomplish this by nailing a little strip of pasteboard over the candy of the old-style Miller which the bees gnaw away. Sometimes we use a little strip of tin secured by a nail through one end. This may be revolved around to close access to the candy; at other times it can be turned the other way, exposing it. This little strip of pasteboard could not be applied so handily to your new form of cage, and pasteboard has the advantage that it is *automatic*, because the bees will gnaw it away in 24 hours, and afterward eat out the candy.

But the new cage we consider greatly inferior to your old one in point of strength. There is nothing to protect the wire-cloth end from getting crushed; and, moreover, it is not easy to close up the end without a stopper of some kind. Indeed, your photograph shows the crumpled-up ends of the wires, which, to say the least, do not look neat.

We notice that you specify the wood block to be $\frac{5}{16}$ inch thick; but $\frac{1}{4}$ inch we would consider very ample. The thinner it can be,

and allow the queen room enough to turn around, the better it is for insertion between the combs; for in the height of the honey-flow it is desirable not to have them spread apart any wider than is absolutely necessary. Then, moreover, we sometimes introduce virgins in these cages by slipping the cage through the entrance. A cage $\frac{3}{8}$ inch thick with the wire cloth, as yours would necessarily be, might not go into an ordinary $\frac{3}{8}$ -inch-deep entrance, while one having the wood $\frac{1}{4}$ inch thick plus the wire cloth will pass through.

To sum up, we do not see that you gain any thing except in the matter of shutting the bees from the candy, and you lose considerable in the strength of the cage as well as its general appearance, which, to a supply-dealer and manufacturer, is a matter of considerable moment.

But there is one thing more which should not be overlooked. You recommend *tinned* wire cloth. While, as you say, its greater expense does not cut any figure in any thing so small as this, yet experience has shown that this material is the very worst that can be used for introducing-cages. We formerly made the Miller cages of tinned wire cloth, soldering the joint. It was a very much neater-looking cage; but we found that young queens were dying in all such cages very badly, and we soon began to get unfavorable reports from customers. We made the Titoff queen-cell and introducing cage of tinned wire cloth, and very soon our boys began to report that the queens, for some unaccountable reason, were dying at a very rapid rate. We could not account for this at first, especially as the *same* cage made of black painted wire cloth gave uniformly good results. Then we resorted to the expediency of boiling all cages made of tinned wire cloth, thinking that would remove all poisonous solder salts; but still the queens continued to die. We finally concluded that the spelter (or, rather, we should say, the acid or chemical) used to bind the tin on the iron or steel wire was the cause of the trouble; for when we dipped these cages in hot wax there was no mortality. When, again, we made the cages of black painted wire cloth, there was none. So don't, doctor, whatever you do, change over to tinned wire cloth, for you will rue it if you do. We have such an immense amount of evidence in the form of complaints to show that it killed the queens that we have been obliged to abandon it in all queen-cage work.—Ed.]

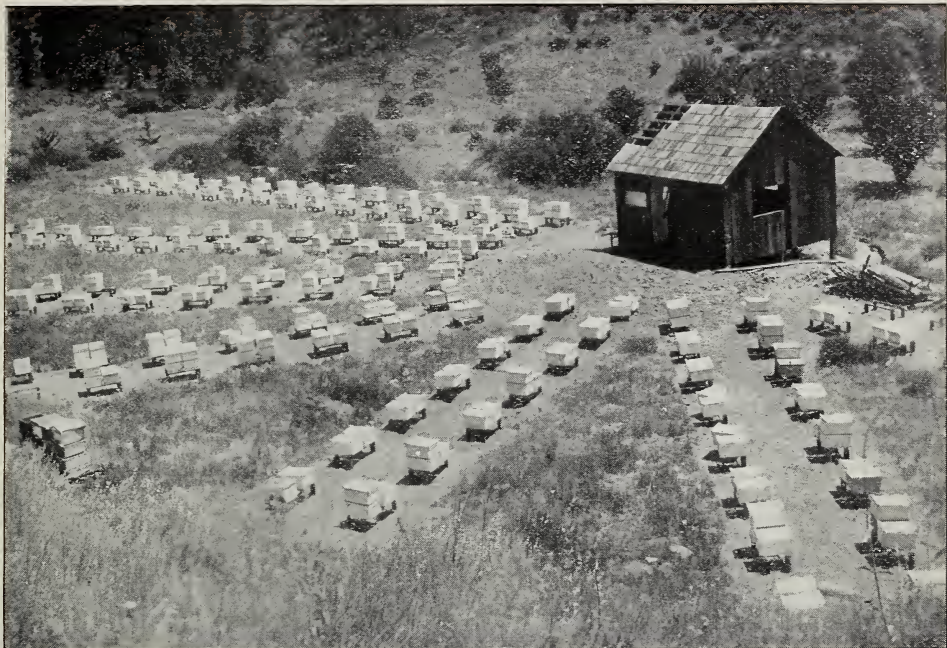
SELLING HONEY.

Advertising, the Best Solution of the Low-price Problem; a Conversation with L.

E. Mercer.

BY H. H. ROOT.

On p. 1369 of the Nov. 1st issue, mention was made of Mr. L. E. Mercer's visit at Medina. Mr. Mercer is a bee-keeper who has passed the experimental stage in the busi-



ONE OF L. E. MERCER'S OUT-APIARIES IN CALIFORNIA.

All of Mr. Mercer's yards are arranged on the same general plan, which might be compared to a mammoth wheel. The honey-house is the hub, and the rows of hives the spokes.

ness. He has, at present, 1800 colonies located in out-apiaries near his home in Ventura, California; and if such a term may be used in an apicultural way, he might be called a professional bee-keeper—that is, he is a man who makes bee-keeping his business—his *profession*—and not merely his pastime. The opinions of such a man are likely to be worth more, perhaps, than those of an amateur, even though the amateur be an experienced bee-keeper, for the opinions of the extensive producer are sure to be practical, being the outgrowth of hard study from the standpoint of dollars and cents.

When Mr. Mercer was at the "Home of the Honey-bees" he had been traveling for six weeks, and he said that, during this time, he had seen almost no honey in the stores for sale, nor could he see any evidence of any advertising of honey. He believed that, if the right kind of man were employed to travel in the interests of the honey-business, there would not be enough bee-keepers in the country to supply the demand. The prices would then become more nearly what the prices of good honey ought to be. On being asked if he did not think the pure-food law would tend to raise the price of honey, he replied he thought that it undoubtedly would, but that some hustling would be necessary also, to get the public to see that honey is really more of a necessity than a luxury.

Mr. Mercer is right. The number of families that buy honey regularly is lamentably small. In order to make any great increase

in the price of honey, the producers ought to make an organized effort to make the consumers recognize honey as a necessity instead of a luxury. The *Honey-producers' League* was a move in the right direction, but some were suspicious.

Our attitude in reference to manufacturers as officers of bee-keepers' associations is clearly defined, p. 1489, Dec. 1st GLEANINGS. The control should be in the hands of the *producers*, for whose direct benefit the movement is carried on.

Now that the National Association has the funds of the Honey-producers' League, the producers have a chance to do some profitable advertising. Whatever is done, it is certain that honey must be systematically advertised if the price is to be brought up to the desired point.

One simple and effective way of city advertising which Mr. Mercer mentioned was the use of cards in street-cars. Every one is familiar with the advertising cards thus displayed, and it is not surprising to find that such a way of getting honey before the public has also been found successful.

AN INEXPENSIVE METHOD OF SELLING LIQUID HONEY.

Mr. Mercer told of one good way of selling honey which one of his sons has made use of in California. Various grocers in a city are supplied with honey-tanks, small enough to stand on a counter, but large enough to hold twenty or thirty gallons. These are gotten



HOME AND APIARY OF J. B. BARTLEBAUGH, GLENCAMPBELL, PA.

up very attractively to harmonize with the surroundings in any first-class grocery. The lettering is in colors that present a striking yet refined appearance. On the front, in plain sight, a gauge constructed of clear white glass is placed to show the height of the honey in the can, and also to call the attention of the customer to the fine color of the goods. A faucet or gate at the bottom permits a sample to be given to any intending purchaser, and also serves as a means for drawing off any amount in bottles, cans, pails, etc. The idea is that the honey is not drawn off until it is purchased. The producer, or dealer who sells the honey, is notified whenever the can needs refilling.

One great trouble with all such plans has been that the honey would surely candy in time, making considerable trouble for the dealer. Many grocers, on this account, prefer to have liquid honey put up in popular-sized packages. Furthermore, this conforms more nearly with modern methods of buying. It is becoming less and less common, for the higher class of grocers especially, to keep any thing in bulk, the tendency being to have standard packages that can be sold over the counter.

But, although the Mercer plan has some objections, it proves an easy and profitable way of selling honey in many cases. Oyster-pails may be used very successfully for holding liquid honey, and they would be especially valuable for this plan.

Descriptive literature might be on the counter beside the honey-tank, for the purpose of explaining the methods of producing the liquid honey, for telling of the value of honey as a food, etc.

A NEW ARRANGEMENT OF HIVES IN AN APIARY.

Mr. Mercer is the inventor of many conveniences in the apiary, some of which have already been illustrated in these columns.

His system of arranging hives in out-apiaries is unique. This is shown in the cut on preceding page. It will be seen that the hives are in rows, arranged like the spokes of a wheel, with the honey-house in the center. This means that there are no corners to turn in wheeling honey into the extracting-house. Where the ground is smooth this plan will be of especial value, since a straight line is always the shortest distance between two points, and much time can be saved if the operator does not have to waste steps in wheeling extracting-supers to the honey-house by a roundabout way or around sharp corners.

A MINISTER WHO ATTRIBUTES HIS SUCCESS TO GLEANINGS.

BY REV. J. B. BARTLEBAUGH.

You may see by this little picture that I am a lover of those little friends we call the bees. I have 26 colonies of fine bees from which I have just finished taking a fair crop of surplus honey, leaving them in good condition for the winter. I want to thank GLEANINGS for my success; and may it continue its usefulness, both on account of its value to the bee-keepers and because of the Christian spirit that is in it.
Glencampbell, Pa.

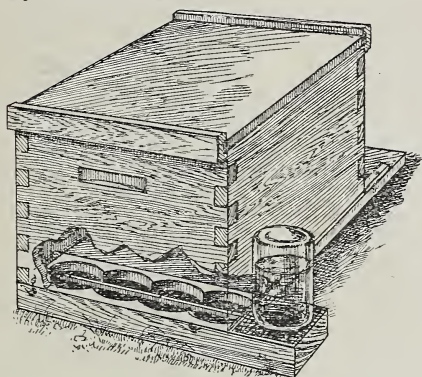
WINTER CASES OF TAR-PAPER.

The Boardman and Alexander Feeder Combined.

BY HARLEY CONDRA.

I decided to make some winter cases for my hives after seeing them recommended in GLEANINGS. I put them on early in the fall, and I can say that the results have been far

better than I expected, and I feel well repaid for my trouble. They can be placed on the hives as soon as the surplus honey has been taken off, and they will not interfere with feeding in the least when a feeder is used like that shown in the illustration. I call it my Boardman-Alexander feeder.



The capacity of the Alexander feeders increased by the addition of the fruit-jar as shown.

The winter case is made of tar-paper, which is tacked to the empty super as shown in the illustration. The ends of the paper are left long enough to double-lap across the end of the hive. I place my colonies in open sheds and pack them with straw.

Seymour, Iowa.

[The plan for increasing the capacity of the Alexander feeder is good. By cutting down the partitions of the projecting end, any Alexander feeder could be adapted to take a Mason jar.

Your plan of making a winter case does not provide for extra folds of paper or other

packing around the sides of the hive; but with straw between the hives in the shed, a material under the tar-paper would probably be unnecessary.—Ed.]

FOUNDATION FOR COMB HONEY.

The Split-section Plan vs. Hot Wax for Securing Full Sheets; Buckling; Double Starters vs. Single Full Sheets.

BY E. F. ATWATER.

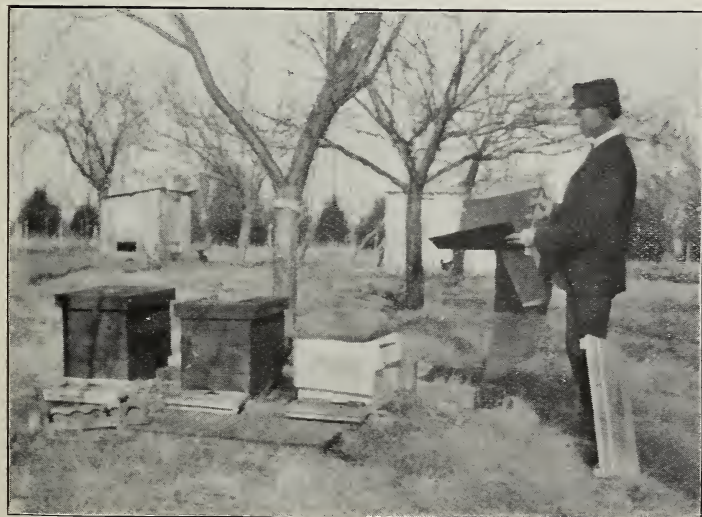
[In our last issue, p. 82, we used a part of Mr. Atwater's article because the report of his experience was timely in connection with that discussion. As promised, we present herewith the engravings mentioned, together with the rest of the article. In order to get the discussion fully in mind, the reader should turn back to p. 82 and read especially the part of the article that is omitted here.—Ed.]

In regard to the various methods of putting full sheets of foundation in sections, as practiced by Mr. Hand and some others, I would say that those methods are by no means faultless. The method used by Mr. Hand would seem to be very expeditious; but I call on him for the *proofs* that his method is the most rapid known for putting in full sheets of foundation. While not posing as an exceptionally rapid worker I have taken sections from the crate in which they came, folded them, put in full sheets of foundation, and replaced them in the super, at the rate of 400 in an hour. Of course, this is not an average; but 250 per hour is easily reached and maintained, while others claim to (and can) put in both top and bottom starters at the same rate per hour.

But there are other objections to the Hand method. One is that the edge of the sheet of foundation is so evident in the finished product that it tends to create and maintain

a belief in the artificiality of the product. Another fault: With our methods, sections go from crate to super, and, with the one handling, are all ready to pile away to await the needs of June; while with the Hand method all must be rehandled, as they are first folded and put into the wide frames; then they are pushed half way out of the frames, and the foundation inserted. To our methods must be charged the time required to cut the foundation.

In many cases the results, when a full sheet of foundation is fastened on all four sides, are all



WINTER CASES MADE BY TACKING TAR-PAPER ON THE SIDES OF EMPTY SUPERS.

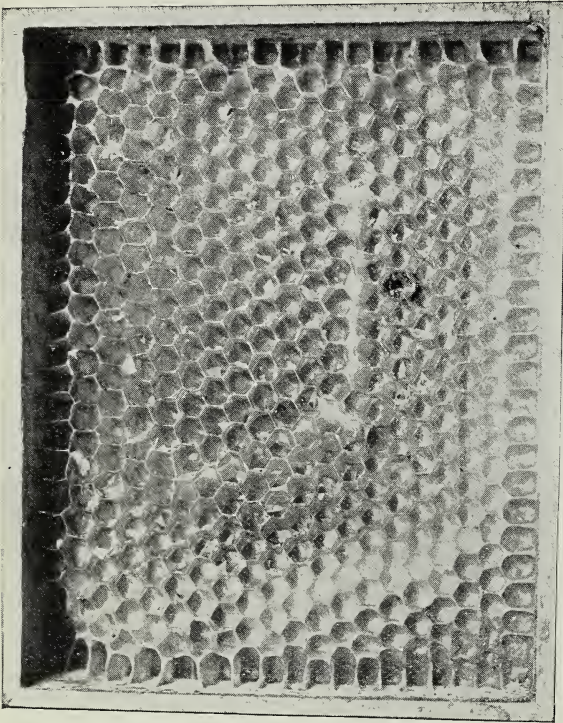


FIG. 1.—DRAWN COMB FROM A FULL SHEET OF FOUNDATION FASTENED ON ALL FOUR SIDES.

Note the bulge near the bottom, and also the one near the right side. Occasional buckling of the foundation causes this.

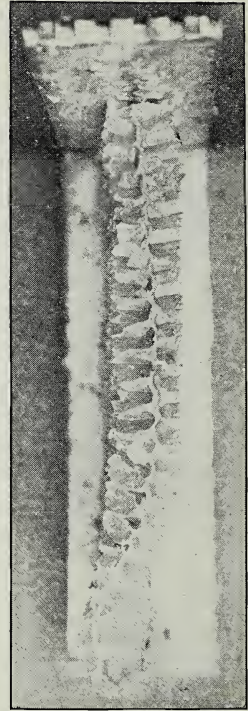


FIG. 2.—SECTIONAL VIEW OF FIG. 1.

that could be desired—beautiful slabs of honey without hole or blemish to mar their beauty. But here the (as yet) inevitable sagging propensities of all surplus foundation on the market, in hot weather, are a factor with which we must reckon. Perhaps the engravings will help to explain what I mean by this. I am sorry to say that, at this date, I have no examples of the results on the finished comb; but from my supply of bait combs many sections like those illustrated might be shown. In Fig. 1 the bulge at the bottom is very plain, as well as the bulge about eight cells removed from the right-hand edge of the section.

Fig. 2 is a sectional view of the comb shown in Fig. 1. This shows even more plainly the result of the sagging of the sheet of foundation.

Perhaps some one may say the foundation was of poor quality; but it was as good as can be had. In hot weather any foundation, light or heavy, will sag, and even horizontal wires but two inches apart will not prevent that sagging. Unless Mr. Hand's method will remove the difficulty, the *greatest fault* with any method requiring that foundation be attached on three or four sides is the expense and the amount of time required to do the work.

It will not pay the extensive producer to devote a great deal of time and labor to the fastening of foundation to three or four sides of the sections, as the price of the finished honey is not raised in any degree over that of comb honey produced in sections containing full sheets of foundation fastened in the ordinary way. Nor is it a fact that sections and supers prepared in the ordinary way require very careful handling at any time. When we can have a really non-sagging foundation, and when the honey will sell for enough more money to pay for the extra work, I may again use some method of using a full sheet of foundation attached on three or four sides.

Meridian, Ida., Dec. 26.

[GLEANINGS would be glad to receive reports from any who may have tried full sheets of foundation fastened on all four sides of the section. What percentage of the finished sections are irregular on account of the buckling of the foundation? If the sheets are warm when put into the sections, is there as great a tendency toward buckling when the supers are put on the hives?

If comb honey built from foundation fastened on all four sides could be sold at even one cent more a pound, this extra price would more than justify the time spent in

fastening such full sheets in the sections. Of course, if the appearance of the honey is not enough better to bring an extra price, then nothing is gained. But there is not enough strictly fancy comb honey on the market, and bee-keepers can well afford to experiment with any methods that will tend to produce better grades. Fancy comb honey never goes begging. It is the honey which is only "fair" in quality that makes the producer hustle to get rid of it at a profit.—ED.]

RHEUMATISM CURED.

Another Case of this Disease Cured by Bee-Stings.

BY HIRAM LANDIS.

[Our honey-man, Mr. J. A. Warren, recently became acquainted with a gentleman who had been cured of rheumatism by bee-stings. His statements proved to be so interesting that he was asked to write a short article for GLEANINGS, hence this letter.

It will be noted that the cure is every bit as marvelous as the fake cures so often lauded by the patent-medicine concerns, and yet we have every reason to believe that Mr. Landis' story is true.

Personally we have no faith in bee-stings as a cure for all forms of rheumatism, nor perhaps even for the same forms that afflict different individuals. There is no doubt, however, that it proves beneficial in many instances. Certain it is, there is no patent on the bee-sting cure; it is free to all who wish to try it.—ED.]



HIRAM LANDIS, OF PITTSBURG, PA., WHO WAS RECENTLY CURED OF RHEUMATISM BY BEE-STINGS.

I am glad to give you any information you wish in regard to my successful cure of rheumatism, which, I am satisfied, is the only permanent cure in existence up to the present time, or at least the only one I have heard of yet. I suffered for seven months, and took all the truck imaginable; but nothing did me any good.

I paid a visit to an old friend, Mr. D. B. Travis, in Armstrong Co., Pa. I got acquainted with old Dr. Sharp in Dayton, Pa., on the B. R. & P. R. R. He said he would give me a cure, but added I would not take it—that it was a sure cure, as he had suffered for one year, and it had cured him. I told him I could take *any* thing he could. Then he told me to cover my face and roll up my sleeves and stir up a bee-hive and let them sting me in the arms all they would. I did so. I got 25 stings, and it never swelled. In a day or so I went back and got another dose of the same medicine. It never swelled; but the third time it swelled and I quit. I took no more truck to knock out my stomach, and I felt better every day; and in four weeks I went on the road and have been out in all kinds of weather for a year and six months. I have not felt the least effect of rheumatism since—not even in a change of weather. I have been on the road for 50 years, and feel like a four-year old boy.

My rheumatism commenced in my knees, and finally got up into my shoulders and arms. I could scarcely get out of bed. I could not put on my clothes myself for seven months until I got stung by the bees. Dr. Sharp told me that the poison of the stings would eradicate the poison or uric acid in the blood, and said I would get rid of my rheumatism.

Pittsburg, Pa.

BEE-KEEPING IN QUEBEC.

A Foul-brood Act to be Passed.

BY R. F. HOLTERMANN.

Few outside and perhaps not many inside the province of Quebec realize the magnitude of the bee-keeping industry in that part of Canada. There are probably quite as many colonies of bees kept in that province as in Ontario, and yet there is a good deal of dissimilarity between the situations.

In dairying, Ontario is the great cheese-producing province, and Quebec the butter-producer. Likewise, in bee-keeping, Ontario is largely an extracted-honey producer, and Quebec a comb-honey producer. One of the weakest points in the production of honey in Ontario, as perhaps in all extracted-honey-producing sections, has been the marketing of unripe honey; and one of the weakest points in the production of comb honey in Quebec has been the production of combs attached only to the bottom and sides of the sections. The quality of the honey has been all right, but the combs must be securely fastened to the sections in order to take advantage of the best markets that may be at a distance. The remedy for this lies in using a full sheet of thin or extra thin foundation instead of the small starter generally used.

Quebec, owing to winter snow, has more natural clover than the present honey-producing sections of Ontario; but this may not be true when the more northerly portion of our province is developed. The source of

surplus honey in Quebec is largely white clover and buckwheat.

There are still many box hives in the province, and the writer is not as strongly opposed to them as some are, for the old let-alone plan of keeping bees goes better with the box-hive system than with the modern hive. But in these days, owing to the rapid transportation of bees, honey diseases are more easily spread; and on account of the known fact that there is disease about, no

bee-keeping a great national wealth-producing industry, and they and the Germans appear to have a natural aptitude for the business. Thrift does not allow such a source of revenue and aid to other branches of agriculture to be lost.

Under the management of the Quebec Department of Agriculture, among other efforts to develop bee-keeping there have been sent out through the province a large number of lecturers. The writer has been among the number, and he has found the people of the audiences intelligent, deeply interested, and of an inquiring and receptive mind. I have very pleasant recollections of my work there.

The Hon. Minister, Mr. Jules Allard, is about to take a very important and necessary step in bee-keeping. Mr. A. Girard writes me, under date of Dec. 30, 1907. "At the next session of the Parliament of Quebec he intends having a law passed for the appointment of inspectors to fight the contagious disease foul brood."

Mr. A. Girard, editor of the *Journal of Agriculture*, who takes the very deepest interest in bee-keeping, stands in a very prominent and influential place, and is able to help the cause. It has been my pleasure to attend institute meetings with him, and I know he is ever ready to do all in his power to help in the development of this industry, for which he has a genuine affection.

Of the many bee-keepers who well deserve mention in this article, owing to limit of space the readers will, for the present, have to content themselves with a brief introduction to four gentlemen, all Canadians by birth, but two of English and two of French extraction.

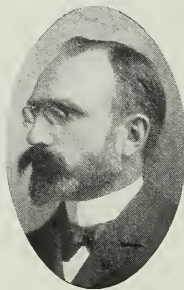
Mr. F. W. Jones, Bedford, Que., is perhaps one of the very best-known bee-keepers in the province. He has done much to disseminate modern apicultural knowledge. He has not only been an extensive bee-keeper, but he does a large business in bee-keepers' supplies. From personal acquaintance with him for many years I know he possesses not only strong business integrity, but he seeks to do toward others as he would be done by.

