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GLEANINGS IN BEE CULTURE.

ESTABLISHED IN 1873.

DEVOTED TO BEES, HONEY, & HOME INTERESTS,
PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, - MEDINA, O.

A. I. ROOT, EDITOR.

ERNEST R. ROOT, - - ASSOCIATE EDITOR.

J. T. CALVERT, BUSINESS MANAGER.

Terms. \$1.00 per annum; two years, \$1.80; three years, \$2.50; five years, \$3.75, *in advance*; or two copies to one address, \$1.80; three copies, \$2.50; five copies, \$3.75. These terms apply both to the United States, Canada, and Mexico. To all other countries in the Universal Postal Union, 18 cents per year extra for postage. To all countries out of the U. P. U., 42 cents per annum extra.

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Rates of Advertising. On not less than 5 lines, per single insertion, and for a uniform space each issue, our rates per nonpareil line are as follows:

RATES.	
1 to 2 insertions, per line.....	20c
3 to 5 " " " ".....	19c
6 to 11 " " " ".....	18c
12 to 17 " " " ".....	17c
18 to 23 " " " ".....	16c
24 insertions " " " ".....	15c

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On 8 inches or more, 2c per line less.
On less than 5 lines space, 1c per line more than above rates.

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For electrotyped advertisements we will allow an additional discount of 5 per cent.

A. I. ROOT, Medina, O.

CLUBBING LIST.

We will send GLEANINGS with—
The American Bee Journal, weekly, (\$1.00) \$1.75
The Canadian Bee Journal, weekly, (.75) 1.65

The Bee-Keepers' Review,	(1.00)	1.75
The British Bee Journal.	(1.50)	2.00
American Apiculturist,	(.75)	1.70
American Bee-Keeper,	(.50)	1.40
All of the above journals,		5.65

American Agriculturist,	(\$1.50)	2.25
American Garden,	(2.00)	2.60
Prairie Farmer,	(1.50)	2.35
Rural New-Yorker,	(2.00)	2.90
Farm Journal,	(.50)	1.20
Scientific American,	(3.00)	3.75
Ohio Farmer,	(1.00)	1.90
Popular Gardening,	(1.00)	1.85
U. S. Official Postal Guide,	(1.50)	2.25
Sunday-School Times, weekly,	(1.50)	1.75
Drainage and Farm Journal,	(1.00)	1.75
Fanciers' Monthly,	(1.00)	1.75
Illustrated Home Journal,	(.50)	1.30
Orchard and Garden,	(.50)	1.45

[Above Rates include all Postage in U. S. and Canada.]

Hebblewhite & Co., 369 George St., Sidney, New South Wales, are our authorized agents for Australia and adjacent islands. All remittances for subscriptions should be made to them. Subscription price, 5 shillings per annum postpaid.

Names of responsible parties will be inserted in either of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

UNTESTED QUEENS

For \$1.00 from July 1st. till Nov. 1st.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with * use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner or later, see rates in price list.

- *A. I. Root, Medina, Ohio.
- *H. H. Brown, Light Street, Col. Co., Pa. 7tf90
- *Paul L. Viallon, Bayou Goula, La. 7tf90
- *S. F. Newman, Norwalk, Huron Co., O. 7tf90
- C. C. Vaughn, Columbia, Tenn. 9tf90
- Jenkins & Parker, Wetumpka, Ala. 9tf90
- E. L. Goold & Co., Brantford, Ont., Can. 9tf90
- *W. A. Compton, Lynnville, Giles Co., Tenn. 9tf90
- *Oliver Hoover & Co., Snydertown, Northumberland Co., Pa. 19tf90
- John Shearer, Osceola, Wash Co., Va. 11d
- D. A. McCord, Oxford, Butler Co., O. 11-23d
- * F. H. & E. H. Dewey, Westfield, Hamp. Co., Mass. 11-9
- A. J. Higgins, Washington Mills, Dub. Co., Ia, 14-12
- *S. P. Roddy & Bro., Mt. St. Marys, Md. 15-17-19d
- *E. S. Eaglesfield, Berlin, Green Lake Co., Wis.

HIVE MANUFACTURERS.

Who agree to make such hives, and at the prices named, as those described on our circular.

- A. I. Root, Medina, Ohio.
- P. L. Viallon, Bayou Goula, Iberville Par., La7tf90
- C. W. Costellow, Waterboro, York Co., Me. 1tf90
- Leahy Mfg. Co., Higginsville, Laf. Co., Mo. 9tf90
- Jenkins & Parker, Wetumpka, Ala. 9tf90
- W. T. Falconer Mfg. Co., Jamestown, N. Y. 7tf90

ONE COLONY Saved from Death the Coming Winter Would Repay the cost of a copy of "ADVANCED BEE CULTURE" ten Times Over. In 5 of its 32 Chapters may be Found the Best That is Known upon Wintering Bees. It costs 50 cents but its Perusal may Make you \$50 Richer next Spring. The "REVIEW" and this Book for \$1.25. If not Acquainted with the "REVIEW," send for Samples. **W. Z. HUTCHINSON, Flint, Michigan.**

PATENT WIRED FOUNDATION.

The Greatest FOLLY of MODERN BEE-KEEPING is WIRING BROOD-FRAMES.

—Dr. G. L. Tinker.

OUR WIRED BROOD FOUNDATION is BETTER, CHEAPER, and not HALF the trouble to use that it is to WIRE FRAMES. Many may confound the two, but they are ENTIRELY different. **J. VAN DEUSEN & SONS, Sole Manufacturers, Sprout Brook, Mont. Co., N. Y.**

☞ In responding to this advertisement mention GLEANINGS.

6-4d



THE NEW FAMILY SINGER SEWING-MACHINE.

Made from latest models; first class in every respect, and warranted for 5 years. A boon to many an overworked housewife who can not afford to pay the price usually asked by agents. Cut shows No. 4. No. 1 is the same without the cover, leaf, and two drawers. Price \$11.00. No. 2 has a cover, but no leaf or side drawers. Price \$12.50. No. 3, as shown in the cut, without the 2 side drawers at the right. Price \$14.00. No. 4, shown in the cut, price \$15.00. No. 5 has 3 drawers on each side. Price \$16.00. We can furnish a high-arm Singer, in any of these Nos., if preferred, at \$2.50 extra. Wood parts are oil polished, walnut; balance-wheel is nickel plated, and each machine includes a full set of attachments, with instructions for use. We ship them direct to customers from factory in Chicago. We have a catalogue giving cut of each machine and full description which we shall be pleased to mail on application.

A. I. ROOT, Medina, Ohio.


MUTH'S Honey - Extractor.

Square Glass Honey-Jars,
Tin Buckets, Bee-Hives
Honey-Sections, &c., &c.
Perfection Cold-Blast Smokers.

APPLY TO

CHAS. F. MUTH & SON, Cincinnati, O.

P. S.—Send 10 ct. stamp for "Practical Hints to Bee-keepers." Please mention this paper.

MUSICAL INSTRUMENTS

MURRAY & HEISS
 CLEVELAND OHIO.
 SEND FOR CATALOGUE.
 Please mention this paper

FOR SALE OR EXCHANGE. — Michael's Early Strawberry Plants, \$4.00 per 1000. Will take fruit-trees in exchange.
J. S. WARNER, Medina, Ohio.

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc.
PAGE & KEITH,
 New London, Wis.
 In writing advertisers please mention this paper.

BEE - HIVES ! SECTIONS !

AND ALL APIARIAN APPLIANCES.

Our Motto : Good Goods and Low Prices.

Catalogue free for your name on a postal card.

LEAHY M'FG CO.,
HIGGINSVILLE, Mo.

14tfdb

Please mention this paper.

Punics. Apis Niger. Punics.

The most wonderful race of bees on earth. Full description of these bees with prices of queens, full colonies and nuclei, in the August (1891) American APICULTURIST. Sample copies free. Address
HENRY ALLEY, Wenham, Mass.
 15tfdb

Please mention this paper.

Syracuse, New York,
FOR ALL OF A. I. ROOT'S APIARIAN SUPPLIES.
FOUNDATION is Our Own Make.

F. A. SALISBURY.

In writing to advertisers please mention this paper. 4tfdb

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.
NOVELTY CO.,
 Rock Falls, Illinois.
 8tfdb

☞ In responding to this advertisement mention GLEANINGS.

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CONVENTION NOTICES.

The Executive Committee have fixed the date of the next session of the North American Bee-keepers' Association, Dec. 8 to 11, at Albany. There will be an informal meeting on the evening of Tuesday, Dec. 8th, for getting acquainted, etc. The real work of the convention will commence Wednesday morning, and extend through two full days ending Friday morning, giving distant delegates time to get home before Sunday. We want all to get there if possible on Tuesday. If they have a few hours of daylight it will give an opportunity to look around the city, view the capitol building, etc. Reduced rates have already been secured in all trunk-line territory, and the same is expected over other railroads. The program is now under way, and other arrangements are nearly completed. If you have decided to take a vacation that will, we trust, be profitable, don't fail to attend this convention.

P. H. Erwood, Pres., Starkville, N. Y.

C. P. Dabant, Sec., Hamilton, Ill.

KIND WORDS FROM OUR CUSTOMERS.

That cover (GLEANINGS, Aug. 1) takes the cream. Huntington, Fla., Aug. 9. A. F. BROWN.

Your columns are a good medium to reach the public with salable goods in their season. Dennison, O., Sept. 11. HILL MFG. CO.

The goods ordered of you by express a few days ago came to hand yesterday in nice shape. It is a pleasure to deal with a man who is so prompt and careful about his shipments. I will send you an order soon for my next year's supplies, in order to have them ready when needed. Fort Smith, Ark., Sept. 16. Z. WELLS.

The goods came all right, and we join with the many who are praising the qualities of the improved smokers. We could not sleep until we had perused the A B C, and read most of the pictures at least. Now when we read GLEANINGS we can turn to the friendly faces of the writers, and soon feel we are acquainted with them. Springfield, Mo., July 31. S. CORNISH.

THE NEW IMPROVED CLARK SMOKER.

I have tried one of the new improved Clark smokers, and it is O. K. now. The grate is a big improvement. If there were the same number of holes in the slide-door it would burn more evenly. My preference has been decidedly in favor of the Bingham; but the improvement on the Clark makes it every way as good, and just look at the difference in price! Syracuse, N. Y., July 13. F. A. SALISBURY.

THE A B C AND COOK'S MANUAL.

The A B C of Bee Culture has been on hand for a few days, and I like the newly written and revised articles very much. I find it my most convenient book for quick reference. This book and Prof. Cook's is all a beginner needs in the way of books; then a good journal, and he is equipped as far as theory goes. Columbia, Mo., Aug. 1. C. L. BUCKMASTER.

THE WAY WE PUT UP NUCLEI.

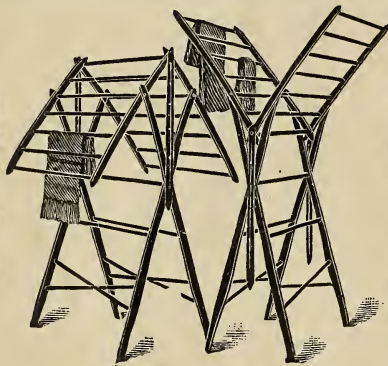
We received the bees in first-rate order, and were well pleased with the change you made for us. We saw the queen the evening we hived them. I have received nuclei of three frames from others, but we were better pleased with the one you sent us than any other so far; and as for packing, it was just grand. Thanks for your promptness in filling my order. Bladell, N. Y., Sept. 18. R. SWIFT.

Kindly send me ten water-cure pamphlets. This simple cure has done more for my wife than all of the doctoring for the past eight years. A short time ago we became fearful lest the constant washing would injure or remove the lining or coating, and the use was partly abandoned for the time. Then my wife said she did not feel as well, and would have to start the use of it again, when she experienced the same relief as before. We have told a great many, but I should like the pamphlets to send away where it is more difficult to send particulars or have my journal returned. This to me has been worth many times the price of GLEANINGS. London, Ont., July 31. F. J. MILLER.

From two nuclei bought of you in August, 1890, I now have eleven good eight-frame colonies, and expect to have three or four more swarms in the next few days. I am also getting a good crop of honey. My crop of Japanese buckwheat is in full bloom, and bids fair to give a handsome yield of both honey and grain.

By the way, friend Root, my select tested Italian queen that I purchased of you last August led out a swarm yesterday, and settled in the top of a mulberry-tree. I was at work at the Call office, over a mile away, and my wife could not get them down. She sent after me, and I reached home just in time to see my beautiful queen and her babies leave for the woods; \$25.00 would not have tempted me to part with her. Fort Smith, Ark., Aug. 20. Z. WELLS.

"OUR DOMESTIC"



CLOTHES - DRYER.

EVERY FAMILY NEEDS ONE.

Here is your chance for a winter's job. Buy them in the flat. Learn to set them up, and control the sale of them in your locality. For particulars address D. S. HALL, S. CABOT, VT. Please mention this paper.

100

I can furnish about 100 young laying Italian queens by return mail at \$1.00 each; six for \$5.00. My queens, many of them, are yellow to the tip. Over 1000 queens sold in past two seasons, and not a displeased customer, and but two queens reported impurely mated. 20tfdb

W. H. LAWS, LAVACA, SEB. CO., ARK.

MUST BE SOLD.—I have a lot of new and second-hand bee-supplies for sale at 50 per cent below cost. Full list and prices on application. They consist of Simp. bodies, covers, Simp. section cases, Sections made up and flat, Honey-Extractor, No. 5, Division-Boards, Drone-Traps, Parker's Fasteners, and numerous other things, about \$45.00 worth in all; \$25.00 cash buys them. Honey taken in exchange. 19-24db G. WIEDERHOLD, YONKERS, N. Y.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey.*—Owing to the still-continued warm weather, the honey market is almost on a standstill. Those having bought still hold it, very little selling. If we do not have colder weather soon, honey will drop in price. There is no change in honey and beeswax since last issue.

Oct. 9. CHAS. ISRAEL & BROS.,
New York.

CHICAGO.—*Honey.*—The honey market is more active, and sales are more readily made. We now obtain 16c for best grades of white comb in pound frames. The supply is light. This is also one of the best months to sell honey in our market. Very little demand for dark grades. Extracted sells at 6c for dark, and 7@8c for white. The inquiry is also active.

Oct. 8. R. A. BURNETT,
Chicago, Ill.

CINCINNATI.—*Honey.*—There is a fair demand only for honey for table use. Warm weather and an abundance of fruit may be the cause of it. There is a fair demand only from manufacturers. Supply is plentiful of all but choice comb honey, which brings 14@16c in a jobbing way. Extracted brings 5@8c on arrival. Demand for beeswax is fair, arrivals are good, and it brings 23 to 25 cts. for good to choice yellow on arrival.

Oct. 8. C. F. MUTH & SON,
Cincinnati, O.

MILWAUKEE.—*Honey.*—This market presents no new features to note, although the supply of comb honey has increased, and the supply now is good, and better quality than usual. The demand is not very brisk, but values continue, for choice 1-lb. sections in good cases, 15@16; good, 14@15; fair, 13@14; dark, 10@12. Extracted, in barrels and kegs, 7@7½ for white; 6@6½ for dark.

Oct. 9. A. V. BISHOP,
Milwaukee, Wis.

NEW YORK.—*Honey.*—The demand for honey has been rather limited, owing to the unusually warm weather and the abundance of fruit. Supplies are sufficient for the demand. We quote: Fancy white, 1-lbs., 14@15; 2-lbs., 12@13. Off grades, 1-lbs., 12@13; 2-lbs., 11@12. Buckwheat, 1-lbs., 10@11; 2-lbs., 9. Extracted, basswood, white clover, and California, 6½@7; orange bloom, 7@7½; Southern, 6@7c per gallon, according to quality. Beeswax steady at 25@27.

Oct. 9. HILDRETH BROS. & SEGELKEN,
New York.

ST. LOUIS.—*Honey.*—Southern strained, in 1-lbs., 5c for dark to 5½c for choice; in cans, 7@8c. Comb, white clover, 13@14c; dark, 11@11c; broken, 5@7c. Beeswax, dull at 24c for prime. Comb honey, choice stock, in good demand and scarce.

Oct. 5. W. B. WESTCOTT & CO.,
St. Louis, Mo.

ALBANY.—*Honey.*—Honey demand improved since weather cooled, and is selling as follows: White comb, 14@17; mixed, 13@15; buckwheat, 10@12. White extracted, 7@7½; dark, 6@6½. Beeswax, 28@30.

Oct. 11. H. R. WRIGHT,
Albany, N. Y.

KANSAS CITY.—*Honey.*—Honey demand fair, supply light. With cooler weather demand will be better. We quote 1-lb. white comb, 15@16; dark, 10@12. Extracted white, 7@7½; dark, 5@6. Beeswax, 23@26; none in market.

Oct. 9. CLEMONS, MASON & CO.,
Kansas City, Mo.

DETROIT.—*Honey.*—Best comb honey is selling at 12@13; supply light. Extracted, 7@8. Beeswax, 25@26, dull.

Oct. 8. M. H. HUNT,
Bell Branch, Mich.

CLEVELAND.—*Honey.*—White comb honey in fair demand at 16@17c in 1-lb. sections. Beeswax scarce, and wanted at 25@28c.

Oct. 8. A. C. KENDEL,
Cleveland, O.

ST. LOUIS.—*Honey.*—No change since our last. Demand remains quiet. Beeswax, 24c for prime.

Oct. 9. D. G. TUTT GRO. CO.,
St. Louis, Mo.

BOSTON.—*Honey.*—We quote our market on fancy 1-lb. comb honey, 15@16. Extracted, 7@8. No beeswax on hand.

Oct. 9. BLAKE & RIPLEY,
Boston, Mass.

FOR SALE—10 lbs. of buckwheat comb honey.
23d D. F. LASHIER, Hooper, Broome Co., N. Y.

WANTED.—530 lbs. extracted white-clover honey.
20d EDGAR BRIGGS, care of W. Irish,
Poughkeepsie, Dutchess Co., N. Y.

FOR SALE.—800 lbs. honey in 1-lb. boxes, packed in 24-lb. single-tier cases; about 80 lbs. mixed, the rest No. 1 white clover. Would be pleased to hear from any one wanting honey, stating price they will pay delivered at R. R. Must be sold. References given.

2.d WM. VAN AUKEN,
Woodville, Jeff. Co., N. Y.

I am prepared to furnish pure extracted honey in 60-lb. tin cans. New cases and cans; graded goods. Carloads a specialty. Address

11tfdb E. LOVETT, San Diego, Cal.

FOR SALE.—6000 lbs. extracted honey, in 60-lb. cans.
C. H. STORDOCK, Durand, Winnebago Co., Ill.

FOR SALE.—6 tons alfalfa and sweet-clover honey in 60-lb. cans, 5c by the ton. 19tfdb
A. B. THOMAS, Payson, Utah Co., Utah.

Wants or Exchange Department.

Notices will be inserted under this head at one half our usual rates. All advertisements intended for this department must not exceed five lines, and you must say you want your adv't in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these "swaps."

WANTED—To exchange wall paper, from 5c a roll and up, for honey. J. S. SCOVEN,
12tfdb Kokomo, Ind.

WANTED.—To exchange a 5x8 photograph camera with tripod and six plate holders—first-class in every particular, for apiarian supplies.
C. F. HOPWOOD, Caldwell, Essex Co., N. J.

WANTED.—To exchange a Franz & Pope knitting-machine in first-class order, nearly new, for honey, or dove-tailed hives in the flat.
MRS. C. A. STEBBINS, Churchland, Norfolk Co., Va.

IF YOU WANT BEES

That will just "roll" in the honey, try **Moore's Strain of Italians**, the result of twelve years' careful breeding. Reduced prices: Warranted queens, 80 cents each; 3 for \$2.00. Safe arrival and satisfaction guaranteed. Those who have never dealt with me I refer to A. I. Root, who has purchased of me, during past 11 years, 505 queens. Circulars free. 13-14d

J. P. MOORE, Morgan, Pendleton Co., Ky.
Money-order office, Falmouth, Ky.

Please mention this paper. 7d

A Four-Color Label for Only 75 Cts. Per Thousand.

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2½x1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

A. I. ROOT, Medina, O.

LADIES' FINE SHOES.

PRICE ONLY \$2.

Genuine Kid, Soft Soles, Elegant Style; Broad or Narrow Toe. Sizes, 2 to 8. C, D, E, and E E widths. This Shoe is sold at \$3 in all retail stores.

OUR PRICE \$2, POSTPAID.

FIT, STYLE, AND WEAR GUARANTEED. NO SHODDY, BUT GOOD SHOES.

Send P. O. order, Registered Letter or Postal Note.

C. L. GRIESINGER, MEDINA, OHIO.

Reference, GLEANINGS. 18-19-20-21d
In writing advertisers please mention this paper

Golden · Italian · Queens

◀ BY RETURN MAIL. ▶

The Golden Italians are considered to be the handsomest and gentlest bees in the country. As workers, they are second to none. My breeding queen and bees took FIRST PREMIUM last fall at the Detroit Exposition. I can now furnish untested queens promptly, for 75c each, or 3 for \$2.00. Tested queens \$2.00 each. Select tested, \$3.00 each. Make money orders payable at Flint, Mich.

N. B.—One of my queens, together with her bees, has again taken FIRST PREMIUM at the Detroit Exposition. 19tfd

ELMER HUTCHINSON,
ROGERSVILLE, GENESSEE CO., MICH.
Please mention this paper.

EARLY QUEENS.

In March and April, from apiary in Texas, the choicest 5-banded stock, warranted purely mated. One, \$1.25; 6 for \$6.00.

BREEDING QUEENS.

From home apiary in April or May, \$3.00 to \$5.00 each. All orders filled promptly. Send your name NOW for full particulars, ready in February or fore part of March. Safe arrival and entire satisfaction guaranteed or money refunded. Orders booked now, pay when you want the queens. 1-24db

S. F. & I. TREGO, SWEDONA, ILL.
Please mention this paper. 1tfd

YOUNG TESTED ITALIAN QUEENS FOR \$1.25 EACH.

Do Not Let a Colony go through the Winter Queenless. Get a Queen. 19-20d

JOS. NEBEL & SON, High Hill, Mo.
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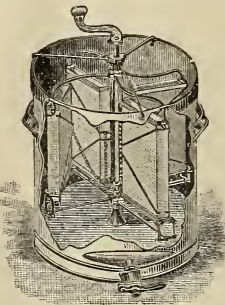
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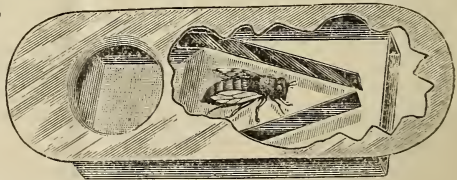
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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

ILLUSTRATED SEMI-MONTHLY
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No. 20.

STRAY STRAWS

FROM DR. C. C. MILLER.

SHAKE HANDS with me at Albany.

J. F. MCINTYRE can go to the head with that nucleus record on page 761.

SUNDAY seems to be the favorite day for bee-conventions among the Germans.

GOOD HONEY should be a little more than a third heavier than water.

APPLES are very plentiful in my neighborhood this year. Bad for bees. Cider-mills.

COVER A BURN with what the grocerymen call waxed paper, such as they cover over butter.

FOR SCRAPING SECTIONS I formerly believed a dull knife was best. I have come to believe a sharp one is better.

SIXTEEN THOUSAND, or at the most twenty thousand, is the limit of the number of bees in a swarm, according to Cheshire.

WINTER CASES, costing 2 cents per hive, are made by A. N. Draper (A. B. K.), of lath, tarred twine, and forest-leaves.

A REMEDY FOR STINGS, given in *Leipziger Bienenzeitung*, is to cut an onion in two and apply the cut surface to the part stung.

CHARLES DADANT, in *Revue Internationale*, says that the United States stand at the head in apiculture among all nations, because of the study of bee-books.

THIS COUNTRY stands at the foot in the matter of bee-keepers' societies. We might learn something from other nations which leave us clear out of sight in numbers.

MY PUNIC QUEENS were taken to the Wilson apiary. When I told Mary Wilson I had brought two Punic queens, she very innocently asked, "Why do you bring puny queens here?"

"PIPING," Cheshire says, "is certainly not produced by the wings, since queens clipped so vigorously that not a vestige of wing remains can be as noisy as others."

BEES FLY 60 to 100 miles an hour under favorable circumstances. D. A. Jones thinks. M. Teynac, when using bees as carriers, found a loaded bee to make 3 miles in 15 or 20 minutes.

A MELILOT STALK, that I found growing in a clay bank on the roadside, measured 10 feet 4 inches in height. I can easily believe that a few years' growth of such plants in clay land would make it quite fertile.

RECORD-BOOKS have one advantage that is not to be despised. They are safe against the meddling of other people, animals, or winds. One year I had manilla tags on all my hives. Some person or thing, I never knew what, tore

off nearly every one. If my only records had been on them it would have left me in bad shape.

TO FASTEN COMBS in frames when transferring, Doolittle says in *A. B. J.*, punch holes with an awl through top, bottom, and end bars, and then push wire nails through the holes into the comb. Leave the nails permanently if you like.

HONEY CANDY. Take one pint of sugar, with water enough to dissolve it, and four tablespoonfuls of honey. Boil until it becomes brittle on being dropped into cold water. Pour off into buttered pans to cool.—*Ladies' Home Journal*.

THE *British Bee Journal* still insists vehemently against using granulated sugar made from beets, in feeding. I suppose much of it is used on this side. Can't Prof. Cook demonstrate beyond a doubt either that it is or is not poisonous to the bees?

A PATHETIC LETTER comes to me from a man whose 128 colonies have been nearly ruined by the bees getting into the furnace of a neighboring evaporator. The result is much the same as if poison had been set out for them; but there is redress against the poison and none against the furnace. Ought there not to be?

WEIGHING COLONIES is more satisfactory than hefting them, or guessing at the weight by looking into the hives. With the proper apparatus two of us took less than a minute to a hive in weighing. Even when weighing, allowance must be made; for in some hives as much as ten pounds must be taken off for extra weight of old combs and bee-bread.

ROBBING BEES can be stopped, even when thoroughly under way, by wet straw or hay at entrance. Pile it a foot thick all about the entrance, and then pour on water till every thing is flooded. I've tried it a number of years, and this year saved a queenless colony thus, when robbers were at it wholesale. The robbers did not attack it afterward.

BEES AS DISPATCH-CARRIERS.—A Frenchman, M. Teynac, has been experimenting, and seriously considers the advisability of substituting bees for carrier pigeons in carrying messages. A tiny piece of paper is pasted on the back of the bee, with a cipher number on it, and, when the bee returns to its hive, it can enter only through round perforations which will not let its paper through, so the message is easily found.

SWARMING was considered a desirable thing 50 years ago. Every year the desire for non-swarming bees increases. If all who are anxious for non-swarmers would breed only from those colonies which swarm least, it seems reasonable to suppose that some one of the number, in the course of a few years, would strike a

strain that would be valuable in this respect. Because many have failed is no reason that some one else may not succeed. It's worth much trying.

THE PUNIC QUEEN that I succeeded in getting to lay seemed to be doing a good business, but suddenly disappeared, I don't know why, and the bees have raised a successor from her brood. The curious part of it is, that, of the progeny of the Punic queen (she was fertilized in my apiary), not one in 500 shows any black blood. A careless observer might readily take them for pure Italians. I still think it was a big thing to get a virgin queen from England, and get her to laying.

QUESTIONS ANSWERED.

INTRODUCING QUEENS TO COLONIES THAT HAVE BEEN LONG QUEENLESS.

Some time in August I sent a queen to a party in Canada; and in writing to me, telling of his losing her in trying to introduce her, he incidentally mentioned that he introduced her to a colony that had been queenless for three or four weeks, and asked what I supposed was the trouble. I suppose the colony had a queen, or something it called a queen. I do not know whether or not he had given this colony unsealed brood at different times during this time that they were queenless; but from the tone of his letter I should judge that he had not. The object in answering this question in GLEANINGS is to particularly emphasize this thought: *Don't ever try to introduce a queen to a colony which has been long queenless, without first giving them unsealed brood, so as to know to a certainty that they are queenless.* According to the many letters of the past, in regard to loss of queens in introduction, I judge that more queens are lost by trying to introduce them to supposedly queenless colonies than from all other causes put together. "But," says one, "how shall I know to a certainty that a colony has or has not a queen, by simply putting in brood?" As far as I have had experience, a queenless colony will always start queen-cells on brood given them, unless they have laying workers, in which case they do not always consider themselves as queenless, and, as a rule, one might about as well try to get a queen into a colony which has a queen as to try to introduce one to a colony having laying workers. If a colony builds queen-cells you may know that it is queenless, and that, if the right amount of care is used, a fertile queen may be successfully introduced to it. But if any colony does not start queen-cells on brood given them, it may be known that it is a dangerous undertaking to try to introduce a queen to such a colony. Don't let us as a bee-fraternity be longer ignorant or heedless on this matter, for enough money and fine queens have already been sacrificed at the shrine of ignorance and carelessness.

SECTIONS PARALLEL WITH FRAMES.

Another writes, telling how he is about to make some new hives in which he desires to have the sections in the cases go crosswise of the brood-frames, and wishes me to tell in GLEANINGS whether I think the bees will do as well in them when worked in this way as they do where they go with the frames, as is the usual custom. As far as the bees are concerned or the amount of honey produced, it makes no difference which way the sections run to the brood-frames where the Langstroth bee-space is used, as I have repeatedly proven to my satisfaction. Where a continuous passageway is used, necessity compels us to place the sections

parallel with the brood-frames. There is one important item in this matter, however, which makes it very desirable to have the sections run parallel with the frames, and that is the matter of having all hives pitch toward the entrance. This is almost a necessity to keep the water out of the hive, both as regards rain at all times, and the condensed moisture from the bees' breath during the winter and early spring months. If hives do not slant toward the entrance, injury is worked, not only to the bees, but to the hives; for a hive will not last nearly as long which stands level as will one that pitches enough to the front to run off all water. If such pitch is used and the sections go crosswise of the frames, the combs in the sections will be run from one section into the bottom of the next one, for bees always build their combs perpendicular; or if the frames run crosswise to the entrance, and the hive is pitched toward the entrance, as it always should be, then the combs will not be built true in the frames. Having hives pitch toward the entrance also helps the bees much in cleaning the bottoms of their hives and keeping them clean; also in defending themselves from robbers and other insects. For these reasons I should prefer to have the sections run parallel with the frames, if such a thing were possible.

PARTLY FILLED SECTIONS.

Still another writes, saying: "I am about having my partly filled sections fixed up by the bees preparatory to next season's operations. This I do by uncapping the sealed part of the honey and placing them over colonies which need feeding. After the bees have removed the honey, during my leisure hours this fall and winter I wish to put them in my cases so as to have all in readiness for another harvest when it comes, so as to have no fussing with these in my hurry next summer. Should the supers be entirely filled with these sections, or partly filled with new? If the latter, what part of the super is the best location for the sections containing the comb?"

My way of doing this would be to divide the number of sections by the number of colonies which I expected to have next year to produce comb honey, and place the quotient in each case, placing the partly filled ones in the center and the other on each side. Used in this way as "bait" sections, these partly filled sections are of great value, and will bring you a greater interest than money in the bank; while if all were put on top of a few hives they would not be of nearly so much value. If you have more partly filled sections than enough to make one tier through the center of each section-case, then I should place in the middle tier as before, then a tier on each side of this of the new sections, then more of the partly filled sections, and so on, alternating till the section-case is filled. In this way the bees will be at work throughout the whole case, almost before you know it.

G. M. DOOLITTLE.

Borodino, N. Y., Oct. 5.

[I indorse emphatically what you say in regard to introducing to queenless colonies; and I wish that every A B C scholar might read over those italics two or three times. The meanest colony, according to our experience, to introduce a queen to is one that has been queenless long enough so that there is a possibility or a probability of a virgin queen being in the hive somewhere. They will invariably kill the introduced queen, no matter how valuable she may be, and take instead any little old black virgin that may happen to be lurking in the hive. In the directions we have been sending out for introducing queens for the past year or

so, we have been entering a caution against introducing to such stocks. We get the best results from a colony that has been queenless long enough to show initial cells.] E. R.

A NEW DEVICE.

A SECTION-FOLDER AND FOUNDATION-FASTENER COMBINED.

Friend Root:—Having expressed you one of my combined self-folding section-press and foundation-fastener (patent applied for in U. S. and Canada), with your permission I will endeavor to describe its construction, working, and advantages over other devices.



As will be seen by cut, it is small, neat, and light, being only 14x16 in., with a three-inch rim, and weighs about 8 lbs. It is made of hard wood and metal castings. The section is picked up in the right hand in the center, out of the flat; at the same time a piece of wax with the left hand. When the section is drawn back in the triangle back, stop, when it is half folded, and immediately drops down in position even with the table. A slight pressure now of the foot draws the two upright pins together, which folds the two ends; at the same time the heater, or wax plate, is raised up in position (being heated by a lamp), when the pressure is stayed long enough to touch the wax to the hot plate, when, on further pressure, it immediately drops out of the way, and the head-block closes the section and draws it up to the wax, which at once adheres. As soon as the foot pressure is relieved it returns to its original place ready for another section, being automatic, and takes longer to describe than perform.

Its advantages are quite apparent from description of its working. 1. It is small, neat, and convenient. It can be set on a solid table or workbench, with treadle attached to the floor, and can be worked sitting or standing.

2. Being foot-power, it leaves both hands at liberty to handle the section and wax at the same time, practically saving time.

3. Being combined, once handling of the section from the flat prepares it for the super, which is placed at your left to receive it. All know, who have prepared sections the old way, the time and labor saved here of handling the sections all over twice and even three times, besides doing the work of two machines by any

other method, there being no changing or transferring required, but it can be used either as a folder or a fastener separately. As a folder it has no equal for expeditious work by detaching the wax-plate. Now that all sections are put on with starters it may seldom be required to use it separately.

4. It is automatic, being always ready for operation.

5. It folds the sections even and square, thus avoiding breaking.

Altogether it is a saver of wax, time, labor, and patience; in fact, it has to be seen working in order to appreciate all its advantages, and I think it could be named *Eureka*.

W. O. LEACH.

Coldwater, Ont., Can., July 21.

[We have tried the machine sent, but didn't succeed in making it work satisfactorily. When one feature will work, the other has a fashion of hitching or catching. As it is one of the first machines sent out by Mr. Leach, it is possible that it is not so strong nor well built as those he is manufacturing now. It will be a great time-saver if it can be made to do both operations at once.]

WHO FIRST SENT QUEENS SUCCESSFULLY BY MAIL?

A LITTLE EARLY HISTORY OF THE SUBJECT.

Bee-keepers of the present scarcely appreciate the advantages derived from the knowledge that queen-bees can be sent from any point of the earth to any part thereof by mail. Not until July, 1863, had a queen with a few workers ever been caged and shipped per mail. From 1860 to '63 I was bothered about getting Italian queens by express. It occurred to me that queens might, perhaps, be transported by mail. I wrote to my ideal apiarist, Rev. L. L. Langstroth, suggesting the idea of sending queens by mail, and asked his opinion of the feasibility of mail transit of bees. He answered, saying that, in his opinion, he thought it not practical. I at once determined to test the matter. I took a small paper box, about the length and depth of the Benton cage, but wider, took a piece of sealed comb, very tough by age, and, with needle and thread, fastened the comb in one corner of the box, and with an eyelet-hole punch made holes in the box, by which air could circulate among the bees. Then I put a common queen and some 15 workers into the box; made it secure and addressed it to Mr. Langstroth; paid postage; and the postmaster, who is still my neighbor, duly marked the package, and, to honor me, dropped it into the pouch with the installment of mail matter. A few days later I received a letter from friend Langstroth, informing me of the safe arrival of the bees, and complimenting me highly for suggesting and putting in practice so worthy an enterprise. At the time he wrote he sent a fine Italian queen in a very small cage, addressed to me. The workers, five or six, were dead, and the queen died soon after I took her from the postoffice. Later he mailed another fine Italian addressed to me, and all came safely.

This is the history of the advent of sending queen-bees by mail, which has proved a great boon to the bee-keeping public. Mr. Langstroth was the first who shipped queens by mail. The authors of the "New Langstroth" were mistaken in according credit to other parties as being first to cage and mail queens to patrons. At the time of my sending the queen to friend Langstroth he wrote me that, in his contemplated new edition, he would give me due

credit. Unfortunately, not only for bee-keepers but for the prosperity and good of mankind, the teacher was debarred by ill health from issuing another edition. In 1881 I wrote, calling Mr. Langstroth's attention to the circumstance of my sending him the queen by mail. I was prompted to do so from the fact that I thought certain other parties laid claim to the discovery. Mr. Langstroth answered my letter, and I inclose it, requesting the publishers of GLEANINGS to publish his answer, to the end that an authenticated record be published, and thus settle the question of priority. Mr. Benton received a prize for a particular form of shipping queen-cage, but I was first to devise a cage and a way of transit.

C. J. ROBINSON.
Richford, N. Y., Sept. 22, 1891.

The following, in the familiar handwriting of Mr. Langstroth, is the letter referred to, and it speaks for itself:

Dear Sir:—I remember distinctly the circumstances to which you allude. As far as I know you were the first person to send a queen in this country by mail. I am not sure that queens had been previously sent anywhere by mail. If you could give me the year I could probably find all the facts recorded in my private journal. I think that the queen you sent came in July. I am now entirely laid aside by ill health from all active work, and have published no new edition of my work since the 3d. in 1859.

L. L. LANGSTROTH.

Greenfield, O., Jan. 21, 1881.

[We are sure no injustice was intended by the publishers of the Revised Langstroth. We are pleased to get the information. Mr. Langstroth's letter above establishes the fact pretty clearly as to who sent the first queen by mail successfully. As Mr. L. would have given proper credit had he been able to revise his book, we are sure he would be glad to have it done now over his own signature.]

WANTED—A HIVE.

AN A B C SCHOLAR IS ALL IN A MAZE; BLIND LEADERS OF THE BLIND.

As you will perhaps recall from a former letter, I am one of your A B C scholars in the art and science of bee-keeping. I have got far enough on in the past two years to know that there is to me a lasting fascination in the pursuit. My plan from the start has been to work with a few colonies until I should become practically acquainted with the habits and requirements of my pets, to read books and journals until somewhat posted as to the methods and appliances used by leading men in the business; and then, when I had tested my own capabilities, and had found the best all-round hive for the production of comb honey, to enlarge my plant, and work for profit as well as for pleasure and information. So far I followed what I think was good advice. When I finished reading the A B C book, two years ago, I thought I had a well-defined plan, a good hive, and a good frame. To-day, on finishing the Sept. 15th No. of GLEANINGS, I have half a dozen or more of each, and am all at sea as to which will suit me best. Any one of them might do, if it were not that some other one is sure to have several better features. Root and Cook; Heddon and Doolittle; Miller and Tinker and Hutchinson:

How happy were I with either dear charmer,
Were t'other dear charmer away!

As it is, I *must* have the best; and how can I pick out the best of these varying methods, and

so combine them as to keep bees with profit and pleasure? Is it always true, that in a multitude of counselors there is safety—never confusion?

The thought comes to me sometimes, that possibly things would work smoother if I quit my part in the game of "follow your leader." Perhaps with my little apiary with ten or twelve colonies I shall want to "handle frames instead of hives." In thinking it over I really believe I shall. I am sure I shall want to be acquainted with my frames, both sides of them. I feel certain that my bees will fare the better and work the harder; that there will be less waste, and consequently more profit, if the boss looks carefully into every apartment of their home. And possibly I do not need a hive that is a good one for a queen-breeder; that is, a non-swarmier out-apiary hive; an extractor, comb honey, winter, spring, summer, cellar, semi-tropical, snow-drift hive combined; but just a *hive*, with movable frames and a strong colony of bees in it. With Dr. Miller "I don't know." I confess I can't keep up with you. You ought to have taught me something in the past two years that would enable me to decide what I want now; but as you have not done so, I am going to give you the task of deciding for me; and it would tickle my fancy and perhaps the funny-bone of others as well, if you could get, say, Heddon, Doolittle, and Ernest Root to answer the same query. Here it is:

If you were going to start, and maintain at that size, an apiary of ten colonies, say in Central Pennsylvania, having no money invested in bees or hives or fixtures of any kind, and having in view mainly the production of comb honey, what kind of bees, hives, frames, supers, and sections would you buy, and why?

I need not tell you that, where there is one bee-keeper owning fifty colonies, there are twenty with from three to a dozen. Some of these are of the helter-skelter class, and it does not matter what hive or frame they use. Others are careful, practical, economical men and women who keep a few bees because they get congenial employment, good foods, and welcome cash for them. These, doubtless, comprise a large majority of your readers, and I want a hive and frame for them as well as for myself—something that we and the bees can hang to for a dozen years at least.

I like the conservative note of Doolittle's last article. There is sense and cash in it, as regards fixtures, and I am reluctantly approaching the conclusion that the fine manipulations and advanced ideas which bring about such exact results belong exclusively to experimenters and to an experimental stage; and that, to a vast majority of bee-keepers, they are practically but vanity and vexation of spirit. Isn't it enough to make a novice daft to read of the ease with which one can handle the Hoffman frame, and, in the same article, that there is no need to handle them, as the trained ear can detect queenlessness by the hum, and the hand estimate the amount of stores by hefting?

Now, I believe in progression in every industry. I know these experiments must be made, and our special pursuit go on to perfection by way of selection and the survival of the fittest. I am glad the editors and the owners of large apiaries, and the many intelligent men who have made almost a lifelong study of the bee, are pushing ahead. Much good must result; but by the time a system is perfected and agreed upon by the leaders, I, perhaps, will have gone over to the majority. So I wish you to take account of stock now, and pick me out a hive and frame which I can use for the next five years in my proposed home apiary of a

dozen colonies, without dreading that some acknowledged leader in apiculture will hint of kindling-wood when it is mentioned in his presence.

I have read somewhere that almost every bee-keeper, at a certain stage in his experience, invents a hive of his own. Is it any wonder? for, sooner or later, he is sure to come to the conclusion that in this matter there is no such thing as an unprejudiced mind; or that, within certain limits, it makes no practical difference what the size or shape of hive or frame is. So, why should he not have his own?

As you will no doubt guess, I am drawing very near that stage when either a hive of my own get-up or a humiliating guess at what to buy will be a necessity. E. J. BAIRD.

Orlando, Fla., Sept. 28.

[I have read your article with much interest, and I do not much wonder that you are confused when the doctors seem to disagree; for who then shall decide? Surely not the beginners. As I have said all along, beginners should be careful about investing too much in new things. In all cases it would be wise for them to adopt the implements and devices that have given good satisfaction for many years. To what I refer is practically the L. hive and the L. frame. I would get this in a plain square-edged hive with no porticos, movable bottom, and a plain simple cover. It would be safe for a beginner to adopt a loose frame, and equally safe to adopt it with thick top-bars. While for my own use I should prefer something on the style of the Hoffman frame for the production of comb and extracted honey, I am quite certain that it would not please a good many others. In order to be progressive, advanced beekeepers ought to discuss advanced methods; but beginners had better stick to established methods; and if they can afford to, let them try a few of the "new-fangled" devices. Of course, they would like to adopt that which, in the near future, would be accepted as the best; but at the present stage none of us can decide. I think we are safe in sticking to the eight-frame L. hive with loose bottom and without the portico; and if we wish to make any change, let it be in the matter of frames. But every one should be very careful which one he proposes to adopt. The advanced bee-keeper who has tried all kinds of frames can decide for himself which one he cares for, much better than any one else can decide for him. A beginner can not; and he had better (let me repeat it) stick to the established L. hive and a loose frame until his *advanced* brethren come to a little better agreement. The L. hive that I would recommend is essentially the Dovetailed. The same thing with both eight and ten frames has been made and advertised for many years by almost all supply-dealers; and it will be a long while before the general principles of this modified L. hive are changed—at least ten years. Now, I hope that my friends who think I am going too fast on fixed distances will carefully read over the above, for it explains just my position.] E. R. R.

CLOSED-END FRAMES.

JAMES HEDDON DECLARES AGAINST THE
HOFFMAN FRAME.

I believe we all entertain a just pride in forming correct conclusions. I am very glad there have been bee-journals through which we may aid each other, not only, but on whose pages I might place my opinions, which I believe to be advanced opinions, on record. You know, Mr. Editor, that the man who really believes him-

self a true prophet, really capable of laying down such truths to-day as, although not accepted now, will surely be in the future, desires to make his prophecies public.

The above thoughts are suggested by the article of brother Stachelhausen, on page 592. You know very well that the mechanical construction and devices of apiarian fixtures and implements, especially of the hive, have been my hobby for twenty years; and probably from the great importance of having a good hive have flowed forth the bitter jealousies between inventors. I desire to make this article short, although devoted to a very long subject.

While for fifteen years a user and admirer of the laterally movable suspended L. frame, never a moment did I cease to study into and look after the merits of close-fitting frames. I have gone slowly and carefully, and made my experiments on a comprehensive scale; and I desire now to go on record for the following:

1. The Hoffman frame will never come into general use, and remain so. It is not as worthy as the L. frame. If I must use a Hoffman frame or a Langstroth frame, I will have the latter.

2. A closed-end frame in a close-fitting case is the only arrangement that will supersede the L. frame with practical honey-producers. As you say in your footnotes on page 592, such an arrangement works more perfectly in shallow cases like those used in my divisible brood-chamber; but, please place me on record, here and now, as affirming that this same arrangement in a case 10 inches deep makes a more worthy hive than the L. hive with the suspended frames; and don't fail to record me as saying that no other close-fitting style of frame does.

Some of your readers may say that some of the above are strong statements, and savor of conceit in the writer, to which I take no exception. I meant to make them strong; for, when I go upon record, I desire to go squarely so, and I think I know that every statement above is true; and have I not a right to some conceit? I think that, as long as ten years ago, and perhaps longer, I foresaw that the practical money-making bee culture of the future must desert the rules laid down in text-books and bee-journals; that the future bee-keeper who would succeed in honey-producing must abandon all work except that absolutely necessary, and this he must be able to accomplish in the shortest space of time. This demanded a different system of management, and that, in turn, different implements, especially different hives. Then I began making and advocating lighter hives, recommending the manufacture of the brood-chamber and supers of thinner material. Of course, I was met with plenty of opposition. My lumber was "too thin for winter" and "too thin for summer." My recommendation of eight instead of ten L. frames was also heresy. Very few, at least, agreed with me, even if Adam Grimm did use eight frames. "Handling hives more and frames less" is also a part of the reform above referred to, and was the title of an article of mine published more than ten years ago, and yet I did not get on record in letters large enough and ink black enough.

Let me refer you to many numbers of the *American Bee Journal* and *GLEANINGS*, away back as above mentioned. Please get me on record strong, this time, Bro. Root, and record me as saying that there is nothing superior to or equal to the L. hive system except the close-fitting frame as arranged in my late invention; and that is so much better that any apiarist who thoroughly understands it and knows how to use it can handle double the number of colonies with the same labor required with any other style of hive. Are the above statements

any too strong, if true? Now let the future decide; and when it comes, don't forget the past, I pray you.

JAMES HEDDON.

Dowagiac, Mich., July 22.

ENEMIES OF THE HONEY-BEE.

READ IN WASHINGTON BEFORE THE A. A. A. S.
CONCLUDED FROM LAST ISSUE.

Another lepidopterous insect which I have called the *wec* bee-moth belongs to the same family—*Pyralidae*—as does the old bee-moth just referred to. This, however, is much smaller. It is the *Ephestia interpunctella*, Hübn. The larva feeds on the wax and pollen, and overspreads the comb with its fine silken fabric. It is a serious annoyance to the bees, and ruinous to the comb honey. I have this insect from most of the Northern States, and from as far south as South Carolina, where it is reported to be a serious pest. Here, as before, the exposing of combs doubtless invites attack.

Among *Coleoptera* we do not find many enemies of bees. The common flower-beetle, *Tenebrionellus molitor*, Linn., and the still more common bacon-beetle, *Dermestes lardarius*, Linn., often mutilate exposed comb in quest of pollen or dead bees, on which they feed. These can hardly be said to be enemies of bees, though they may vex the bee-keeper.

That the carabid beetles, from their chitinous armor and well-known predatory habits, would be especially likely to attack bees, we might well expect; yet I have rarely known of any such habit among the species of this immense family of predaceous *Coleoptera*. I have discovered one exception, which leads me to suspect that more of the species may have a like habit, or may acquire it at any time. The one species is *Pterosticus rotundatus*, Lec., which attacks and kills bees in Virginia and Pennsylvania. Secure in its chitinous armor this fine beetle enters the hive, and captures and carries out the bees upon which it feeds. It does not seem to suffer in the least from the attacks of the bees. It gives no indication of even being stung.

From California, New York, and Nebraska I have received one of the larval forms of some meloid beetle taken on the bees in the hive. In one case several of these were found on a single bee. Dr. C. V. Riley gives us a very full and interesting account of the hypermetamorphosis of these beetles. It is in the earliest stages that this blister-beetle larva attacks the bees. The larva at this time has a long abdomen, strong jaws, two anal stylets, and reminds us strongly of a neuropterous larva. I am not sure what species attacks bees. I think it may be *Meloe barbarus*, Lec., in California and *Meloe Angusticollis*, Say, in the East.

Among the *Heteropterous Hemiptera* there are two predaceous species which are wont to prey upon bees. One of these, *Euthyrhynchus Floridanus*, Linn., is found from Georgia to Florida and thence to Texas. I have called this the bee-stabber, as it stations itself at the entrance of the hive, and stabs and sucks the bees, one by one, till the latter are bloodless and lifeless. This bug has a powerful four-jointed beak, which fits it admirably for its fell work. The insect is purplish or greenish blue, though occasionally it is nearly black. There are orange or fulvous spots on the scutellum, thorax, and head, which vary not a little in number and extent.

Another bug, *Phymata erosa*, Fabr., often called the stinging bug, from its severe bite or stab, is one of the most formidable of all the bee-enemies. In structure and habits this bug

is exceedingly interesting. It is its habit to lie concealed among the flowers, especially the goldenrods. As its color is greenish yellow, it is very inconspicuous among the flowers, and so is alike hidden from its enemies and its victims, and thus the latter run into the very jaws of death, all unaware of danger. The structure of this bug is as interesting as are its habits. Its anterior legs are strangely modified. The femur and tarsus are so hinged to the very small tibia that they oppose each other as the blade does the knife-handle as we shut our pocket-knives. Both these parts are toothed. Thus the flowers secrete a most formidable trap, which can grasp and hold even the strong honey-bee. With the bee thus entrapped, the bug has only to insert its very strong sharp three-jointed beak, to suck bloodless and lifeless the luckless bee. Thus thousands of bees lose their lives each autumn through the rapacity of this stinging phymata.

The order *Orthoptera* gives us a single species that preys upon bees. It is the common praying mantis, *Mantis Carolina*, Linn. This ferocious insect—so ferocious that the female is said to conclude the ceremonies of the honeymoon by devouring her spouse—is found from Southern Indiana to the gulf. Its peculiar forelegs, so admirably adapted structurally to grasp its prey, remind us of the stinging-bug *Phymata erosa*, Fabr., though here the femur opposes both the tibia and tarsus, all of which are toothed. That this insect often satisfies its appetite by devouring the honey-bee is incontestably proved; yet I do not think it a very serious enemy.

Among the *Pseudo-neuroptera (odonata)* some of the dragon-flies are great bee-enemies, especially in the South, where they are known as bee-hawks. Their savage rapacity is so seriously felt by the bee-keeper that not infrequently boys are hired to destroy them. They are, indeed, hardly second to the *Asilidae*, or robber-flies, as enemies of bees. It is the large species, like *Anax junius*, that are chiefly responsible for these depredations.

Among the arachnoids, all the orders contain species that prey upon bees. Not a few of the true spiders are known to capture and feed upon the honey-bee. Often the web is made close beside the entrance to the hive, so as more surely to entrap the unwary bee. I have also known spiders to hide in flowers, like the stinging phymata, and thus easily capture the unsuspecting bee as it came for nectar. Many of these spiders, like phymata, mimic the color of the flowers so closely that their presence is not detected till their venomous jaws grasp the luckless bee.

The second order, the *Arthrogastra*, also gives us a bee-enemy in a species of *Datames*, of the family *Solpugidae*. I have several of these from California. It is *Datames Californicus*, Simon. This enters the hive, where it captures and eats the bees. I have received this species from Central and Southern California.

Of the order *Acarina*, or mites, a small, dark, nearly black species attack and often kill the bees, or are the cause of their death, so that, through its presence and work, the hive is nearly depopulated. Like the dipterous bee-louse, *Braula circa* they attack and destroy the queen as well as the workers. I have known these mites to do serious damage to bees in several of the Northern States.

Among the flowering plants there are several species of *Asclepias*, or milkweeds, that capture bees by means of their sticky pollen masses. I have thought these plants more friends than foes. In Michigan they are excellent honey-plants. In Grand Traverse Co., much fine hon-

ey is secured from the milkweeds. Mr. Chas. Robertson, of Illinois, tells me that he has counted over 1000 bees in a single walk captured and killed by milkweed blossoms. Besides the captures, many bees are so loaded by the sticking pollen masses, which are torn off in the struggle of the bees to escape, that the other bees consider them useless hangers on and drag them from the hives as mercilessly as they do the drones when the latter are no longer needed. The bees-view social problems somewhat differently from what we do. They have no eleemosynary institutions, but turn to and banish all weak, feeble, and helpless members of the beehfraternity.

The last bee-enemy to which I shall refer is that of microbes. Foul brood is the most serious malady of this kind. This is caused by the attack of a very minute cylindrical bacillus which attacks the brood. Its germs are conveyed in the honey from affected hives. It is a very deadly enemy of the bees; but by close study it has been conquered, or brought under control, so that now many of our brightest beekeepers, who have had extensive experience with this microbe, have little fear of it. Yet safety demands quite a full knowledge of its habits, and the utmost caution. There are other microbe enemies, not so fatal in their effects, and not so well understood. One of the most common, causes the "nameless bee-disease." Here the imago bee, and not the larva or brood, is the seat of attack. The disease usually abates in a short time, and is thought by some to disappear upon superseding the queen.

I think I have given in this paper all the enemies that have attracted attention thus far among the honey-bees of the United States. It is probable that more will appear as the years go by.

A. J. COOK.

Ag'l College, Mich.

WIRING FRAMES.

DR. MILLER GIVES HIS VIEWS.

I'm very glad the matter of wiring frames is still under discussion, and that the tendency toward horizontal wiring has not gone beyond the possibility of a protest. Horizontal wiring may be best; I don't pretend to know; but at least it will bear discussion.

I never saw a frame wired horizontally, to notice it; but I can not readily become reconciled to the idea that we must tolerate, and make provision for sagging and bagging. Even supposing that the stretching of the foundation is not enough to materially spoil the shape of the cells, there must be allowance made for it at the bottom, and that will always leave a space between the lower edge of the comb and the bottom-bar. Indeed, I am afraid we shall always have more or less of that, the best we can do, unless we invert the combs, for I have known cases in which the foundation came clear down to the bottom-bar, and the bees coolly gnawed it away to allow a passage under it.

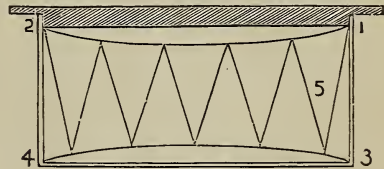
By the way, does the bottom-bar itself have any thing to do with this? D. A. Jones and some others have bottom-bars that, instead of being $\frac{1}{2}$ wide and $\frac{1}{4}$ deep, are $\frac{3}{8}$ deep and $\frac{1}{4}$ wide. What is claimed as the advantage in this? and does it do any thing to prevent the open space between the comb and bottom-bar? If there is any real advantage in that kind of bottom-bar, will some one tell us about it? You know friend Hall was quietly going on using his clumsy thick top-bars for a long time before any of us thought there was any thing

good in them. Possibly we may wake up some day to find our bottom-bars are all wrong.

I have 2500 or more combs wired perpendicularly. They are nice combs, straight as a board, and until recently I felt entirely satisfied with them. But when the younger Root raised such a hullabaloo about small exact spaces, then my frames wouldn't stand close inspection. For perpendicular wiring, the wires must be drawn so tight that the bottom-bar is curved upward or else there will be bagging. Of course, there is more or less tendency for the top-bars to sag, and in a good many cases this becomes more than a tendency. But as to the combs themselves, they are all that could be asked. Possibly with top-bars $\frac{1}{2}$ or an inch thick there might be no trouble at the top; but one would need very thick bottom-bars to keep all straight below.

When the Keeney wiring came to light, that seemed to offer a way out of the difficulty; but upon trial there was too large a surface of foundation unsupported by wire, consequently bagging. The good part of the Keeney plan was the fact that the wires were attached to no part of the frame except at the four corners, making sure that there would be no interference with the straightness of the top and bottom bars. It also helped to hold a frame rigid, so that, if square when wired, it was likely to remain so.

I have done quite a bit of studying over the problem how to combine the good features of both the Keeney and the perpendicular systems, eliminating the fault of each. The picture shows the ideal I settled upon. You see that there is a series of upright wires, giving the advantages of the perpendicular wiring, and at the same time every thing is supported from the four corners. There can be no more chance for sagging than with the perpendicular wiring I have so thoroughly tested, except above and below the horizontal wires; and as there is only $\frac{1}{2}$ of an inch between the horizontal wires and the bars at top and bottom, there can be no great amount of bagging there.



DR. MILLER'S PLAN OF WIRING.

But it is easy to make perfect things on paper. The real often differs widely from the ideal. For some weeks I was so driven with work that I could give the new plan no trial. When I did get time to try it, I found that the up-and-down wires, instead of being taut and straight as in the picture, were curved and curled in all shapes, even when I stretched them so tight that they were all pulled out of place.

Without giving all my failures, I will give instructions how to do as I finally succeeded in doing. Cut a board, no special matter about the thickness, so it will just fit easily inside the frame. Take nine one-inch wire nails and drive them about half way in at the points where you want the upright wires to cross the horizontals. This should be about $\frac{1}{2}$ of an inch or less from the edge for the two central nails near the top-bar, and for the central nail near the bottom-bar. The other nails should be nearer the edge, forming a curve. Now cut off the heads of the nails. That's all the machine you need. With an awl, punch a hole at

each corner of the frame through the end-bars at 1, 2, 3, and 4. Let it be tight up in the corner. Now string a wire through the two upper holes at 1, 2. Fasten one end of it by giving it two or three turns around a $\frac{3}{8}$ wire nail partly driven in, then drive this little nail in tight. Then stretch the wire just as tight as you can, and fasten with another $\frac{3}{8}$ nail at the other end. This wire will then lie flat against the top-bar. Stretch another the same way, to lie flat on the bottom-bar. Cut a wire of sufficient length; run it half way through under the lower wire at the middle, then run one end through the upper wire, then through the lower, then the upper, then the lower, then through the awl-hole at 1, and fasten with a $\frac{3}{8}$ nail. In the same way, thread the other end back and forth, and thread it through the awl-hole at 2. Fasten lightly the end temporarily on a $\frac{3}{8}$ nail driven partly in. Now lay the frame over the board already described, letting the nails come inside the angles of the perpendicular wires. Taking hold of the wire at 5, stretch it *very* tight over the nail; then taking hold at the next strand, stretch tight over the next nail, and so on till it is drawn tight through the hole at 2, when it is to be fastened. Lifting your frame off the board, you will find it wired just like the picture, only the perpendicular wires will not be as straight and taut. But if you have stretched them quite tight they will be as good as the perpendicular wires in my old frames that have made such straight combs. I succeed in getting the horizontal wires perfectly tight.

I have described minutely the way I put on the wires, not because I think it the best and easiest way, but because it is *a* way, and I hope some one may tell us how to do it more easily. It is a good bit of work, but hardly more than the old way of perpendicular wiring; but even if much more, it is, I think, the only wiring I shall use till I learn a better plan, or till I learn of faults in this that I do not now know.

Severest criticisms are invited; for if the thing has faults enough to be useless, the sooner we know it the better.
C. C. MILLER.
Marengo, Ill., Aug. 26.

[I think I see two objections, doctor, to your plan of wiring. The two horizontal wires have too much weight to bear. The ordinary tinned wire will pull in two quite easily, and will stretch quite a little before it will break. If one of the horizontal wires breaks, the whole is gone. Another objection, which you have incidentally mentioned, is the labor required to wire it. I am not certain, but I think I should prefer the Keeney method with the intersecting wires at the top, and the horizontal wire at the bottom. Out of some 200 or 300 combs wired that way last season, there are very few that have any appreciable bulging. But the plan which, in my estimation, is ahead of all, is the horizontal loose wires. There can be no bagging. I have tried a full sheet of the very lightest foundation we could make on a special mill, the same wired on the horizontal plan. The bees built out a perfect comb. There is no other plan of wiring with which I am acquainted with which we can use such thin foundation.]
E. R.

THE PUNIC BEES.

THEIR CHARACTERISTICS, ETC.

They are truly wonderful bees, and are answering to all their claims. Mr. Alley says, "They are the most prolific, gentle, and hardy of any race or strain of bees I have ever had any thing to do with. They will supersede the

Italian." The queens are the most even layers I have ever seen. Lift a fresh comb from a Punic stock, and one will see the most beautiful work in the way of egg-laying ever beheld. Every egg will point downward in line with the grain of the cells, and one could swear that the queen used a straight-edge when putting them in. Not a cell will be skipped. The bees are as quick as a flash, and are off to the field in no time. On their return they look and act like robber bees, with the same quick motions. They pass through the traps like a flash. It does one's heart good to watch them. I never before saw such lightning rapidity in motion. I have spent hours watching them and picking them up in my fingers as they go and come, simply to hear the little fellows squeal as a young queen will when handled. They refuse to sting. If the sting happens to stick a little into one's skin while being rolled about in the finger, how quickly they withdraw it and fly away!

It is a grand sight to open a full colony of Punic and see the little "niggers" at home so quiet, so unconcerned, and, to me, so beautiful because of their usefulness and not of the five gold bands. The Punic put the gold into their keeper's pockets, which is better than our little backs.

Their length of life, and hardiness, are something remarkable. I had some imported queens come a few weeks ago that had been on the road 28 days; and after the queens had been introduced the attendants lived fully two weeks longer in confinement.
E. L. PRATT.

Beverly, Mass., Sept., 1891.

The above is pretty strong testimony for the new race of bees. They may deserve it all, however, and it were no more than fair that we give a little on the other side. Mr. Thos. Wm. Cowan, editor of the *British Bee Journal*, one who has traveled very extensively, in answer to a correspondent who wanted to know more about the new bees in his journal, says:

As a rule we do not like to import into our columns controversies originating in other journals; but as our correspondent asks for information, for the benefit of our readers we give all we know about African bees. We know nothing of the experience of the persons mentioned, and have received no reports from any of our numerous correspondents about Punic bees. We know of no such race. Amongst African bees with which we are acquainted are those from Algeria, Morocco, and Tunis—all varieties of *Apis mellifica*. They are prolific black bees, said to be good workers, but which have not sustained their reputation when introduced into Europe. Queens of any of these varieties could be purchased for a few francs, and some years ago Algerian queens were offered for ten francs apiece by M. Feuillebois at Beni-Amran. The variety cultivated by the Kabyles is shiny black, and the workers much smaller than the average European bee; the drones, however, are quite as large. The Kabyles inhabit the mountains lying toward the desert of Sahara, where they live in small villages, and derive a considerable income from honey, and more particularly from wax. These bees are called "*thizizoua thik' arrim*," and are cultivated in cylinders of cork bark, basket-work, or earthenware. Some of the natives have as many as 500 such hives. They were first imported into France in 1874, and, by their behavior, showed that they came from a warm climate. They are great propolizers, which shows that they are not used to cold. Although quiet at times, if stimulated they become very savage, and not only attack persons, but even enter the houses in their vicinity. They have not proved satisfactory in Europe, and we know no one now who cultivates them.

We know nothing about the so-called Punic bees, and can give no information as to their value. Possessing as we do one of the largest libraries of bee-

literature in the kingdom, it is strange that we have never found such a race alluded to. The word *Punic* means faithless, treacherous—neither of which should be considered good qualifications for bees. Punic bees are said to come from Africa, but the only varieties of African bees we know of are those alluded to above, besides the various species mentioned on page 366 of *B. B. J.* for 1888.

As so little is really known about these bees we hardly think it necessary to advise our friends in their own interests to wait for reports from experienced and well-known bee-keepers. We shall take care to give any reliable information that may come to hand and be of value to our readers.

COLORADO NOTES.

HOW THEY WINTER IN THAT STATE.

Friend Root:—Here I come again with a few notes from Colorado, that land almost flowing with milk and honey. The honey-flow is now over, and it has been only fair, nothing extra. We had too many rains during the season, which greatly hinders the work of gathering honey. Wintering bees in this locality is something which I wish to speak to the readers of *GLEANINGS* about. We winter on our summer stands by simply setting the hives 6 to 10 inches apart, and placing old straw between, over, and behind them, and leaning a broad board up behind them and laying one on top to keep the straw from blowing off; then our work after that is comparatively light the rest of the winter. Some do not go to the trouble to put them down in as good order as I have described, but you are very apt to hear some grumbling about the time when almost everybody else is getting some fine large early swarms, and they none at all. You will hear them saying, "Why, my bees don't seem to be doing any thing at all. I think they dwindled a right smart this spring." It is no uncommon thing to hear such complaints, and I for one am ready to cry out, "For shame for such dire negligence! they don't deserve to have any thing on their farm that is as busy and industrious as the honey-bee."

LUCK NOT NECESSARY FOR PROFITABLE BEE-KEEPING.

Now, right here I say, how often it is that we hear men say that they never have any luck with bees! Why? let me ask. How many times is it that they have let their bees remain out all winter with not one particle of protection round them? How many times during the summer have you been to see how they were doing? Once, twice, perhaps three times. Once a man told me he had bees to sell. As I wanted to buy I dropped around to see them. Well, now, where do you think they were? Fully one hundred yards from the house, on the bank of a ditch, with sweet clover and weeds higher than the hives. When we mashed the weeds down, the bees rushed out like mad, but soon settled back after a ray of sunlight had passed into the small entrance. In fact, they were scared. Now, what an absurd statement to hear a man say "luck"! Oh fallacy! how foolish! Just let me say this to all who read this: There is no luck in bee-keeping. Did you ever plant a field of potatoes or corn, and then expect as big a yield without cultivation as your neighbor's that was cultivated right up to the handle? No! that's what you say. Well, I should like to ask A. I. Root, or Hutchinson or Prof. Cook, whether a colony of bees doesn't need to be cultivated in just the same manner, according to its needs, to give good returns, that a field of potatoes or a field of corn does to make it yield up to your expectations?

Now, to such bee-keepers as these (for that is all they are, just bee-keepers and not honey-

producers) let me say, if you keep bees and do not take care of them as you should, if you do not get any honey, don't complain; but select some good place for your bees, keep the ground clean, and free from weeds and clover; put your bees into some good hives; attend to them regularly, supply their wants, and see how much better they will work for you. Also select some good bee-journal. Study it carefully to see what the latest novelty in bee-keeping is. Don't be a natural imitator, but strive to devise some plans and methods of your own, and put them into practical use if possible. Some prominent writer, James Heddon, I believe, once said that it is rarely that a person will succeed in business by being a mere imitator; so, now, let us not think that it's all "luck" that makes this busy world move. It is he who keeps posted in regard to the occupation he follows, and puts the theories of his own mind into active operation who shall win.

THE PORTER BEE-ESCAPE.

I will say that the Porter spring bee-escape has proven to be a very acceptable addition to my apiary, and I feel like recommending it to all bee-keepers. Buy one or two for trial; and if they prove as satisfactory to you as they have to me, you will never have cause to regret your investment.

T. V. JESSUP.

Greeley, Colo., Sept. 19.

KING-BIRDS—REGURGITATION.

OTHER ENEMIES OF BEES AMONG THE BIRD TRIBE: INDISPUTABLE EVIDENCE THAT KING-BIRDS DO REGURGITATE.

In your note after Mr. McDonnell's article in *GLEANINGS* for September 15, on king-birds, you ask for further testimony in regard to the regurgitation matter, suggesting that it may be "all a hoax." Without citing further lay testimony, which could be readily done, the writer suggests a reference to those great A B C books on ornithology, the writings of Audubon, Wilson, Nuttall, and Buonaparte, whose authors devoted their lives to this one study, and weeks, nay, months, in learning the habits of a single species, not only in its native haunts, but also with the bird in captivity, and hence constantly before their eyes. These books, particularly Audubon's, if not often obtainable in private libraries, can be found in all or most public ones; and with its magnificent illustrations, copies from life by that masterly hand, will repay many fold the time taken in a visit to such an institution. The plates were lost by fire, and now so greatly are these bird-portraits admired and valued, that the volumes bring the highest prices when sold at auction or at second hand, however much the text may be defaced, if only the illustrations are uninjured. In the large edition, found in public libraries, only the largest birds are represented under life size.

I feel sure that Audubon refers to the regurgitating habit of the king-bird. Nuttall certainly does, whose work is before me. After minutely describing its habits generally, he writes, of a captive bird of this kind, "which I had many months as my pensioner:" "At length the pieces of beetle were swallowed, and he remained still to digest his morsel, tasting it distinctly soon after it entered the stomach, as became obvious by the ruminating motion of his mandibles. When the soluble portion was taken up, large pellets of the indigestible legs, wings, and shells, as likewise the skins and seeds of berries, were, in half an hour or less,

brought up and ejected from the mouth, after the manner of hawks and owls." Hence Mr. McDonnell and Mr. Waite have the very best authority in corroboration of their position in this matter; for it will scarcely be gainsaid that it is eminently safe to accept as fact the assertions of men of high reputation on a given subject whose lives have been devoted to the exclusive study of that one branch of science—not in the closet, but throughout the broad domain of nature, whose books have been written, not from hearsay evidence, but from notes made in many places at many times by the author himself, face to face, so to speak, with his subject whose traits, habits, or characteristics are not determined till verified by the study of other specimens of the same species, thus establishing your axiom, "In the multitude of testimony there is wisdom."

So much for his kingship the "tyrant fly-catcher," who has the reputation of standing first as a bee-killer.

Down here we have a bird of another tribe or genus that, I am sure, gets more of my bees in one day than the king-bird does in a week. The latter seldom perches near the hives. This bird gets as close as he can, and he will stay all day and be on hand early every succeeding day throughout the season, unless he is killed. This is the summer redbird, *Tanagra aestiva*, one of the tanager genus, all of them bee-eaters to a greater or lesser extent. Do not mistake him for the common red or cardinal bird—they are not at all related. In ornithology this bird is described as follows: "Male, vermilion red, inner vanes and tips of quills tinged with brown; the tail even. Female, young and autumnal male (the sly fellow changes his clothing), yellow-olive; below, brownish yellow."

Unlike his cousin the scarlet tanager (scarlet and black), which comes only occasionally to get a sweet meal, this robber takes up his quarters right in the apiary, his favorite perch being a dead limb or bush close to the hives, and in the bee-highway, where he can have space sufficient to fly out and seize the incoming worker, alight again, and swallow his luscious morsel. Sometimes he even sits on the hive, catching the bees in rapid succession, just in its front, returning to it always to do the masticating part. Both sexes "work" at the same task and at the same time. Sometimes several pairs are noticed, and it is safe to say they never tire in well-doing.

My reason for thinking this bird kills more bees than the king-bird is because he gets close by where the lines of flight concentrate, and bees are always within his range, while the king-bird, perched on some tree a hundred or more yards away, is on the line of only a few bees, and he seldom comes much nearer, which, however, may be because my apiary is under a grove of forest-trees, making considerable shade. The king-bird seems to like a prominent or high perch on a leafless tree.

For both, the remedy is the shotgun; yet I imagine many if not most apiarists allow these predators much latitude before they get roused to the point of going for the gun.

C. P. COFFIN.

Along with the above article friend Coffin sends the following beautiful stanzas:

AUDUBON'S HYMN IN THE AMERICAN FORESTS.

I keep my haunts within the woodland solemn;
My chartered comrade is the stainless beam;
My bed is made beside some old oak's column;
My goblet is the stream,
Whole years are mine in this majestic dwelling,
Where Nature yet frowns back the sounding mart;
What waves of life forevermore are swelling
Their rapture through my heart!

But not for these I wander o'er the mountains,
And not for these I dare the hurricane;
And not for these I quaff the virgin fountains—
A prince of hill and plain!
Oh mighty meanings from the mountain hoary!
All natural objects o'er me solemnly roll;
These give the longed-for prize and sacred glory
Unto my pilgrim soul.

Amid the beautiful, the strange, the holy places,
With noonday bright or tender twilight dim,
What joy is mine to measure all the spaces,
And find the prints of Him!
You long, long river, like an anthem pouring;
You thoughtful silence of the lonely mere;
You eagle, to the sun divinely soaring,
All, all have meanings here.

To find and read them is my joy and duty;
Then hail, ye boundless scenes! forevermore;
How will I drink and drink your perfect beauty
Upon the virgin shore!
Oh! give me welcome, every woodland solemn,
And long-swept plain and mountain-piling sod;
For I pass by each stately forest-column
To learn the thoughts of God.

[We are exceedingly obliged to you for the information you have given us on this subject. We can scarcely doubt now that the statement as made, originally in the A B C book was correct. We are glad this controversy has come up, for now the true habits of the king-bird are better known than ever; and, besides, we have a better knowledge of other bee-enemies among the feathered tribes.]

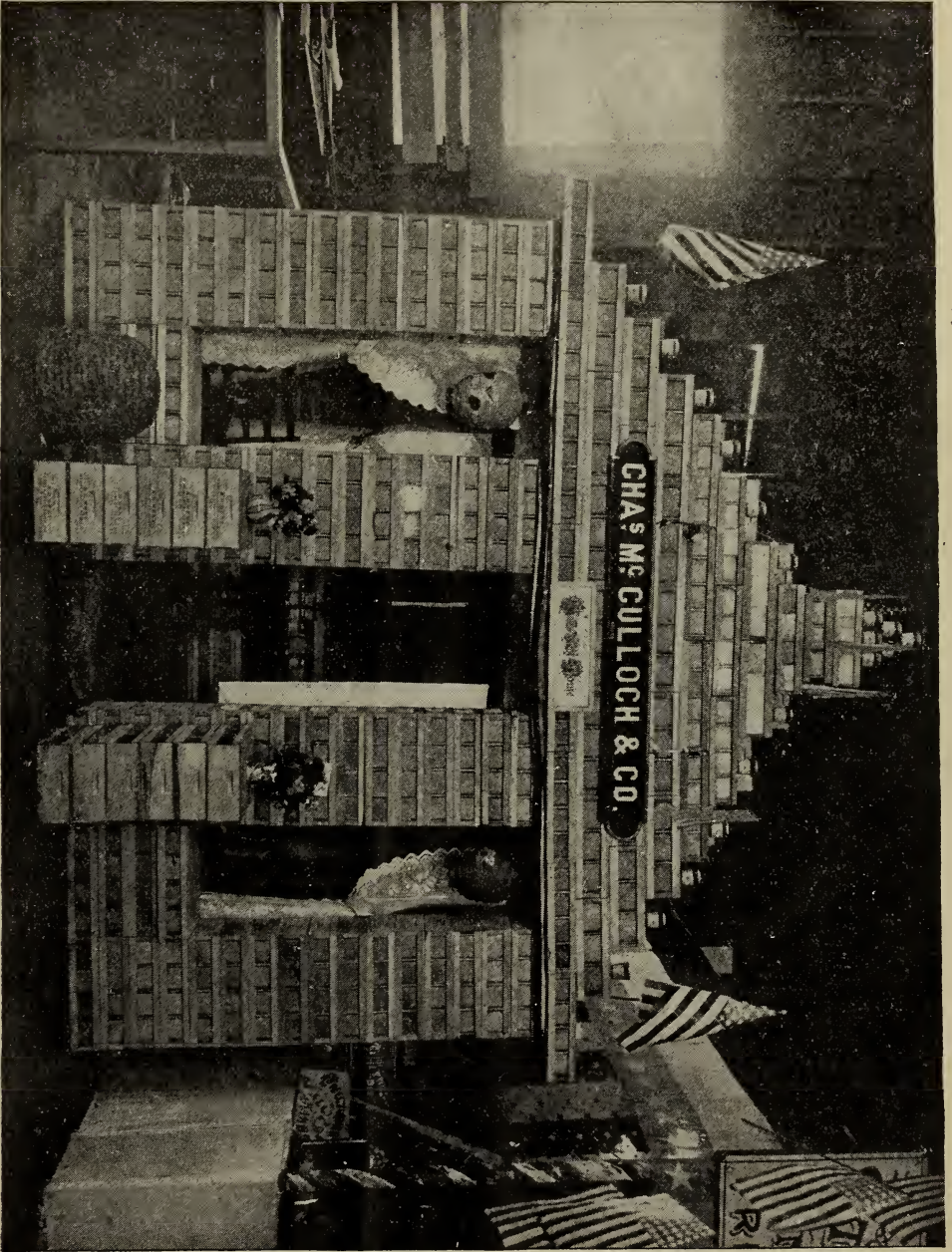
EXHIBIT OF HONEY AT FAIRS.

A NOVEL DESIGN.

While in attendance at the New York State convention at Albany last winter it was our pleasure to make the acquaintance of Mr. Charles McCulloch, senior member of the firm of Charles McCulloch & Co., honey commission merchants, of Albany. This acquaintanceship grew into a sort of kinship when we learned that our friend was a Christian Endeavor man—in fact, a leader of the C. E. movement in that city. While in conversation he showed us a photograph of their exhibit of honey, made at the Albany State Fair. We requested the privilege of reproducing the same for GLEANINGS. Mr. M. has since forwarded to us a photograph, which we take pleasure in presenting to our readers, with a description of the same.

The cut, next page, shows a display of honey made by Chas. McCulloch & Co., dealers in honey, at the last State Fair, held in Albany, N. Y. It was in the form of a house 12x12, and 15 feet high. It took over 400 cases of honey, weighing in all over 4 tons, to build it. The room inside was handsomely furnished with easy-chairs, center-table, mirror, rugs, and pretty lace curtains at the windows. Over the door was the very appropriate motto, "Home, Sweet Home." It was the headquarters for all honey-producers visiting the fair, and they were made to feel at home by Messrs. McCulloch & Co., who went to the trouble and expense of the display for the benefit of their consignors, taking orders for a large amount of the honey during the progress of the fair.

A LOG-HOUSE HONEY-EXHIBIT.



KING-BIRDS.

HONEY-DEW FOR WINTERING, ETC.

In your footnote to my article about king-birds, in Sept. 15th GLEANINGS, you query whether the matter of regurgitation as explained by the writer (T. L. Waite) in the A B C book is not all a hoax. On referring to the A B C I notice that Mr. Waite's observations in regard to this action of the bird are referred to as "very positive evidence." I added some testimony, which I think goes to further establish it; and to your mind, because *one* observer has expressed a contrary opinion, the matter assumes the form of a possible hoax. I am not going to be too hard on you, but "in the mouth of two or three witnesses shall every word be established." The station master to whom I referred as having seen part of what I related is Mr. John A. Gallaher, Grand Trunk Ry., Branchton, Ont., who will no doubt answer for himself if called upon. I trust, however, we shall have some other of the readers of GLEANINGS who may have further testimony to offer on the subject, so that the evidence as regards the facts of the case will be so very "very positive" as to be finally conclusive.

I notice in different papers, GLEANINGS included, reference made to the question of honey-dew as winter feed, and I would incline to think that the test given by Prof. Cook some year or so ago would be a safe one, if one's taste could be depended upon to be uninfluenced by a mental bias favorable or unfavorable to the article: viz. that, if the honey-dew were agreeable to the palate, it would be safe; but if not, it would be unsafe.

In this northern latitude, with its severe winter, it is necessary to lean to the safe side of any question affecting the wintering of bees, and I am glad to be able to say that my experience with honey-dew extends only to one season, that of 1886, I think, when, by taking the precaution to extract it early in October, I have reason to believe I saved my bees. A young and aspiring bee-keeper, some four or five miles away, who did not take the same precaution, lost nearly all of his, and has never seemed to rally from the blow, and the losses elsewhere throughout the country were very severe from the same cause. This honey-dew was such vile stuff that, by merely putting the point of my finger into the combs to make sure that the dark patches were not simply some dark-colored honey, the taste was so disagreeable that it would give me a headache. Some of the patches in white combs showed almost jet black. In the extractor the smell was very rank, and the product ran out like thin black molasses.

I always find the reading of Doolittle's articles profitable; but I think that in Sept. 15th journal was particularly timely and valuable. I have had some of this changing to do, and know, on a small scale, what it means in time and money, and I believe the principle he laid down at his start in bee-keeping is a safe one to anchor to in almost any line of business. I have seen and been personally interested where thousands of dollars were squandered in adopting every thing new, and business failure followed on the vacillating course accompanying this weakness. I do not believe in that conservatism which amounts to old fogyism, so that progress and improvement are made utterly impossible, but I believe in making the most of what one has, and that it is well to go "canny" in making changes, for the reason that "a rolling stone gathers no moss."

R. W. McDONNELL.

Galt, Ont., Can., Oct. 6.

[Our answer was not intended to imply that regurgitation of king-birds was a hoax, but to call out further facts. Your testimony together with that on page 311 settles the matter that the A B C is right.]

PAILS FOR MARKETING HONEY.

FRIEND FOSTER SCORES ANOTHER VICTORY.

I read with interest in GLEANINGS for Aug. 1st and 15th, a year ago, the answers to questions propounded to honey-dealers as to the best packages for honey for the various markets. I was surprised that only one firm makes any mention of pails for extracted honey. Perhaps one reason is, that much of the honey shipped to commission men goes into the cake-factory, or some other factory, before it finds its way to the family table. I have found that, where I once make a sale of honey in the cheap and neat "raised-cover pails," holding from 1½ to 12 lbs. each, it is hard to sell extracted honey in any other form. Although I often sell 60-lb. cans to large dealers, there are comparatively few families that use so much honey before it granulates; they want it only occasionally, with hot biscuit, for tea, or with pancakes for breakfast. But when they find it is hard, rather than have the task of warming up the large can they content themselves with syrup.

The pails, when empty, are just what is wanted, while the cans are in the way. Just before shipping these pails I lift the cover and slip under each, upon the hard white surface, a slip of red paper printed as follows:

All pure extracted honey granulates hard at the approach of cold weather.

HONEY.

To liquefy it, set the pail or can in warm water—*not too hot*, or the flavor may be injured. If you can bear your hand in the water there is no danger.

OLIVER FOSTER, Producer,
Mt. Vernon, Iowa.

Perhaps one reason why honey in pails has not found a more extensive market is, that, since the article has found a place in the freight classifications, it has been classed as "*double first-class*" freight, while comb honey is classed as first class; cans boxed, as second class, and barrels as third class. Being impressed with the injustice of these rates on honey in pails, I sent to the Superintendent of the Western Classification Committee a sample pail of honey, with the following letter:

Mr. J. T. Ripley:—Allow me to make you a present of a pail of honey as a sample package for shipment which is becoming very popular. My object is, in behalf of the honey-shippers of the country, to call your attention, in this friendly way, to an oversight or misapprehension on the part of your committee in fixing the classification of "honey in pails." Your committee may have had in mind the old-fashioned "strained" honey, or perhaps comb honey in a broken state; whereas, you will find, I think, upon investigation, that 99 per cent of the honey now shipped in pails is *extracted* honey in the granulated form, which, as you see, is a very different article. The agitation it receives in being thrown violently from the comb, breaks up the texture, causing it, in a short time in cool weather, to granulate very hard, in which state it will remain through the warmest weather. These pails are usually shipped in convenient boxes with handles, holding about 125 lbs. each.

I think you will agree that this form of package is safe for shipment, and most convenient for shipper, carrier, retailer, and consumer; but the present classification (double first-class) is prohibitory.

I would suggest that a just classification would

be, "extracted honey (granulated) in pails boxed, second class." Liquid honey should not be received as freight except in sealed packages.

Trusting that a fair consideration of these suggestions on the part of your honorable committee may result in securing to the many railroad companies you represent the patronage of a large class of shippers, I remain very respectfully yours,
Mt. Vernon, Ia., Feb. 16. OLIVER FOSTER.

His reply, dated Feb. 19, reads as follows:

Mr. Oliver Foster:—Answering your favor of the 16th inst., will you please describe more fully the package or box in which your pails of honey are packed? also say if it would be correct to describe the extracted honey as "granulated honey," which name, it seems to me, would indicate more clearly the character of the goods as an article of freight.
Chicago, Feb. 19. J. T. RIPLEY.

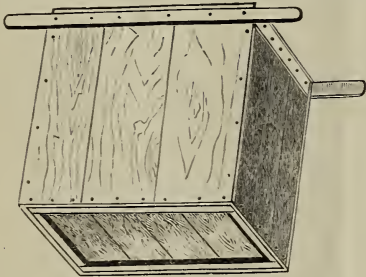
In reply to which I wrote as follows:

Mr. J. T. Ripley:—Answering your favor of the 19th, I will make a sketch on the back of this sheet showing the two styles of boxes I use for shipping honey in pails. The small box is for one set of five pails, as shown in price list inclosed, and the other



Box for one set (or nest) of pails, with rope handle. Sides $\frac{1}{2}$ in. thick, bottom and top $\frac{3}{8}$ inch thick.

is for four sets of the same. Shippers as a whole have as yet no uniform package for pails. Your suggestion, to describe extracted honey in pails as



Box for four sets pails, about 16 in. square; bottom and sides $\frac{3}{8}$ in. thick; handles and bottom strips, $\frac{1}{2}$ x 1.

"granulated honey," is a very good one. The term "granulated honey" is perfectly correct, and is in very general use with bee-keepers and honey-men. "Granulated honey in pails boxed," strikes me as the form in which to put it. This could not be construed to apply to such extracted honey as might be unscrupulously offered for shipment in pails before granulation has taken place.

Any further information you may wish on this subject will be gladly given.
Mt. Vernon, Ia., Feb. 21. OLIVER FOSTER.

His reply of the 21st gives the gratifying result. This classification applies to fifty or more railroads throughout the West. As to classification on other roads, I know nothing.

Mr. Foster:—Answering your favor of the 20th inst., I will rule as follows: "Granulated honey in pails, boxed O. R. second class." J. T. RIPLEY.
Chicago, Feb. 21.

Mt. Vernon, Ia.

OLIVER FOSTER.

[Many thanks, friend F. You have done bee-keepers a valuable service, and we owe Mr. J. T. Ripley another vote of thanks. He has kept his promise, as the revised Western Freight

Classification shows. Mr. Ripley has certainly shown a disposition to be reasonable and fair toward bee-keepers.

Those raised-cover tin pails are excellent for the purpose. We sell large numbers of them. They are so cheap that the honey-producer can almost afford to throw in the pail; but even when he adds the price of the pail to the honey, the consumer makes no objection, because such an article is always available in every home. Now, won't some one get up some plan whereby we can granulate liquid honey on short notice, even in warm weather? Consumers are being gradually educated to this granulated honey, and very many prefer it in that form to any other to spread on bread and butter.]

SUPERSEDING THE OLD QUEEN.

HAVING QUEENS FERTILIZED IN FULL COLONIES HAVING A LAYING QUEEN.

I notice Dr. Miller says in *Stray Straws* that he "tried superseding quite a number last year by having a young queen hatch out in a cell-protector. They hatch out all right, and would be found peacefully traversing the combs; but before it was time for them to lay, every last one disappeared. If I had removed the old queen, I have no doubt all would have been lovely."

This item is of special interest to me, being right in my line of experiment involving my plan of having queens fertilized in full colonies having a laying queen.

It is not necessary to remove the old queen—simply divide the brood-chamber into two parts with perforated zinc; and instead of putting in one zinc division-board, put in two, about half an inch apart; or, what is better still, put the zinc division-boards far enough apart to allow a comb between them and then fix a strip of zinc before the old queen's half, and the young queen will be fertilized, and lay as certainly as if she were in a separate or nucleus hive. I have tried more than a hundred in just the way Dr. Miller describes; and so long as the young queen was admitted on the combs where there were eggs, nearly all came up missing. I think they thought they were not needed, and flew out of the hives and never returned. I do not know that I ever had *one* become fertilized when eggs were present; and it is my belief that, if the old queen should travel across one of the combs, it would have the same effect.

The reason I think it is the young queen's fault is this: I make a queen-nursery with Benton cages by suspending them between the combs by a raveling of wire cloth attached to a match that rests across the top of the adjacent frames. The cells are thus arranged in the cages to hatch; then when the young queens need food it is provided by the bees. Before the cells are put in, a fourth-inch hole is bored through the wood into the cage, and a piece of zinc with one perforation in it is tacked on, so when it is turned it may or may not admit bees into the cage and exclude the queen. I often keep a dozen to twenty young queens in this way until I have use for them, and it is often they are kept until they are too old to become fertilized; and while I used to lose a great many by the old method where bees were not admitted, I have never known a single one to die treated in this way, and I have kept them from July to November, and a laying queen outside the cages.

If we divide a colony into halves by a solid division-board, queen-cells will be built in the queenless half. If a division of perforated zinc is used, the effect is almost the same. They

may build queen-cells or they may not. If they don't, put in the solid board; and when the cells are started, take out the solid board and put the zinc in its place, and the cells will go on just the same. This raising the second queen in the same colony is a grand key to success. It succeeds where any sort of introduction fails. But the queens must be kept more than a sheet of perforated zinc apart, so I place the old queen on a four-frame restrictor on one side of the hive, put in one zinc division-board and slide the entrance-blocks along, and the young queen has the privilege of flying from the hive and returning safely to her own apartment, and the bees go on storing honey as usual.

C. W. DAYTON.

Clinton, Wis., Sept. 15.

A BEAUTIFUL CARPENTER BEE.

THE XYLOCOPA.

The handsome bee received through you from F. I. Tyler, Bakersfield, Cal., is a species of *Xylocopa*, or carpenter bee. It is as yellow as the yellowest Italian, and is a beautiful addition to our cabinet. It is a new species to our collection, if not to science. I wish I could get eight or ten more like it. In its long abundant hair and yellow color it differs from most carpenter bees, and reminds us of the bumble-bees. Carpenter bees are usually black, blue, or purple. The habits of these carpenter bees are well known. They bore into wood to form their cells, store these wooden cells with pollen, and lay their eggs in this, so that, as soon as the eggs hatch, the little carpenters can have bread (bee-bread) close at hand. We see our friend Aspinwall was not the first to construct wooden cells. These bees frequently tunnel into cornices and window-casings, and do no little mischief. I have frequently recommended the filling of the tunnels with an ointment made of either lard and kerosene oil, or sulphur and kerosene oil. This always drives them away at once. I have never known it to fail. The bee sent is a female. I should like very much to secure a male, if no more.

Ag'l College, Mich.

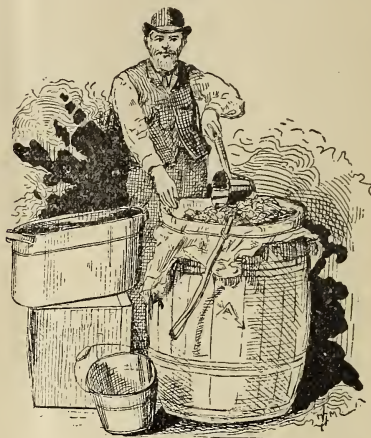
A. J. COOK.

WAX BLEACHING; HOW 'TIS DONE.

A SIMPLE AND EFFECTIVE WAY OF RENDERING WAX.

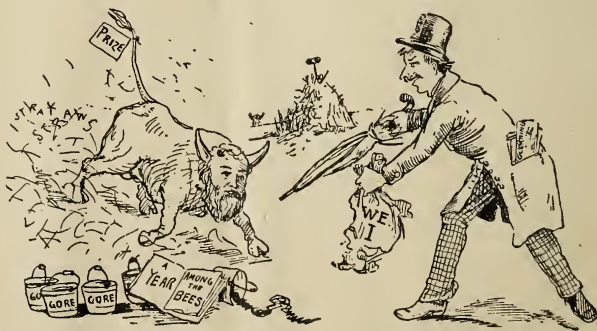
Friend E. R. Root:—In answer to your foot-notes, p. 662, under the last Ramble, in relation to the process of wax-bleaching, the process is so simple there is but little detail to it. At first the wax has to be frequently loosened up, and is emptied from the trays on to the wide bench where the men are seen breaking up the chunks and loosening it up to the light. It is then returned to the trays; as it progresses toward the finish it requires less of this loosening process. I understand the wax is bleached to whiteness because it can then be handled better in the incorporation of colors. The candles, to a great extent, are white; also the wax for the drug trade. From the amount of bleaching done I should say that yellow wax would be called crude in this factory. As to the amounts of other ingredients used, it depends entirely

upon the class of goods made. I did not investigate this point closely, for I was aware that I might be treading in the forbidden paths of trade secrets, etc. There is no deception, however, here in relation to the class of goods sold. They are true to name and description. While upon the wax subject I wish to call your attention to a method of rendering which is quite rapid, and which, though old, I have never seen



VROOMAN'S PLAN OF MELTING WAX.

described. This method is practiced by Mr. Solomon Vrooman, of Hartford, N. Y., in preference to any of the many methods recommended. The wax is melted in a boiler or large kettle, and thoroughly boiled until all the lumps are finely pulverized. A square of very coarse burlap is placed over the end of an empty barrel, a stout cord tied around, and a twist taken with a stick to hold it secure. The hot melted mass is then dipped on to the burlap, which will soon bag down and hold several dipperfuls. It is then pressed and ground around with the side of the dipper until all the wax is out. The dross is thrown into a pail, and another charge manipulated. Steam from the heated wax and water that goes into the barrel keeps the mass in the burlap from cooling, and the mass can be worked for a long time if desired. The Rambler has tried this method on a batch of 200 lbs., and prefers it to the press method as being cleaner, and accomplished more rapidly, and the dross is so free from wax that there is no necessity of further treatment. The photo



RAMBLER PROPOSES TO FIGHT IT OUT.

shows the method and Mr. Vrooman so plain that any further explanation is unnecessary.

The clear wax can be dipped from the barrel into any kind of molds desired.

Tell Dr. Miller *we* are going to shake our *we* and *I* banner more than ever. The way he goes for all who differ with him upon that *very important* subject reminds the Rambler that the accompanying cartoon just expresses the situation.

RAMBLER.

LADIES' CONVERSAZIONE.

OUTDOOR FEEDING TO PREVENT ROBBING.

SOME GOOD SUGGESTIONS FROM MRS. AXTELL.

Sometimes during the summer I go out to the woodpile and carefully scrape up the clean small dry chips and fill into barrels, being careful that there has been no rain for some time before gathering them, and get the men-folks to set them away under shelter for next year's use. These, mixed with a little rotten wood for starting the fire, make excellent smoke with little time to prepare it. Where an old fence is being rebuilt there are always plenty of old rotten rails the builder is glad to give away to be rid of, that, if gathered and laid away, make excellent smoke when chopped or sawed up fine, or mixed in with the chips; also dry corncobs, pounded just enough to split them open, and mixed with other fuel. It makes the work of handling bees much easier if one has plenty of smoke just when he wants it, and the smoke-wood all in readiness. To have good smoke, the fuel must be dry. The smoke does not gum up the smoker so badly either. I have been asked to look at others' bees when I had to wait for them to run and hunt up the smoker, one member of the family looking here and another there, and all in commotion, and then smoke-wood had to be hunted up out of the woodpile or barn, or along some fence, which, when found, would generally be wet or damp, and would not burn well; or sometimes only very rotten wood that burned out too quickly. Then some inferior face-protector was brought, full of holes. By the time I was ready to work at the bees, if all things had been in readiness for work, it would have been done.

ROBBING.

Toward the close of the honey-dew harvest, even when we could shake honey out of the combs, we had to work very carefully to keep all exposed honey covered, and close hives quickly, or the bees would be in a terrible hubbub of robbing as Dr. Miller speaks of. At one time after honey harvest closed I had considerable work I wanted to do. I got the bees quite aroused before I realized how bad they were. I remembered how nicely I could work with them while they were feeding from the troughs of sweetened water. I went immediately and filled up their trough with floats, poured in sweetened water, and set the robbers to work, at the same time covering the robbed colonies with wet sheets. Pretty soon all robbing ceased, and all were intent on bringing in the sweetened water. After the robbers had left I uncovered the hives being robbed and let them work too.

For open-air feeding, only slightly sweetened water should be used, or they will sting each other badly in the troughs and around the trough. On the grass for several feet away they will be seen fighting and dying, as they are often seen to do in the honey-house where they have access to combs of honey. If we catch a bee as it comes in from the fields, with its honey-sac full of nectar, and kill the bee

and taste the nectar, we notice that it is not very sweet. It only tastes like sweetened water, so that is as sweet as the bees should be fed out of doors. They not only kill each other, but they daub themselves up so badly that many are unable to reach their hives, and are lost in the grass and dirt.

ESCAPES.

To give best results with escapes we found they need to be left 48 hours after being raised up. Some supers could be taken off in 24 hours, while a few would not all get out, so that they might as well remain until all were gone, and a clean thing made of the work.

At our out-apiary we have so good an escape window in our honey-house that we concluded this summer it was about as convenient to smoke them well and stand supers on end in the house in such a way that the light from the windows shone through the spaces in the sections, which attracted the bees quickly to the windows, so that, in two hours, many cases would be cleared out; in half a day all would be gone.

The bees nearly all find their way back to their own hives. Possibly the young bees went into the nearest hives; but if so, they would be received all right, because they were young bees. Carrying them into the honey-house saves opening the hives twice. Apiarists whose supers were set on top of the hive would not mind lifting the lids to take the supers off the second time; but our supers are set inside the hives. We have to take out the back-board or back end of the hive; and by the time we got the super raised up, especially hives that were not high enough to take in a slatted honey-board and the bee-escape, the bees would be coming out pretty lively at the back side of the hive, except as they were smoked back; so that it takes, with our hive, more time than it would with some others to get the bees brushed off and board returned and hive closed; and the dripping slatted honey-board, unless great precaution is used, would cause robbing. Some of our hives will take in both the slatted honey-board and the escape-board. In that case the hive is closed up so tightly there is no danger from robbing.

At an out-apiary where supers are set on top of hives with no hive surrounding them, and then lifted up with an escape put under, in the hands of careless bee-keepers I fear some will find their honey robbed out unless great care is taken that there is no crack or opening large enough for robbers to push themselves in, as there are no bees to keep them out, as they can crowd themselves through a very small place when in search of honey. At a home apiary such robbing would be detected.

BUILDING UP WEAK COLONIES.

We thought to place an escape over a very weak colony, and place on top several supers with adhering bees as they came from the hives to build them up, as we have often done, unless using the escape-board; but we found it would not work, as every bee that passed down into the colony was killed and dragged out. They were making a wholesale slaughter. Seeing that they were killing them off so fast, I had the supers removed and the escape-board taken away, a cloth laid over the frames, except a space at one side, so the bees could readily go up into the combs of honey, and all fighting ceased. The bees in the supers were from several hives, so they readily united; and, being in a strange hive, they would not fight, and the honey stopped the bees of the colony from killing the incoming bees. Then they united peaceably, and formed a nice strong colony. So long as there is unsealed honey in supers

they will not uncap the other; but this fall, as all our honey is dark we would not care if they did uncap some of the combs.

Roseville, Ill., Sept. 6. MRS. L. C. AXTELL.

[My good friend, your plan of getting rid of robbers by feeding sweetened water instead of syrup is one of my old hobbies, if you remember. At the time of my experiments, however, I preferred grape sugar, for the reason that it was not as sweet as cane sugar, and they did not care very much for it. I assure you it was refreshing to get every robber out of the way, simply by drawing them off with a very little cheap sugar. One objection, however, to this very weak syrup or sweetened water, was that it soured very speedily, especially in hot weather, if I gave more than they took up at the time. Yes, I too discovered how the bees would fight and get daubed if it were just a little too sweet.

Do you not unconsciously give us an illustration of some of the very inconvenient features of the closed-end frame you use in connection with the old Quinby hive? Yes, I have seen just the result you mention, in taking bees from one colony to give to another. Unless you take pains to let the inmates of the hive get a taste of the honey to make them good-natured, they will sometimes sting, even when the new comers are gorged with honey.]

A. I. R.

OUR QUESTION - BOX,

WITH REPLIES FROM OUR BEST AUTHORITIES.

QUESTION 194. *In a locality where flowers are late in blooming in the spring, would you advise supplying some substitute for pollen? If so, name two or three of the best.*

Yes. We use flour, rye or wheat.

Illinois. N. W. DADANT & SON.

Yes. Rye or corn meal, or wheat flour.

Vermont. N. W. A. E. MANUM.

I have always found enough pollen left in the combs, but the best substitute is flour.

Louisiana. E. C. P. L. VIALON.

I don't think as favorably of feeding pollen substitutes as I used to.

Ohio. N. W. H. R. BOARDMAN.

Rye and oats ground together make an excellent feed. That's all I have ever tried, and it is seldom necessary in this latitude.

New York. E. RAMBLER.

No, not here. I would not supply any substitute. I have repeatedly tried it, and found it would not go. It looked to be a howling success, but it was not.

Michigan. S. W. JAMES HEDDON.

Most assuredly, if the bees are short of pollen for breeding-purposes. I would use either pea flour, or wheat flour mixed with honey, and placed in the combs.

Ohio. N. W. A. B. MASON.

Yes. Rye, oats, and wheat are good. While I have never tried it, I think peas or beans would be better. Corn meal will not do, as they can not carry it.

Illinois. N. C. J. A. GREEN.

No, I would not supply any artificial pollen if the flowers furnished plenty when they did come, even if it were late. My experience in

that direction has satisfied me that it pays better to wait till nature comes to the rescue.

Wisconsin. S. W. S. I. FREEBORN.

The best substitutes for pollen are rye flour and pea flour. But if you take care of your combs of pollen of the previous season, substitutes are hardly ever necessary.

Ohio. S. W. C. F. MUTH.

In this locality natural pollen is to be had as soon as it is warm enough for bees to work without loss. If I used a substitute I should prefer rye flour.

Illinois. N. W. C. MRS. L. HARRISON.

I would use unbolted wheat flour. My miller told me that, on one occasion, the bees came in great numbers and worked in his flour-chest as it came warm from the stones.

California. S. R. WILKIN.

In this locality bees can get pollen as soon as they can fly safely. I imagine that this is pretty generally true. In case there is a lack of pollen I should advise oat or rye meal.

Michigan. C. A. J. COOK.

There are some localities where it pays to furnish rye flour. A cheap wheat flour, known as daisy flour, is taken quite readily. Pea meal, recommended by British bee-keepers, is probably better. We do not feed.

New York. C. P. H. ELWOOD.

In my home yard I have used some rye flour in early spring, but I don't know that it ever did any good. I don't think I shall bother to use any more. My bees always gather pollen in the fall, so they have plenty of pollen in spring, and don't need flour. If I thought they had no pollen in their combs in spring, then I would give them rye flour.

Wisconsin. S. W. E. FRANCE.

I do not know that this pays in dollars and cents; but the "fun" pays me, for it is lots of fun for me and all who call at my house to see the little fellows roll over and over in the meal. I consider corn meal ground fine just as good as any, while all that the bees do, not use is not wasted, as it can be fed to the cow, horse, sheep, or chickens.

New York. C. G. M. DOOLITTLE.

Not very much to be gained on that line, I think; yet there is no harm in furnishing pollen substitutes when the bees go for them eagerly. They work with great zeal sometimes at fine dry sawdust. Let them have the choice between a lovely article of sawdust and rye flour. While I think of it, feeding flour is sometimes complained of for getting the combs full of little solid lumps that the bees have to tear out to get rid of.

Ohio. N. W. E. E. HASTY.

If the weather were pleasant enough for bees to work, and they could not get enough natural pollen, I would try to give them all they would take of some ground feed I was using for horses or cattle. You see, if they use only the finer parts the rest can be fed to the cows after the bees are done with it. I think I have liked ground corn and oats the best. Corn meal will do, but it is pretty heavy for them to work. Rye, wheat, barley, buckwheat, are good; but I would have neither of them bolted—both because it is pleasanter for them to work on the unbolted, and because, I think, some of the best is bolted out. The different brans are good if not cleaned too close. Pea flour is used in Eng-

land, but I suspect it would be too expensive for us.

Illinois, N.

C. C. MILLER.

[It seems to me, friends, that this whole matter hinges on a locality or season, where pollen is plentiful and where it is not. Now, there are seasons when our bees seem to care but little for meal, and at other times they seem just crazy for it. At such times I have examined hive after hive without finding a trace of pollen. They were actually powerless to raise brood unless they could find some substance that would answer as pollen. They went to a sawmill near by until the people complained that they could not handle the lumber on account of the bees, and the piles of sawdust were also covered with them. They went inquiringly into the barns and stables, and seemed to be crazy for any thing in the line of meal, flour, or chopped feed. At such times, oats and rye ground together were taken with wonderful avidity, and brood-rearing started as if by magic. The largest honey-yield I ever reported came after the heaviest meal feeding we ever had, and visitors from adjoining apiaries expressed great astonishment to see my hives so crowded with brood when theirs were not. Friend Hasty speaks of solid lumps of hardened meal or flour in the combs. We found quite a little in our combs during one season, but we didn't discover it until extracting time. The bees seemed almost unable to get it out without cutting out the combs or excavating it and letting it tumble on the bottom-board. That spring we fed fine white-wheat flour. In feeding oatmeal and rye I have never noticed any such trouble. My answer, therefore, would be, whenever there is such a state of affairs that the bees seem greedy for the rye flour before the natural pollen comes, and when examination at the time shows that their hives contain no pollen, I would most assuredly give them some of the substances mentioned above. When, however, natural pollen comes, as soon as they fly freely, or when there is pollen enough in the combs, I would not fuss to give them a substitute, unless it were, perhaps, a very little, "just for the fun of the thing," as Doolittle puts it.]

A. I. R.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

"RASPBERRY APIARY" REPORT FOR 1891;
LEATHER-COLORED ITALIANS; HOW THEY
ROLL IN THE HONEY.

The hives used are "Bristol L.," and the strain of bees is one cross, since coming from A. E. Manum's leather-colored; and while not quite as gentle as some of the handsome, dude-looking, five-banded hybrid bees so much lauded for their beauty, yet if any one wishes bees for honey I advise him to obtain some of A. E. Manum, of Bristol, Vt., as I know they are good, and, as sent out by him, pure Italian. April 27 I had two good colonies, two fair. May 11 I put upper stories with queen-excluders on Nos. 1 and 2, and moved No. 3 to Barre. On June 5th, all were in prime condition—Nos. 1 and 2 storing some new honey. On June 15th I extracted from Nos. 1, 2, and 4, 150 lbs.; June 20th, from Nos. 1, 2, and 4, 170 lbs.; June 27th, from Nos. 1, 2, and 4, 200 lbs.; July 2d, from No. 1, 80 lbs.; from Nos. 2 and 4, 100 lbs.; July 16th, from No. 3, 60 lbs.; July 23d, from Nos. 1, 4, and 3, 110 lbs.; Aug. 3d, from Nos. 1 and 4, 100 lbs. Total, 970 lbs. In the way of increase I saved

two swarms. At least three large swarms went to the woods, as no one watched for swarming. I clipped the old queens' wings for the sole object of keeping them at work for me as long as possible. Bees are now in good condition; but if the fall flow fails I shall have to have returned to them for winter, 170 lbs.

I wintered in the cellar. Honey sources, fruit, raspberry, white and alsike clover, basswood, and goldenrod. The remarkable record of 80 lbs. of honey as the net gain for four consecutive days, of one queen's bees, in one hive, is something which I do not remember having heard of. The honey is of very good quality.

Barre, Vt.

H. W. SCOTT.

[Your report is good, but we must not overlook the fact that the product from a few colonies is usually much greater in *proportion* than from a larger number.]

THE HONEY-CROP IN NEW HAMPSHIRE; A GOOD SEASON REPORTED.

New Hampshire has furnished the Union its proportion of great men, and has done it handsomely; yet it can not show a great number of "way up" bee-keepers. Out of New Hampshire's granite flows an abundance of water, but honey doesn't seem to flow so freely; but scattered here and there over the rocks are farms, and on these farms are flowers, and in these flowers honey is to be found. Bees find it and carry it home to their families. Then comes man, with all his selfishness, and claims a lion's share; and thus it is that, as I write, some of the most delicious honey that flowers ever produced is tickling my palate, and making glad my heart. Bee-keepers of New Hampshire have had a very prosperous season. To be sure, the bees died out badly during the winter and spring, but the honey-flow has been all that could be desired. Not for a good many years has there been so much white clover. It has grown everywhere—by the roadsides, in the pastures, gardens, in dooryards—anywhere and everywhere; and that it contained honey, our bee-hives fully attest. Bee-keepers in this vicinity all tell me that they have never known honey to be more abundant; but the weather has been unfavorable a part of the time. However, more honey has been secured than for several years. There is no purer, richer-flavored honey produced in any part of the United States than in New Hampshire. There can not be. Perhaps there is no place where honey brings so high a price. The retail price is uniformly 25 cents per box, and it is scarce at that. We should judge from reports, that this season has been more favorable than last in almost every section of the country. Honey should bring a good price, as it has been pretty well cleaned up during the past year. A. D. ELLINGWOOD.

Berlin Falls, N. H., