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JAN 22 1908

Gleanings in Bee Culture



Headquarters, Museum, and Apiary of the Swiss Bee-keepers' Federation, at St. Gallen.

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Vol. XXXVI

January 15, 1908

No. 2

DEEN LOOM



Flying Shuttle

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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.

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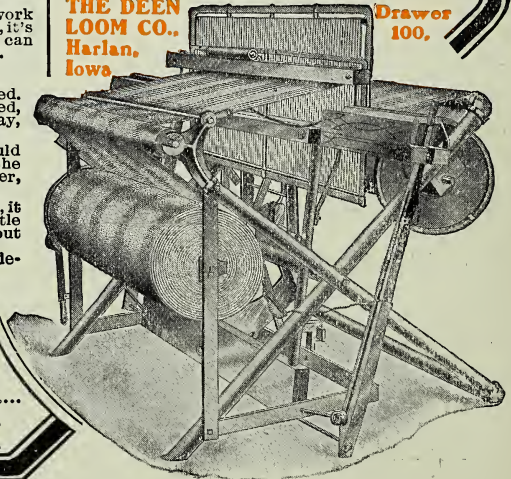
- 1.—You can make from \$2 to \$3 a day if you weave 2 hours daily.
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- 3.—We help you personally by letter if you wish. But this is seldom necessary, because we send you simple, detailed instructions with pictures of the loom and its parts. This book makes everything plain. You have no real difficulty in handling the loom.
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Mrs. L. E. Foster, Bedford, Indiana
Mrs. Salanda Gunkel, Osgood, Ohio
Mrs. D. E. Williams, Pickering, Missouri
M. H. Vining, Waterloo, Iowa

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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.

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WANTED=Sweet Clover.

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

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CINCINNATI,



OHIO

Honey Markets.

GRADING RULES FOR COMB HONEY.

FANCY.—All sections, well filled, combs straight, firmly attached to all four sides, the combs unsoiled 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 soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

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

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

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

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

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.

CHICAGO.—Within the last few days an unexpected amount of comb honey has come on this market in addition to small consignments from adjacent territory that became quite frequent in December. Three carloads of Western comb have come on consignment, part of it to firms that do not make a specialty of honey, so that, when a buyer appears, he is able to get concessions that are chiefly limited to what he will pay. On choice white grades, 16 cts. is asked, with little demand for any of the off lots, which are difficult to sell at from 1 to 5 cts. per lb. less. Extracted, white, 8 to 9; ambers and dark, 6 to 7. Beeswax, 28.
R. A. BURNETT & Co.,
 Jan. 8. Chicago, Ill.

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. 4. **WALTER S. POUDEE,** Indianapolis, Ind.

CINCINNATI.—The market on comb honey is very slow and quiet. No. 1 is selling, in a retail way, white clover from 16 to 17. Colorado alfalfa from \$3.75 to \$4.00. Water-white extracted honey, sage and clover, good demand, ranging from 9 to 10; amber extracted in barrels, slow from 6 to 6½. Beeswax is selling slow at 32.
C. H. W. WEBER,
 Dec. 31. Cincinnati, O.

CINCINNATI.—Owing to the unsettled condition of finance throughout the country, causing much uneasiness and anxiety among the buyers, we look forward to seeing honey reach lower values in the very near future. We are at a loss to say what prices we will ask in 10 days hence, but at this writing we are quoting extracted amber honey in barrels at 6 to 7½ cts.; fancy white extracted in 60 lb. cans, at 10; and strictly fancy white comb honey (which is moving slowly), at 16½ to 18, according to the quantity purchased. For choice yellow beeswax free from dirt, we are paying 30 cts. per lb. deliv. red here.

THE FRED W. MUTH Co.,
 Jan. 4. 51 Walnut St., Cincinnati, O.

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 quiet. Would pay 30 cts. in exchange for bee-supplies, f. o. b. here.
EDMUND W. PRIBIC,
 Jan. 7. 136 W. Main St., Zanesville, O.

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. Beeswax, 30.
W. C. TOWNSEND
 Jan. 11. Buffalo, N. Y.

ST. LOUIS.—The honey market has been slow on extracted and comb honey, and is freely offered at the following reduced prices: Fancy white, 15 to 16; No. 1, 14 to 15; amber, 13 to 15, according to quality and condition. 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 1c per lb. less. Granulated honey sells at about ½ cent per lb. less than liquid. Beeswax, 26c for choice pure. All impure and inferior, less.
R. HARTMANN PRODUCE Co.,
 Jan. 10. St. Louis, Mo.

KANSAS CITY.—The receipts of comb honey are more liberal, and prices lower. The demand is light for both comb and extracted. We quote No. 1 white comb, 24-section cases, \$3.00 to \$3.10; No. 2 white and amber, \$2.75. Extracted, white, per lb., 8 to 8½ cts.; amber, 7 to 7½. Beeswax, 25 cts.
C. C. CLEMONS & Co.,
 Jan. 10. Kansas City, Mo.

SAN FRANCISCO.—Honey moves very slowly at present, as high prices have curtailed the demand. With light offerings and few arrivals of new stock, prices are firmly maintained. Light amber, extracted, 7 to 7½; water-white comb, 16 to 17; white comb, 15; water white, extracted, 8 to 8½.—*Pacific Rural Press.*

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 Orange-blossom Honey.

Genuine
 Black-sage Honey.

Genuine
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enough to fill this book. Will give you only one.
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colonies starved. I have over twenty strains in my
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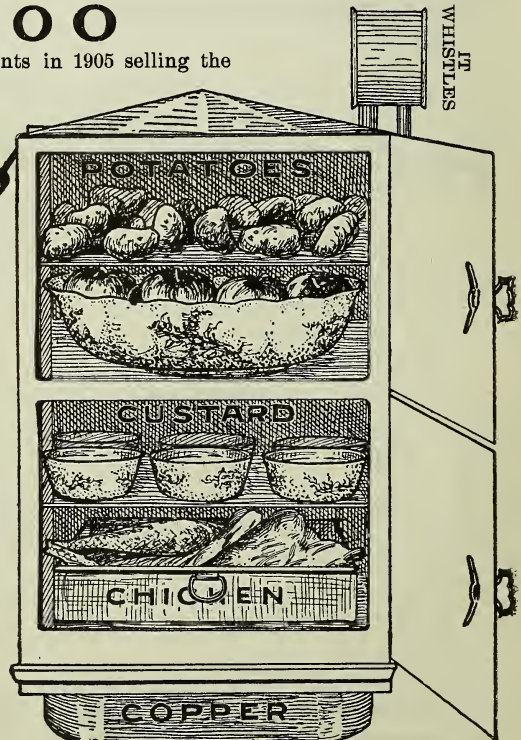
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THE JANUARY

Bee-keepers' Review comes as near being a "health number" as any issue yet printed, or that probably will be published. Health is

The Foundation of All Success,

and two important points are covered in this issue. Many of our ills come from imperfect digestion, and C. W. Dayton, who has studied medicine as well as bee-keeping, points one great cause of imperfect digestion and faulty assimilation, and tells how to make and use a drink, with honey as a basis, that will almost prove a cure-all for headaches, colds, neuralgia, and the many ills that result from indigestion.

Then there is an article from the pen of T. B. Terry, the potato-specialist, telling how he

Cured Himself of Rheumatism,

without medicine—simply by changing his ways of living. Then, to make sure there was no mistake, he

went deliberately back to the old habits. The rheumatism returned, only to be cured again when he "reformed." Mr. Terry says that no one needs to have rheumatism if he lives right—and he tells how.

Then there are the usual practical, helpful, bee-keeping articles from such men as Atwater, Townsend, Bingham, and J. E. Hand. Yes, and Mr. Doolittle tells how to produce a crop of the most

Fancy of Fancy Comb Honey

with no danger whatever from swarming.

There are still a few sets left of the back numbers for 1907 that will be

Sent Free

if you send \$1.00 for the *Review* for 1908. For \$2.00 you can get these back numbers for 1907, the *Review* for 1908, and a copy of the book, *Advanced Bee Culture*. Book alone, \$1.20.

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Gleanings in Bee Culture

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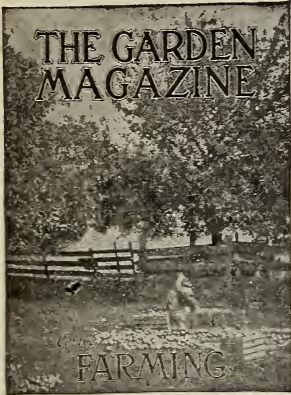
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All for \$2.



These magazines, if paid for separately, would cost you \$2.75, 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 50,000 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.

WHY SHOULD YOU HAVE THIS INSURANCE?

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.

WHAT THE POLICY PAYS:

For Loss of Life.....	\$500.00
For Loss of Both Eyes, meaning entire and permanent loss of the sight of both eyes.....	500.00
For Loss of Both Hands, by actual and complete severance at or above the wrist.....	500.00
For Loss of Both Feet, by actual and complete severance at or above the ankle.....	500.00
For Loss of One Hand and One Foot, by actual and complete severance at or above the wrist and ankle.....	500.00
For Loss of One Hand, by actual and complete severance at or above the wrist.....	125.00
For Loss of One Foot, by actual and complete severance at or above the ankle.....	125.00
For Loss of One Eye, meaning entire and permanent loss of the sight of one eye.....	50.00

Provided such loss shall result within thirty days from date of accident, from accidental bodily injuries, solely and independently of all other causes, and covers accidents as follows:

- Being thrown from a mover by horses.
- Being knocked down in the road by a wagon or automobile.
- Being hurt in a bicycle accident or collision.
- 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.

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The A. I. Root Co.:—Please take out my ad't. The machine is sold. Thanks for your kindness.

Crawfordsville, Ind., Jan. 10. W. H. KERR.

WANTED.—To exchange Cypher's incubator.

W. H. KERR, Crawfordsville, Ind.

Hundreds of our subscribers have articles, implements, etc., for which they have use no longer, which could easily be disposed of by a little adv't in our classified columns. Rates, 25 cts. per line per issue.

On page 74 appears the advertisement of a new firm located at Bangor, Maine. They handle Root bee-supplies and sell at factory prices, allowing all quantity and early-order discounts. They have fine shipping facilities and would be pleased to handle a trial order from you. Give special attention to their offer for the coming year concerning bee literature. Catalog and circulars will be mailed free upon request by Geo. S. Graffam & Bro., Bangor, Maine.

AN OLD RELIABLE SEED FIRM.

We have just received the annual catalog of that old reliable seed-house, D. M. Ferry & Co., Detroit, Mich. The cover pages are handsome color illustrations of scenes in Belle Isle Park, in Detroit. The firm of Ferry is so well known to all gardeners and farmers that it is almost a work of supererogation to make any remarks about them. Their trade extends from the Atlantic to the Pacific, and from Hudson's Bay to the Gulf of Mexico—and, in fact, further, for they send seeds to the islands of the sea. They do a large business in farmers' seeds for the vegetable-garden. In addition the farmers' wives also buy considerable quantities of flower-seeds for the proper adornment of the rural home. Some good housewives will have none but Ferry's seeds. When you send for their catalog, mention this journal.

THE "OLD TRUSTY" INCUBATORS.

One of the most reliable poultry concerns we know of is the M. M. Johnson Co., of Clay Center, Neb., who manufacture the well known Old Trusty incubators. One of the important features of these incubators is the California redwood of which they are made. This is one of the best furniture woods

known, having the striking advantage of not expanding with the wet atmosphere nor contracting with a dry one. It is, furthermore, a wood of great durability and beauty, being much used by piano-makers. Another valuable feature of this machine is the absence of the lever arm on top, which generally happens to be in the way, more especially when some person throws his overcoat or hat down on the incubator. It is also out of the sight of meddlesome children who are generally interested in incubators. These two features alone are surely sufficient to show that Mr. Johnson is no "chicken" at the chicken business, and that he is in earnest in trying to furnish his customers the very best machine that money can buy. He issues a nice catalog which is free for the asking. When you send for it, kindly mention GLEANINGS.

THE DETROIT DISC HARROW.

Disc machines are the order of the day in the farming world. Plows and harrows of this type are carrying all before them. Among the very best is the Detroit tongueless disc harrow advertised on back cover page. It certainly has features which appeal strongly to the practical man who is looking for something which will do his work with the least expenditure of force, time, and money. One of the prominent features of the Detroit is that it is tongueless. For this reason it is easier to handle and is less troublesome to the horses.

Another valuable feature is that the discs can be lifted up out of the way very readily and easily. This prevents dulling the discs when the machine is on the road going from one field to another, or to and from the barn and the land to be cultivated. Having no tongue it is easily handled among fruit-trees—something of a boon to fruit-growers. It is unnecessary for us to explain all the features of this harrow, because the manufacturers send free a book which fully explains all the main points of superiority. It is worth sending for.

The makers, The American Harrow Co., 468 Hastings St., Detroit, Mich., have branch-houses through which they ship to save freight. They also sell on the installment plan to suit the views of some patrons. Some of our foreign readers would probably find a perusal of their catalog very interesting. Send for a catalog and mention GLEANINGS.

THE DIVERSITY OF OUR READERS' WANTS.

Ten years ago the large advertising agencies placing advertising for miscellaneous goods such as farm-implements, vehicles, fencing, etc., gave us slight consideration under the mistaken idea that bee-keepers were not interested in the lines other than relating to their special trade. When it is remembered that the average bee-keeper is also a farmer, a gardener, fruit-grower, or belongs to any of a hundred other well-known occupations it will be seen at once that he is just as good a purchaser as any one, and the chances are that he may be better. The advertisements reproduced below are selected from some of the smaller ad's run within the past year, showing what a diversified class can find it profitable to use our columns:

MATTHEWS' "NEW UNIVERSAL" GARDEN TOOLS

6 TOOLS IN ONE
Seeder, marker, Ros rake, plow, cultivator, single or double wheel. Adjustments easily made. For planting and all kinds of cultivation.
Send for FREE BROCHURE containing valuable information for planting and cultivating the garden and full description of these implements.

8 Styles Seeders
Double or Single Wheel Hoe
Cultivator, Plow, Rake, Churns, etc.
New High Arch and Plant Guards.
Best Oak Handles on All Tools.

AMES PLOW COMPANY, 88 MARKET STREET, BOSTON, MASSACHUSETTS

10 DAYS FREE TRIAL
We ship on express, freight prepaid. DON'T PAY A CENT if you see inside after using the bicycle 10 days.
DO NOT BUY of tires from anyone at any price until you receive our guide and catalog illustrating every kind of bicycle, and have secured one hundred of prices and numerous new offers.
We will send you a special and surprising offer if you will send your valuable information. Do not miss this opportunity.
TIRES, Coaster Brakes, Bulb Caps, etc.
HEAD CYCLE CO. Dept. W25 CHICAGO

BROWN PAYS THE FREIGHT
HAVIEST FENCE MADE
All No. 9 Steel Wire. Well galvanized. Weighs 1/2 more than most fences. 16 to 20c per rod 10 ft. high. We send free sample for inspection and test. Write for fence book of 132 pages. The Cleveland Fence & Wire Co., Cleveland, Ohio.

DEMING Get something reliable when you buy.
Barrel, Bucket, Knap sack, Hand and Power Outfits. No greater variety nor better types than Deming
SPRAYERS
For trees, shrubs and vines. Model appliances for posittment for whitewashing, disinfecting, etc.
Write for catalogue with full particulars.
THE DEMING CO.
General Agencies in Principal Cities
41 Depot Street, Salem, Ohio.

MANDY LEE Incubators
and Brooders. The most improved type of "Chick" machinery. Perfect regulation; not affected by outside climatic conditions. Contact heat brooder furnishes heat in the natural way, broods chicks like the old hen. Catalog tells the hows and why. Send today.
GEO. H. LEE CO., Box 4, Omaha, Neb.

THE "BEST LIGHT"
Produces a safe, white, powerful light brighter than acetylene or electric. 100-candle power at a cost of 2c per week.
Made in over 100 different styles—every one warranted. Agents wanted for dist. make order. Everywhere.
THE BEST LIGHT CORP.
208 E. 21st St., Omaha, Neb.

Big Money In Early Potatoes
Potatoes grown from Northern Seed are always earliest, the best, and bring the highest prices. A new look and best southern seed. A new and early growing smooth potato. Our early fine round seed. 25c per bushel. Our new description of potatoes. Do not miss this opportunity. Key catalogue free. If ordered in advance, \$1.00 per copy.
QUINN & BEAHAN, 22 Michigan St., Pittsburg, Minn.

GET MORE EGGS
Larger, more fertile, vigorous chicks, heavier, larger profits by feeding cut loose.
MANN'S LATEST MODEL BONE CUTTER
cuts fast easy, fine, never clogs. 10-1/2 inch metal. No money in advance. Call to free.
F. W. Mann Co., Box 37, Millard, Meese.

Peach Trees
This stock of hardy peach trees is the best ever offered. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year.
THE STORRS & HARRISON CO., 100 N. 1st St., Fairbairn, Minn.

FARMERS HANDY WAGON
Low steel wheels, wide tires, make loading and handling easier. We for hard steel wheels to last and sale, to carry any load. Straight or staggered spokes. Catalogue free.
EMPIRE MFG. CO., Box 91 F Duinccr. Ill

850,000 GRAPE VINES
We have the finest quality of grape vines for sale. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year.
100 N. 1st St., Fairbairn, Minn.

34 Years Selling Direct
Our vehicles and harness have been sold direct from factory to user for a third of a century. We ship for examination and approval and guarantee safe delivery. You are out nothing if not satisfied as to style, quality and price.
We are the Largest Manufacturers in the World
selling to the consumer exclusively.
We make 100 styles of Vehicles, 65 styles of Harness, custom made. Price complete \$75.00. As good as sells for \$50.00 more.
Ekhart Carriage & Harness Mfg. Co., Ekhart, Indiana

STERLING SEED
We have the finest quality of seed for sale. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year. They are all of the latest and most improved varieties, and are guaranteed to bear fruit in the first year.
100 N. 1st St., Fairbairn, Minn.

If you will examine previous statements made on this page you will find some different examples of the profitable results secured from the use of our columns.

ADVERTISING DEPARTMENT GLEANINGS IN BEE CULTURE, MEDINA, O.

WE OFFER

THE FOLLOWING LIST OF GOODS AT THE EXCEEDINGLY LOW PRICES TO CLOSE OUT OUR STOCK:

80 Danz. 10-frame nailless covers, flat, and metal-bound at ends to prevent warping, at 15 cts. each.

20 C hive-stands and bottom-boards combined, 10-frame, flat, at 21 cts. each.

30 C hive-stands and bottom-boards combined, 8-frame, flat, at 19 cts. each.

18 lbs. thin super foundation, $4\frac{1}{2} \times 12\frac{1}{2}$, at 55 cts. per lb.

8 sheets Root zinc, 28x96, square holes, at \$1.00 each.

35 chaff-trays for Root 8 frame chaff hives, at 16 cts. each.

1 Taylor comb-leveler at 60 cts.

75 chaff division-boards, flat, at 10 cts.

50 8-8 shallow extracting-supers, with shallow frames, at 33 cts.

25 8-10, as above, at 37 cts.

1 6-in. Root foundation mill, good condition, \$8.00.

All goods f. o. b. cars our station.

Our stock of the latest Root goods is complete. Send your name and address for 1908 catalog. Note the January discount is 3½%.

M. H. HUNT & SON

REDFORD, 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.

BIENZÜCHTER!

von Deutschland, Schweiz, Oesterreich,
u. s. w., senden Sie fuer unsere
1907 Preisliste von

Bienenwohnungen, Rauchapparaten,
Honigschleudern, Handschuhen,
Bienenschleiern, Walzwerken,
Futterapparaten,
Porter's Bienenflucht,
Fluglochschiebern für Kasten,
Königinnenabsperrgittern,
Weiselkäfigen,
Schwärmfangbeuteln,
Entdeckungsmessern,
Dampfwachsschmelzern,
Wabenentdeckungsappa-
raten, und allen anderen
Bienengerätschaften der

A. I. ROOT COMPANY
Grösste Fabrik Ihres gleichen in der Welt

EMILE BONDONNEAU
General Vertreter für Europa und Kolonien
142 Faubourg Saint Denis, Paris, 10me.

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,

..

..

..

..

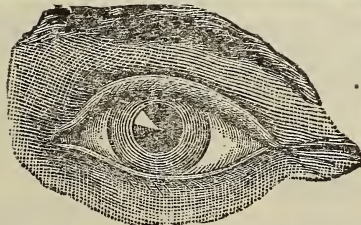
New York.

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 BEEWAX 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

WE KEEP IN STOCK IN

NEW YORK CITY

a large line of BEE-SUPPLIES and allow a liberal discount at this season. Catalog free.

I. J. STRINGHAM,

Aplaries, Glen Cove, L.I. 105 Park Pl., N. Y. City.

Northern New York Bee-keepers.

3% PER CENT DISCOUNT.

We have a large stock of shipping-cases and feeders, and all orders for same will be filled promptly. Beeswax and old combs wanted; cash or trade; 3 1/2% discount during the month of Jan. on every thing but cases and feeders. Comb honey wanted; write stating how put up, kind, and lowest cash price delivered in Watertown, N. Y. **A. H. REEVES & CO., No 3 State St., WATERTOWN, N. Y.**

THE DANZENBAKER SMOKER

PAT. OCT. 3, '05, 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 valveless bellows. The air, passing to the back and over the top, cools and fans 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.

1884

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  Line

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

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

Nothing "halfway" but the Place= or, what is in a name, anyhow?

By the Bee Crank.

Not "halfway" satisfactory, but entirely satisfactory, and from a prosperous little town in Missouri, the State where folks have to be shown. I find, though, that there are bee-men in other States who are in need of being shown as well as those in Missouri. Try placing a trial order here, regardless of distance, and let me show you what I can do by way of accuracy, promptness, and finest quality of goods. The following whole-souled letter from Mr. Taft speaks for itself:

Mr. Walter S. Pouder:—The goods are here, and every thing is all right—not a blemish on any thing. I never saw goods packed better. I am more than pleased, and the freight from Indianapolis to Bolivar was less than I expected. The honey and wax extractors are simply fine; and when I want more goods I know where to send.

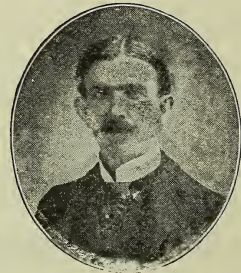
Halfway, Mo.

Truly yours, J. M. TAFT.

Incidentally, Mr. Taft's letter conveys a very strong suggestion to other bee-men regarding the place to order their supplies. Packing goods carefully and getting them to my customers in perfect condition is a matter of temperament with me. If there was any thing wrong it would worry me more than it did the consignee. I handle all sorts of bee-supplies, sell Root's goods at Root's prices, and it's only "halfway" as far from me to you as it is from any other point in the universe where you could buy your supplies.

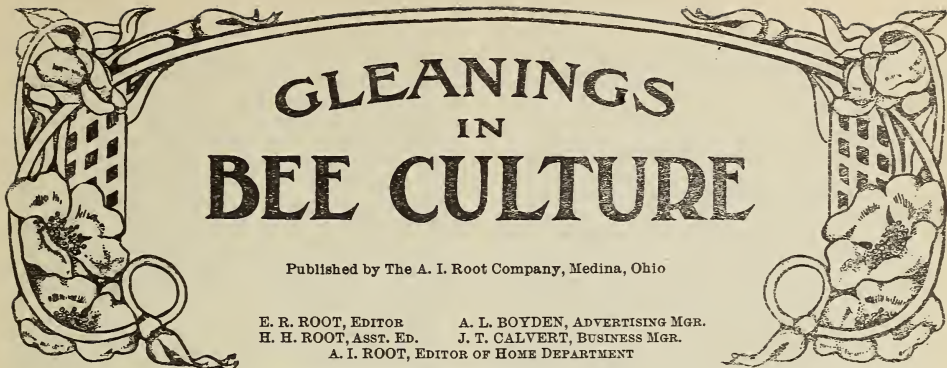
I pay highest cash and trade prices for beeswax. Send it along by freight or express according to size of package.

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Walter S. Pouder,

513-515 Massachusetts Avenue, Indianapolis, Ind.



GLEANINGS IN BEE CULTURE

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E. R. ROOT, EDITOR A. L. BOYDEN, ADVERTISING MGR.
H. H. ROOT, ASST. ED. J. T. CALVERT, BUSINESS MGR.
A. I. ROOT, EDITOR OF HOME DEPARTMENT

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A TABLESPOONFUL of honey, even measure, weighs $\frac{3}{4}$ of an ounce — 24 spoonfuls to the pound.—*American Bee Journal*, 747.

POSSIBLY dividing a swarm into two or more parts at time of swarming, as given by Wm. M. Whitney, p. 37, has been given before; but I don't remember seeing it. Looks good.

J. E. HAND has the endorsement of the bees as to the best time to requeen an apiary, page 40; for, if I am not mistaken, nearly all their superseding is done about the close of the honey-flow.

A PROFIT of \$300 is figured for Mr. Howe for moving 100 colonies to the basswoods, p. 23. That's right, if absolutely nothing is stored in the home apiary during the time of removal. Otherwise the home surplus must be deducted from the \$300. [Here is a chance for a nice little conflag between Dr. Miller and G. M. Doolittle. If we knew how to egg on the fight we would do it. GLEANINGS will furnish the arena.—ED.]

SPLIT-TOP SECTIONS are mentioned, page 1557. When sections were first introduced they were all 4-piece, and did they not all have split-tops? Certainly I never saw any others for some time. The tops were not split in two entirely; a saw-kerf was cut in the under side, and then they were bent apart to receive the foundation. [You are correct that split tops were used with four-piece sections, but not exclusively. They were made both ways.—ED.]

"A SYRUP two parts of sugar and one part of water" for late feeding, p. 32. Wouldn't you rather have it just a bit heavier? All the syrup I ever fed late was $2\frac{1}{2}$ parts sugar

to one of water, and it never seemed too thick. It may be well to remember that many excellent authorities in Germany strongly insist that continued sugar-feeding is at the expense of the stamina of the bees. [Possibly you are right, doctor, that a thick syrup given all in one feed should be two and a half to one. We shall be glad to get results of experiments on this point from our subscribers. See discussion by J. L. Byer on this subject in this issue.—ED]

A CORRESPONDENT whose bees are now in the cellar wants to change the location of his apiary in the spring about half its length, leaving the east half on its old stands, and moving the west half east of this. He wants to know whether there will be any trouble from bees returning to their old location when thus placed in the spring. I think not; and, what's more, he will have no trouble if he puts each colony just where he likes when taken from the cellar, with no reference to its former location, as I have tried it a number of times.

STATE'S ATTORNEY HEALY, of Chicago, whose office has 15,000 or 20,000 criminal cases a year, says, "When you put the lid down hard on the liquor-traffic, or wipe it out altogether, then you can close half of your courts." [And he was quite within the limit of facts. Whenever the lid is put on hard, there is not much doing in the criminal courts. Only recently the lid has been screwed down on Sunday in Cleveland, and the newspapers have been commenting on the fact that the usual bums and toughs that come up before the criminal courts on Monday are conspicuous by their absence.—ED.]

ENDORING what Prof. Cook says, page 24, let me add that, if the bees of this country are ever brought to their highest development, it will not be so much because a few of the queen-breeders have done conscientious work, but because the rank and file all over the land have done what Prof. Cook commends. What John Smith, with ten colonies, ten miles distant, does with his bees may not seem of any interest to me, and yet in time it has its influence on the character

of my bees. A drop of water dropped in Lake Michigan at Chicago doesn't raise the level of the lake much ten miles distant, but it does raise it.

In 1880 Frank R. Cheshire was engaged as lecturer of the National Temperance League, and up to the time of his death he had delivered 2100 lectures in metropolitan schools, which were valued by the young people to whom they were addressed.—*British Bee Journal*, Oct. 11, 1894.

A friend calls my attention to the foregoing; and in these days, when such a wave of prohibition is sweeping over our land and other lands, it is pleasant to recall that one so prominent in the rank of bee-keepers should have used such an influence among the young folks who are now voters in the old country. I wonder, now, whether a greater proportion of prohibitionists may not be found among bee-keepers than among any other class, not even excepting ministers.

"WHEN THE MOTH is disturbed it moves with a jump and a flit, making it hard to catch," p. 21. Yes, hard to catch after it gets to jumping and flitting, but very easy before. Move the fingers slowly till within an inch or so of where the moth is sitting, then quickly make a dab, and you have it. Now something interesting to the youngsters. When you catch a moth, pull off its head; and if it is a female—nine times out of ten it will be one—it will almost immediately begin feeling around with its ovipositor. Shut together your thumb and finger, and let the ovipositor feel its way into the crack between them, and a very little round white egg will be laid there—perhaps several. [This is an interesting contribution to natural history. We do not remember to have seen it given before.—ED.]

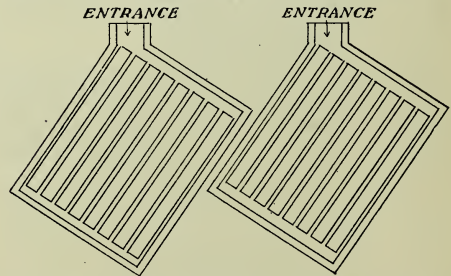
"IN THE WELLS system there was no intermingling of the bees," p. 17. Did not the bees from both parts enter the same super, thus making an entire intermingling? [In most of the cases where the Wells system was illustrated and described in the *British Bee Journal*, the super was divided as well as the brood-nest, so there was no intermingling of bees as suggested by you. In one or two cases of the Wells system, however, the bees in the two divisions in the hive could mingle after they got into the super; but, apparently, the author of the system did not contemplate any intermingling of bees either in the super or brood-nest. We have lately been over the files of the *British Bee Journal*, and we are convinced there is a sharp distinction between the Wells system proper and the two-queen system with perforated zinc.—ED.]

W. S. PANGBURN writes: "E. R. Root objects in the A B C to your tent-escape for supers, for the reason that the very young bees are unable to get back to the hive," and perhaps for that reason I find no mention of it in the 1908 edition. Please tell us on what ground you base your objection. [Your tent escape, doctor, was dropped for one embodying the same principle by W. M. Whitney.

As his modification we consider superior to yours, and as our space was cramped, we dropped yours and substituted his. Mr. Whitney's has the advantage that bees will come out of the supers because they do not have to travel from one super to another in order to find daylight. By consulting the Whitney bee-escape in our new A B C book, which escape was illustrated and described by the author on page 1150 for Sept. 1st last year, one will see more clearly why the change was made. With either escape it would be my opinion that some young bees will be lost.—ED.]

SR. PONS-FABREQUES, p. 27, is threatened with lynching in Germany or Scotland for saying heather honey is of inferior quality. Certainly in Scotland; but wouldn't he be safe at least in parts of Germany? [At the risk of being lynched ourselves, we will state that a very fine section of heather honey was sent us from "Merrie England." Perhaps our tastes have been educated wrongly in this country; but of all the vile honey we have ever tasted, we should certainly put this at the head of the list. We have since submitted it to guests as well as to connoisseurs of honey; and the verdict of all of them alike was to the effect that it is an ill-flavored honey to say the least. Perhaps some of our British cousins may say this was not a good sample; but the correspondent who sent it said it was something extra fine in heather honey. If we were not familiar with the taste of buckwheat we probably would class it as bad as heather; but the very fact that some residents of the buckwheat country consider buckwheat honey the best honey sold, and that expert connoisseurs in England and Scotland consider heather honey the very finest that is produced, it shows that there is every thing in getting our tastes educated to a certain flavor.—ED.]

RUDOLF HORA, *Deutsche Imker*, 347, is enthusiastic over a half-cold-and-half-warm arrangement. He says the cold arrangement in use in this country (frames running at right angles to the entrance) makes the bees move to the back part to get away from the cold; while the warm arrangement, largely used in Europe, makes the bees cluster toward the entrance to get the air. He com-



promises by making the entrance at one corner, which favors clustering in the center of the brood-chamber. Not hard to do if there is any thing in it. [The arrangement illustrated above is very pretty in theory; but

Rudolf Hora is clearly wrong in his statement when he says that when the frames are at right angles to the entrance the bees will be found clustered in the back of the hive rather than in front. The rule is, in this locality at least, that they will be situated in front directly over the entrance, with occasional exceptions. We have talked with prominent bee-keepers who say they have observed the same thing. If we were to call for a show of hands on this point we would venture to state that 99 per cent—yes, we may say all who have observed the matter at all—will say the bees will be clustered in front. If this be true, then Rudolf Hora's catcornered entrance has nothing in it.—ED.]



THE scheme of wrapping up sections of honey in transparent paper is going to prove to be a success. If you did not read the article on page 1500, Dec. 1st, you had better do it now.

So far as we can ascertain, the winter thus far has been comparatively mild in most localities. This will augur well for outdoor-wintered bees, and at the same time give the young clovers a chance to grow.

EVERY bee-keeper should read the editorial in this department on the subject of allowing glucose to be called corn syrup. It is very important that every one of our subscribers write at once to Secretary Wilson and to Dr. Harvey W. Wiley, of the Bureau of Chemistry, Washington, D. C.

POSTMASTER-GENERAL MEYER recommends the issue of postal notes to the present session of Congress. A small fee will be charged, and the denominations will be as convenient as possible; namely, 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 cts., \$1.00 and up to \$2.50. Notes payable to the bearer will be issued from 1 to 9 cts., and no fee will be charged. The postoffice comes into closer relationship with the people than any other bureau of the government, and these suggested improvements will make it more so.

LOMPOC, CAL., recently shipped 20 carloads of mustard seed to points in the East. The cars were not small-sized either, for each one held 500 sacks of 80 lbs. each. The trainload represented a value of \$35,000; and in honor of the event it was decorated with flags and bunting. Lompoc Valley is said

to produce about 60,000 sacks a year of both the red and yellow varieties. There are some bee-keepers in that valley who ought to be able to tell us something about the value and production of mustard honey.

W. K. M.

PURE-FOOD LAW IN CALIFORNIA.

THE pure-food law of California went into effect January 1. The enforcement of the law has been entrusted to the State Board of Health, with its headquarters and laboratory at the State University, Berkeley. The work is in charge of Professor M. E. Jaffa, a well-known pure-food expert. Under the law the sheriff of each county is the authorized agent of the board for the collection of samples. On complaint the sheriff will collect samples and forward them for examination. Heretofore it has been possible to "doctor" California honey intended for consumption in that State; but the new State and national law will prevent this entirely in the future.

SUBSCRIPTIONS ROLLING IN FOR GLEANINGS FOR 1908.

WE are gratified to know that, even during these panicky times, and after two very poor seasons, new subscriptions and renewals, with cash, are rolling in at a pretty good rate. Apparently our efforts to furnish a first-class bee-journal, making an aggregate for the year of 1600 pages for \$1.00, are being appreciated. GLEANINGS for 1908 will be better than ever. It is going in for a campaign for higher prices on honey, and to fight unfair competition from so-called corn syrups.

MAKING LABELS STICK TO TIN.

AT the Harrisburg convention, during the question-box discussion Mr. N. E. France said there would be no trouble about making labels stick to tin providing the oil on the surface of the tin is washed off with soda or vinegar; then when dry apply the paste and the label.

Some one else, we can not remember who, said there was something in making the flour paste. Mix the flour and water *cold*, and then cook to a paste. Don't mix the flour with warm or hot water, or the labels won't stick, it was said. This seems worth trying.

THE CRISIS IN THE GLUCOSE BUSINESS; "CORN SYRUP" VERSUS "GLUCOSE;" DO IT NOW.

ON page 1557 of our Christmas number we requested our subscribers to register a protest against allowing glucose to be called "corn syrup" in trade advertising, as demanded by the glucose interests. It appears that Dr. Harvey W. Wiley, Chief Chemist of the Department of Agriculture, and Dr. Dunlap and Solicitor McCabe, of the Pure-food Board, have already ruled against the glucose crowd, declaring that it is not permissible to use the term "corn syrup" to cover up and conceal something that won't sell un-

der its old and real name. Aye, there is where the shoe pinches. They wish to get a ruling in favor of "corn syrup" because, apparently, that would carry the impression that corn syrup is a new high-class food product made from the juices of the corn-stalk after the manner that sorghum syrup is made.

Glucose has earned for itself an unsavory reputation; it has a metallic, disagreeable taste—an article that will not sell if the public knows what it is getting. Apparently the glucose people understand this only too well, and, of course, looking to their own interests they do not propose to allow the decision of the pure-food commission to stand; therefore they have appealed to President Roosevelt and to Secretary Wilson, of the Department of Agriculture, asking for a stay of proceedings, during which they can present various arguments to the public and cause it to believe that corn syrup is the real name for a product made by treating *any kind* of starch* with sulphuric or hydrochloric acid.

Dr. Wiley and his associates have stood for pure food, and have all along been strenuous in insisting that all food stuffs be so labeled as to convey no deception. The general public does not know that corn syrup, so called, is glucose; and to allow this change of name would be the grossest kind of deception—a thing that would be entirely out of harmony with the provisions of the national pure-food law under which Dr. Wiley and his associates are working.

The glucose interests are alarmed, and they have good reason to be; for neither President Roosevelt nor Secretary Wilson has intimated that either one of them proposes to reverse the decision of their subordinates. They have simply signified their willingness to hear argument pro and con; and therefore it means that, unless bee-keepers and all producers of honest pure cane syrups and sugars register a mighty protest, *at once*, against making any change, there is danger that the decision of the pure-food commissioners may be reversed.

We are sure that the President, *provided* the full facts are put before him, will rule in the interests of the people and not in favor of private corporations and small retailers whose opinions would be biased by the profits arising from the sale of so-called corn syrups.

We urge every bee-keeper, as soon as he reads this, to write immediately a concise letter to Dr. Harvey W. Wiley, of the Department of Agriculture, Washington, D. C., commending the course he and his associates have taken in ruling against the use of the words "corn syrup" for a product known as glucose. A short but expressive letter should be addressed to Secretary Wilson, Secretary of Agriculture, and to President Roosevelt, Washington, D. C., requesting both to sustain the action of the Pure-food Board in placing a ban on corn syrup.

* Glucose can be made of *potato* starch, as it is in Germany. Corn is not, therefore, an essential source of glucose, and it should not be called corn syrup.

We have nothing to fear from glucose when it is called by *its right name*. Since the new pure-food law has been in effect it can no more masquerade under the name of "honey," "maple molasses," or New Orleans molasses, etc., but it must be sold for *what it is*. It looks very much as if the glucose interests, seeing that glucose will not sell under its regular name, must disguise and cover it up by calling it by some new name under the pretense that glucose is the product of corn. While that may be true in one sense (as it may also be of whisky), yet to call glucose "corn syrup" is to place legitimate syrups and honeys in unfair competition with glucose embellished with a real nice name.

We hope our readers will not lose a moment of time, but sit right down as soon as they read this, and *do it now*.

THE HARRISBURG NATIONAL CONVENTION;
THE SECOND DAY'S SESSION; THE GROWTH
OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

GENERAL MANAGER FRANCE, after the appointment of some committees, presented his general report. In making a comparative statement of the growth of the membership during the last two or three years he said:

In 1906 we had 410 members who paid one dollar each. In 1907 we had 416 members who paid one dollar each. In 1906 there were 825 in co-operation with our Association who paid fifty cents each; whereas in 1907 there were 1008 who came in at that rate. The additions for 1906 alone were \$321; and up to the time I left home were \$974 for 1907. Of those, New York State has contributed by single membership 56 at one dollar each; and one county association consolidated, coming in, gave us 21, giving us \$10.50.

He then referred to the statistical crop reports which he had been gathering and sending to members. But this year he had sent out no such statement because he could count on his fingers all who had a crop.

He referred to the fact that the good offices of the National Bee-keepers' Association had been used to further the interests of the national pure-food bill, which has since been enacted into law. He believed this to be one of the grandest things the government has ever done for bee-keepers.

He had something to say about a special honey-label for members of the Association, which he was furnishing; and then he referred to the fact that some member would order only fifty labels notwithstanding it would cost just as much to print fifty as five hundred. He did not see how any one could object to the outlay of a dollar for that number. He thought, therefore, if any one used labels at all he could afford a dollar for 500 special Association labels.

After some discussion we listened to an exceptionally interesting paper by the government representative in charge of apiculture, Dr. E. F. Phillips, on

THE CARE OF EXTRACTED HONEY.

It will be remembered that some three or four years ago General Manager France collected a large number of samples of honey

from all portions of the United States, and exhibited the same at the National convention that was held during the St. Louis exposition. These were subsequently turned over to Dr. Phillips, who in turn gave them to the Bureau of Chemistry for analysis. These analyses, Dr. Phillips thought, constituted one of the most complete series that were ever made of American honey. Several things came up during this analytical work which needed some explanation, and he therefore prepared a paper on the care and production of extracted honey with a view of bringing these points out.

He first drew attention to the fact that nectar contains a large percentage of water, which, during the process of ripening, will be reduced down from 20 to 25 per cent in normal honey. Some very ripe samples would have as little as 12 per cent.

The ripening of honey consists not only in the evaporation of a surplus of water, but of the transformation of the sugars of the nectar into the levulose and dextrose of honey in about equal proportions. Unripe honey contains a large proportion of cane sugar; and the longer the honey remains in the hive, the less sucrose (cane sugar) will be found.

While pure honey will contain all the way from zero to 8 to 10 per cent of sucrose, the purest are those that contain the least. The United States standard of pure honey allows no more than 8 per cent. The thorough ripening of honey can not be too strongly recommended, and he favored bee-ripened honey rather than that ripened in tanks.

THE CANDYING OF HONEY.

He spoke of the peculiar characteristics of different kinds of honey in reference to the matter of candying, and told of the methods of correcting this by bringing the honey up to a temperature of 160 degrees; but he cautioned not to heat to a higher point. A greater degree of heat, and especially as high as the boiling-point, will change the character of the honey, spoiling its flavor, and from a chemical point of view it could not be considered as true honey. He advised against drawing off the liquid portions of honey from that which has been candied, because what is left will not be honey.

Honey is made up of dextrose and levulose in about equal proportions. The candied or solid portions are largely dextrose, for the levulose probably does not granulate at all. If, then, the liquid portion, consisting largely of levulose, sucrose, and water, be drawn off, then what is left will not be honey. He also emphasizes the necessity of stirring up honey when drawing it off for bottling purposes; for it would be unfortunate to have a bottled honey that does not analyze according to the prescribed standard set by the Bureau of Chemistry. Such honey will have to be classed as adulterated or not honey.

The speaker drew attention to the fact that, in the popular mind, granulation is an indication of adulteration with sugar. This is, of course, untrue. Many bee-keepers, on the other hand, go to the other extreme by

saying that granulation is an absolute test of purity. This statement is also untrue, since invert sugar, one of the adulterants sometimes used, will also crystallize.

He explained how age affects honey greatly. Repeated granulation and liquefaction year after year in some way affect the chemical composition of honey. Some one submitted to the Bureau of Chemistry some honey which was known to be absolutely pure, but which was 35 years old. It had too large a percentage of sucrose or cane sugar.

There is only one condition, Dr. Phillips explained, where it is desirable to heat honey hotter than 160 degrees, and that is to kill the germs of disease. He advised diluting infected honey by using an equal amount of water, and then boiling it thoroughly for at least 30 minutes, or, better, an hour.

VARIATIONS IN HONEY.

The speaker called attention to the fact that well-known honeys from different plants vary considerably in taste, color, granulation, etc. While granulation may be considered a property of all honey, yet the fact that some granulate more than others is due to a larger or a lower ratio between dextrose and levulose. The following table will make this clear;

NORMAL HONEY (FROM NECTARIES OF FLOWERS).

1. High purity (high in sugars, relatively low in dextrose, gums, and other non-sugars).

a Levulose type; *e. g.*, mangrove, tupelo, sage.

b Average type.

a High in sucrose; *e. g.*, alfalfa.

b Low in sucrose; *e. g.*, buckwheat.

2. Low purity (relatively high in dextrose, gums, and other non-sugars; *e. g.*, basswood, sumac, poplar, oak, hickory, apple (most tree honey)).

ABNORMAL HONEY (NOT FROM NECTARIES OF FLOWERS).

(Generally high in dextrose, gums, and other non-sugars.)

1. Honey-dew honey (from aphides and other insects).

Coniferous honey (plant exudations not from nectaries).

Honeys containing approximately the same amount of levulose and dextrose, and which are high in sugars (average type), granulate readily. Very few honeys have more dextrose than levulose. If, however, the levulose is considerably greater than the dextrose (levulose type), or if the non-sugars are relatively high (low purity and abnormal honeys), granulation is retarded. Some honey-dew granulates rapidly; but no abnormal honeys of that type were included in the samples examined, and consequently they are not included in the table.

This paper called forth a great deal of interesting discussion, winding up with a vote of thanks to the Bureau of Entomology, and to Dr. Phillips in particular, for his interesting and valuable paper. Indeed, some experts were present, including Mr. France and Mr. W. A. Selser, who pronounced it the best contribution on the subject that had ever been given before the National convention.

We have attempted to give only the main points of the paper; but those who desire to see the full text are referred to the verbatim report which General Manager France will soon send to the members of the National, if he has not already done so.

It should be observed that this report is well worth the dollar paid for membership,

to say nothing of all the other benefits which one secures.

SPLIT SECTIONS A LA HAND, VERSUS THE
REGULAR STYLE OF SECTION WITH A
FULL SHEET OF FOUNDATION
CUT TO FIT.

DR. C. C. MILLER has commented quite at length on the subject of split sections as discussed by J. E. Hand and H. H. R. on page 18. As there is hardly space to admit the whole discussion in his regular department of Stray Straws we are placing it here at this time in order that the reader may get the benefit of further discussion before the question is forgotten. Dr. Miller writes:

Split sections, as compared with putting in foundation with hot wax, are well discussed by H. H. R., p. 18. Pardon the egotism if I suggest something better than either—bottom starters.

First, let me say that the objection to the appearance of split sections, if I am rightly informed, is a very serious one in England, where they are more used. I feel sure that, if my sections had a split with the wax showing through on top and sides, it would reduce the price very much more than 50 cts. a thousand. That one objection gives the preference to the hot-wax plan.

But compare either plan with bottom starters. If a section is fastened securely at top and bottom it must ship safely, even if it does not touch either side. The bottom starter as well as the top starter is fastened just as securely as by the hot-wax plan, for it is the hot-wax plan. How about the sides? Well, I do not think you could tell by the looks of my sections whether the sides had been hot-waxed or not; so, as far as safety in shipment and looks are concerned, I believe hot-waxing a full sheet has no advantage over the bottom starters. The only question, then, is as to comparative cost of labor in putting in. You estimate the time for hot-waxing at about 200 an hour. Possibly an expert might do better than that. But an expert will put top and bottom starters in 480 sections in an hour. A single piece to fill the whole section must be cut with great exactness.

A one-piece section is not always exactly square until forced square in the super. If foundation is hot-waxed in a section that is a little out of true, and it is then crowded square in the super, there will be trouble. A variation of $\frac{1}{8}$ inch or more in cutting top and bottom starters will make no trouble, and there will be no trouble with a section somewhat out of true.

When the section comes into the consumer's hands, if there is any preference it will be in favor of the bottom starters, for the hot wax poured all around ought to make it just a little harder to cut the section clean from the wood.

Against bottom starters it must be said that more skill is needed in using the hot plate, or an occasional top starter may drop before the bees can fasten it, while any slouch can make it secure by daubing on enough wax with the other plan. Your honor, we here rest the case.

The objection raised by Dr. Miller as to the unpopularity of these sections in England is a very serious one. We raised this point with Mr. Hand in private correspondence some months ago, stating that, in our opinion, such sections, if sold largely in this country, would give rise to the old comb-honey canard, because the consumer, not understanding the nature of foundation and its uses, would be likely to jump to the conclusion that the contents of the section were "manufactured," because he could see undeniably the handiwork of man. The foundation projecting through the wood on three sides would be almost sure to arouse his suspicions.

In relation to this point Mr. Hand wrote that he had found no trouble whatever; but we feel firmly convinced that, if such sec-

tions ever become popular with bee-keepers, we shall have to be constantly "explaining" and always on the defensive.

But this is not the only point. Such a section, with foundation projecting through the top and sides, is unsightly compared with the neat clean face of the regular section. That fact will hardly admit of argument.

In this connection a valuable article on the subject has just come from E. F. Atwater, Meridian, Idaho; and while we have not the space to give the whole of it in this issue we wish to present herewith the part having an especial bearing on this question. We expect to publish in our next issue some engravings made from photographs which he sent. On the subject of starters, he says:

As I was the first in this part of the West to use sections containing a full sheet of foundation fastened on all four sides, and as that experience has covered several years, extending in part to the present, I feel qualified to say something about the results. In many cases the results are all 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, is a factor with which we must reckon. A full sheet of foundation as usually used, attached at top only, with $\frac{1}{16}$ to $\frac{1}{8}$ inch space below it, will usually sag evenly, resulting in a comb even and smooth of surface. But if the foundation completely fills the section, being attached at all four sides, then when the sheet does sag, a bulge usually occurs somewhere near the bottom; and the bees, when the comb needs capping, are often unable to puzzle out a satisfactory solution of the problem; a depression or small uncapped area results, besides a tendency toward comb attachments to the separator.

But the downward sagging does not constitute the only difficulty. Under the manipulation (or "mandibulation") of the wax-workers, the sheet of foundation enlarges transversely, resulting all too often in another bulge in the foundation, and giving rise to another problem which is too difficult of solution for the untaught instinct of the bees, and this results in another blemish on the face of the finished comb.

In some localities the sagging of the foundation is undoubtedly more of a problem than in others. Wherever full sheets of foundation fastened on all four sides with hot wax are found to sag and buckle, we should expect that the same trouble would be found with foundation secured on the split-section plan. At any rate, it is quite important in these days that we make as few changes as possible in our bee-hive appliances. Where regular goods and regular outfits already in use can be made to do the work it would be folly to go to the expense of a change. In the case of the problem under consideration, we would say by all means stick to the regular section that one is using. We will shortly illustrate how any one, with home-made appliances costing only a few cents, can fasten full sheets, cut to a fit, into the section, and do a neat and perfect job.

BE sure to read about what the glucose interests are trying to do in pulling the wool over the eyes of President Roosevelt and Secretary Wilson on the subject of calling glucose "corn syrup." It is to your interest to write at once to Secretary Wilson and to Dr. Wiley. Do it now. There is not a minute to lose.



STIMULATING IN THE SPRING WITH SHALLOW EXTRACTING-COMBS OF HONEY.

"I use the Danzenbaker hives, and winter the bees on their summer stands. In buckwheat bloom I expect to get a lot of shallow extracting-frames in Danzenbaker supers filled with buckwheat honey. Then I will store them away until the first warm day next February or March, when I can give each hive a super of these filled shallow frames. When any of the colonies are ready to store surplus honey I will raise this super put a super of sections filled with full sheets of foundation on the hive, then put on a bee-escape board and get the bees out of the shallow frames, which can then be stored until the following spring. Do you think I would be paid for the extra honey and work? Or would it be better for me to put the shallow frames of honey on the hives in the fall before I pack them for winter, instead of waiting until spring? Would the extra space to keep warm be a detriment?"

"Would it be just as well, instead of giving a full super, to put four or five of the shallow frames of honey in the center of the super and leave the rest of the super empty? It seems as if even four or five frames would be more than any colony would ever use, and still it would stimulate them to brood-rearing in the spring.

"Girard, Pa. NORTON C. MILLER."

Regarding the first proposition and question I would say there would be advantages and disadvantages in carrying out that program; and in my judgment the disadvantages would more than overcome the advantages. For this reason I should say that it would not pay to work so—no, not even in a larger yield of honey, to say nothing of the time spent in the different manipulations.

The advantages would be two in number as I see it. The first would be the securing for the bees an abundance of stores, so that there would be no danger of the colonies ever becoming short to an extent bordering on starvation, or to their retrenching in brood-rearing; but this matter should be looked after in the fall by way of *knowing* that each colony has sufficient stores in the brood-chamber to supply all wants till the flowers give them an abundance the coming spring. This is an easy matter if all colonies are carefully looked after in September, just as soon as the surplus of the season is over. Those not having 25 to 30 pounds of stores should be given full-sized Danzenbaker frames of honey to take the place of the light frames in the hive, or the colony should be fed the proper amount where such frames of honey are not on hand. In this locality it is of rare

occurrence for any colony which is worked for comb honey to be short of stores for wintering and springing. Even during the unprecedented spring of 1907, not one out of twenty of my colonies ran short of stores.

The second advantage would be that of the bees acquiring the habit of entering the super freely while the super of extracting-frames was on the hive. Having been "frequenters" of this super they would more readily enter the super of sections when it was put on to take the place of the extracting-super, and in this respect quite a little would be gained, but nothing like enough to overcome the disadvantages, next spoken of.

Of all the time in the year when the brood-nest should be kept as warm as possible, early spring is that time; and the proposed plan of working not only breaks open a joint between the cover and top of the super, but one between the super and the top of the brood-chamber, at which joints the warmed air from the cluster can not only go out into the open air, but it will be fanned out by every passing breeze or high wind that blows. And not only this, but the ascending heat from the colony below will be up in this super at just the time when every particle should be economized for brood-rearing, so that the colony, instead of becoming strong in time to take advantage of the first opening flowers, would remain weak on account of the cracks all about the top part of the hive and the *much* too large brood-chamber which they would have through the added super. While I claim that the bees are enabled to confine the heat very largely inside the cluster, so that brood-rearing will go on quite extensively within the cluster, no matter what the conditions just outside said cluster are, yet the warmer the air outside of this cluster, the more the cluster will expand, or the less number of bees it will take to make the "walls" to the cluster or brood-nest proper, and so an advance is made by confining all the heat possible as nearly within the limits of the cluster as may be. And the adding of an extra super above the cluster in the spring is in direct opposition to nature's requirements, which, of course, is opposed to a paying crop of honey, or any pay for the labor performed in thus working.

Then, if Mr. Miller's bees are like mine, unless he puts a queen-excluder between this added super and the brood-chamber to the hive, he will have more or less brood in the extracting-frames at the time he wishes to raise them up for the section-super, which brood is just where he does not wish it, and will cost him the honey necessary for its rearing (besides injuring his extracting-combs), and the extra work it will make for him to get rid of this undesirable brood.

Again, this proposed plan militates little if any against swarming, which will be quite likely to occur soon after the bees have been run down out of the extracting-super into the sections. Such a plan could not be depended upon in the least when working an out-apiary unless it resulted in too weak colonies to swarm, or do little else to advantage.

Lastly, with the running of the bees out from these supers, and the storing of them away for the next spring's using, comes an invitation to a sumptuous feast for the wax-moths and larvæ, or else a continual fight to save these combs from being destroyed by the ravages of these pests. Of course they can be fumigated at the proper time, and then put in a moth-proof room; but all of this is extra work at a time when minutes and hours are of great value, and the results obtained would in no way compensate for this or any other of the disadvantages.

The answer to the second question about putting this extracting super of filled combs on in the fall would be the same as that given above, with the additional thought which Mr. Miller suggests with his question of "Would the extra space to keep warm be a detriment?" All unnecessary room during winter and early spring is *always* a detriment, and against the best interests of the bees and their keeper.

His third question and proposition only add to the disadvantages through its giving additional empty space, either in taking the heat from the cluster of bees, or in the time and material for packing the space not occupied with combs, or in the building of drone comb in this space should a little honey come in from fruit-bloom before it was time to put on the supers of sections, and in running the bees out from these supers of extracting-combs. As I said at the start, the disadvantages of these proposed plans much more than offset any advantage which may be gained, and I am sure if Mr. Miller tries these things he will find the results as outlined above.

But, friend Miller, if you will make a change in your plan according to the following suggestions you will see all swarming stopped, and the bees will go to work in the sections as you never saw them before. Instead of the extracting-super, provide a Danzenbaker hive-body containing worker combs that are from one-fourth to two-thirds full of honey. When your colony becomes strong enough to need more room in March or April (possibly May, in your locality) put a queen-excluder on the hive, and place this filled hive-body on top leaving it there till it is time to put on the sections, and then put this upper story down on the bottom-board where the brood-chamber has been up to this time, putting your super of sections on top. Shake and brush all of the bees from the combs of brood and out of the brood-chamber, allowing them to enter what has previously been the upper story, now on the bottom-board.

If you tier this hive of beelless frames of brood over a weak colony, using a queen-excluder between, you will not only overcome the wax-moth nuisance but have your hive and combs filled with honey in the right shape for using again the next spring, and so on year after year. In fact, you will have just what you are looking for in your proposed plans, with all of their advantages, and *much more* added, and that with none of their disadvantages.



After having been buried up for a whole year, like a mouse under a haystack, here we are again. Such a flood of material for the use of the editor has come to his sanctum that Pickings has stood aloof simply from motives of modesty. In the stack alluded to there have been Stray Straws, Notes from the Southwest, Mr. Crane's department, that of J. A. Green (a rare visitor, however), that of R. F. Holtermann, the crispy articles from J. E. Hand, E. W. Alexander, E. D. Townsend, Prof. Cook, Doolittle—more than I can name. These men, in the short space of a year, have completely transformed the old plan of getting out GLEANINGS, and, as a matter of course, the hand-car has been removed from the track to make way for the Cannonball express. Besides, Mr. Morrison has devoted all his time to an examination of exchanges during the past year, and he has squeezed the lemon perfectly dry. But for all that, the manager of this department has been busy on every page and line of GLEANINGS during the absence of Pickings, in the endeavor to have this journal maintain as high a degree of typographical accuracy as possible under the circumstances. With the help of a friend I have prepared the following, which may be of interest to some:

SUBTLE DIFFERENCES IN COLONIES.

To help explain why some colonies do so much better work than others, even though the conditions of all seem to be equal, the editor of the *Bee-keeper's Review*, in the December issue, republishes a translation of an article by C. J. H. Gravenhorst, who worked out the problem to his own satisfaction about twenty years ago. Briefly, the reasons given by the celebrated German authority are as follows:

1. The ideal colony must have a faultless queen; hardy, sound of body, and, above all things, fertile, and her progeny distinguished by diligence.
2. Nevertheless, such a queen alone does not make an ideal colony. At the right time, that is, when honey is coming in freely, there must be plenty of empty comb that no time nor honey be lost in building comb.
3. Our ideal colony must swarm at the right time or not at all. It swarms at the right time when it swarms so early that the queens of the after-swarm, if such are allowed, become fertile, and the first or prime swarm has its combs completed before the opening of the main harvest.
4. The ideal colony must not be over-populous. A hive is over-populous when its working force is too great in comparison to the dimension of the hive and to the number of wax-building bees.

Such a condition is intolerable to the bees and they try to help themselves by loafing. Their instinct teaches them to begin this loafing even before the hive is over-populous. The bees seem to see the combs are filled and capped, that bees are daily hatching, and that they will soon be crowded. A colony in such a condition will never perform the wonders in gather-

ing honey that we may expect from one less populous. Such a colony feels instinctively that its abode will soon be too small, and the swarming fever sets in, and we know that when that is awakened the bees will continue to loaf. At the most, only as much honey will be gathered as is needed for making the swarming preparations. A colony with the swarming fever is of little value as a honey-gatherer.

5. The best honey-gathering colonies are not kept at home during the best honey-flow by the nursing of too much brood. If there is too much brood in proportion to the working force, most of the honey gathered will be consumed by the brood. The bee-keeper whose bees rear a large amount of brood during the main honey harvest, or near its close, will find, as he stands before his colonies at the close of the harvest, that, although they are strong in bees and the combs faultless, the latter will be empty and will stay so.

SMALL NUCLEUS HIVES FOR QUEEN-REARING.

The queen-breeders over the country have adopted various means for providing nuclei, or small colonies, in which young queens may be temporarily placed until after they have been fertilized. Many have made use of two or three frame nuclei in standard-size hives; but a few years ago "baby nuclei" were advocated on account of the small number of bees needed to fill them and the general inexpensive equipment required. But because of the care necessary to maintain such abnormally small clusters of bees the larger twin-mating boxes were developed for the purpose of providing a small hive large enough to hold two clusters of bees that would, in a measure, take care of themselves. These have proven very satisfactory, although some of the experts are beginning to feel that it may be perhaps cheaper, after all, to use nuclei on full-size combs and frames, thus saving the expense of odd-size hives and fixtures.

In this connection it is interesting to note the report of W. H. Laws, a veteran queen-breeder, as given in the November issue of the *Bee-keepers' Review*.

Small nuclei for queen-rearing are still a success with W. H. Laws, but he now reports that, taking the whole season through, there is really less labor by employing three-frame nuclei of the regular size. Such nuclei take care of themselves right along, month after month.

WAX-PRESSES.

The readers of this journal will remember, doubtless, that we have advised against the use of hot-water wax-presses except in the case of very large producers—those whose output is 300 lbs. or more of wax per year. One of the reasons for our opinion was the discoloration of the wax due to the long-continued heat to which it is almost of necessity subjected. Of course, if the wax is not allowed to remain for any length of time on the surface of the boiling water it will not be discolored to a great degree; but it is not an easy matter to keep the wax running off as fast as it rises to the top.

At the convention of the Ontario Bee-keepers' Association, which was held in Toronto, Nov. 13, 14, and 15, the Hershiser hot-water press was compared to the Hatch press. Mr. J. L. Byer, in the *American Bee Journal* for December, gives the following report of this discussion:

Relative to a question on wax-presses, those who

had tried the Hershiser admitted that, while more wax could be obtained, yet the quality was not so good as that taken with the Hatch-Gemmill press. Later on during the convention, Mr. Sibbald, by means of a model, explained the workings of a press (one member called it a cross between the Gemmill and Hershiser presses) which he thought superior to either the Hatch-Gemmill or Hershiser. (Cuts of this press with Mr. Sibbald's explanations will appear in the printed annual report of the convention.)

SOME VITAL POINTS IN BUILDING UP A HONEY MARKET.

It may be that salesmen are born and not made; but we are inclined to doubt it. At any rate, any salesman may improve. Mr. M. V. Facey in an excellent article in the *Bee-keepers' Review* for November in which many sound doctrines are preached. We should like to give his thought in full, but we have room for only a part of the article. He mentions the fact that he now has about 1000 customers; and under the heading of "Don't Argue, but Give the People what they Want," he says:

In building up this trade I have at all times placed myself in the place of both buyer and seller. You have, first of all, to learn the tastes of your customers. If you are building up a home trade, you will, as you start out, find that one person likes basswood honey, another clover, another an amber, and a fourth buckwheat. A great many salesmen will try to persuade certain ones that their taste is a mistaken one; that such and such honey is better than the one their taste calls for. This is a great mistake. No man wants the salesman to dictate to his tastes, as he knows perfectly well that the honey he likes the best is *the best for him*; and this is what the wise salesman should offer him. And right here I would say that the idea of cultivating the public taste for this or that kind of honey is largely a mistake. People have their tastes; they are largely fond of honey; and, instead of cultivating a taste, we have only to cater to it. I find this is an art that bee-keepers learn very slowly. We are too apt to set up our own standard, and expect everybody else to adopt it because it is *ours*; and thus, in the supposed perfection of our own knowledge, we are unable to detect our own defects. We should rather, while we have an eye turned upon the public, studying its demands, have the other eye turned back upon ourselves, studying *our own defects* of both trade and production.

Therefore, instead of trying to build up a trade by belittling your rival, you should learn wherein his goods excel yours, and bring your goods up to or beyond his standard. See that your honey is the best ripened, the best graded, and the best put up, and then, as you go out and sell this honey, people will appreciate it; and when you have a man's honey trade, and furnish him with such goods, he will stick by you and even give you a cent or two a pound more than he will give your neighbor.

Every sale should be made as though your *whole trade* depended upon that one transaction. I once bought honey of a man who kept out his inferior goods for his home trade, with the remark that it was "good enough for them." That was the opposite of what I am trying to impress upon my readers. If that man had valued his home trade, and if he cared in the least to build it up, he should have kept his very choicest honey for *it*, and, instead of a small trade at a low price, he might have had a good trade at a good price that would easily have taken all his honey.

I said it was necessary to furnish each buyer with the kind of honey his taste preferred. To do this we must learn to grade honey. This is a weak point with many bee-keepers and with some dealers. I have been offered "clover honey," by large and experienced bee-keepers, that seemed to have hardly a trace of clover in it; besides, it was dark in color and strong in flavor at that. I have bought a lot of white honey and of dark honey of a dealer, wherein much of the dark honey was *whiter* than the *white*.

To hold a person's trade, we must furnish him *what he wants*. If a man is dainty in his tastes, and wants clover honey, and we furnish him honey-dew a time or two, we will find he will very promptly avoid our honey quite as persistently as our satisfied customers

stick by us; and, as one pleased customer will often bring half a dozen more buyers, so one unsatisfied customer will often deter half a dozen from buying.

Mr. Facey's second point is: "Sales largely depend upon pushing the goods." Concerning this, he says:

We must keep our goods before our customers. A family promptly supplied will use several times as much as one that has to hunt for the goods. I know families which, when promptly supplied, will use from twenty to thirty gallons of honey per year, who otherwise do not use more than four or five gallons. Honey is an article which is used by many people, or, perhaps, by most people, largely in proportion as it is drawn to their attention and made easy to obtain. Its sale must be *pushed*; hence store-keepers often so signally fail in building up a trade. It is a luxury, but where constantly supplied it is then a necessity.

I have not found the fear of adulteration much of an obstacle in my trade. I am very particular as to the purity of my honey, and I absolutely guarantee all I sell. If any thing puzzles my customers I regard it as a favor to be permitted to clear up the matter. We often sell our honey to people who know nothing about bees, and, therefore, when so many bee-keepers know so little about honey, we can not expect them to know much, except that it is pleasant to the taste and a desirable article of food. I acquaint them with the workings of the pure-food commission, and am always pleased to have any test made. Our very willingness to submit our goods to the test greatly increases confidence in their quality and purity. We should avoid trying to tear down another's reputation in order to build up our own; and when I see this done my suspicions of the critic are always aroused, and I make purchases of such people with extreme care. It certainly is no recommendation of *our* honey to say that our neighbor's is *poor*. If it is poor, the people will soon find it out without our officious declaration, and the suspicion we attempt to place upon him will almost invariably react upon ourselves.

Previous favorable acquaintance with the people along a given route goes far toward making the machinery run easy in the sale of honey.



A prosperous 1908!

Save the pieces. It means much in the course of time.

All successful men have well-laid plans. Have you?

That Marbach queen-excluder seems to be quite an improvement. I saw samples of it.

Resolutions of the right kind are good if carried out; so let us resolve to make our industry better than ever. Keep better bees, and keep bees better.

A mild winter and lots of rain here in the South has given a new impetus to bee-keeping. The bees are in fair condition; and most of the main honey-yielding plants are already well grown and bee-keepers are hopeful.

Plurality of queens has not appealed to me. It may pan out something good later, but at present it seems better to keep *one good queen* in each separate colony.

The divisible brood-chamber, after a ten-years' trial and comparison with others, has given excellent results. With me they are time-savers, and afford me both pleasure and profit. I can produce more honey with them with less labor and expense. This kind of hive is not a "new-fangled" thing with me.

"Sour clover" (*Melilotus Indica*), mentioned on page 1310, grows wild here, but is not considered valuable for bees, as its blooming period here is quite short, and bees are not always present. It is an annual here, naturalized along the southern borders of Texas. When I first saw it before blooming it was mistaken for white sweet clover. The fact that it grows so well indicates that the other species, more valuable to the bee-keepers, *M. alba* and *M. officinalis*, should thrive here also. I will try them.

Stachelhausen used divisible-brood-chamber hives extensively for years; and with these and shaking swarms he managed out-apiaries successfully. With these divisible hives, swarming can be successfully controlled when running outyards for either extracted or comb honey. For years his average per cent of swarming has been only 2. His son-in-law, Mr. Ed. Dietz, succeeds him in his business, and is as enthusiastic about such hives. When supplies are made at home such hives are cheaper, for they may be cut from narrow lumber.

Organizing the bee-keeping forces for better production, wiser distribution, profitable prices, and better care of the apiary, is work that should be given more attention. There is no better time to begin this than now. The time has come when organized efforts will bring better results. Education is necessary in all branches, and this should be eminent in association work. It is not how much honey is produced, but how much of it is better, and then sold in such a way that it will bring most profitable returns. By beginning with the better care of the apiary during 1908, and applying it to all the other branches as well, a step would be made in the right direction.

A round to all the apiaries should be made in early spring. The colonies should be examined for stores, queenlessness, and other conditions, and noted. This will save many colonies which often starve when the owner thinks they have sufficient stores or are all queenright and well. Take along an ax, a hoe, and a rake, and cut off those low limbs and trim up the trees where the veil caught last summer. Cut out the stumps and other rubbish; rake it off, and see the effect. It shows up nicely. "Little drops of water,

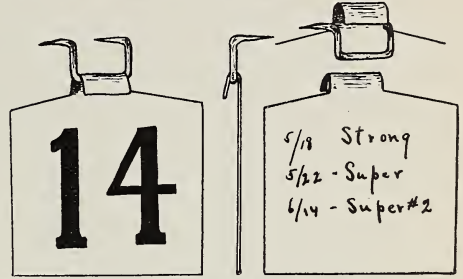
little grains of sand, make the mighty ocean and the wide, wide land." So in bee-keeping. Little wastes of honey, with water, make mighty barrels of vinegar, and little bits of wax, generally wasted, make great big cakes.

HONEY PRICES; TEXAS VS. THE NORTH.

It seems somewhat strange that complaints should arise against the honey-market quotations of the northern and eastern markets. That there was a wide difference in the quoted prices of honey in the different markets was noticed; but why this? Is not the local bee-keeper of the North, who is so far in advance of us Southerners, in position to straighten these matters out to one and the same level in all these markets adjacent to each other, allowing a slight difference for difference in freight, etc., at more distant points? Who makes the prices of honey, anyhow? and if the dealer fixes his quotations, what does he go by?

In this one thing I believe some of us here are ahead. It is becoming more and more customary for buyers and dealers here to write us for "prices on your honey." For

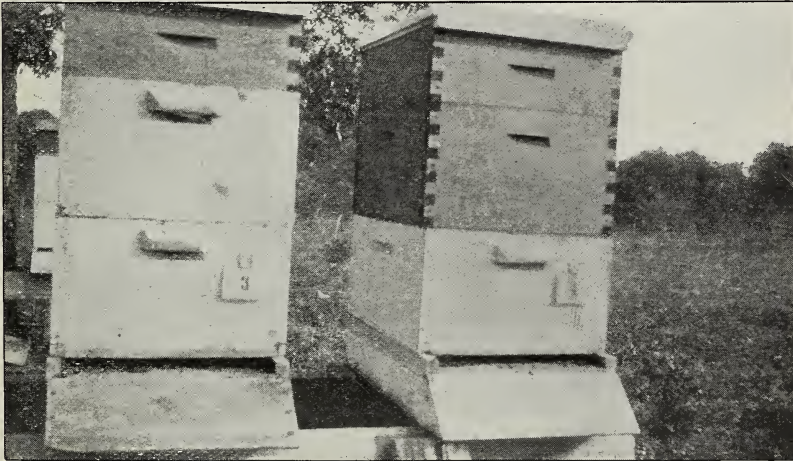
erased when necessary, and the surface used over again. As this side is protected against the wall of the hive it is not necessary to write so it can not be erased.



SCHOLL HIVE-NUMBER—DETAILS.

Notice that a bent crate-staple is used instead of a straight one or a nail. It is done for the reason that the latter would soon be driven into the wall of the hive-bodies when these are handled, and the "numbers" could not be hung on them. With the bent staple this is quite overcome, for it acts like a spring, and will not go deeper into the

wood. With this spring-like pressure the tin number-plate is held firmly after it has been hooked in place. Such a staple is put on each end of all hive-bodies so that, no matter which end is placed forward, there will be such a staple on which to hang the



THE "SCHOLL HIVE-NUMBER" IN USE.

years I have quoted *my own price*, and regular price lists are sent out. First, it is ascertained what the prospects are, and how large the crop will be. Then a price is set, and in this way a cent or more a pound above other prices has been obtained.

HIVE-NUMBERS.

It is well to have each hive with its number so a record can be kept of it. Many ways of applying such have been tried, but nothing has given me more satisfaction than the one pictured just above. They are made of heavy tin, painted on both sides. On the front is the number, while the back is used for keeping records of the colony with a leadpencil, so they can be easily

number. It is not necessary to unhook the tin for making records on the back. Just stoop down beside the hive; lift up the lower end of the tin on its staple hinge, and examine the notes or add more. These will be upside down after the tin is turned up, and are readily read from the top. Try some of these, and report. Perhaps they can be improved.

WHAT SHALL WE CALL THEM—

"section," "story," or "brood-chamber"? For want of a better term, one of the portions of a divisible-brood-chamber hive has been called a "section," and I have often used it without conflict here, because sections of the other kind are very little used

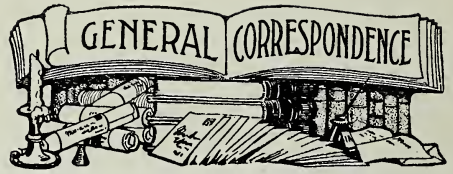
in the South, comb honey in sections being almost a thing of the past. Dr. Miller, page 1908, does not like the term, but wants it called "story." Editor Root objects to that as meaning a full-depth hive-body, and suggests "brood-chamber" as a better term. I object to all of these terms, especially the latter, for the brood-chamber proper may consist of several parts of the divisible-brood chamber hive, often three or more being used. Besides, the same parts are continually changed about, sometimes the lower, and then as the upper portion of the brood-chamber.

Better call them "cases." A divisible-brood-chamber hive consists of a series of shallow cases, two or more for the brood-chamber; the same kind of cases, and frames for extracted and bulk-comb honey supers, and such cases with sections, instead of frames, being used for producing section-box honey. They can be called supers when used above for honey, and are "brood-cases" when used for the brood-chamber—thus two or three cases or more for a brood-chamber. Then we can call them the lower case or upper case of the divisible brood-chamber, and know just what is meant. There should not be any confusion between cases of brood of such hives and shipping-cases of comb or extracted honey. On the hive the shallow cases are always called supers, so there's no confusion between these and shipping-cases of honey.

RAPID GRANULATION OF HONEY.

Never did I see honey granulate so quickly as this year. It caused considerable trouble in the markets at the beginning of the season. Honey extracted in April, May, and June would, in many instances, granulate in ten days after it was taken off the hives. As a good harvest was obtained in most of the main honey-producing sections of Southwest Texas it was sent to market in hundreds of carloads in a very short time. Most of this was bulk comb honey in cans, which made it worse, and hence it left a large stock of unsalable honey on the dealers' hands. This caused a slowing-up of sales, as many were afraid to buy more; but the demand stiffened again rapidly after the granulated honey was out of the way. This was not done without much trouble, however, as it necessitated melting up the granulated comb honey and separating the wax from it.

After this experience, the majority of bee-keepers heat all their extracted honey, before shipping it to market, to 150° F., which delays granulation for a considerable length of time. For bulk comb honey the liquid honey is heated to the above temperature, and then poured over the packed comb honey in the cans while still hot. The comb honey will not granulate as fast as the extracted would; and by heating the latter before putting in the cans with the comb, the whole mass is kept from granulating a long time. Of course, it will granulate at the approach of cold weather late in the season.



SCIENTIFIC AMATEURS.

The Modest Small Bee-keepers.

BY E. R. ROOT.

Among those who attended the Harrisburg National convention was Miss Susan E. Williams, of Moorestown, N. J., a suburb of Camden, opposite Philadelphia. It is true she took no prominent part at that meeting, yet it was easy to see that she was an enthusiast and a good listener. Such people always help a speaker by their presence.



MISS SUSAN E. WILLIAMS, AN ENTHUSIASTIC AMATEUR BEE-KEEPER.

While Miss Williams has kept bees for only a comparatively short time, she represents a type of "scientific amateurs," if I may use the phrase, who have done much to enrich our bee literature in all countries. It is these people who occasionally give to the bee-keeping world some practical suggestions as well as some scientific facts. Miss Williams, while she belongs to this class, is exceedingly modest in her attainments in bee-lore, especially for a beginner. Her neat little apiary in her back yard, where she has found



MISS WILLIAMS' APIARY, AT MOORESTOWN, NEW JERSEY.

so much pleasure and profit, is shown herewith.

It seems one of her friends asked her to give a series of talks on bees and other natural-history subjects. The result was, she took up the study of bee culture with all her heart and soul, and finally became the possessor of a modest little back-lot apiary, types of which one can see all over the United States. She started with two colonies in May, 1905, and in the spring of the following year she was the happy owner of six colonies, and at the present time she has something like 25. Her crop last year amounted to 1000 lbs., mostly extracted, and two colonies gave a return of over 100 lbs. each. For one only two years in the business this is not a bad showing. Had she not been familiar with bee-literature she could scarcely have accomplished this.

When I asked Miss Williams, toward the close of the convention, if I might have a picture of her and her bee-yard for publication in *GLEANINGS* she looked at me somewhat curiously as if inquiring why her personality would be of any value in a bee-journal. She was more curious still when I explained that she was a "type." "A 'type' of what?" she asked. "Of a class who are far more numerous than those who are engaged in bee-keeping solely for the 'almighty dollar.'"

There are thousands and thousands of "back lotters" among the professional people, and nature-lovers who do more to popularize honey among the masses than any

other class of bee-keepers, and it is to this class that we wish to pay our respects at this time, for they are performing an invaluable service.

Perhaps some of our lady bee-keepers will recognize Miss Williams as the one who contributed an interesting chapter in our booklet, "Bee-keeping for Women." On reading this, one can not help feeling impressed with her enthusiasm and love for this most fascinating of all nature-studies, bee culture.

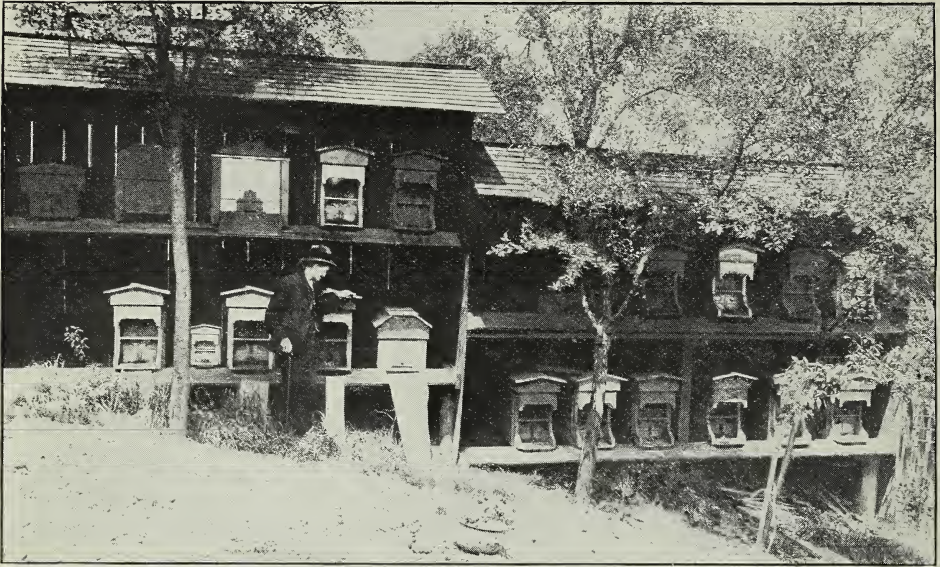
I am glad to introduce Miss Williams as a modest representative of her class, because I think *GLEANINGS* has not made enough of those who are in the business, not for the dollars and cents, but for the mere love and pleasure they find in delving down into the hidden secrets of nature. We wish there were more like her, because the one who is looking only after the glittering dollars very often misses some of the most wonderful things this blessed old world has to offer.

AN APIARY UNDER ROOF.

An Open Shed over the Hives for Protection.

BY WILLIAM F. OTT.

As the space for my apiary is limited I built the "shed" as seen in the picture, a two-story concern which keeps the north winds and storms from the hives. The colonies seem to get along very well in these quarters;



AN OPEN-SHED APIARY IN PENNSYLVANIA.

This affords partial shade in summer and protects the hives from the cold north winds in winter.

and the building being shaded in summer by overhanging fruit-trees makes a very pleasant home for them. My leisure hours are spent, in summer, about the "bee-stand" which I enjoy very much indeed. I have one colony of the golden-all-over bees. I bought a fertile queen and introduced her to half a gallon of "loafers" which I scraped from the hives early in the morning, according to a plan which I learned by reading, and kept them "queenless and broodless" for 24 hours. Then having the queen on hand I introduced her and was indeed happy to find her all right and laying eggs later. Finally my anxiety was relieved to see the little yellow fellows on the combs, easily detected from the ones on hand before. They are getting along very nicely.

Johnstown, Pa.

BEE-KEEPING IN TURKEY.

Some of the Leading Honey-plants of that Country.

BY N. J. NICOLAIDIS.

I am a bee-keeper of Greek nationality—the first one, very probably, who has adopted movable-frame hives in this old country. From your excellent paper, to which I have been a subscriber these three years, I see that you are interested in bee-keeping all over the world.

My interest in bees and in movable-frame hives was aroused by a few hints in class by my professor in physics, and, as a result, I decided to find out if bee-keeping pays in this country on the shores of our beautiful

Bosphorus. I started with one colony, bought from a farmer in my neighborhood, which colony was comfortably lodged in a barrel such as are used in this country for transporting water. The swarm that this barrel hive gave me in the latter part of April, which is with us the swarming season, was a really monstrous swarm, and was successfully hived in a Dadant hive of my make.

At that time I was a subscriber to a Swiss bee-journal edited in French, which, however, being too local, did not satisfy me. It was not without pains and eager researches that I found out one of your advertisements, and as a result I sent in my subscription.

My little apiary consists now of eight Langstroth hives with Hoffman frames. The bees in them are all descendants of their barrel ancestors, and are working pretty well indeed, notwithstanding they had comparatively little care from me, as I am obliged to be away most of the time. Next year I expect better results, as I have decided to run half of them for section honey on the Doolittle plan, with increase, and the other half for extracted on the Alexander plan of increase.

The important nectar-yielding flora of this locality are the following: Fruit-trees, white acacia, horsechestnut, little basswood, peppermint, ivy, and heather, besides some other minor sources that give a continuous light honey-flow all through June and the early part of July. Our most important honey-flow is that from the acacia bloom, giving a honey of fine flavor and light color. One defect of this honey-flow, however, is that it can not be kept separate from horsechestnut, which yields at about the same time a honey

of pinkish color and rather unpleasant taste. The honey obtained from heather is of dark color, and rather strongly flavored, granulating as soon as cold weather sets in; yet the sections made during this honey-flow are of the finest appearance with regard to wax and cappings. The ivy blooms at about the same time, and yields a honey of fine body and rather pleasant taste.

Some time ago I ordered an Italian queen, and I hope to have her by the end of this month, when, if not too late, I shall try to requeen some of my colonies for the purpose of comparing the work of these Italian-bred colonies with the native species. The bees of this country are industrious, and winter well outdoors. Their defects are that they are great propolizers, and rather cross in temper. Among my colonies I possess one which I imported myself from the neighboring country of Bulgaria. The bees of this Bulgarian stock are very probably allied to the Caucasians, because they are mild in temper and seem not to know the use of propolis and of stings. They are of rather small size, rather prolific, and not inclined to swarm. The sections which I have obtained from them are white, and well capped.

Please answer the following questions.

Is it true that some species of pine-trees yield nectar through a kind of insect, of the aphid family? I have heard some peasants of this country and of Greece assert this, but would not give credit to their assertions be-

fore I hear it supported by some more competent authority, especially as no pine-trees are found in my immediate vicinity to watch bees on; it is, moreover, said that a honey of delicate flavor and color is obtained from this pine-bred aphid.

My second question is about the chestnut-tree, of which we have plenty in this country. Does it yield any honey, and of what kind? I have seen bees work earnestly on them, but could not ascertain whether they were gathering honey or pollen.

Constantinople.

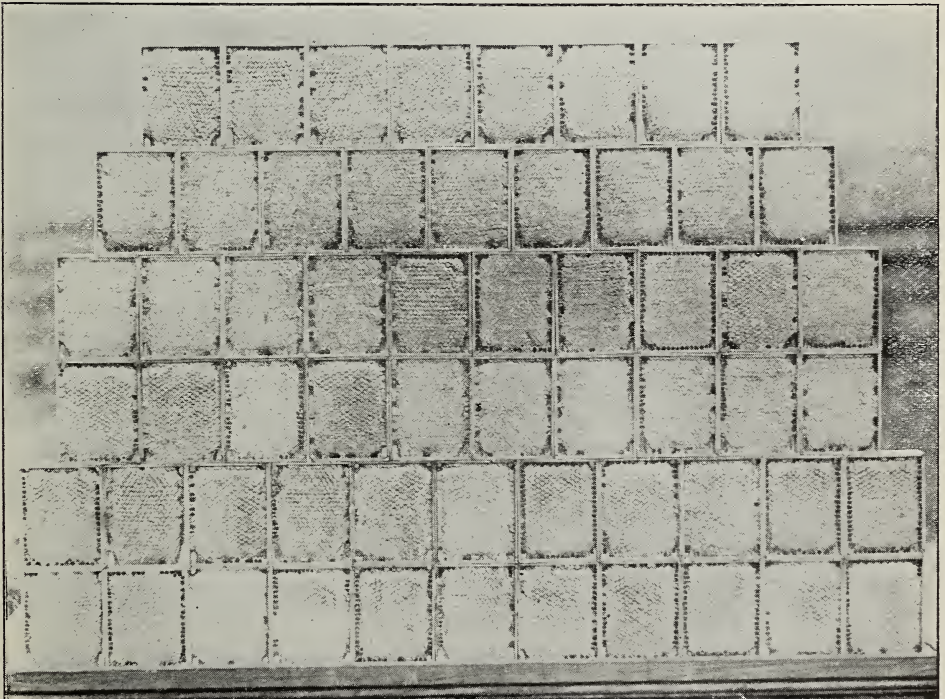
[The source of pine-tree honey is a mooted question. Chestnut honey is not very good. It does not seem to yield a great deal. It is better for pollen.—W. K. M.]

NATURAL SWARMING AND RE-QUEENING.

Prevention of After-swarms.

BY B. H. BRADLEY.

I am sending you a photograph showing 59 sections. The colony that produced them had 11 more equally good. I let my colonies swarm once, giving the swarm with the old queen in a new hive, close to one side of the parent hive. Some of the bees hived with the old queen will return to the parent stock; but enough will remain to take care



A LOT OF FANCY HONEY IN 4×5 SECTIONS, PRODUCED BY A NATURAL SWARM.

of all the eggs the old queen can lay. If there are sections on the hive at the time the colony swarms (and there usually are), I leave them on. In eight or eight and a half days the young queen will hatch. Before it is time for the young queen to hatch I go through the parent hive, taking out all queen-cells but one, leaving the longest and best-looking cell to hatch. Some will say, "Suppose that one cell doesn't hatch." In all of the thirty years I have kept bees I never knew them to gnaw the wax from the end of a queen-cell unless that cell hatches. This is my guide, therefore, in determining which cell to leave. As soon as the young queen gets to laying I move the hive with the old queen, if honey is coming in plentifully, to the opposite side of the hive, thus adding greater strength to the parent hive, at the same time reducing the strength of the swarm with the old queen, which prevents the bees from swarming again, as they might do unless they were reduced in numbers in some way, or given more room. I find it more profitable to move them, thus getting their field workers in the parent hive. Almost any number of bees will stay with a *young* queen, with no desire to swarm, if given plenty of room in time. This is not true, however, with an old queen.

Since I began managing my bees in this way it has been no trick to produce prize honey, and lots of it.

Greene, N. Y., Oct. 28.

PAPER WINTER CASES.

Some Conflicting Reports Concerning their Value; how to Prepare Paper Cases.

BY H. H. ROOT.

The verdicts do not all agree concerning the value of the paper winter cases. We have received quite a number of reports from those who have used such forms of protection for colonies during the winter, and the results indicate that the paper method is at least well worth trying.

The idea is not new. Mr. Arthur C. Miller recommended the use of papers some years ago, and it is a well-known fact that many bee-keepers are using them to-day. The cheapness of such protection should appeal to every one, although, of course, no protection would be economical which resulted in a loss of colonies during the cold weather.

Mr. J. L. Byer, in the *American Bee Journal* for November, thinks that, for his locality, the paper protection is simply "no good." He tried the plan several years ago, and found that his colonies packed in the ordinary way came through in fine condition, while those with the paper wrappers nearly all perished. In view of his experience he does not recommend the paper for even spring protection.

From this it is evident that the paper should not be used in all localities; and, to

be entirely frank, we believe that, if one has a system of packing whereby he can bring his colonies through the winter in uniformly good condition, he has the most economical

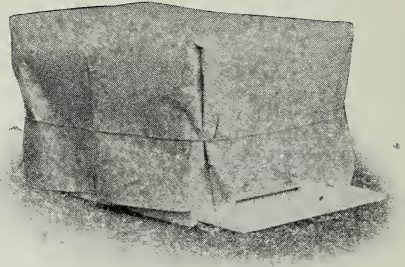


Fig. 1.—A colony in a single-walled hive prepared for winter by the addition of a heavy paper wrapper, under which are several thicknesses of newspapers covering chaff or straw placed directly on the hive-cover.

system that can be devised, and he had better let well enough alone.

But there are many who are obliged to provide protection for their colonies, but who hesitate about going to the expense of buying lumber and making outer cases. To all such we would recommend at least a trial of the paper wrappers.

We present herewith some additional illustrations to show more clearly the proper method of packing colonies for winter with paper cases. Fig. 1 shows a colony in a single-walled hive all ready for cold weather. The paper should be long enough to reach the ground to give the best results; and since the entrance would then be covered, a little of the paper should be torn away in front to give the width of opening desired.

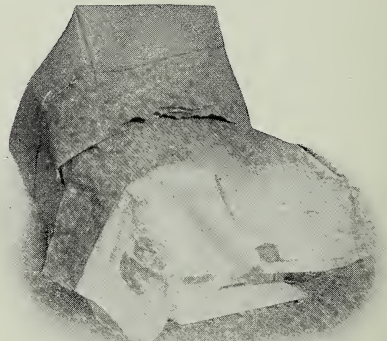
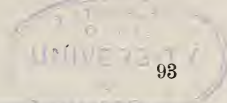


Fig. 2.—The heavy paper raised and pushed back to show the newspapers beneath.

As explained in a former article, it is important to have the paper folded in such a way that water will be shed instead of directed into the fold of the paper. See page 1437 of the Nov. 15th issue.

Instead of nailing cleats on each side, it is



much quicker to tie simply a coarse string around the hive, paper and all.

In most cases it will not be sufficient to wrap but one thickness of paper about the hive. A little chaff or excelsior should be scattered around on top of the hive-cover; and if hay or straw is used, it may be easily pushed down over the sides and ends. Newspapers, pieces of old carpeting, or any similar material, may be laid over this packing. For the purpose of illustrating this part, the string was loosened and the outside paper raised to show the newspapers covering the packing material beneath. See Fig. 2.



Fig. 3.—Under the newspapers; excelsior or chaff is spread around on top of the hive-cover. If hay or straw is used, it may extend down on the sides and ends of the hive, providing extra protection.

In Fig. 3 the newspapers were rolled back to show the excelsior placed on the hive-cover.

BEE-VEILS VARIOUSLY CONSTRUCTED.

Wire-cloth Facing v. Celluloid or Glass.

BY E. R. ROOT.

When one goes over the country visiting bee-keepers he is almost sure to be surprised at the variety and complexity of the head-gear used. Like a great many other things, what one regards as simply perfect, the other would consider an intolerable nuisance—



THE ALEXANDER BEE-VEIL.

may, he would prefer to have no protection whatever, with all the attendant stings, than to put up with some awkward contrivance that the other fellow uses. As it is impossible to make one shoe, hat, or coat suit every one, I am now submitting several different styles without any attempt to show them all, allowing the reader to select and make that which suits his fancy best.

First we will start with the simplest form of bee-veil—the one most commonly used. It is made of grenadine, brussels netting, or mosquito-bar, preferably black, in the form of a bag open at both ends. The top has a rubber-cord binding, and the bottom is bound by a silk ribbon. The smaller end is made to fit over the brim of any ordinary hat, and the other end is tucked into the coat or vest, or, when neither is worn, under the suspenders. The manner of adjusting such a veil is shown in Fig. 1. It slips over the hat, then the hands are passed under the suspenders in front, grabbing the lower end of the veil and drawing the edges as shown in Fig. 2. In doing this, care is taken to take up all the slack, front and rear, leaving the edges under the suspenders as shown in Fig. 3. When it is desired to remove the

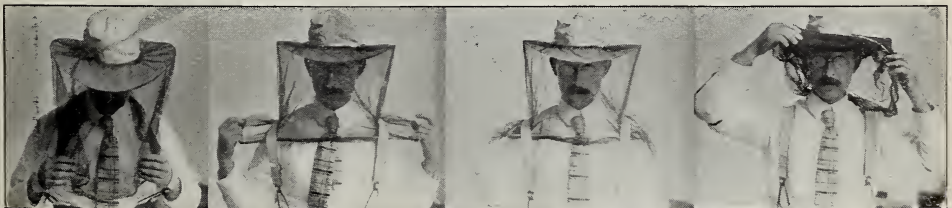


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

MANNER OF ADJUSTING A BEE-VEIL UNDER THE SUSPENDERS WHERE THERE IS NO ELASTIC CORD IN THE BOTTOM.

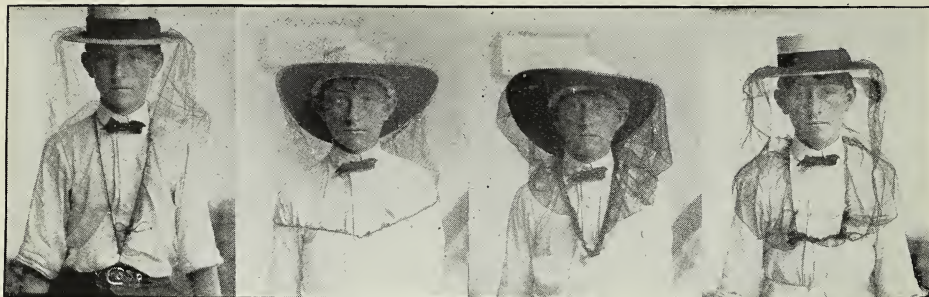


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

RIGHT AND WRONG WAY TO FASTEN A BEE-VEIL HAVING A RUBBER CORD INSERTED IN BOTTOM.

veil, or to raise it for the purpose of inspecting eggs in a dark comb, or when it is very hot and the bees are gentle, it can be easily lifted as shown in Fig. 4.

The illustration above shows the same veil but with a rubber cord gathered in the top and bottom alike. Many apiarists work without suspenders, coat, or vest, using a belt to hold up the trousers. Such a veil, by means of a large safety-pin, is hooked into the belt or lower portion of the waist, also catching the rubber cord and drawing it V-shaped over the front of the waist as shown in Fig. 5. This gives perfect freedom to the arms, and yet holds the bottom of the veil drawn tightly over the waist, making it bee-tight.

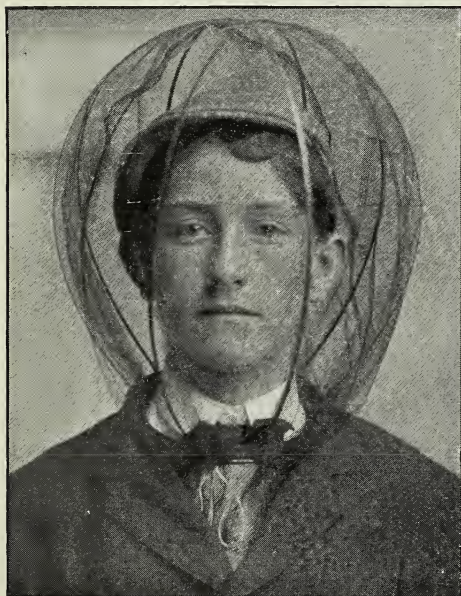
One might suppose that the manner of adjusting it as shown in Fig. 6 would be just about right; but he will find, if he tries it, that it will interfere with moving his arms,

and in a few minutes it will slip up and hang loosely over his shoulders. Fig. 7 is a little better; but it ought to be drawn further, as shown in Fig. 5.

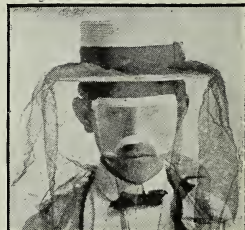
Fig. 8 shows a manner of fastening it to the waist, recommended by several bee-keepers. A long cord is inserted in the bottom end of the veil, leaving plenty of surplussage and two free ends. These ends are drawn across the front, around the back, and across, then back to the front, and tied. This makes a very nice arrangement, and is preferred by many. But it has the disadvantage of tying one's head up in a sack, and making it impossible for one to reach up without untying to pick out a stray bee that may be crawling over the face, or to wipe off the perspiration. The veil with an elastic bottom will allow one to reach up at any time without interfering with the fastening; and in my opinion it is much superior to the long loop-string plan.

With any of these veils it is important to have at least a facing, black in color, and something that will obstruct the vision as little as possible. A white veiling is hard to see through. The finest thing for this purpose is silk brussels netting. For many years, and especially for traveling, I have used a veil made entirely of this material because of the little room it takes up in the pocket. It is easy to fold it up and slip it into the vest pocket, and it takes hardly any more room than an ordinary watch.

But there are many who object to these loose-flowing veils, especially under trees or among underbrush, where they are likely to get caught and torn. Many a time under the shade of an old apple-tree have I suddenly found myself "hooked" to some little sprig, and it sometimes takes several minutes to untangle; and one is lucky if he does not tear the veil in doing it.



THE GLOBE BEE-VEIL.



POUDER'S CELLULOID-FRONT VEIL.

Of late there has been a tendency on the part of many honey-producers to go back to the old wire-cloth headgear of father Langstroth, such as he described in his "Hive and Honey-bee," published in the early 50's. Among this number is E. W. Alexander, who has adopted a headgear on the Langstroth idea, and the same is shown in Fig. 8. This is made up of special wire cloth of 8 meshes to the inch, black in color, and of so fine a wire as to obstruct the vision but very little. It is formed into a cylinder of suitable size, the top of which is covered with a gathering of muslin, and to the bottom is attached a skirt of the same material.

When I first saw Mr. Alexander and his men using this outlandish headgear I felt sorry to think that a man so progressive would be willing to be seen in such a thing, to say nothing of the inconvenience of using it all day long. I did not, however, express my feelings; but after some little persuasion on the part of my host I submitted to the ordeal of wearing one. At first I did not like it; but the longer I wore it the more I concluded it was not such an inconvenient thing after all. I continued to wear it, and finally came to the conclusion that it was one of the most serviceable and handy headgears it had ever been my lot to try.

The skirts fit loosely over the head and shoulders. The wire-cloth cylinder rests partly on the head and partly on the shoulders; and as it is made of stiff strong material the protector does not in any way touch the face. I soon discovered it was not necessary to wear any hat or cap; indeed, the white muslin top gave all the protection from the sun one would need, without any pressure on top of the head. As work in the bee-yard is usually performed in hot weather, this veil is very cool, because the summer breezes can circulate over the top of the head; and, what is more, there is no tight-fitting hatband from which the sweat will ooze in great drops.

While I have not tried these wire-cloth-facing veils extensively, yet I have talked with men who have; and I am convinced that for heavy work in the bee-yard it is a splendid and serviceable protection. There is no danger of getting it "hooked" on to a limb or twig, and no danger of having it torn, because both the muslin and the wire cloth are sufficiently strong material to stand any ordinary usage without damage.

But the feature of this veil that will be appreciated by many is the ease with which one can reach up under the skirt to get at the face to wipe off the perspiration with a handkerchief or pick off any bees that may be playing tag over one's bald head (my head is not bald). Another thing, it may be jerked off in an instant and laid on the ground, and it can be put on again just as quickly.

The illustration will show how the veil is made. I find a very good proportion for the veil is as follows: Wire cloth, 11 inches deep by 2 feet 7 inches long. This is rolled up into a cylinder and sewed together at the

back. The top is made of a piece of muslin 10 inches wide by 2 feet 7 inches long. This is drawn together and tucked into the form of a circle, the tucks running toward a common center, at which point there may be a small hole. The skirt consists of a piece of muslin 11½ inches wide by the same length as the wire cloth—2 feet 7. This is sewed to the bottom edge of the wire-cloth cylinder, and hemmed at the bottom.

There are some others who have recommended veils with a glass front, glued to the veiling material. Mr. Walter S. Pouder suggested celluloid; but both of these substances gather moisture from the breath, and thus totally defeat the object of their use by smearing up the glass or the celluloid so that it is impossible to see through it. The best material that I have ever tried so far is silk brussels netting or a fine grade of wire cloth.

For the very timid, a globe bee-veil seems to offer advantages from the fact that the protecting material is kept away from the face and head at all points, and the bottom securely locked around the neck by means of a metal band, the same also supporting the steel hoops that make up the globular shape, and hence the name. As a general rule this veil is not popular with the beekeeper who is not afraid of stings, because it takes too long to put it on and take it off.

There are others, like the Coggsball, which combine a waist and bee-veil all in one. I will not give a description of this here, because it was shown in these columns, page 1497, Dec. 1, 1907.

WEBER'S ENTRANCE-CONTROLLER.

How it is Used to Prevent Bees from Flying out on Bright Days, getting Chilled, and Dying.

BY C. H. W. WEBER.

When the hot weather is over, say at the end of September or in the beginning of October, supply your hives with the entrance-controller. Push the controller into the entrance between the bottom-board and brood-chamber, which should leave a space ¼ inch high: leave the metal slide out of the controller; also leave off the attachment. By doing this there will be an entrance through the controller, 4 inches wide and ¼ inch high, formed.

Toward the end of October, or in the beginning of November, when the nights become cold, bring the metal slide into play by placing the slide into the slot of the controller by moving the same to one side, so that the entrance becomes partly closed, and so that there will be an entrance of one inch formed for the bees to go in and out the hive. At the same time, place the attachment on the controller so that the one-inch entrance made by moving the slide to one side becomes fully covered, and so that at the same time a one-inch entrance is formed on the opposite end of the attachment. Thereby



the bees are at liberty to go in and out, thus not allowing the sun and light to shine into the inner hive, preventing, in this way, the bees from being drawn out by the sun or light to take a flight. Only the warm tem-

perature becomes warm enough for the bees to take a flight, then they could do so.

The entrance-controller should be closely fitted to the sides of the bottom-board so that no light will shine into the inner hive through the space which perhaps is made by not having it fit closely enough. If any such space is left it would have to be filled. Putty will answer this purpose the best.

You will be astonished when using this method to see how small a number of bees you will lose. Spring dwindling is mostly overcome.

Cincinnati, Ohio.

[This is the second year, if we are correct, that Mr. Weber has tested a device of this kind; and so satisfactory has been its operation on that he secured a patent, the same being granted Sept. 24, 1907. The device, as will be seen by consulting the illustrations, consists of a general scheme for gradually contracting the entrance, allowing daylight to penetrate in moderate weather, when the bees can fly without being chilled to death; and later, when chilly or cold weather comes on, it permits of the closing of the entrance in such a way as to let in the air and yet shut out the light.

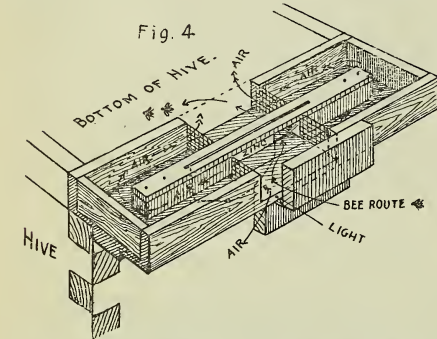
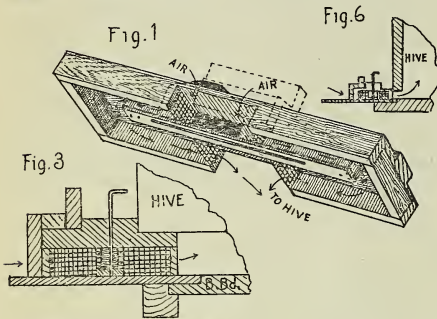
By referring to Fig. 4 you will see that the whole arrangement is turned upside down, although the illustration does not show correctly the true relation of the parts, but yet enough so to enable the reader to understand the general principle. When the entrance is closed entirely by the zinc slide in the central partition the air passes in at the point marked "bee-route," through the wire-cloth screen around the ends of the partition, back through the screen, and finally into the hive.

It may be questioned whether thus shutting in the bees so they can not get out would not, in some localities especially, result disastrously to the colony. All the experiments that we have conducted in our locality toward shutting off the light, and yet letting in the air, have resulted in heavy losses of bees, providing the bees themselves could not get out of the hive. It is our opinion that it would be better to omit the wire cloth in this controller entirely, because we believe that simply shutting off the direct rays of the light would keep all the healthy bees inside, while those that are diseased could escape, thus avoiding a general disturbance if they were confined, demoralizing the whole colony.

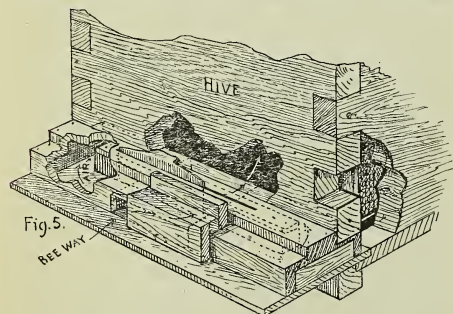
It will be noted that in moderate weather a wooden slide on the outside, in connection with the zinc slide in the slot of the central partition, can be staggered in a zigzag order in such a way as to exclude the direct rays of the light, and yet allow the passage of the bees back and forth.

It will be remembered that nearly two years ago Mr. A. J. Halter, of Akron, Ohio, following out the suggestions of Mr. Doolittle, made some time before, showed how in this climate he leaned a board up against the hive, shutting out the direct rays of light, and yet making it possible for the bees to pass in and out at any time (see illustration). His theory was that, if the light were shut

perature would cause this. In other words, only the atmosphere of 60 to 70 degrees Fahrenheit would cause them to take a flight, and thereby prevent them from becoming chilled.



When the weather becomes very severe, below zero, you move the metal slide so that the entrance becomes closed, so that there is perfect night darkness in the hive. This darkness will keep the bees quiet. The se-



vere weather will not affect them, with the direct entrance closed up, while a steady supply of fresh air through the air channel at each end will make the hive more comfortable for them.

When the weather moderates, remove the slide to the side again, so that, when the tem-

out, there would not be much flying on the part of the bees on bright sunny days, yet having an atmosphere too cool to allow them



HALTER'S STORM-DOOR OVER ENTRANCE FOR OUTDOOR WINTERING.

to fly out and thus get chilled. We are testing this idea this winter, as well as the controller of Mr. Weber, also shown.

Time and again we have noticed that, with the ordinary hive-entrance, perfectly healthy bees would fly out on cool or cold days, become chilled, and die by the thousands. Those lured out by the inviting sunshine were scattered around on the ground for several rods within the vicinity of the apiary; and so thick have they been that one could scarcely walk without stepping on bees. A cold spell following on without any warm weather intervening would be very certain to kill all these bees, and the colonies losing them would suffer very heavily in consequence.

This last fall our Mr. Pritchard reported the north yard had unusually strong colonies during October; but a late inspection in December, when it happened to warm up, showed that they were fearfully reduced in numbers. These had no entrance-controlling devices, and the presumption is that the bees flew out on deceptive days and died, for we had many such days last fall.

The loss from bees flying out this way is not so marked in very cold localities as it is where a more moderate temperature prevails. A bright sunshine will often fail to warm up a chilled atmosphere. It looks all right to the bees outdoors. They come out, discover their mistake too late, and die.

We regard this as a *very important* subject, because in localities on a line just between the outdoor wintering portion of the country and the indoor, there are severe losses just from this source. Many times a colony will lose two-thirds of its force, even before the first of December; and then, of course, it dies before spring. In other instances colonies that have done well through the winter suffer heavy losses in the spring because of this (to them) peculiar spring that invites the bees out where they die by the thousands.

We hope that Mr. Weber or Mr. Halter

will be able to solve this problem in a practical way. While Mr. Weber's is a more complicated device, it may be, when intelligently handled, far more effective.

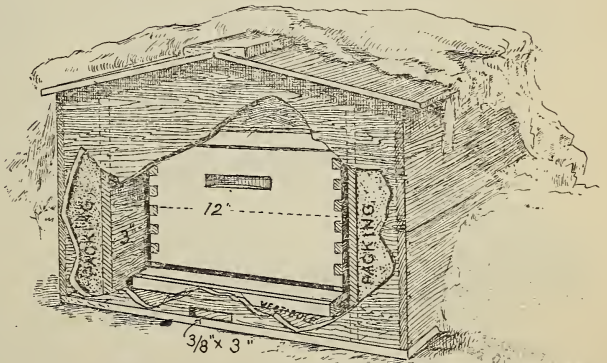
Hello! here is something more on this interesting subject.—Ed.]

HOW TO PREVENT ENTRANCES FROM BECOMING CLOGGED IN THE WINTER.

Last winter I packed my bees, two colonies, side by side in a packing box with a $\frac{3}{8} \times 3$ -in. entrance leading straight into the hive; but I found that the bees clustering down to get more air actually shut off an already insufficient supply. In GLEANINGS for Nov. 15, p. 1438, Mr. Latham writes that it is very important to have the winter entrance directly opposite the cluster; so this winter I have a part of my colonies arranged with the summer entrance $\frac{3}{8} \times 12$ in. bridged full width out to the packing-box wall, then the $\frac{3}{8} \times 3$ entrance cut in the packing-box. It seems to me that, with this arrangement, it would be impossible for the inside entrance to get clogged with dead bees or ice. There would be no damp corners in the front part of the hive. Air could reach the cluster direct, no matter what side of the hive they are in, and the whole front of the hive could be cleared of dead bees and filth at any time if need be. The distance from the wall of the packing-box to the hive is 3 inches. Will any more air get into the hive with this arrangement? It looks colder to look in at the entrance. Is there any thing about this that would be detrimental to the bees? H. D. MCINTYRE.

Galt, Ont., Nov 1.

[The arrangement of the vestibule shown in the illustration, while perhaps not showing the exact arrangement mentioned by our correspondent, we should consider excellent.



M'INTYRE'S WINTER-CASE AND VESTIBULED ENTRANCE.

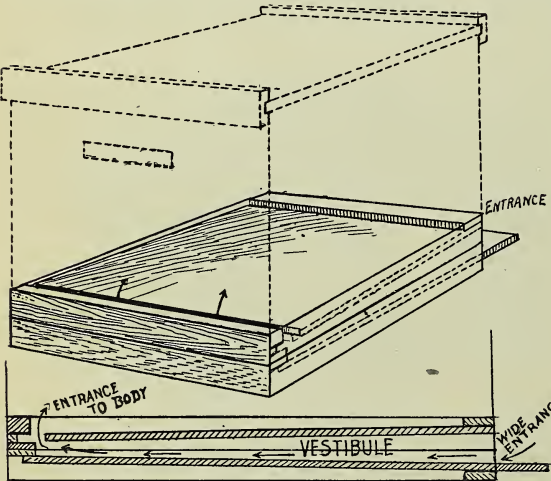
It is not entirely clear whether the bridge covering the entranceway from the inner hive to the outer casing is on a level with the cover, or just barely above the entrance. We should consider that it would be better to have it elevated about 3 inches above the entrance so as to make a sort of inclosed vestibule. This arrangement would catch the air

currents, catch any dead bees any time they accumulate, and at the same time to a great extent shut out the direct rays of sunlight on a bright day. As mentioned elsewhere, this would be very desirable. Answering the question of our correspondent directly, we would state that, in our opinion, the arrangement would prove to be very satisfactory. At all events, will he report the result of the experiment next spring?—ED.]

A DOUBLE HIVE-BOTTOM FOR WINTER PROTECTION.

Mr. Editor:—The drawing illustrates a combination of two bottom-boards used as a preventive against cold drafts, bees flying on cold sunny days, suffocation from having the entrance clogged with dead bees or ice, and spring robbing. This combination is made of my old bottom-board and a new one having its floor loose (both are the standard 10A Danzenbaker style, which can be used singly if this experiment fails). The loose floor is shoved along until it projects about $\frac{1}{2}$ inch beyond one end of the new bottom. This projection is sawed off and reinserted in the place where it was shoved from, which gives us a plan to make the entrance from the lower bottom. The strip is fastened tight, and the loose floor is shoved forward, making an opening any width, and mouse-proof if desired. The opening between the sawed-off strip and under the back of the hive is closed perfectly by using a piece of one of the cross-sticks left out from an R cover. At the beginning of the swarming season I will remove the upper bottom, leaving only the lower one with its wide entrance.

The benefits that could be derived from



DOUBLE BOTTOM-BOARD TO PREVENT THE ENTRANCE FROM BECOMING CLOGGED IN WINTER.

such a board are, I think, many—first, cold drafts in early spring prevent the spreading of brood to the lower part of the hive. This is overcome by the large vestibule formed

between the two bottoms (this point is not an experiment). Second, to take away the direct vision of light during cold sunny days prevents bees from being lured out to get chilled and die. The vestibule also answers for this purpose. Third, robbing can be prevented by bewildering the robbers; therefore when robbers make a rush past the first opening, and find themselves not in the hive, they act strangely bewildered. The guards notice this strange performance and promptly set upon them. Fourth, a bottom having such a wide opening at the front and a wide narrow entrance to the hive could not very well be clogged with dead bees or ice. I hope you will try one or two of these combinations so that you will discover, as well as myself, whether there is any benefit gained by using such a board. I am sure there is nothing lost. JOSEPH F. ROSE.

Washington, D. C.

[We should consider this arrangement very simple, cheap, and excellent. It possibly might retain all the advantages of the Weber arrangement. It is so simple for one to carry that we suggest that a number of our subscribers try it and report. We shall certainly test it in our own yards with all the arrangements here shown.—ED.]

FEEDING IN THE FALL.

Thick Syrup Needs No Acid to Prevent Granulation; No Loss after Years of Experience with a Syrup Made in the Proportion of Two to One.

BY J. L. BYER.

On p. 1488, of the Dec. 1st issue, both the editor and the genial Dr. Miller seem to think that, because I fail to see any advantage in feeding syrup as thin as equal parts of water and sugar, I occupy a very untenable position. In view of what has been written about the liability of thick sugar syrup granulating, it is not to be wondered at that a statement of that nature should be treated as unorthodox and rank heresy. You will pardon me, and I assure you there is no intention of being impolite, when I say that all such assertions as far as wintering results are concerned (in our locality), are so much "bosh."

Upon what do I base such a broad statement? I answer, from practical experience, and result of feeding thousands of pounds of two-to-one syrup to hundreds of colonies during different years, without the loss of a single colony so fed. The only severe winter losses we have experienced were caused by the presence of honey-dew in the hives, and the labor factor is the only thing that keeps me from feeding every colony every fall, with this dreadful two-to-one mix-

ture. With colonies so fed I would not give five cents a hive as insurance against winter losses. Under certain conditions, in exceptional cases, thick sugar syrup will granulate, but so will good clover honey. Can either you or the good doctor make the positive assertion that, under like conditions, syrup that was fed thin will never granulate?

But, as has been pointed out, this granulation in the rare cases mentioned cuts no figure so far as actual results in wintering are concerned. Aside from this the advantages of feeding the thick syrup as compared with the thin article are so great that I would not think of feeding the latter, at least until better proofs of its superiority are given me than have so far been forthcoming. This fall some 3000 lbs. of sugar were fed to three apiaries in a little over two weeks. If thin syrup had been used, two operations would have been necessary instead of one to each colony, and the feeding operations proportionately prolonged. Feeding when I did, quite early, all the syrup was sealed over; while if the thin syrup had been fed later a large amount of it might have been left unsealed to ferment later on.

Referring to the fact that bees make chemical changes upon the sugar syrup before it is fit for food, Dr. Miller asks if I think they can change my two pounds of sugar to one of water as easily as they can syrup as thin as nectar. For answer I would use the doctor's own handy phrase, "I don't know," and, what's more, I don't care how or how much they change the chemical constituency of the thick syrup so long as they winter splendidly on the same.

I am also asked if I can add the acid necessary to keep this thick syrup from granulating, as well as the bees can impart this requisite when fed the thin syrup. In all my feeding of bees I have never added an ounce of acid in any form; and I believe the addition of the same to any pure sugar syrup is entirely unnecessary.

So good an authority as our friend W. Z. Hutchinson comes out strongly on this point in the November *Review*; and were it not for such strong testimony from so well known an apiarist, probably the writer would not have dared to record such unorthodox statements. For fear that some readers of GLEANINGS may not see the *Review* for November I can not forbear making a short extract from the editorial of Mr. Hutchinson's referred to:

Sugar syrup for feeding bees does not need the addition of tartaric acid, vinegar, or honey, as recommended by some, to prevent granulation; at least, that has been my experience, and I have fed barrels and barrels of sugar, beginning as early as Oct. 1, and continuing the work until nearly the middle of November.

While the consistency of the syrup fed is not mentioned, any bee-keeper knows that a thin syrup would not be fed to bees by W. Z. H. as late as on dates given.

On the spur of the moment I could name at least half a dozen successful apiarists who feed the thick syrup extensively and *exclusively*, and all with good results; so is it any wonder that I continue to pay no attention

when told that, unless acid is added where such food is used, granulation will take place and the bees will starve? Give me positive results, doctor, as to the superiority of your formula and I will fall into line instantler.

Mount Joy, Ont., Can.

[If we implied (we certainly didn't mean to) that our correspondent was teaching heresy we are glad that we did so, as otherwise we should not have had this vigorous rejoinder. The editor may be wrong on the proposition that a *thin* rather than a thick syrup should be fed. At any rate, he is always glad to have his views assailed by an opponent who is able to present an array of such good argument as has been presented above. We are frank to confess that we may be wrong; and that we are open to conviction will be apparent from our footnote given on p. 32 of our last issue on this subject *before* we saw Mr. Byer's point of view. And right here it is proper to observe that he has, in addition to the others mentioned, Mr. Alexander on his side.

We shall be glad to get more facts bearing on this question of thick or thin syrup, and in this connection we will say that thick syrup, so thick that the bees could not change it, and fed all in one big feed, gave us uniformly good results, but not better than a syrup fed thin. The question is open for discussion; but let us have *facts*.

But say, Mr. Byer, we never advocated putting acid of any kind in *any* syrup. On this we will join with you as against Dr. Miller *et al.*—Ed.]

MICHIGAN STATE CONVENTION.

Honey-strainers in Extractors, Smokers, etc

BY R. F. HOLTERMANN.

In a private conversation with Mr. L. A. Aspinwall at the Michigan State convention, Saginaw, he gave me one idea which, in my estimation, will amply repay me for the expense and trouble of my trip.

HOW TO GET RID OF MOISTURE IN A CELLAR.

Mr. Aspinwall told me that, if I would build a bee-cellar, I should make a portion of the floor above of strips, with spaces between; upon this, put a thin muslin cloth, and over this fairly fine planer-shavings or chaff, say to the thickness of three inches. In this way the moisture can escape from the cellar through the shavings and yet the warmth of the cellar be largely retained. When I was home I made a frame of lumber four inches wide, a little longer and wider than the cellar trapdoor. Over this frame I stretched a piece of cheese-cloth strengthened by bands of strong cloth. The cloth was put on the under side, and the planer-shavings into the tray until no light could be seen from below through the shavings, when all was placed over the trapdoor opening to the cellar. If the temperature of the cellar gets too low I will add to the thickness of the shavings. In this way I feel sure I shall get

rid of a lot of moisture with a minimum loss of heat

Those who know Mr. Aspinwall believe him to be one of the most careful and thorough apicultural investigators the world has ever known. The revolution which has come about by his invention of automatic potato machinery alone entitles him to be heard with a measure of confidence. Mr. Aspinwall reported at the convention that, owing to rheumatism, he was unable to give his bees in his "non-swarmer" all the super room they should have. Many colonies had built brace and burr combs, being so crowded; yet, even under these circumstances, only one colony out of thirty-one had swarmed.

COÖPERATIVE EXPERIMENTS.

After an address by the writer it was decided that members would undertake coöperative experiments. Mr. R. L. Taylor suggested that the first work be to learn to what extent, if any, the following conditions would cause the bees to fill and cap the sections in the outside row of the supers as soon as the more central rows.

The conditions were, to have two bee-spaces divided by a separator between the last row of sections and the side of the hive; also to raise the brood-chamber $\frac{1}{4}$ inch at the front from the bottom-board closing the opening (made at the side) by means of a wedge, the object being to compel a larger percentage of bees to go up the sides of the hive and thus reach the outside sections first. Mr. Elmore M. Hunt, Redford, Mich., the hard-working secretary of the association, was elected director of the work, and any one desiring to join in this experiment should write Mr. Hunt.

THE BEST SPEED FOR RUNNING AN EXTRACTOR.

Mr. E. E. Coveyou, Petoskey, Mich., wished to see some tests conducted to ascertain the best speed at which to run extractors, also to find out the best temperature of the combs to be extracted. He heated his combs artificially after hauling them to a central station from out-apiaries. Work as to speed, etc., is all haphazard at present, and often five to ten per cent of the honey is returned to the hive. It was pointed out that bees could not store honey in the extracting-combs returned to the hive until the combs had been cleaned up by the bees; and the more honey that adhered to the combs, the longer it took the bees to prepare them. When extracting during a honey-flow this might result in a loss of honey.

A STRAINER INSIDE OF AN EXTRACTOR.

Mr. Coveyou is very enterprising, and is not only willing to adopt any good suggestion given in bee journals, etc., but has the ability to improve on them or originate ideas of his own. He is using the system of straining inside of the honey-extractor, invented by Holtermann. Like myself he heats, when desirable, the unstrained honey on the bottom of the can between the cone side and the side of the can, but has improved the

method by using a double bottom to the extractor and having water between. He has also improved the rubber tube I used to conduct honey from the strainer to the barrels and 60-lb. cans by having at the mouth of the tube a stop like those used at the mouth of a syrup-jug.

He thinks, as I do, that the strainer is made much less valuable by having it reach across the can where the unstrained honey can not be warmed, and where all refuse rests on the cloth when the honey is strained. Mr. Coveyou washes the cloth on the cone strainer with warm (not *melting* hot) water, and then brushes with a whisk any particles on the cloth. In this way he never removes the cloth. Messrs. Coveyou and Holtermann expressed in no terms of doubt their opinion that the strainer is a desirable feature in an extractor, and that any one who has once used it will not want to do without it.

Mr. Coveyou pointed out a weakness in honey-gates, as made at present. They will not stay open at a desired point, but either fall down, closing the gate, or, when opened until the handle is thrown back more than above the point of attachment, they fall clear back and hang down, falling into the issuing stream of honey, resulting in many objectionable features. He thought bee-keepers should find out what would be desirable features in goods, and then compel the supply dealer to give it.

VALVELESS SMOKERS RECEIVE ENDORSEMENT.

The Root valveless smoker, recently introduced, received unstinted praise. A valve in the bellows was pronounced *unnecessary*—often a source of loss of air when using it. The new hinge connecting the barrel and nozzle, having a measure of play to it, was pronounced a great success. Mr. Holtermann stated that he had four makes of smokers, and that this new smoker was the first one to be used.

COMB-HONEY SUPERS.

Mr. E. D. Townsend advocated a drawn-out comb for each side of the comb-honey super. This prevented a large percentage of swarming, and tended to give greater uniformity of finish of sections.

Mr. Aspinwall advocated continuous passageways between brood-frames and sections—that is, the passageway between the sections should be directly above the passageway between the brood-combs. In this way the ventilation is better, and the bees can go up in a straight line to reach the sections.

QUEEN-CATCHER.

Mr. Aspinwall showed a queen-catcher consisting of a 14-gauge wire bent in a circle $\frac{1}{4}$ inch in diameter inside, dipped in wax, with a handle. He had not caught a mated queen in his hands for five years. He put the circle about the queen on the comb, and with very little effort she could be induced to step on the wire, when she could be lifted up.

BEST INVENTION.

Mr. Coveyou exhibited a balance by means of which any desired package could be filled; an electric bell then rings automatically at the same time the honey-gate is closed. This invention received the first prize.

It is fully expected—in fact, the president of the National, Geo. E. Hilton, and the Secretary, W. Z. Hutchinson, who was president of the Michigan State Association—stated that Vice-president Geo. W. York and Manager N. E. France all were decided that Detroit will be the next place of meeting of the National. Michigan will do its part to make a success of that convention.

President, vice-president, and secretary elected were Messrs. L. A. Aspinwall, E. D. Townsend, and Mr. Hunt. Mr. F. J. Miller, president of the Ontario Bee-keepers' Association, attended the convention, and was an advocate of hauling combs for extracting to a central point, and there extracting by means of a gasoline-engine.

Brantford, Canada.



SWARMING; ITS PREVENTION BY THE DOUBLE-QUEEN PLAN; SUPERSEDING OLD QUEENS.

Mr. Editor:—I have been very much interested in the recent correspondence of Mr. Alexander in regard to his double-queen system and the keeping-down of swarms. My most successful plan, if they persist in swarming, is to unite the swarms, that is, put two swarms in each hive regardless of the age of the queen. They work nicely together until the first super is filled, and then I space them; but when the honey-flow is over, the older queen generally comes out with the bulk of the old workers; and if they cluster conveniently I proceed to hive them, catching the queen, pulling off her head, and the workers return to the hive when the work is done. This leaves me the best queen. I have tried the cutting of queen-cells, but it will not work here, as it makes the workers cross and sullen.

ABSCONDING SWARMS.

I was interested in Mr. G. C. Greiner's letter in Dec. 1st GLEANINGS in regard to absconding swarms and their sending scouts. As I live in a swampy country I have had varied experience along that line, though I never had a swarm run off if the queen was two years old. Virgins or young queens give me some trouble, and they do not always cluster here before they go to the woods. I have had them swarm, cluster, be hived, run off, and hang on a limb for a week when

there were hollow trees near them. Queens are like men—they are different in mind. If I make a young queen mad in hiving a swarm, if she is not clipped she will invariably go to the woods.

C. L. BODDIE.
Nashville, N. C.

A BEE-KEEPER'S EXPERIENCE AT A FAIR.

At the Chester County fair I had an exhibit of bees. There was a very good fair, but no great inducements were offered for the bee-man. I wanted to get the people enlightened in the bee business.

No one had any bees but myself. I had a hive of five-banded goldens, and they were quiet, and could be handled without smoke or gloves, turned about without fear, and were unusually quiet. I had a comb in an observation hive, and I had a very large crowd around me most of the time. I demonstrated that bees could be handled without fear of being stung, and at any time. I was asked all sorts of questions, and you may judge what a good time I had all to myself. Just to think that there are so many people who know nothing about the workings and the habits of the bee!

Morstein, Pa. WM. Y. STACKHOUSE.

MOVING BEES IN HIVES WITH OPEN ENTRANCES.

Having read of a number of accidents in moving bees by the bees getting out and stinging the horses, I will give herewith the method used by Chas. Adams, of Greeley, Col. He first gives the colonies that he intends to move a thorough smoking, then nails the bottom-board fast to the body of the hive, and loads them into the wagon, leaving the entrance wide open. If any seem to be restless they are smoked a little more. I have been with Mr. Adams about a year, and have helped him move a good many bees for quite a distance—ten miles sometimes—with never a bit of trouble nor any broken or melted combs.

LEONARD GRAPER.

Greeley, Col., Nov. 25.

[We have no doubt that the plan of moving bees with the entrances of the hives open is a very good one, and yet at the same time we always hesitate about advising a beginner to attempt this. There are many who move bees in no other way, but yet there is always quite a possibility that, if a beginner were managing the moving, a stray bee might escape and perhaps sting one of the horses, when a serious accident would surely take place. From reports we have received it has seemed very necessary, when moving colonies with the entrances open, to keep the team moving steadily. If there is a stop there is more of a likelihood that the bees will issue from the hives.—ED.]

HOW TO MOVE OFF NO. 2 OR UNSALABLE COMB HONEY HAVING A GOOD FLAVOR.

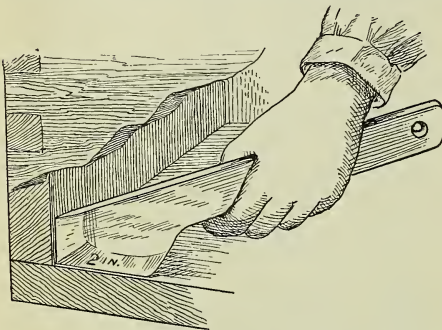
After seeing the above heading, page 1558, I thought I would give the plan I followed

the past season to sell such comb honey. All sections not No. 1 were cut out and placed in Mason quart jars, two sections to the jar. The jar was then filled full of extracted honey of a fine quality, and sealed with a neat label containing my guarantee and name. *If you live up to your guarantee your name will sell your honey.* I speak in regard to the local trade. When rightly handled it is the best market we have. I placed this with the grocer at 20 cts. per lb., 3 lbs. to the jar, 60 cts. per jar. This will dispose of the off sections and quite an amount of extracted honey at a good price. Mannington, W. Va. B. A. AMMONS.

[The plan here spoken of is excellent. It is the same that is used in Texas, only pails are used instead of glass.—ED.]

A BUGGY-SPRING HIVE-SCRAPER.

I have been using a cheap and practicable hive-tool which can be made of a wagon or buggy spring. The broken end of a spring can generally be found at any blacksmith shop, and the thin end can be filed sharp for 10 or 15 cts. Have it sharpened as per the



illustration, the thin end sharpened and one side about two inches back, to be used as a scraper or screwdriver, and the thick end can be squared on very edge to drive a nail with. I find it very handy for all purposes around an apiary. VIRGIL P. CUTLER.

Canon City, Colo.

THE RELATIVE POSITION OF THE BROOD AND HONEY DEPENDS UPON THE LOCATION OF THE ENTRANCE.

In the Nov. 15th GLEANINGS, page 1435, I notice the writing of Bro. Hand in regard to the position of honey and brood in a normal colony of bees, and it seems to me that he is mistaken, to some extent at least.

Mr. Hand refers to bees in a normal state unrestricted by man. Very well; we will take our ax and go to the woods, and here we have a bee-tree with the entrance high up at the extreme upper end of the cavity. Upon examination we find brood at the top and honey below; next we find a tree with an entrance at the lower end of the cavity. Upon examination we find brood at the bottom and honey above. The fact is, bees pre-

fer to store honey away from the entrance, regardless of other conditions. As our hives usually have the entrance at the bottom, the honey is usually stored at the top, or above the brood. If Mr. Hand will take notice he will find that the end of his brood-frames at the back end of the hives usually contains more honey than the end nearest the entrance—at least that is the case here in Texas. Sabinal, Texas. GRANT ANDERSON.

TRANSPARENT WRAPPERS FOR COMB HONEY; RUBBER BANDS TO HOLD THE PAPERS IN PLACE.

In the Dec. 1st issue, page 1499, I see an article by H. A. Sackett in regard to using transparent wrappings for comb honey. I also note the editorial reference to butter-paper. I have used it for wrapping fancy comb honey in $4\frac{1}{2} \times 4\frac{1}{2}$ plain sections, and find it answers nicely and makes a very neat package. Instead of mucilage or glue I use a small rubber band placed around the section after the ends are folded down. I find these answer every purpose, and the combs can be inspected at any time without destroying the wrapper. I usually cut a diamond-shaped opening in some of the papers, and these I set next to the glass in the cases, so that the color and quality may be seen without opening the case. G. W. BYERS, JR.

Dundee, Oregon, Dec. 10.

CAUCASIANS CROSS; PLURAL QUEENS NOT AN UNQUALIFIED SUCCESS.

I have a Caucasian queen, imported direct myself; and, notwithstanding I opened her colony and passed out the frames for 156 high-school students to look at and handle, they are, at times, very vicious. They came through last winter all right, and are very strong at present. I have also some imported Italians which are very vicious, but wonderful workers.

Many years ago I tried a plurality of queens at various seasons of the year. About 30 per cent would hold out in the honey-flow. Except in case of supersedure I never managed to keep two in a hive only as above mentioned, and I tried it many times with brood and without and in all ways. A No. 1 vigorous queen with energetic and long-lived offspring suits me. DOUGLAS D. HAMMOND.

Truro, Ia.

TWO QUEENS IN A HIVE.

If two queens in one hive are separated by perforated zinc, does one of the two show up missing in the fall? J. L. ZEINZ.

Chicago, Ill.

[Yes, as a general rule, if there is no fall flow of any kind.—ED.]

RED POLLEN FROM ASTER.

The bright-red pollen in our parts of Pennsylvania, 28 miles north of Philadelphia, comes from fall aster. My bees brought it in up to the middle of November.

Souderton, Pa.

M. B. BERGUY.



OUR HOMES

by A. I. ROOT

I will instruct thee and teach thee in the way which thou shalt go: I will guide thee with mine eye — PSALM 32: 8.

Those who are young and well should bear in mind these notes are mainly for elderly people, or those who feel their strength and energy are failing. Of course, these talks may be useful in holding up a warning to those who are young and strong, for you know that, to be forewarned, is to be forearmed. After I purchased the one acre near Bradentown I wrote friend Rood asking if it would be possible for Mrs. Root and me to get a couple of rooms in the neighborhood, so we could be near by while our house ("cabin in the woods" No. 3) was being built. He replied he knew of none; but if we two were willing to accept their every-day fare they would try to accommodate us in their own home. We finally arranged that I should go on ahead and build the house, and let Mrs. Root come later.

Let me here remind you, dear reader, that I have been writing these Home Papers for more than 25 years; and during all this time I have been studying with intense interest the homes where our people live and where our children are brought up—not only American homes, but I have studied *also* with intense interest the homes of the people in Canada, Cuba, Bermuda, and every other place when and where an opportunity offered. You can understand, then, how I rejoiced at an opportunity of getting a glimpse, at close range, of the home life of some of the best Christian people I have the honor to number among my friends.

Now, every family has its own peculiar ways and notions. Like people, they have an individuality. For instance, Mrs. Root and I have all our lives been in the habit of getting up early, say 5 o'clock or earlier, the year round. We have our breakfast over and put away, often before our children and grandchildren are up. Mind you, I don't say our way is the *best*; but we got used to it on the farm, and rather liked to keep it up.

Now, *please* don't you, any of you, think I am finding fault and feel hurt when I tell you how a great blessing came to me when I least expected it. I shall always thank God for having given me the privilege of getting a glimpse of the home life of such a family as that of dear brother Rood's; but when I found that their hours for meals were an hour later, and sometimes more than that, I at first felt a little fear lest I might not feel as well under the arrangement. Mr. Rood is up fairly early, gets all his men at work, and the general business of the day well under way, and then comes in to breakfast. After quite a little work outdoors before

breakfast, all have good appetites, and we have a rather long breakfast, with lots of visiting and much merriment. Everybody has a chance to "*chew* his food" thoroughly.

Well, when breakfast is ended, instead of rushing off to work brother Rood gets a whole armful of bibles, and we read around until we finish a chapter—that is, unless the chapter is very long—closing with prayer. Let me say here that Mrs. Root and I have had bible-reading and prayer all our lives, after breakfast, but we read only a few verses; and when things are rushing the prayer is often very brief. Well, Mr. Rood is one of the busiest men I ever knew. He has his strawberries, lettuce, and cauliflower by the acre; then he has charge of eight or ten *apiaries*, deals in real estate, loans money, and I don't know what else. Yet with all this business he deliberately drops every thing and gives his *Maker* the very best part of his energies, right out of the early forenoon. I am sure he and his beautiful bright family will forgive me if I confess that at *first* I felt worried for fear he was giving *too much* attention to God's holy word in the very best part of the day. Why, it is almost funny, when you come to think of it, to hear of a man who is an educated lawyer (and a bright one too) having so much *bible* in his home that *A. I. Root* felt worried.

Well, just before noon he takes his berries to market (carrying *strawberries* to town the day before *Christmas*, for instance); and as everybody seems to want his advice or something, he seldom gets home until a pretty late dinner hour, and with supper it is much the same. Do you wonder that very soon I began breathing my little prayer, "Lord, help me to learn the new lesson thou art striving to teach me"? Did you ever try to drive an excited hen into the very place where she could find food, water, and every thing she was in great need of? Well, you and I are often like that hen. We grumble and complain, and act contrary, until we find the imagined hardship or calamity was one of God's choicest blessings. Well, when Mr. R. was sometimes unusually late, and I felt too much used up to work or read, I *finally* decided to take my noonday nap before instead of after dinner, and was amazed to find I was not *particularly* faint or hungry after the nap. I did the same thing in the evening, and then my appetite began to increase amazingly. Then it occurred to me that my very warm friend Dr. Salisbury told me, almost forty years ago, that it would add years to my life if I would take a good rest lying down, and, if possible, a short nap before eating a meal. Of course, one is expected to be well rested before breakfast; but he said the digestive machinery could never do good work when one comes to his meals exhausted and tired out. For years past I at times feel so used up before dinner time that

*Our pastor said last evening (at our Wednesday-evening prayer-meeting) that God planned to take the children of Israel into the promised land by a short quick route, but owing to their obstinacy and "stiff-neckedness" the best he could do was to get them there in *forty* years.

it is really painful to do either mental or physical work until I have my dinner.

Well, it was one of my "happy surprises" when I discovered that it was *not* lack of food that made me feel faint, but lack of rest. One noon, after getting my nap, I ran over to give the carpenters some directions, and then "got busy" with my chickens, and actually forgot I hadn't been to dinner. Mrs. Root didn't find me, and told the rest not to wait; and when I told them I hadn't been to dinner I found I was just feeling fine without any.

Another thing, I do not think I ever enjoyed my daily food, at any time in my life, as I do now; and I am resolved from this time on to avoid sitting down to any meal, if it can possibly be helped, until I am thoroughly rested, especially after I have been doing much fatiguing work of any kind. Think of asking the delicate and complicated machinery to do the work your very life and existence depend upon when you are too much used up to do any thing but sleep.

Yes, I know what a lot of tired women and some others will say to my great "discovery." My excellent friend Mrs. Rood (and she is one of God's jewels) said when I was talking about this very thing:

"Mr. Root, just think of my taking a nap before dinner, with all this family to look after at such a time."

I replied, "My dear good friend, when you feel you are failing, just force some one to take your place, exactly as you would do when the doctor, a little later, tells you to go to bed and stay there until he says you may get up. Twenty minutes or half an hour before meals may cost something *now*, but nothing like what medicines, doctors, and possibly funerals, will cost later."

Christmas morning I wrote to the Medina people that my 68th Christmas morning was certainly the happiest if not the "merriest" of any in my recollection.

While making these statements I recognize, or try to, that this outdoor life, with the sea breezes from the Gulf always around me, may be quite a factor in giving me health and enjoyment. In my *after-dinner* naps I often awoke, even here in Florida, with a bad taste in my mouth, and a dull feeling, until I had stirred around a little. After a nap *before* eating there is nothing of the kind. On the contrary, I invariably wake up with an exultant feeling and a disposition to shout, "Praise God, from whom all blessings flow," and "Is not this the land of Beulah?" By all means take this noonday nap in the open air if possible. On account of flies (and at times mosquitoes) I sleep before a wire-cloth-covered window. This window is low enough so my pillow can be pushed over on the sill; and one of the delights of living is, to me, feeling the delicious cooling breeze across my face as I lapse into unconsciousness.

BLOWING OR BREATHING WELLS, ETC.

Mr. A. I. Root:—I read with interest your account in GLEANINGS of your visit to Wind Cave, and note

what you say in regard to the air going out and in, and also that there are other places that exhibit the same phenomena. I thought then I would sit down and write you about the wells in this part of the country, but have not done so till now. I live in what is known as the semi-arid country, being located in the northeast corner of Colorado. In countries where the rainfall is light, water is not usually found near the surface unless it may be springs on low ground, and these are not dependent on rainfall, as the moisture that supplies them comes from long distances, sometimes hundreds of miles. In our county (Phillips) the depth to water varies from 95 or 30 ft. up to 250 or more, owing to location. Just around where we live, the depth is from 150 ft. to 175. When water is obtained it is in a bed of sand or gravel, and is usually found in unlimited quantities. Before water is reached, there is more or less gravel. This is because of being below where rain ever reaches; and above, the strata that supply the water are dry. Indeed, it is often found with scarcely a trace of clay in it; and in boring or drilling wells this gravel will slide or roll in from the sides as fast as it is lifted out, just the same as if you tried to go through a pile of wheat.

These bodies of dry gravel vary from a few feet in depth to sometimes nearly 100 ft. In the writer's well we went through nearly 100 ft. in one body in which there was not enough clay to make it stand alone. If there is any way for air to reach these bodies of gravel it will, of course, fill up all the air-spaces.

When I first came west I heard of the blowing wells, and many and absurd were the theories as to the cause of their blowing and sucking, for the air goes out and in just as you say at Wind Cave. People soon learned to forecast the weather by the wells. I began to study out the cause of the air at times coming out and at others going in. Later I read how all our changes in weather are preceded either by a high or a low barometer, and at once decided that I had solved the mystery. The solution is simply this: When what is termed a high barometer passes over any part of the country the air in that part is more dense, and is, of course, heavier. The air among the particles of gravel below the surface, not being of the same density, the outer air will naturally pass down into the well to equalize the pressure. When the "high" passes over, and a "low" takes its place, the reverse will follow; and in proportion to the intensity of the "high" or "low" will be the current of air going out or in; and I might add, too, the volume of space to be filled below the surface modifies it.

If the opening between the two be large the current of air may be scarcely perceptible; but if confined to a small opening it is at times very strong, as noted in your remarks about Wind Cave.

Our wells here are mostly drilled, usually not over 6 to 8 inches in diameter. With this space the current is sufficient at times to lift a light hat when held close to the opening. When the pump is in, and the well covered, sometimes the opening left will not be larger than a pencil. At times the air will pass with sufficient force to make a whistling or roaring that can be heard at a distance of 50 to 150 ft.

Now as to foretelling the weather, we have learned that, when our wells blow, we may look for a wind-storm from the northwest, with colder weather. The severity of the storm will be indicated by the force of the current coming from the wells. If the air goes in, look for warmer weather with southern winds. The change is indicated, usually, about 10 to 12 hours preceding.

You spoke in one place about ice in wells. I know of a well half a mile from where I sit, in which one winter the iron pipe (pump) was frozen sufficiently to burst 130 ft. below the surface. This may look like a western lie; but in view of my explanations above, should the air be entering rapidly, and a very low temperature, it might as readily freeze there as higher. We generally do not have these extreme conditions. We have, however, a good deal of bother with pumps freezing in the winter; but by making a small vent 15 to 25 ft. below the surface, and covering the well closely, the difficulty is reduced to a minimum.

I have written this out fully, as I find but few, even in the West, who understand why wells blow.

Holyoke, Colo., Jan. 8, 1907. K. M. ARKIN

Many thanks, friend A., for your interesting description of these "breathing wells." Your theory as to the cause is, I think, reasonable, and in agreement with the conclusions of science.

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

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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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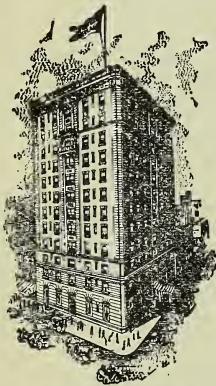
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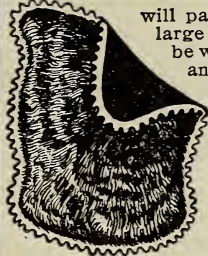
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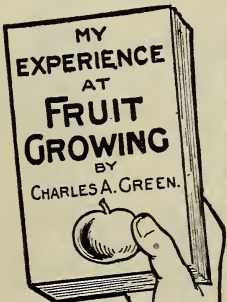


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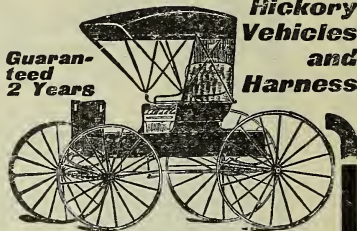
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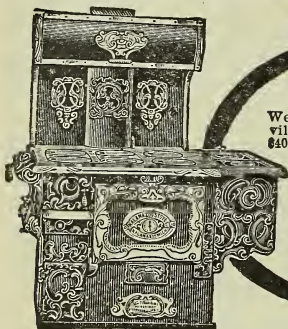


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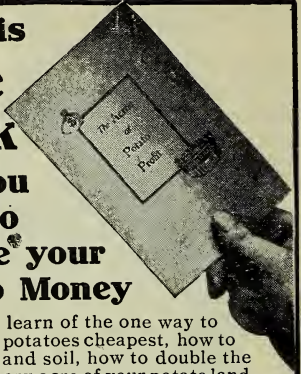
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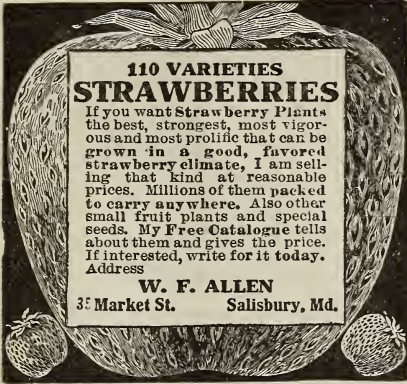
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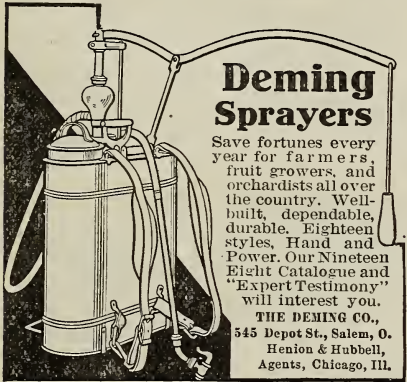
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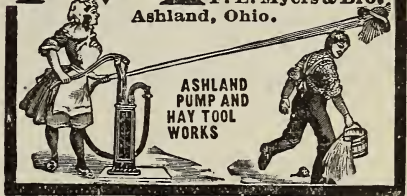
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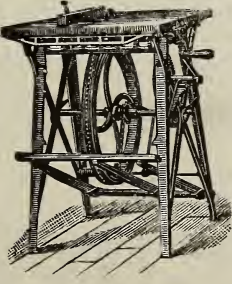


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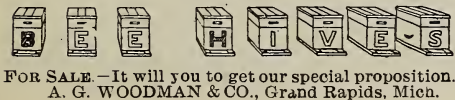
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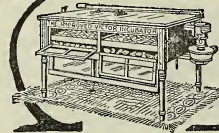
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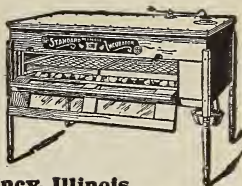
The safe way to buy an incubator is on a Real Free Trial. Invincible Hatchers are sold that way and results guaranteed. Brooders, Poultry Houses and supplies all at very low prices. **224-page book Free.** Write to-day. **The United Factories Co., Dept. X38, Cleveland, O.**



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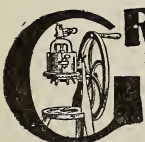
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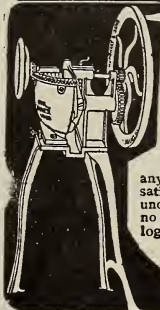
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Green Bone & Vegetable Cutter, the only open hopper machine, is guaranteed to cut more bone, with less labor and in less time than any other. Money back if you are not satisfied. It's the one hand cutter; feed under operator's control at all times;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

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Simple, perfect, self-regulating. Hatch every fertile egg. Lowest priced first-class hatches made. GEO. H. STAHL, Quincy, Ill.

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All leading varieties of standard-bred chickens, ducks, geese, turkeys, and peafowls. Send 4 cts for large catalog. J. J. BRENNER, D.12, Mankato, Minn.



45 Varieties of practical and fancy pure bred poultry. Beautiful, hardy vigorous. Largest, most successful poultry farm. Thousands to choose from. **Big Profitable Poultry** book tells all about it. Quotes low prices on fowls, eggs, incubators, and supplies. Sent for 4 cents. **Berry's Poultry Farm, Box 153 Clarinda, Ia.**

CUTS USED IN THIS MAGAZINE ARE FROM THE MUGLER ENGRAVING CO. MUGLER BLDG. CLEVELAND, OHIO.



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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.

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.

Sheet-metal Stamping, Dies, etc.

We are prepared to do large or small jobs of sheet-metal stamping at reasonable rates. Contracts for monthly deliveries solicited. Special dies made to order. Write for prices, stating quantities, time of delivery required, and send samples or drawings of the articles and any other particulars.

THE A. I. ROOT CO., Medina, O.

Wanted, Situations.

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

WANTED.—Position as apiarist for the season of 1908. Over 30 years' experience.
M. W. SHEPHERD, Wakeman, O.

WANTED.—Position by young man of good habits, to work with bees, one year's experience in large apiaries.
LEONARD GRAPER, Plymouth, Iowa.

WANTED.—At once, position to help with bees or fruit. Three years' experience; age 18; do not use tobacco, liq' or, or profanity.
RAYMOND SMATHERS, Sharpsburg, Ky.

Help Wanted.

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 shall like to secure the services of a young able-bodied man to help us care for our bees the coming season; commence work about March 20. State age, experience, and wages wanted.
E. W. & F. C. ALEXANDER, Delanson, N. Y.

Post Cards.

Send us any picture and we will copy it on one doz-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.

For Sale.

FOR SALE.—Opaline honey-jars, all kinds; send for price list. HAROLD E. SHORE, Germantown, Pa.

FOR SALE.—Homestead farm crops in their season, consisting of honey, grapes, pears, apples, etc.
C. J. BALDRIDGE, Kendaia, Seneca County, N. Y.

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.—Finest never-freezing evergreen honey-suckle bee-plants, 4 for 25 cts. postpaid.

WM. H. KAUTZ, New Ulm, Texas.

FOR SALE.—500 second-hand 8-frame L. and Heddon hives in good condition, at 40 cts. each f. o. b. Sandusky, Mich. H. & W. J. MANLEY, Sandusky, Mich.

FOR SALE.—One thoroughbred OIC male, age 15 months; weight, 450 lbs.; pedigree sent with hog. Price \$50. FRANK E. SMITH, Queen City, Mo., R. D. 1.

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

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.

Bees and Queens.

FOR SALE.—15 strong colonies of bees in "American" hives; have enough stores for winter. Price \$3.00 each.
JOHN T. GORDON, Ashland, Va.

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

FOR SALE.—120 colonies of bees at \$3.50 per colony, and fixtures; all in fine shape; combs straight. Also 200 lbs. sweet-clover seed, at 10 cts. per lb. Inquire of
H. E. DAVIS, Redfield, Kan.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. Choice mellottus (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, \$6.00 per colony. Two-frame nucleus, \$2.00. Queens, tested, \$1.00; doz., \$11.00. Untested, 75 cts.; doz., \$3.50. Virgins, 40 cts.; doz., \$4.50. Cash orders filled first.
GEO. H. REA, Reynoldsville, Pa. Rt. 2.

FOR SALE.—150 colonies of bees, arranged for comb-honey production, together with 250 supers and 100 empty hives, with all the necessary fixtures, stands, etc., for \$700.00. Present location can be leased on easy terms.
SEBASTIAN ISBLIN,
Box 11, R. D. No. 2, Stockton, Cal.

Poultry Offers.

FOR SALE OR EXCHANGE.—Trios of S. C. R. I. Reds. MR. AND MRS. E. G. CROSLLEY, Farina, Ill.

FOR SALE.—40 B. P. R. pullets cheap to make room. Eggs in season. MRS. W. L. BENNETT, Miscou, O.

FOR SALE.—Cocks and cockerels. "Fishes'" stock and eggs. DR. C. L. VAN OSDOL, Dillsboro, Ind.
White and Plymouth Rock Specialist.

FOR SALE.—White Wyandottes. Egg-record strain; standard-bred, farm-raised, unlimited range; healthy, vigorous, prepotent. Eggs, \$1.50 per 15.
F. H. TRENT, Hollybrook Farm, Rockford, Tenn.

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FOR SALE.—40-acre farm in northwest Missouri; house, two lots, and five acres choice improved land; 200 colonies bees and fixtures; fox hounds that hunt all kinds of game; heavily furred buffalo-robe, and old Stradivarius violin. ELIAS FOX, Hillsboro, Wis.

FOR SALE.—Fruit and poultry farms in the Fruit Belt of Michigan. Finest steamboat and railroad transportation service. Ideal climatic conditions for fruit culture. Best markets. Demand for poultry and eggs never supplied. Send for 1908 lists, or give us description of about what you want. MERWIN & FARMER, Benton Harbor, Mich.

Wants and Exchange.

WANTED.—500 colonies of bees in Texas, Arizona, or California. N. E. MILLER, Box 373, Logan, Utah.

WANTED.—To exchange 10 new Jumbo hives, 10 Danz. for honey or cash. F. W. SAMPSON, Littleville, Mass.

WANTED.—To exchange or sell standard Edison phonograph, 36 records, new, for sewing-machine and bee-supplies. W. S. MCKNIGHT, Elamville, Ala.

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.—To lease, with the option of purchase, an apiary in the West or Southwest. Cash rental. Please send all particulars to W. K. MORRISON, 523 Friendship St., Medina, O.

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 exchange Excelsior printing-press, chase 3x5 $\frac{1}{2}$, combination cabinet of drawer, ten type-cases and cupboard, plain and script type, furniture, etc., for Langdon or Stanley miter-box and saw or offers. FRANK LACEY, 5 Madison Av., Danbury, Conn.

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.

Honey and Wax Wanted.

WANTED.—White ripe extracted honey; may 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; 4x5 $\frac{1}{2}$ 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.

WANTED.—White ripe extracted honey; pay cash. C. O. BERGSTRAND, Amery, Wis., Rt. 3, Box 87.

Honey and Wax For Sale.

FOR SALE.—Alfalfa extracted honey in 60 lb. cans, 8 cts. per lb., f. o. b. Kansas City; sample sent upon request. C. C. CLEMONS & Co., Kansas City, Mo.

FOR SALE.—Choice table honey, heavy body, fine flavor, aster-buckwheat blend; 60-lb. cans, \$5 00 each. Inquire H. M. WEST, N. Kingsville, Ashta. Co., O.

FOR SALE.—36 cases of comb honey in 4 $\frac{1}{4}$ and 4x5 plain sections. Clover and raspberry. E. D. TOWNSEND, Remus, Mich.

FOR SALE.—Fancy orange-blossom honey, 60-lb. cans, 9 $\frac{1}{2}$ c; water-white sage, 60-lb. cans, 9 $\frac{1}{2}$ c; light amber, 60-lb. cans, 8 $\frac{1}{2}$ c; dark amber, 60-lb. cans, 8 $\frac{1}{2}$ c. Special prices in quantities. E. R. PAHL & Co., Milwaukee, Wis.

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 7 $\frac{1}{2}$ 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, 4263 Virginia Avenue, St. Louis, Mo.

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.

ITALIAN BEES and queens—Red-clover strain imp'd mothers. A. W. YATES, 3 Chapman St., Hartford, Ct.

ITALIAN BEES, queens, and Root's bee supplies. E. SCOGGIN, Carlsbad, N. M.

I club a high-grade Italian queen with GLEANINGS, new or renewal. W. T. CRAWFORD, Hineston, 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, 4426 Osage Ave., Philadelphia, Pa.

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

ROOT'S BEE SUPPLIES Send for catalog.
D. COOLEY, Kendall, Mich.

FOR SALE.—Root's bee-supplies, wholesale and retail; factory prices; catalog free. Beeswax wanted. W. E. TRIBBETT, Staunton, Va.

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

IMPROVED ITALIAN bees and queens ready in May. Circular and testimonials free; second-hand surplus arrangements for 4¼ sections, also folding cartons, cheap if taken soon, or will exchange. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ANGEL'S GOLDEN BEAUTIES and his bright three-banded Italian Queens have but few equals and no superiors. A fine large queen of either strain for \$1.00; an extra select breeder for \$2.50. I have had 12 years' experience at queen-breeding. Address SAMUEL M. ANGEL, Route 1, Evansville, Ind.



CATALOG FOR 1908.

We have begun mailing our 1908 catalog. If your copy does not reach you as soon as you would like it, send a request for one on a postal and we will mail it. Better wait a week before sending, as we wish to mail first to our list of readers, so you should get one now very soon.

SWEET-CLOVER SEED, WHITE AND YELLOW.

We are furnishing the unhulled white-sweet-clover seed at 15 cts. per lb.; by mail, 25 cts.; 10 lbs., not prepaid, \$1.30; 25 lbs., \$3.00; 100 lbs., \$11.00. For hulled white add 7 cts per lb. Yellow-sweet-clover seed is now on the way from Oregon, and should be in stock soon. For hulled seed, while it lasts, 25 cts. per lb.; by mail, 35 cts.; 10 lbs., \$2.30; 25 lbs., \$5.50; 100 lbs., \$21.00. Pamphlet on the cultivation of sweet clover mailed free to those interested who call for it.

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.

Convention Notices.

The annual convention of the Southeastern Minnesota and Western Wisconsin Bee-keepers' Association will be held at Winona, Minn., in the court-house, on Feb. 26 and 27. Those interested are invited.

OZRO S. HOLLAND, Sec.

NEW BEE-KEEPERS' SOCIETY ORGANIZED.

We have formed a new organization in Wheeling, W. Va. We call it the Panhandle Bee-keepers' Association. It is to include part of Ohio, West Virginia, and Pennsylvania. At the meeting we found that there is foul brood in one apiary in Belmont Co., Ohio.

Blaine, O.

W. L. KINSEY, Sec.

The Wisconsin State Bee-keepers' convention will be held at the Capitol, Madison, Wis., Feb. 5 and 6. President N. E. France promises several good papers and an abundance of questions. The special features of the Wisconsin convention have always been the friendly and social intercourse among its members, and the profitable and instructive questions and answers of special interest to bee-keepers. Everybody is cordially invited to be with us.

GUS. DITTMER, Secretary.

The Indiana Bee-keepers' Association will meet at room 12, in the State-house, Feb. 1. We wish a full attendance of bee-keepers, whether they are members or not, as business of the utmost importance will be discussed. Foul brood is found now in a majority of counties in the State, and it is to stop its ravages that this movement is being made. We wish at least one representative from each county in the State to be present. There has been quiet an enrollment of members the last year, and we wish many more this winter. Come if you can; and if you can not come, send a dollar, and this will enroll you a member of the State organization and also the National. Do it now.

Redkey, Ind.

GEO. W. WILLIAMS, Pres.

THE NEBRASKA STATE BEE-KEEPERS' ASSOCIATION.

This association will hold its next annual meeting in room 308, Agricultural Hall, at the State Farm, Lincoln, on Jan. 22, at 2 P. M. President, C. M. Lewelling, Beaver City; Secretary, Miss Lillian E. Trestler, Lincoln. The following is the program.

Address by the President.

Reading of the minutes of previous meeting.

Roll-call.

Wintering Bees, by I. D. Shuman, Callaway, Neb.

Discussion.

Bee-keeping as a Secondary Industry on the Farm, by J. E. Atkinson, Pawnee City.

Discussion.

Practical Hints for the Bee-keeper, by O. E. Carlson Vice-president, Newman Grove, Neb.

Question-box.

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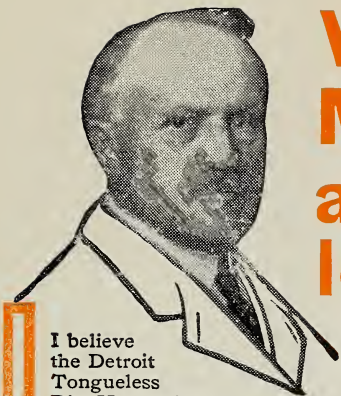
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CAUTION:

Beware of imitations. They say "imitation is the sincerest flattery"—and our Detroit Tongueless Disc Harrow is being very much flattered. There are several cheap imitations of our Harrow being offered for sale through dealers. Don't buy one of them believing that you are getting a genuine Detroit—because you are not. The Detroit Tongueless Disc is not for sale by any dealer—anywhere. We sell it direct from our factory—and you keep all the dealers' profits in your own pocket.

THAT'S my proposition—I mean every word of it. You can use one of these discs on your farm—for a full month without cost.

At the end of that time—if you don't want it—return it to us. We'll allow the freight—thus the test won't cost you one penny. That test is only a part of our liberal selling plan.

It's just our way of assuring every one of our customers that they are going to get what they WANT and what they will be pleased with when they buy a Detroit Tongueless Disc Harrow.

We're anxious to send a Detroit Tongueless Disc Harrow to any responsible farmer—without deposit—and without advance payment—to make the test. It MUST be a good Disc—and one that will PLEASE you—or we could not go on making this proposition year after year.

We're sending out thousands upon thousands of these Discs all over the country on this plan. Surely we could not afford to do this if the Disc were *not* all we claim it to be.

The principle of the Detroit Tongueless Disc Harrow is right. The Forward Truck does away with all of the annoyance on the team of the old "tongue." It does away with all jamming—end thrust—and whipping of the horses, that frets them and puts them out of commission just at the time you need them most. See the two wheels back of the Disc Blades in the picture?

Those wheels are a part of the Detroit Tongueless TRANSPORT TRUCK, upon which you can raise the Disc Blades off the ground, making them rest on the front and back Trucks—so that you can drive the Harrow over stony ground, rough and sandy roads, bridges, etc., without dulling the blades or cutting up the surface. A good invention—that Transport Truck,—most worth its weight in gold the way it saves Disc Blades that have to be transported from one field to another or from house to field.

Year before last we had over 1600 orders for this Disc that we couldn't fill—had to send them back. Last year we made twice as many as the previous year—and still we couldn't fill all our orders.

This year we've increased our factory facilities, and hope to be able to fill every single order on the Detroit Tongueless. It has had a wonderful sale—and has given universal satisfaction.

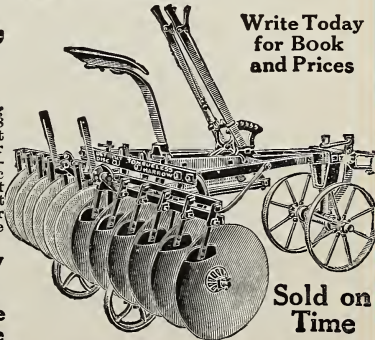
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Anyway, we invite you to drop us a line on a postal card, giving us your name and address, and letting us send you our new 1907-08 Disc catalogue. This Book tells you more about the famous Detroit Tongueless Disc Harrow than we can tell you here—gives you our Selling Plan and quotes prices on a Detroit delivered at your railroad station. You can buy the genuine Detroit Tongueless Disc only through us *direct*. We advise you of this that you may not be imposed upon by some unscrupulous dealer who will represent to you that he has a Detroit Tongueless Disc Harrow for sale—or one as good. He *can't* have a genuine Detroit Tongueless—and he can't have one "just as good."

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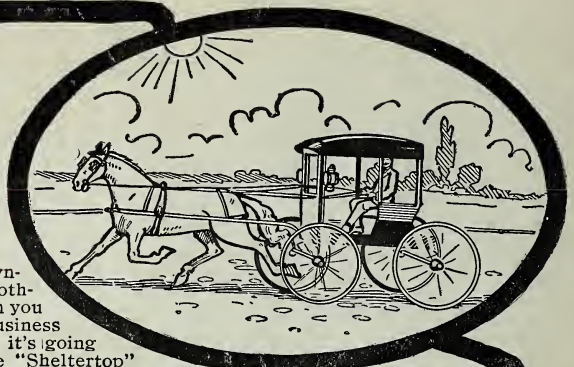
NOTE: Full line of Detroit Tongueless Discs are carried at our branch houses in all leading trade centers, enabling us to make prompt shipment to all points. To be sure of getting a Detroit Tongueless just when you want it, better get your order in early.

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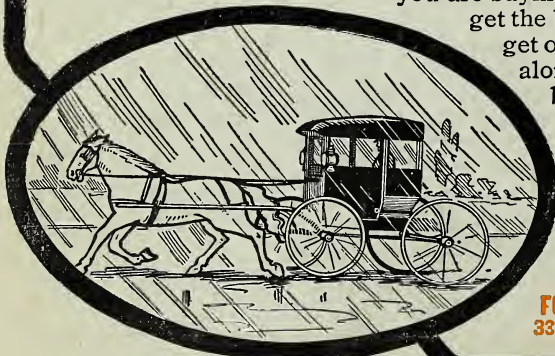
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