Mr. C. O. Jones, Bedford, Quebec, is an extensive comb-honey producer, and these two last-named gentlemen have had the experience of competing with one another at Montreal exhibitions, even dividing the prize money when the judges did not act wisely. I have been in Mr. Jones' winter repository. He removes the bottom-boards from the hives, closing, however, about three-fifths of the space below by setting the hive on two other hives sufficiently far apart to leave open at the bottom two-fifths of the center space, running from front to back.

Mr. Jacques Verret, Charlesburg, Quebec, like the Messrs. Jones, speaks both English and French, and is of French extraction. He is an enthusiastic bee-keeper, and is a strong advocate of black bees. He prepares his colonies for winter in September, wintering only strong ones with plenty of stores. His bees are put into winter quarters about November 15, and for the last four years they



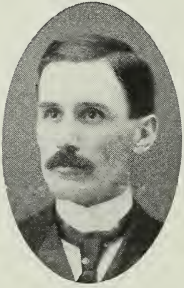
JULES ALLARD



A. GIRARD



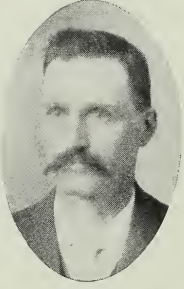
F. W. JONES



C. O. JONES



JACQUES VERRET



A. L. BEAUDIN

colonies should be kept in such a way that the combs can not be examined, whether in the old box hives or in carelessly looked-after modern hives.

Referring to the illustrations above, the gentleman who is by right of position at the head of the bee-keeping industry is the Hon. Minister of Agriculture, Mr. Jules Allard. He springs of a nationality (French) which has had much to do with the development of bee-keeping. The French people have made



have been brought out on the second day of May. Eight pounds has been the average consumption per colony in the winter.

Mr. A. L. Beaudin, St. Chrysostome, Quebec, is one of the largest and most progressive French bee-keepers in the province. He is about 45 years of age, and has been interested in apiculture for many years. He generally has from 200 to 300 colonies of bees, producing extracted honey almost entirely. He uses the nine-frame Langstroth hive called "The Model." His crop of honey is generally white clover; and as he leaves the honey with the bees until it is well ripened, it is of excellent quality.

Quebec, having many natural advantages for bee-keeping, should do every thing reasonable in its power to develop it. If you, Mr. Editor, could recommend a French bee-journal it would be a help to many in that province who do not read English.

Brantford, Ont., Canada.

[*L'Apiculteur*, 28 Rue Serpente, Paris—now in its fifty-second year; *L'Apiculture Nouvelle*, E. Bondonneau, Paris, 142 Faubourg St. Denis; *Revue Eclectique d'Apiculture*, 11 Rue de Mezieries, Paris.—W. K. M.]

THE TWO-QUEEN SYSTEM.

This Plan Makes it Possible to Keep the Brood-chamber Packed with Brood During the Flow; Forcing Honey into the Supers; Wintering Two Queens in One Hive not Desirable.

BY J. E. HAND.

Continued from the Jan. 1st issue.

In the first article on this subject I stated that no iron-clad rules should govern the disposition of a two-queen colony during the harvest, and I gave what I consider the best method of managing such a colony during a good honey-flow when the bees are likely to swarm more or less.

However, if the bee-keeper, after a careful study of the present conditions and future prospects of the honey resources of his location, decides that the harvest will be short, and, consequently, not much swarming, then it would be unwise to make artificial swarms as directed in a former article; and he will either keep the two queens in the same hive during the harvest or else follow the plan as outlined in our season's work with the sectional hive.

However, since the various hive manipulations necessary to the successful carrying-out of this system are quite complicated, and since feeding back is a science not well understood, and therefore is likely to cause trouble for the beginner, I would advise those who wish to give the two-queen system of comb-honey production a trial to follow the more simple methods as outlined in these two methods.

By expanding our brood-chambers during the breeding season (gradually by means of shallow brood-sections) prior to the harvest we fully develop the fertility of two queens

in one hive, thus securing a much stronger force of workers for the coming harvest than it is possible to secure with one queen in any hive. And then, at the beginning of the harvest, force this great army of workers to begin storing in the sections at once—not by extreme *hive* contraction, as in a former article, but by limiting the room in the brood-chambers during the harvest, so that two queens will have no difficulty in keeping it full of brood to the exclusion of honey, which must go into the sections.

Mr. Titoff claims that two queens are not necessary during the harvest; and cites for proof the fact that some bee-keepers restrict their queens during the harvest to two or three brood-frames. However, he seems to lose sight of the fact that, to restrict the queen during the harvest, without an equal contraction of the brood-chamber, would be to do so at the expense of a honey crop, since the honey would be stored in the brood-chamber instead of in the sections.

The successful comb-honey producer of to-day will not winter his bees upon stores of white honey with the corresponding difference in price between that and sugar syrup, as well as the superiority of the latter as a winter food for bees.

It is not only very desirable to have a brood-chamber full of brood during the breeding season prior to the honey-flow, but it is equally important to keep it full of brood during the entire harvest to the exclusion of honey. And such brood will put dollars into the pocket of the bee-keeper by holding the brood-chamber against honey during the three weeks of their hatching period, even if they never gather very much honey. However, such bees often come handy in storing honey from some unexpected source during autumn, and this is just what they did in our home yard last September.

Regarding the condition under which two queens may be kept in the same hive for any length of time, it is needless to say that this can be accomplished only by keeping the queens as far apart as possible, and for this reason it is safer to use a double queen-excluder and feed during a dearth of honey, not to stimulate brood-rearing, but to keep the bees busy and good-natured toward the queen. Further than above stated, it is not desirable to keep too queens in one hive, and I prefer to winter surplus queens separately in my shallow brood-sections with a small bunch of *young* bees. The fact that several queens may be safely introduced into the same hive, and that such will often remain together, is not strange when we understand queen nature, and only proves that it is possible to use a plurality of queens so far as the bees are concerned. If two queens meet, and the challenge to mortal combat is given and accepted, they will lock in a deadly embrace, and one is quickly killed; but if one refuses to fight, and runs away, the other will not pursue her, and this may be repeated every time the queens meet until the cowardly and weak ones pluck up courage enough to fight; and if two remain in the

hive for any considerable time it is safe to say that one of them is of no account.

While the two-queen system as above outlined will greatly discourage swarming by keeping the brood-chamber free from honey, yet I do not recommend it as a sure means of swarm control except in seasons as above described; and in case a swarm issues it is treated as described in a former article, and work in sections will go on with renewed energy.

Birmingham, O.

THE PLURAL-QUEEN SYSTEM.

A Series of Interesting Experiments; Clipping the Queens' Stings so they Can't Kill each Other; do the Bees Take a Hand in Royal Combat?

BY EARL BUSSEY.

How two queens may be kept in one colony, unseparated by queen-excluding zinc, and how long it is possible for them to remain in this condition without disaster to either queen, seems now to be the main question.

Having experimented along this line to some extent, and also having been in a measure successful, I will endeavor to explain *how* they may be kept in this manner, and *how long* it is possible for them to continue in this state.

After reading Mr. Alexander's article some time ago, wherein he stated that he had been successful in keeping two queens in one colony, I at once decided that, if the scheme were possible, I wanted to know something more about it right away.

You can imagine the exodus to the beeyard. Arriving there I immediately made preparations for the furthering of the experiment by getting in readiness a new hive. I then succeeded in extricating two queens from their respective abiding-places, each being accompanied by three frames of brood and bees. These separate combinations being placed on opposite sides of the hive, the cover was put in place and the whole removed to a new stand. The hives being eight-frame it will now be seen that there was an unoccupied space the width of two frames in the center, which was to serve the purpose of keeping them apart until such time as they should become reconciled to each other.

Three days after, no fighting having taken place, and as they were working nicely, I decided to look in on them. Removing the cover I lifted the frames from one side and found the queen doing nicely. On the other side I found the same state of affairs. I then removed the whole to the center so as to form one cluster, and replaced the cover.

Now then! The next day I removed the cover once more, and proceeded to investigate as to the success of the cooperation proceedings. Every thing was quiet and nice, with a few guards standing to attention around the outposts. I now had no doubt at all about the matter, and could almost imagine them drawing up a set of corpora-

tion laws or debating the question as to whether they would work more than eight hours. But on removing the frames I could find only one queen. Horrors! Is it possible that here in this peaceful-looking congregation there has been vile murder done, a tragedy enacted, or possibly a case of abduction? Perish the thought!

On thinking the matter over I came to the conclusion that the missing queen must be out taking an airing, leaving her sister to look over and attend to the wellbeing of the community, both having come to a previous understanding after a realization of the improved state of affairs. Yes, I would much rather think this way. Besides, that queen cost a dollar.

Next day I looked, and next, but still I could find but one queen. About this time I began to have doubts; and, to settle the question, I removed the remaining queen. It rained next day, and I left them alone; but the next day I looked in and found they had started queen-cells. This left no doubt about the matter, and I was forced to come to the conclusion that, so far, the two-queen system had proven a rank failure. But one swallow does not make a summer, and I was determined to have two queens work together in harmony. So, twice again I tried the experiment, with the same result both times.

About this time I was getting a little disgusted with the two-queen business; but I should certainly like to know what went with the missing queen. After studying the matter over for a couple of weeks I settled on a plan whereby I could find out whether the queens did fight each other; and if they didn't I would know it was the bees that did the killing. So I took two queens and cut off their stings by folding the abdomen over my thumb-nail, and pressing, when their stings came out and were amputated. These stingless queens being taken from a double colony, one above the other, with excluder between, did not have to be introduced in the usual manner, so I turned them loose at once, each on an opposite side of the hive. In two hours I looked in, and on lifting out the third frame I saw the two queens come together, and right there I witnessed one of the fiercest battles I ever saw. The bees stood around like referees, forming a circle around a prizefight, and not one of them offered to interfere. But as a battle it was a bloodless one, so I left them until late in the evening, when, on looking, I found them still fighting. One of them seemed to be getting the best of the other, for she had gnawed off one wing completely. So I separated them by putting one of them below the excluder, and I may say that they are just as I left them, both of them having done good work the rest of the season, and seeming none the worse for the loss of their stings and their battle.

I may also say that I have been successful in keeping three queens in one colony for five weeks. These queens were superseding, and were not a year old. The reason why they were superseding is that I had been

moving them from one queenless colony to another until such time as I could get queens for them. I let them requeen out of their second batch of cells, and could not see but they did as well as any colony in the yard. After five weeks, two of the three superseding queens in one hive came up missing. I think the reason the superseding queens do not fight is because they have the same instinct that the worker bees have; and when they have been laying heavily for some time they begin to feel their weakness, or want help, or are expecting to meet another queen at any time, any way. I also believe they may be kept together only just so long as they remain in this condition, and that, when they have rested up and have regained their normal strength, their jealousy will assert itself, and that will be the end of the plural-queen system.

Uvalde, Texas.

THE PLURAL-QUEEN SYSTEM.

How an English Expert Looks at the Question; the Advantages and Disadvantages.

BY JOSEPH GRAY,

Traveling Expert in Apiculture, and County Council Lecturer.

I have read with deep interest Alexander's new plural-queen system. We have in England the Wells hive, which takes two colonies side by side, divided by a central dummy made of wood, and perforated to allow the scent to pass freely to each stock. The bees work to the center, forming one cluster. A queen-excluder is used over the brood-nest, and one common super is used.

Advantages.—A mighty working force which will roll in the nectar from the fields and give a large surplus that no single colony will.

Disadvantages. 1.—A big unwieldy hive not easy to handle.

2. In winter the brood-nest is likely to separate and make two clusters, and one side is likely to attract more bees during the early spring flight, needing a more skillful management to adjust matters.

3. Often one queen turns up missing in the spring examination, but you get a big colony at the other end.

In my travels I find these hives are gradually going out of favor on account of the disadvantage first named.

Swarming.—There is less tendency to swarm, the mighty force bending their energy to storing.

Locality and season.—These are important factors in the case. Given a locality and season where there is a good flow, these colonies do well; but in a locality with a slow flow and changeable weather, the swarming may be raging, and all stores consumed in excessive breeding.

Alexander's new method has two points of interest to me.

One brood-nest, without perforations or ex-

cluder, where queens, two to five, can roam at will.

The matter of swarm control alone is worth all the experiments, and around it centers the chief interest in the new method.

There is one condition in which Mr. Alexander stands ahead of most of us. He has an ideal locality, with a certain and steady honey-flow. Buckwheat may account largely for his success where others will fail.

If Mr. Alexander has given to the world a system that even a limited number can use, that will permit a plurality of queens in a single brood-nest the year round, with complete control of swarming, he has undoubtedly made an epoch in apiculture, and his name will go down to posterity.

Long Eaton, England.

[Since the foregoing was received at this office Mr. Alexander has published a statement to the effect that the plural-queen system, without the use of perforated zinc, has not yet proven to be a success—see page 1496, Dec. 1st issue of last year.

From the testimony that has come in, it seems to be more and more clear that the dual-queen system will not work unless the queens are separated by excluders, and even then only while the colony is in a prosperous condition.

The testimony offered by our correspondent, that the Wells system in its modified form embodies the principle of perforated zinc, is interesting and valuable at this time. But we have known how, sometimes, devices and methods have been prematurely discarded only to be readopted years afterward, and finally put into successful use. The use of self-spacing attachments on brood-frames, for example, was tried some twenty or thirty years ago, and at that time they were generally discarded except by a few, but now they are in general use. It is possibly true, therefore, that the two-queen system in connection with perforated zinc was discarded in your country before it had had a fair test.—Ed.]

REQUEENING.

Shall the Superseding be Done by the Bees or by the Apiarist? Killing the Old Queens only after the Young Queens are Laying; some Experience in Queen-rearing.

BY F. GREINER.

The bee-keepers we meet at conventions are an enviable, happy lot of people. They are generous; they give as freely as they partake. An enjoyable time is always assured, even should but half a dozen convene.

After having returned from the joint meeting of the Ontario and Seneca County beekeepers, with a few visitors from Wyoming, Livingston, Yates, Tompkins, and Monroe Counties present, I am filled with greater enthusiasm for the pursuit, and am better fitted to cope with the ever changing prob-

lems as they present themselves as time advances.

The address which I delivered on the subject of requeening and queen-rearing, after embodying the many suggestions received would read about as follows:

The minds of the bee-keepers on the topic of requeening are not agreed; but the general opinion is that young queens are more profitable than old ones. It is shown that colonies rarely swarm with queens of the same year's rearing — particularly so when large brood-chambers are used and honey-seasons do not continue uninterruptedly till late in the fall. Large brood-chambers full of large deep frames have a tendency to produce large quantities of bees, and these in turn give us large honey-yields; but the queens must be young and prolific.

It would appear, then, that the matter of requeening must be looked after by the apirist himself. It seems to be the opinion that the bees themselves can not be depended upon to supersede queens timely, although something might be done in the line of breeding bees to perpetuate such a trait.

This matter is not lost sight of in Germany and Switzerland when selecting breeding-stock. With our average stock of bees, when nothing is done to renew the queens some colonies will be found every year in every large yard, which fail to breed up; and when this happens at a time when strong breeding is necessary to produce the bees for the harvest, our honey crop will be a failure from such colonies.

It will be cheaper, Mr. Taylor (of Michigan) says, to keep a few more colonies of bees to make good the loss from this source than to renew a lot of queens every year.

CHEAPER TO REQUEEN EVERY YEAR.

Other bee-keepers think differently. In fact, Mr. Olmstead, of Bloomfield, claimed that it is much cheaper to requeen every year in the spring by rearing the new queen in the same colony containing the old one, not removing the latter till the young one is laying, than to leave the matter to the bees and be bothered with the swarming trouble, holding that the work of rearing the queens in the very early part of the season is a great deal less work than to watch and examine each colony time and again for any swarming symptoms, and then deal with them accordingly.

A more general practice is to rear queens all along the working season and have them mated in nucleus boxes, and then introduce them where wanted, or wait till the close of the white-honey harvest, and requeen by giving a ripe queen-cell after removing the old queen. The former method is, of course, the more costly one, as it means the breaking-up of a few colonies of bees from which we might have obtained a surplus.

REQUEENING WITH NATURAL CELLS.

On account of convenience, many bee-keepers prefer to make use of their naturally built queen-cells found in the populous colonies of the yards. Undoubtedly this is a safe

plan, as the resulting queens will be fine, and free from the objection of having been tampered with.

THE ARTIFICIAL-CELL-CUP PLAN.

Other bee-keepers make use of artificial cell cups, stock them up with royal food, and transfer larvæ into them. Our friends in Germany call this a laborious method, while I myself hold the opposite view. It is the easiest way of obtaining the queen-cells in such numbers as are required, and at a time when needed. The pleasure derived from this method, the joy and agreeable surprise over the success crowning our efforts along this line, can not be estimated by those who never put themselves in touch with this exceedingly interesting branch of apiculture.

It would lead too far to describe minutely the whole process. Works on queen-rearing ought to be consulted. The government bulletin, written by Dr. Phillips in 1905, may be had for little money, and explains matters very plainly. The little book on queen-rearing, by the Root Co., is very good.

A FEW KINKS IN QUEEN-REARING.

A few kinks may be mentioned here which may not come amiss. Expensive implements and other auxiliaries offered by supply-dealers are not necessary to insure success. The dipped cells may be fastened to movable bars inserted in an empty brood-frame. If no royal food is at hand, the larvæ may be transferred without it. The bees will accept them just the same; but I would advise removing the thus transferred larvæ the second day, and make another graft.

One of the very best and at the same time simplest and cheapest instruments for taking up larvæ, without injuring either larva or cell, is a common pin pushed with its point into a small stick. This instrument has been tested by Mr. Olmstead, and will take up the smallest larva easily; and, again, the little bee-baby can be dislodged from it without any trouble. I think such a tool will facilitate the work, and, when known, will find favor with all who practice grafting cells.

DOES THE ARTIFICIAL METHOD TEND TO DEGENERATION OF STOCK?

I am entertaining the fear that, by following up this system of rearing queens by grafting larvæ, our stock of bees may deteriorate or degenerate. I do not think that any harm will come from practicing this method occasionally; for, by thousands of years of nature's breeding, the habits and the whole nature of the bee have become so well fixed that an accidental blunder or mistake on our part will not be noticed. It's a sure preventive of any degeneration. Mr. Olmstead has suggested to select always such queens for breeders as were reared naturally under the swarming impulse, without interference of man.

MATING IN UPPER STORIES NOT A SUCCESS.

So far I have not been able to make a success of mating queens in upper stories over an excluder so long as the old laying queen was present in the lower story. I will take

up this work again next spring. I have long since found that bees can be manipulated with less annoyance early in the season, particularly during fruit-bloom, than at any other time, and possibly I may succeed then in mating queens separated from the laying queen by perforated metal.

THE MATING-BOX NOT ALTOGETHER SATISFACTORY.

So far I have had all my queens mated in small mating-boxes during the clover-honey season. This is somewhat expensive, as a number of colonies will have to be broken up to form the small swarms necessary, and we do not obtain any surplus from them. What I desire is a perfectly safe method to rear queens in upper stories or within the hive somewhere with the old queen present and doing business. The very fact that bee-keepers and queen-breeders everywhere make use of nuclei and mating-boxes proves that they have not been any more successful than I have been in rearing queens without them. If a sure method were known, the mating-box system would be abandoned. It is perfectly practical to have the queen-cells built over an excluder in good strong colonies, but with me only a few queens begin to lay eggs. They come up missing generally. When the queens needed are reared in the same yard, even when the mating-box system is used, the introduction of them to other colonies during the honey season is simple, and reasonably sure. All we have to do is to remove the old queen and allow the new queen (fertile) to run from the comb of the mating hive over into a brood-comb from the other, right in among the bees. A queen heavy with eggs is accepted very readily, while one with a reduced or shrunken abdomen is objected to. The bees detect the difference between their old queen heavy with eggs and the one which has been kept out of the hive for even an hour or two. Such queens I can not introduce without caging; and the longer the queen to be introduced has been kept out of the hive the longer she will have to be confined in the cage before the bees may be expected to treat her kindly. If it can be so arranged that the queen is liberated by the bees during the night, all the better. The bees are so accustomed to the fact that strange bees never enter their hive and home during the night time that they take it for granted every thing must be right, and so they accept the new queen without molesting her.

Naples, New York.

THE JANUARY MEETING OF THE MASSACHUSETTS SOCIETY OF BEE-KEEPERS,

BY X. A. REED.

At the January meeting of the Massachusetts Society of Bee-keepers, in the absence of any regular speaker several topics were brought up for discussion.

Honey of different flavors was mentioned. A distinct flavor of spruce was noted where

the bees had visited the buds of spruce-trees. An acid taste in apple-blossom honey had also been found.

A very interesting account was given by Mr Chase concerning the origin and use of the pound and two-pound section boxes in Massachusetts. In the 60's he took a frame of excellent honey to Boston, calling to see if more was wanted. He found that even that was not sold. No one would buy five or six pounds of honey at once; and, realizing the fact that, if bee-keepers in Massachusetts wanted to sell their honey, it must be in some convenient form, he and Mr. Gould, of Ipswich, made suitable one and two pound sections, and in 1863 Mr. Gould sold a ton and a half of surplus honey.

Miss Cutter, of Princeton, gave her experience with the seventeen-frame Latham hive from which she obtained 111 lbs. of honey while her other colonies gave her no surplus.

As a result of his observations on weather conditions, Mr. Small, of Waltham, stated that the bees in spring and in early summer, and even in the fall, when asters are in bloom, work better when the nights are cold (almost frosty) if the temperature rises rapidly in the early morning. His theory is that the nectar is secreted by the flowers more rapidly, and is of a better quality under such conditions. The weather that, in early spring, causes a good flow of maple sap will, later, make the nectar more abundant.

A discussion as to the best kind of bees for both comb and extracted honey resulted in no agreement. The only point of harmony was that the Italians surpass the blacks and hybrids in gentleness.

This was our third meeting and it showed an increase over the first afternoon, there being twenty-one members present.

Our next meeting will be the first Saturday in February, in the evening, at the Ford Building, corner Ashburton Place and Bowdoin Street, at 7:30. These meetings should be attended by all members, as there are only three more "unless otherwise ordered." We expect to receive some new members at this meeting, and hope to see a lot of the old ones.

Belmont, Mass.

THE NEW YORK PURE-FOOD SHOW.

A PURE-FOOD show will be held in the Lenox Lyceum, March 26 to April 16. It will be managed and financed by the New York Retail Grocers' Union under the personal direction of Mr. L. J. Callahan. This show ought to be a great success, as the forces behind it are of a solid and reliable kind, not easily discouraged or defeated. Besides, New York is the best place in the country for such a show, and the Lenox Lyceum is central to the wealthiest class of buyers in America. Fancy honey ought to be very much in evidence at this show, as it gives a unique opportunity to impress the public with the superlative value of honey as a food.

W. K. M.



HIGH-PRESSURE GARDENING DURING THE
FIRST WEEK IN JANUARY IN MAN-
ATEE CO., FLA.

While we were discussing winter weather in this region, one of my good neighbors, Mr. Stanton, remarked that he had been here four winters; and as all four were very different indeed, he had ceased speculating as to what the weather would probably be. This is my third winter in this county. The first was unusually wet; the next (last winter), *unprecedentedly* dry, and, in fact, there was a lack of rain all summer until almost December of this present year. When I got here with my *barometer*, however, I began giving notice all around that rain was *coming*, and we had an abundance. On one occasion I said there was going to be a *big* rain or wind storm, and advised all to get ready for it. Mr. Rood had his men clear out the ditches and open up all depressions so there would be no standing water, and, sure enough, within 48 hours we had an almost continuous rainfall of about $2\frac{1}{2}$ inches. There have now been five heavy rains in the past six weeks, with a week or more of beautiful weather between them, and the barometer has given prompt notice ahead of every one, almost as faithfully as a clock gives the time of day.

On account of the damaging dry weather for a year or more past, some very extensive (as well as expensive) irrigation plants have been put in. Within two miles of where I sit, a plot of 30 acres has been drained and fitted for trucking, and several acres of this are already equipped with the Skinner overhead sprinkling system. It was my pleasure to visit it when the apparatus was giving a veritable summer shower over a good part of an acre. The water is collected in pipes overhead, with sprinklers every few feet; and by rotating these pipes the water can be distributed very evenly indeed. Mr. Rood has finished laying tiles for sub-irrigation on two acres. A well has been dug, and a ten-horse-power gasoline-engine installed; but the abundant rains have so far prevented even a "trial trip" of the irrigation part. The tiles, laid only 20 feet apart, are, of course, doing their part, and Mr. Rood has now the finest field of Boston Market head lettuce I ever saw *anywhere*, some of it just heading up nicely. Now, here is a trouble some of you might not think of. At this date, Jan. 5, there has been (besides plenty of rain) most beautiful warm growing weather. The consequence is, every thing is coming on and maturing before the usual time; and that is not all—almost everybody, especially when they had good drainage, has a crop. I have

just heard a hint that lettuce in the northern cities is bringing only enough to pay the cost of package and transportation, leaving nothing for the grocer.* This is quite a contrast to last winter, when the shipper was astonished by getting a price that almost took his breath away.

Well, neighbor Rood is all right on his strawberries if not on the lettuce. There are not only more of them, but larger and finer fruit than he ever raised before. It is true he has put the price down to 25 cts., but one day last week they picked 89 quarts, and he usually has his heaviest harvest in March. Whoever comes to Florida will find all garden stuff grown on raised beds, with some kind of open ditch between. Of course, tiles would enable us to have level fields like those in the North (or it *probably* would), but the cost—2 cts. per foot for two-inch tiles—is one item, and the peculiar soil in most of Florida is another. Let me digress a little.

There are no cellars in Florida—at least, next to none. I wanted a cement cellar for my two incubators; but everybody said it would get full of water. I thought I would show them. I dug a ditch along my line fence four feet deep. Such open ditches are quite common, and almost a necessity when you want to grow stuff. Well, I put a two-inch tile drain from this right *under* the bottom of my cellar. Then, to make doubly sure, I set the wall on a trench filled with broken stone, and this trench was connected with the tile drain. My cellar was all right until we had the $2\frac{1}{2}$ inches of rainfall, mostly in one night. I said in the morning my cellar was all right; but the day *after*, water seemed to be oozing in from all sides, and up through the bottom. Right over the tiles it was comparatively dry; but everywhere else it was wet, and it took about ten days for that retentive spongelike soil to "let go" of the water from that shower. After repeated coats of cement on sides and bottom I have got a model cellar—at least I think so now; but the experience taught me a lesson. This wonderfully retentive soil is a great safeguard against drouth, and it enables us to transplant lettuce, celery, strawberries, etc., without watering, in a way I never heard of in the North. One big rain keeps things growing a long while; and after the roots get down two or three feet it is almost perpetual sub-irrigation. Of course, this condition refers mostly to low ground where open ditches have collected the surplus water away, and when, even in a dry time, water is running in open ditches three or four feet deep.

I replied to Dr. Miller that I had never succeeded in getting sweet clover to grow

* Whenever lettuce is a drug it can be very profitably used for poultry; and where lettuce is being shipped, the refuse will be greedily devoured by the birds. It not only starts them to laying, but when they have access to plenty of crisp lettuce the amount of grain consumed is very perceptibly decreased. Here in Florida fowls must have a large amount of green food of some kind. Ours have sprouted oats all the time, but they seem to prefer greatly the lettuce.

here. I have now alfalfa and sweet clover growing fairly well under the influence of "cow-chips" (see page 1605), and the fertilizers used here for trucking.

In answer to many inquiries about the price of labor and chance of getting work, etc., I would say good faithful and able-bodied laborers get \$1.50 per day, 10 hours. Expert carpenters get \$3.00 for 8 hours; masons, \$4.00 for 8 hours; painters, \$2.25 to \$2.50. Now, I want to tell you frankly that quite a few northern people come down here and get disappointed in regard to work and wages. Many are too old to do a good day's work; others have worked a little at the carpenter business, etc. To get \$3.00 for 8 hours a man must be up to the times in his business, and he must "make the work fly" for the full eight hours. As a rule you can't do anything down here until you have learned how, and you must be bright enough to keep your eyes open and see whether you are doing as much as the people you are working with who get the same pay.

In regard to the locality for health, I think it a splendid place to spend the winter, especially for invalids and old people. The carpenter who builds our house said the doctors told him three years ago, in the North, that he could not live until spring, as his lungs were so badly gone. He now works right along, winter and summer. I think I will close with a letter from our old friend M. H. Hunt, one of the leading bee-keepers of Michigan, whom most of the bee-keepers know.

Dear Mr. Root:—I have just received GLEANINGS, and find in it you are south for the winter, and of course, you have to garden a little. Myself, wife, and daughter have been here a month. I too have a garden, and it is looking fine. I have in onions, beets, turnips, radishes, lettuce, mustard, parsley, and cucumbers, besides some flowers. I suffer while north with stomach trouble, but I am always over it within ten days after landing here. I can eat any thing here without trouble afterward. I expect to remain south until the first of May. I went home last year the latter part of March, and made a mistake by so doing.

I have the use of a nice gasoline-launch and other boats, and enjoy the boating and fishing very much. I caught a fish last Saturday that weighed 18 pounds. The town of Crystal River is seven miles from the Gulf, which we visit two or three times a week. We take the ladies along and have dinner on an island where my friend Mr. Baum owns a house for the purpose. I have been to Bradentown several times, and think it about as nice as any town in the State. I know a gardener half a mile out by the name of Herman Crandall. He went there from near our home in Michigan. Four of my friends in Michigan will join me here next Thursday, and on the 9th of next month two more; and later on I expect more.

It is a wonder to me that more people do not spend the winters south. The beautiful sunshine and the warmth, with the continual growth of vegetables, etc., are very attractive to me—no more snow and icicles for me as long as I am able to make the trip. If you can get lime and put on your new ground it will sweeten it, and stuff will grow much better. My garden is an old mule-pen, and as rich as you could imagine.

M. H. HUNT.

Crystal River, Fla., Dec. 30.

My 26 Leghorn pullets that I raised last winter (one fourth game, you remember), are doing finely; and with eggs still at 35 cts. they pay their way very well. I shall have a "chicken story" for the younger readers of GLEANINGS soon.

SWEET CLOVER FOR PASTURE; SOME IMPORTANT TESTIMONY IN REGARD TO ITS VALUE.

Professor Thorne, of our Ohio Experiment Station, has called our attention to an exceedingly valuable article on sweet clover, which is clipped from *Wallace's Farmer*. Perhaps I should explain that the Wallaces, editors of the journal named, of Des Moines, Iowa, are about as good authority on all the clovers, perhaps, as any people living. Below is the extract:

Mr. Frank Coverdale, of Jackson Co., Iowa, has for some time been advocating through the press and at farmers' institutes the use of sweet clover (*Melilotus alba*) as a pasture grass. Many regard sweet clover as a vile weed growing unshown by the roadside, and we are often asked how to get rid of it. Therefore it has surprised many farmers that any farmer should advocate its cultivation. Mr. Coverdale, however, is not the first one to advocate it. As much as twenty years ago a farmer in Madison Co. was a staunch advocate of this plant, using it both for meadow and pasture. We once visited his farm and asked him if he did not have difficulty in getting cattle to eat it. He replied, "Not when they once become accustomed to it." In order to find out what there is in this thing we sent Mr. Coverdale the following questions:

1. How many acres do you have in sweet clover?
2. How long have you made a practice of pasturing sweet clover?
3. Do you have any trouble in getting your cattle to eat sweet clover?
4. When do you turn them on it in the spring?
5. Will they eat it after it has grown up a foot to eighteen inches?
6. Will cattle which have not been on sweet clover, and practically starved to it in the beginning, eat it?
7. Is your sweet-clover pasture entirely sweet clover, or do you grow other grasses with it?
8. How long can you keep a field in sweet clover when you follow the practice of pasturing it closely, and not permitting it to bloom and seed?
9. Where do you get sweet-clover seed? and how much do you pay for it?
10. How do you seed it to make a pasture? and how much seed do you sow per acre?
11. How many steers will a forty-acre sweet-clover pasture carry through the grazing season?
12. Are any of your neighbors sowing sweet clover for pasture?

In answering the above, Mr. Coverdale has sometimes grouped two or three questions together; but his answer gives a clear statement of his experience as follows:

- 1 and 2. I have pastured 35 acres for 4 years; have also sown small patches here and there in an experimental way. This field was sown to timothy and sweet clover except a little strip of alsike, which is now nearly gone, and it is now a thick mass of sweet clover and timothy with blue grass coming in.
- 3 and 7. My cattle make no choice between this and other grasses. All are eaten with equal relish, as you will see from the photograph of my cattle in the pasture, sent you herewith. Timothy grows with it, also a little alsike and blue grass, and it is all eaten together.

4. I have always turned cattle on in the early spring, as this clover is a week earlier than the other clovers.
- 5 and 6. Cattle turned into a field of the clover a foot high act as steers do that are brought from the range and introduced to a trough of corn. At first they will not eat it; but they soon catch on, and thrive on it. My cattle never refuse to eat sweet clover. If the plants become old and woody they will browse on the tops or any part of it that remains green.

8. If a field of sweet clover is pastured close to the ground, three years will finish it. One man here turned too many cows on a small plot of it, and it is seriously injured; whereas it ought to grow better year after year. I sold one man enough seed to seed a small field for hogs, and they have completely destroyed it. He has simply put on too many hogs for the pasture. Another man had a small hog-lot of old plants started, and by the first of June it was eaten out root and branch.

9. I purchased my seed in Chicago at a cost of \$9.00 per 100 lbs. I think it is found most generally in the Southern States.

10. This 35-acre field was sown with timothy and sweet clover after being plowed and harrowed, just as you would seed to alfalfa. The ground should be put in good condition, and the seed covered shallow. In this respect it seems to differ somewhat from red clover, which should be covered deeper. It should be sown thicker than red clover to get the best results. It will not smother out either timothy or blue grass. In fact, these grasses do their best when sown with sweet clover.

11. I have never found out the capacity of this thirty-five acres for yielding grass, as it is such a rapid grower. However, after once getting established it will very far outstrip any other clover that grows here, and should be better as the years go by, which is not true of any other clover. Tramping the ground benefits it, provided it is allowed to reseed itself each year. Other grasses will come to the front if sown with sweet clover.

12. My neighbors are just beginning to wake up to the value of this crop, and are purchasing seed to sow from ten to forty acres for pasture.

I sowed 70 acres last fall on stubble, and hoped to get a good catch. It was sown on the bare ground early in December, and proved an entire failure, only a bunch here and there surviving. I have never failed when I put it in in the spring, covering lightly, and then turning on the cattle. The tramping does it no hurt. However, the soil should be inoculated with soil that is full of the bacteria, which seems to be the same as that of alfalfa. A good stand can always be secured by sowing with oats and pasturing moderately. Last spring I sowed a narrow strip through the oats-field, and at this writing it is a fair stand of slender plants that look rather sickly, just as alfalfa would look under similar conditions. Inoculated soil should have been sown with it and covered with the seed.

July 23 I took steers off from this 35 acres in order to let it grow up for seed. I harvested the seed Aug. 18, and part of the steers that were not shipped were turned back on it Aug. 25, by which time the young clover growing up was 20 inches high. It was eaten at once with evident relish. The mower-bar was run over the top of this young clover ten or twelve inches from the ground, thus allowing on it the tops of the old clover for seed. The steers will make heavy gains on this field.

After my four years' experience with sweet clover I would advise farmers not to put too many cattle on the field if they wish to fit them for market, as I have done, and save two months' feeding of expensive corn. My cattle that were shipped off this pasture (without corn) weighed 1163 lbs. at Chicago, and brought \$5.75 per 100 lbs. while other cattle on the market at the same time, and of better quality, brought from \$4.90 to \$5.25. Mine went on grass thin, while the latter went on in better flesh. My cattle had a nice sleek coat, similar to corn-fed cattle, and they were nearly as fat.

Now, friends, the above article ought to answer the question, and it ought also to refute the statement that has been made several times in different periodicals, to the effect that sweet clover is of no value to farm stock, or that horses, sheep, and cattle would not eat it. The above explains quite fully why it is that farm stock will at first refuse to eat it. I feel confident that I can in a very little time teach horses, cattle, sheep, and pigs—yes, and poultry too—to eat sweet clover with avidity anywhere in the United States wherever sweet clover will grow.

Temperance.

THE ANTI-SALOON LEAGUE IN FLORIDA.

Our temperance meeting last Sunday evening was a "hummer." It was a union meeting of all the churches, and the house was crowded. I opened the meeting with a five-minutes' talk, and then Mr. Lambert, the State Superintendent of the Florida An-

ti-saloon League, spoke about 40 minutes. They are exceedingly fortunate in getting so bright and wideawake a man for the work. He got them so waked up that every man, woman, and child in the church rose up and voted against the saloon. He is a godly man, and at the same time fearless, and of remarkable ability. Florida will soon be all dry, if he keeps at it.

Dear Friend Root:—We are glad to welcome you back to Florida. I want to see you this time before you skip out. I suppose you will go to the fair at Tampa next month. Why not plan to be there at a certain time and give notice in GLEANINGS, as many of your friends would likely plan to meet you?

There is one phase of the question we temperance folks are ignoring. Man is a gregarious animal. You and I have our homes, friends, books, papers, a bright light, and a cheerful fire; but many men, and especially the tempted ones, have not these things, and the saloon offers companionship, light warmth, and cheer, and do we wonder they fall in with it?

This wave of temperance in the South does not mean that drinking is at an end; but much of it is through fear of the darkie, and is to keep him from whisky. The gallons and gallons coming by express every day means some one is drinking a lot of rottenness. Well, come and see us, and bring Mrs. Root by all means. We shall be glad to meet her.

Bowling Green, Fla., Jan. 7.

IRVING KECK.

I have asked the fair commissioner to appoint a day for bee-keepers, and I will give due notice as soon as I hear from him, and arrange to be on hand. The Florida Anti-saloon League is already after the express companies, and I think something is going to happen soon.

PARCELS POST, AGAIN.

WITH a few exceptions the entire agricultural press of the United States is a unit on the subject of parcels post. The editors seem to be well aware that the entire opposition to this great improvement originates with the express companies and their friends the railroads. Underneath all this opposition lies the idea that the farmer is a sort of hoosier, peon, or peasant, and that he ought to be very contented with things as they are. They forget he is the great wealth-producer of the nation, and that it is he who supplies most of the exports to pay our indebtedness to other countries. All other goods are a mere fraction of our exports of wheat, cotton, and other farm products. The farmer makes the millionaires.

There is a more important side to the controversy, which is seldom mentioned, namely, the propriety of improving the conditions of the farmer's life. Good roads, free mail delivery, telephones, and, finally, parcels post, would go a long way toward making life on a farm an ideal existence. Isolation is not good for any one—certainly not for the farmer's wife nor his children.

With central grammar schools it will soon come to pass that the farmer's children will get as good an education as the banker's child in the city. And why not? But the farmer will have to fight for these things.

W. K. M.

FREE!**Comb
Foundation****FREE!**

Weed New-process Comb Foundation GIVEN AWAY!

A 2-lb. trial package included in every shipment of \$25 or over, simply for mentioning this advertisement.

We continue our special offer until Feb. 15.

Our factory is more complete than ever; and, having enlarged our business very much, buying every thing for cash, we are anxious to do twice the amount of business in the line of comb foundation that we ever did before. Our Weed New-process Comb Foundation is the best that money can buy; and whenever we succeed in placing some with a bee-keeper it means that bee-keeper's trade in the future. We also work wax into foundation by the pound at reasonable rates. Write us for rates, stating amount of wax you desire worked up.

With our very large and complete stock of The A. I. Root Co.'s make of bee-keepers' supplies in connection with our comb-foundation factory we are placed in position to offer you a special inducement to try our comb foundation, as we feel confident that you will use it all the time after you once try it.

HERE IS OUR OFFER — GOOD UNTIL FEB. 15, 1908:

Any one who sends in an order for bee-supplies at the regular catalog price, with the cash to the amount of \$25 or more, will receive, **absolutely free of charge** with his shipment, 1 lb. of thin super foundation and 1 lb. of light brood foundation as samples. When sending in your order you must mention this advertisement in GLEANINGS to entitle you to the 2-lb. sample package of foundation.

Now, please understand your order must be for \$25 or more, and no shipment will be entitled to more than 2 lbs. of foundation—no matter how large the order may be. We are glad to give you a 2-lb package to convince a bee-keeper that our foundation made by the Weed New Process, out of our clear southern beeswax, is good foundation. We are doing this to enlarge our trade. We seldom lose any of our customers, as we know how to give the money's worth. We receive many complimentary letters from our customers, such as the following, unsolicited:

Udo & Max Toepperwein.—I got the bill of hives, and nearly all are made up. They are the finest hives I nearly ever saw. While we were waiting for the order my wife said: "Where did you order your hives from?" I said they were from The A. I. Root Co.; then she said, "Then we shall get some good hives, for they make the best hives we ever used." She always nails up the hives and frames, so she has a right to know about as much about the hive as I do. We have bought bee-supplies from several different factories, but A. I. Root makes the best goods of any of the factories that we have ever bought from. I have used foundation from several different factories and think your Weed New-process Comb Foundation as good as any I ever used. It is a great pleasure to deal with a firm that ships out the supplies as promptly as you do.

Taft, Texas, Dec. 22, 1907.

Yours very truly, S. M. CAMPBELL.

Udo & Max Toepperwein.—Are you still in the bee-supply business? If so, please send me one of your descriptive catalogs, as I want to buy all my supplies from you as long as you are in the bee-supply business.

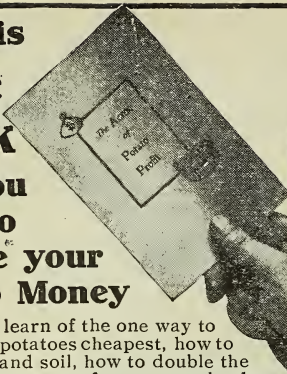
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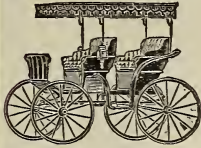


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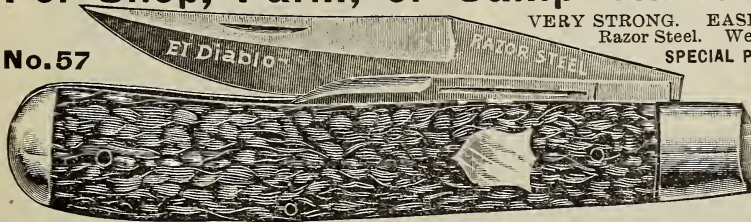
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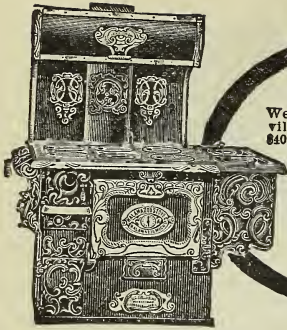
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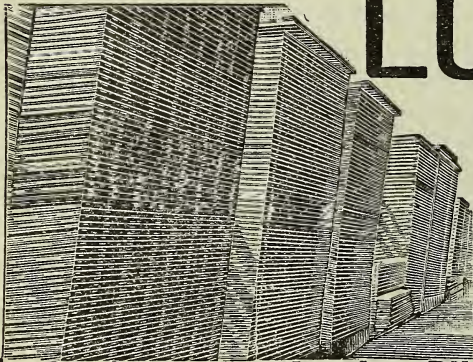
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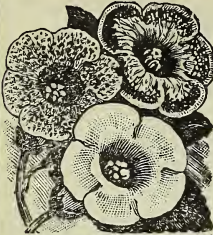
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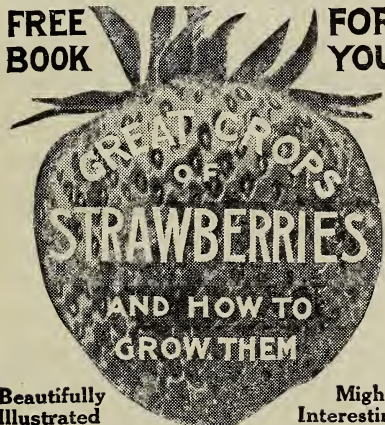
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\$1 Worth of FLOWERS
35 kinds 25¢ 35 kinds

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Enough choice seeds and bulbs to plant a complete flower-garden — all at a give-away price to induce trial orders, and show the quality of our stock.

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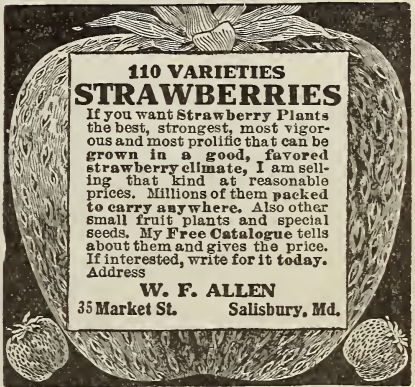


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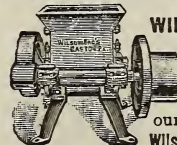


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Complete 50-egg all metal Hatching & Brooding plant for only \$7.50. The only machine made that does the work in the natural way. Once filling the lamp hatches the eggs and broods the chicks

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Our new system \$1.00 Brooder works to perfection. No danger of fire, overheating or chilling the chickens. Let us tell you about our new way of keeping poultry to get the largest profits. Catalogue free.

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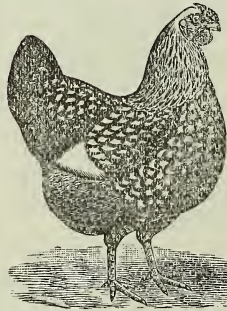


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Feed cut green bone; save half your grain and double your egg yield. The

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Green Bone & Vegetable Cutter, the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times; no complicated parts. Send for catalogue and special Trial Offer.

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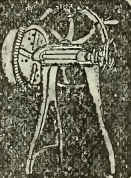


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40 BREEDS. Fine pure-bred chickens, ducks, geese, and turkeys. Northern raised, hardy, and very beautiful. Largest poultry farm in the Northwest. Fowls, eggs, and incubators at low prices. Send four cents for fine 76-page 14th Annual Poultry-book.

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Classified Advertisements.

Notices will be inserted in these classified columns at 20 cents per line. Advertisements intended for this department should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

Concrete Molds.

Do you want to increase your income? We have just the thing for all cement-workers, and others who can give all or part of their time. Our molds are designed for concrete burial-vaults, and these vaults are in increasing demand all over the country. Get a set of our molds and secure the business in your vicinity. Our molds are adjustable, making nine sizes of vaults, besides are adapted to a large range of other work, such as watering-troughs, and other articles on the farm or around the place.

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442 Board of Trade Building, Indianapolis, Ind.

Wanted, Situations.

WANTED.—Position in an apiary for season of 1908.
FRED GEO. BANKER, Sleepy Eye, Minn.

WANTED.—Position by a young man of good habits to work with bees. Two years' experience. Western States preferred. ALFRED STRUCK, Webster, N. Y.

WANTED.—Position in apiary for the season of 1908. Seven years' experience; young and temperate.
FRANK MORGAN, Elk River, Minn.

WANTED.—Position in apiary; 15 years' experience; up to date, and understands queen-rearing; would like position to work into partnership. State wages, etc.
BEEKEEPER, care of Osborne,
1156 Clement St., San Francisco, Cal.

Help Wanted.

WANTED.—Middle-aged bee-keeper to work on salary, or part salary and percentage of honey crop. Address with references.
DR. GEO. D. MITCHELL & Co., Ogden, Utah.

WANTED.—Honest faithful man to work with bees. But little experience required, but must be willing to work any place. Low wages to begin, but steady work and opportunity to work up for right man.
THE ROCKY MT. BEE CO., Berthoud, Colo.

WANTED.—We should like to secure the services of a young man who wants to learn the comb-honey business in the West. Large experience not necessary, but must be willing to learn and not afraid to hustle.
MOUNTAIN VIEW APIARIES, Platteville, Colo.

WANTED.—To an intelligent, active young man having a little experience with bees, and using neither liquor nor tobacco. I will pay \$25 00 a month and board, with as good an opportunity to learn the bee business as can be had in this country. My last year's crop was over 50,000 lbs. Write immediately, with references, to E. F. ATWATER, box 37, Meridian, Idaho.

WANTED.—A cook, near Wasco, Kern Co., Cal., on a ranch. From 8 to 20 men at different seasons of the year, besides the superintendent's family of four or five. A woman preferred, or a man and wife—the woman to cook and the man to work on the ranch. Current wages given. References required. A Christian preferred.
J. E. ANDERSON,
Supt. Palm Fruit Co., Wasco, Cal.

Post Cards.

Send us any picture and we will copy it on one dozen post cards, and return with original, for 50 cts., post-paid.
ACME POST CARD CO., Medina, Ohio.

Samples of Valentine post cards, comic and fancy, at 15 and 25 cts. per package. Money back if not satisfactory. Order sample early, and you can get more of same kind if you desire. M. T. WRIGHT, Medina, O.

Your photo copied on one dozen postal cards, and photo returned uninjured, with cards 50 cts. Finest black and white; no trashy red or brown finish; guaranteed permanent. Fancy etching of your name on each, 10 cents extra. Groups will be copied at same rate—2½ dozen, \$1.00. SANDUSKY ART STUDIO,
Sandusky, W. Va.

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WHITE ROX.—"Fishes'" stock and eggs. Write your wants. DR. C. L. VAN OSDEL, Dillsboro, Ind.

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FOR SALE.—Silverlaced and White Wyandottes. Single and Rose Comb R. I. Reds, choice stock, eggs \$2.00 per 30. CHAS F. L. CLEMONS, Rt. 3 Davenport, Ia.

FOR SALE.—Eggs, White Wyandotte, \$1 per 15; \$6 per 100. White Holland turkeys, \$2 per 9.
FRANK C. PELLETT, R. D. 4, Atlantic, Iowa.

FOR SALE.—White Wyandottes. Egg-record strain; standard-bred, farm-raised, unlimited range; healthy, vigorous, prepotent. Eggs, \$1.50 per 15.
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FOR SALE.—A ten-inch Dunham mill for \$9.00 or wax.
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FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Strawberry-plants. Send for catalog. BUSKIRK BROTHERS' NURSERY, Independence, Ohio.

FOR SALE.—One Root-German steam wax-press, and one Salamander automobile boiler.
D. H. MORRIS, Springfield, Ohio.

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FOR SALE.—Beautiful long-haired Angora and Persian kittens, some white and other colors. Prices low. Stamp for description.
MRS. J. F. SKEES, Marion, Ohio.

FOR SALE.—Special sale of half a million of best Wisconsin sections; thousands of shipping-cases; big discounts on all supplies till February 1. Seeds of honey-plants. Write at once. H. S. DUBY, St. Anne, Ill.

FOR SALE.—Honey-cans used but once, emptied without steam or water, bright and clean; 100 cases or more, per case two cans, 25c; 50 cases, 30c; 25 cases, 32c; less, 35c. E. R. PAHL & Co., Milwaukee, Wis.

FOR SALE.—Dried Fruit, California to consumer, direct from where produced; wholesale prices; finest quality, fresh packed. Write for prices.
CALIFORNIA PRODUCTS CO., DEPT. 27, Colton, Cal.

FOR SALE.—One Humphrey bone-cutter, good as new, cost \$12.50, price \$9.00. One Chas. Cypher's 150-egg Model incubator, bought new last season; price \$16.50. HARLEY CONDRA, Seymour, Iowa.

FOR SALE.—If you want an illustrated and descriptive catalog of bee-keepers' supplies for 1907 send your name and address to FRANK S. STEPHENS, (Root's Goods.) Paden City, W. Va.

FOR SALE.—Big stock bee-supplies, small profit. Big discount for the next 60 days, to make room for 1908 stock. Take Root Co.'s and Marshall Mfg. Co.'s illustrated price list for 1907, if you have one; if not, send for them at once. S. D. BUELL, Union City, Mich.

FOR SALE.—4x5 Premo "Film Plate" camera, 3 plate-holders, film-pack adapter, tripod, Todd's 1st and 2d Steps in Photography. Good condition; cost \$30.00; \$20.00 takes the outfit. E. F. ATWATER, Box 37, Meridian, Idaho.

FOR SALE.—Cabbage-plants. Early Jersey Wakefield, open-air and field-grown; tied in bunches of 25 each; 12 to 15 days earlier than hot-bed or greenhouse plants; fine and stocky, and well rooted—1 to 5000, \$2.25; 6000 and over, \$2.00. J. C. CLOYES, R. F. D. 5, Union City, Obion Co., Tenn.

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FOR SALE.—All who intend to buy bees, queens, and hives, should write postal for Charles W. Zweily's 1908 catalog. CHARLES W. ZWEILY, Fremont, Ohio.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. Choice mellilotus (white sweet clover) seed for sale at eight cents per pound. W. P. SMITH, Penn, Miss.

EARLY ORDERS booked now for delivery after May 1st. Best Italian bees, \$8.00 per colony. Two-frame nucleus, \$2.00. Queens, tested, \$1.00; doz., \$11.00. Untested, 75 cts.; doz., \$8.50. Virgins, 40 cts.; doz., \$4.50. Cash orders filled first. GEO. H. REA, Reynoldsville, Pa. Rt. 2.

Real Estate for Bee-keepers.

FOR RENT.—\$3.00 per month to bee-keeper; 1½ miles from Burg Hill, Trumbull Co., Ohio. House, barn, and garden. R. F. D., telephone, centralized school. Address R. M. PATTERSON, 315 Bryant Ave., Syracuse, N. Y.

FOR SALE.—Farm of 237 acres, 100 cleared and suitably divided; water in every field; good dwelling—\$2000.

Farm of 130 acres, 30 good bottom land, 30 upland, tillage, and pasture; timber estimated at 100,000 feet; log house of three rooms—\$2000. Bargains at above prices. B. F. AVERILL, Howardsville, Va.

FOR SALE.—On easy terms, a nice little poultry-farm of seven acres, with poultry-houses to accommodate 200 to 300 fowls; a five-room house, barn, and other out-buildings, with a carpet-weaving shop 16x20, and a fly-shuttle loom in good order and plenty of work; also 10 or 12 colonies bees with good extractor and other fixtures. Good chance to make money, for the right party who can handle it all successfully. C. P. IMHOFF, Rt. 1, West Salem, O.

Wants and Exchange.

WANTED.—Refuse from the wax-extractor, old combs, or slumgum. ED YOUNG, Boonville, Mo.

WANTED.—The address of some person who would let his bees on shares—California preferred. State number of colonies, and conditions. PERRIN, 417 S. Flower, Los Angeles, Cal.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.

OREL L. HERSHISER,
301 Huntington Ave., Buffalo, N. Y.

WANTED.—Names of parties having bees to sell in South. Give price. Would like to correspond with bee-keepers on or near the Ohio, Cumberland, and Tennessee rivers. W. W. CRIM, Pekin, Ind.

WANTED.—To trade stock of jewelry for bees. Stock is of watches, clocks, fancy chinaware, rings, and other goods in the jeweler's line; also bench-tools, lathe, gravers. What have you, within shipping distance of Illinois? JOHN H. KOONTZ, Stewardson, Ill.

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WANTED.—White ripe extracted honey; will pay cash. GEO. RAUCH, No. 5343 Hudson Boulevard, North Bergen, N. J.

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

WANTED.—To buy basswood, clover, and amber extracted honey for cash. Best prices paid. Send sample, and quote price delivered in Preston. M. V. FACEY, Preston, Fillmore Co., Minn.

WANTED.—No. 1 and fancy comb honey; 4x5x1½ section preferred. Also light extracted. Must be guaranteed pure. Write, stating grade and how put up, and lowest cash price. C. M. CHURCH, Arnold, Pa.

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FOR SALE.—2000 lbs. honey at 10 cents per lb. f. o. b. anywhere. B. F. AVERILL, Howardsville, Va.

FOR SALE.—36 cases of comb honey in 4¼ and 4x5 plain sections. Clover and raspberry. E. D. TOWNSEND, Remus, Mich.

FOR SALE.—White-sage honey, case, 125 lbs. net, 9 cts. per lb.; 3 cases at 8¼. Light amber, 7 to 8¼. I. J. SPRINGHAM, 105 Park Place, New York City.

FOR SALE.—Alfalfa extracted honey in 60-lb. cans, 8 cts. per lb. f. o. b. Kansas City; sample sent upon request. One thousand pounds of beeswax for sale at 27 cts. per lb. C. C. CLEMONS & Co., Kansas City, Mo.

FOR SALE.—Buckwheat and amber comb honey, \$3 per case; 12 cases, \$2.85; 25 cases at \$2.70 per case; 24 sections to case; dark amber extracted at 7½ cts. per pound in 60-lb. cans.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Fancy white comb honey; also extracted basswood, white clover, alfalfa, and amber honey in barrels or 60-lb. cans.

ROBT. A. HOLEKAMP & SON,
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Bee-keepers' Directory.

SWARTHMORE Golden-all-over, Caucasian, Banat, Carniolan, Cyprian queens. E. L. Pratt, Swarthmore, Pa.

QUEENS.—Clover stock. Experience and methods count. Write me. H. G. LARUE, LaRue, Ohio.

ITALIAN queens bred for honey, untested, 75c each. GEO. H. PLACE, 816 No. 49th St., Omaha, Neb.

Extra honey queens and choice mountain honey. Francis J. Colahan, Bernardo, San Diego Co., Cal.

QUEENS.—Pure Gold, Red-clover, Caucasian, Banat. ROSE LAWN APIARIES, College View, Lincoln, Neb.

ITALIAN QUEENS.—Golden and leather, 60c each; worth \$1.00. G. W. BARNES, Box 340, Norwalk, O.

Bee-keepers' supplies, Italian queens. Send for a free catalog. ARTHUR RATTRAY, Almont, Mich.

ITALIANS, CARNIOLANS. No disease. Two-comb nucleus with queen, \$3.00. A. L. AMOS, Comstock, Neb.

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I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineson, La.

ITALIAN BEES and queens.—red-clover and golden strains.
E. A. SIMMONS, Greenville, Ala.

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

ITALIAN bees and queens bred for honey; price list free. B. F. YANCEY & SON, Angleton, Tex.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

FOR SALE.—Golden and red-clover Italian queens. WM. A. SHUFF, 4428 Osage Ave., Philadelphia, Pa.

ITALIAN QUEENS by return mail or money refunded. Circular free. D. J. BLOCHER, Pearl City, Ill.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

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Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free. GEO. S. GRAFFAM & BRO., Bangor, Maine.

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ANGEL is breeding his Golden beauties and bright three-banded Italian queens, but will not offer any for sale this season, on account of not being at home at all times of the season. SAMUEL M. ANGEL, Evansville, Ind.

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4/4 sections, also folding cartons, cheap if taken soon, or will exchange.

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A. H. REEVES & CO.,
411 Main St, Watertown, N. Y.
Both Phones.



Clover seeds are advancing, and prices in our seed catalog no longer hold good. Write for prices if interested, if any one has alskise seed for sale send sample stating quantity and price.

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The Florida State fair will be in progress from Feb. 5 to 22, at Tampa. Mr. A. I. Root expects to be in attendance on the 11th and 18th, and may be found at the Manatee Co. exhibit. He will be pleased to meet any bee-keepers, or readers of GLEANINGS, who may be there on those days.

CARTONS FOR OUNCE CAKES OF BEESWAX.

We can supply cartons for one-ounce cakes of beeswax, printed with name and address blank, at 35 cts. per 100; 250 for 80 cts.; 500 for \$1.50; 1000 for \$2.75; by mail, 15 cts. per 100 extra. These prices will also include the large carton to contain 32 of the small ones. The complete package weighs 2 lbs., and, when filled, sells to the dealer at \$1.00. They retail the cakes at 5 cts. each. Retinned molds for molding ounce cakes cost 35 cts. per dozen; by mail, 40 cts.; for two-ounce cakes, 40 cts.; by mail, 50. We do not have cartons to fit the two-ounce cakes. To print your name and address on the cartons will add, 250 or less, 50 cts.; 500, 75 cts.; 1000, \$1.00.

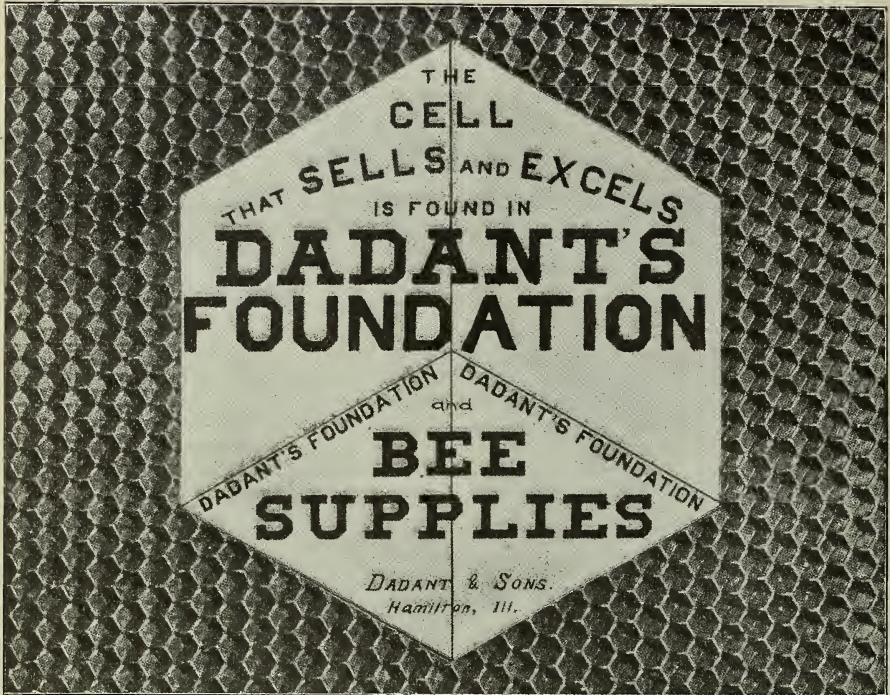
A BARGAIN IN DANZ. SUPERS AND SHIPPING-CASES.

We offer at a special bargain 190 Danzenbaker ten-frame supers, nailed and painted, filled with section-holders, Hyde-Scholl M fences, sections with full sheets of foundation. They have been used, but are nearly new and in good condition. Such supers new are listed in our catalog at \$1.75 each, yet we offer this lot crated and on board cars at Floresville, Texas, at 50 cts. each for the lot, and will throw in 1500 4x5 sections to make good any in the lot which may be broken or missing. In lots of not less than ten the price would be 60 cts. each; 50 at 55 cts. each as they are crated and loaded on cars. There are also 500 shipping-cases to hold 20 4x5 sections in the crates as shipped from the factory, which we would sell at \$5.00 per crate of 50, or \$9.00 per 100 for the lot. That is, \$140 cash for goods worth new at carload prices over \$340. This surely is a bargain for any one desiring to produce fancy comb honey with equipment that can not be excelled for the purpose. They are not in the right locality for comb-honey production, but should work excellently in some other location. Send your orders here to Medina.

HOTBED SASH AND GLASS FOR THE SAME.

We have made an improvement in our hotbed sash by adding a round rod of hard wood through the center from side to side midway between the ends. Some bars are inclined to warp, making it more difficult to fit in the glass; also in lifting the sash by the side rail it may spring and loosen the glass. By the addition of the rod, with a nail driven through at each bar, after all are properly spaced, these objections are overcome. We are also making them standard width, 3 ft. 4 in. wide for four rows, 8-inch glass. We can also furnish them 3 ft. wide for three rows of 10-inch glass, or 3 ft. 6 in. for three rows of 12-inch glass on special order. As regularly furnished they are grooved for glass to be butted together, the joint to be closed with liquid putty. We also furnish them rabbeted so the glass may be lapped if so ordered.

Price of regular-size sash, 90 cts. each; \$4.25 for 5, or \$8.00 for 10, shipped in flat, not put together. If put together not painted, add 10 cts. each. If put together, painted two coats, add 30 cts. each; glazed with 8x10 glass, add \$1.00 for each sash at present price of glass. We can offer 8x10 glass at present for \$2.40 per box; 5 boxes at \$2.30; 10 boxes or more at \$2.20. This is a very low price, due to a recent cut in price of glass, and is not guaranteed for any length of time. If in need of sash or glass, send in your orders while the present low price holds good.



WHILE BEE-KEEPING is almost as old as creation itself, modern apiculture dates back hardly more than fifty years, and the period of greatest activity in the development of our present systems was twenty to thirty years ago. Many of the old writers of those most interesting days are still with us, and they will write special articles for the March number of

The American **Bee-keeper**

(next month), which is to be an "Old Boys" number; and the pictures of the writers will also appear in connection with what they have to say in their reminiscent letters. This number will contain forty pages, profusely illustrated and highly educational. **THE AMERICAN BEE-KEEPER** is in its 18th year. Subscription 50 cents per year, or three years for \$1.00 in advance.

The American Bee-keeper, Falconer, N. Y.

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It's genteel, honest work that any man or woman can do and make good profit at it. Just to prove it, here are the names and addresses of fifteen out of hundreds of people who have woven carpets and rugs at a good profit. They use a Deen Loom.

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Remember these are only fifteen of scores and hundreds who at this moment are hustling out work and getting good money for it.

You Who Read This

Haven't you often wished for a useful employment by which to make money in your spare hours? No doubt you know of people who would gladly pay you for weaving their rags into carpets and rugs.

It's not only the poorer people that have hand-woven carpets and rugs on their floors, but well-to-do people of city, village and country-side appreciate the handsome and useful products of home-weavers.

By canvassing among your friends you can work up a good business. Profitable, too. Besides, it's done at home with the children, where you can have an eye on everything in house and yard.

It's Not Hard Work

Weaving with a Deen Loom is soon learned. The Loom itself is a simple affair, easily handled, and soon understood. May Vittum, Barclay, Kansas, says:

"I can weave almost twice as much as I could with the old loom. I would not go back to the old one for anything. The new one is faster, easier, and does the best work."

Having a steel frame well-braced, and rigid, it resists the shock and stroke of the shuttle mechanism, remaining solid for years without repairs.

It will accomodate any size rug or carpet demanded.

What May Be Woven

Any design can be made in any number of colors that taste and fancy may dictate. You can weave rugs, hammocks, all kinds of hand-weaves, carpets, portieres, etc. The materials to use are common carpet warp which can be purchased of any dry goods store; carpet rags, old clothes of any kind, old ingrain and brussels carpets, blankets, or nearly any kind of fabric. Your customers furnish you all material; you do the weaving and get good pay for it.

A Few Prominent Reasons for Buying

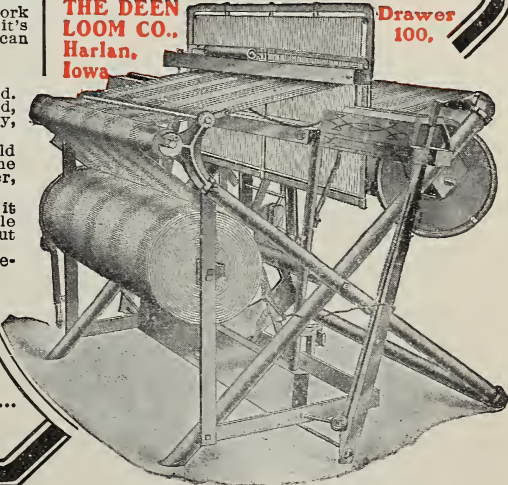
- 1.—You can make from \$2 to \$3 a day if you weave 8 hours daily.
- 2.—You can make from \$4 to \$10 a week using only part of your time—say evenings after work and an hour in the morning.
- 3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
- 4.—The Fly-Shuttle is easily filled, quick to handle, doesn't bother.
- 5.—The Winding Mechanism and Feed-Governor are new improvements. The latter keeps the warp and weft mechanism within control. It saves much material and prevents hours of thrown-away time used by old-style looms.
- 6.—It takes up much less room than many other styles. It requires a room but 10 feet square for a complete weaving shop.
- 7.—We send you everything with the Loom. You can go right to weaving as soon as you get warp and rags.

You Needn't Pay All At Once

Pay something down. As Loom brings in profits send balance by easy installments. Fill in the coupon and mail. We'll send our free catalog and a letter about our easy-pay plan.

**THE DEEN
LOOM CO.,**
Harlan,
Iowa

Drawer
100,



COUPON

Deen Loom Co.— Date.....19....

Please send me your free catalog and detailed explanation of your "Easy Pay Plan" of selling your Deen Loom.

Name.....

Address.....

Town.....State.....

Build Your House At Half Price.

Write To-day for Our Grand Free Millwork, Roofing, and Paint Catalogs, and See How You Can Save Half

Why pay double prices for Sash, Doors, Blinds, Mouldings, Interior Finish, Paints, Roofing, and Other Material? You can buy from Gordon, Van Tine Co. at wholesale prices and build your home at half usual cost. Every item described in our Free Catalogs is a real bargain—averaging 50 per cent less in price than retail dealers charge. Here are a few examples of the big savings on every article offered. We guarantee that every article we ship is up to the Standard of High Quality required by the Official Grade adopted by the Sash, Door, and Blind Manufacturers' Association of the Northwest.

Our financial responsibility is well over \$300,000 and we enjoy highest credit with Western Financial Institutions. Look us up through your local bank or the Commercial agencies.

We own our own timber lands, saw-mill, and lumber yards. We carry an immense stock and ship promptly, loading directly from warehouse platforms to cars. Safe delivery guaranteed. We do the largest millwork business in the country and sell our entire output by mail order—direct to individuals, at half the local dealers' prices, freight included. We sell nothing through dealers.



Westchester Door, \$10.75.

Westchester Door,
Only
\$10.75

The highest art known in fine doormaking. No. R 101 W. P. Size 2-8x6-8-1/4 in.—Glazed, Polished Bevel Plate Glass. Only \$10.75. (Dealers' price, \$22.00.) We pack carefully. Crate in paper, and ship promptly.



Venus Art Windows, \$3.99.

Venus Art Window, \$3.99. This beautiful Art Window No. R 223 has top glazed with clear leaded crystal sheet; bottom clear, double strength "A" quality glass. Size of opening, 3-8x5-0-1/4 in. thick—only \$3.99. (Dealers' price, \$8.00.) All sizes and styles of Art Windows carried in stock.

Red Oak Stair Newel, \$3.10.

(Yellow pine, \$2.90.) This handsome newel No. R 336 is hand-smoothed and made from thoroughly kiln-dried stock. Glued lock joint. Height, 4ft. Base, 8x8. Shaft, 6x6. Every Newel wrapped in paper and carefully packed. Complete line of high-grade stair and porch work at bargain prices.



Oak Plate Rail No. R. 215. 7 cts. per foot

(Yellow pine, 4c.) Adds beauty to any dining room. Picture Molding underneath Oak finish lends "tone" to any home. We sell "everything in moldings."



Red Oak Newel, \$3.10

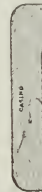
Colonial Sash.

No. R. 238 1/2 light windows—1 1/4 in. thick. Top artistically divided as shown in sketch. Size of glass, 20x24. Size of opening, 2-0 1/2 x 4-6. Glazed Double Strength Price, \$2.25. All sizes carried in stock for quick shipment at a saving to you of over 75 per cent.



Colonial Sash, 80c.

Oak Side Casing. \$3.32 per 100 lineal feet. No. R. 8309 Plain Red Oak Size 13-16x1 1/4 in.



The most popular design. Used in all modern houses. Price is per 100 lineal feet, in random lengths from 8 to 16 feet.

Hardwood Flooring No. R 295 Red Oak, 3/4x1 1/2 inches. 80c per 100 lineal feet. Makes best possible covering for old floors. Costs no more than a good carpet.

No. R. 292 Plain Side Red Oak—13-16x2 1/4 inches, \$57 Casing, per 1000 square feet. We \$3.32 polish, end match, tongue

and groove and bundle this flooring. Bored for blind nailing. For beauty and style, comfort and economy, nothing equals hardwood flooring. This hardwood flooring outlasts a dozen carpets. We ship every bundle wrapped in paper.



Hardwood flooring, 80c.

Our complete Catalog quotes lowest prices on high grade Hardwood Finish for the finest interiors.

Over 5000 wonderful bargains. We want

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to place in your hands free copies of our great money-saving catalogs so you can benefit by our extraordinarily low prices, prompt shipments and absolute guarantee of satisfaction. Book of Plans FREE, showing interiors, floor plans, stairways, etc., of city and country homes, also barns and outbuildings of all kinds. All plans drawn to scale. Send 10 cents in stamps to cover cost of packing and postage. Address

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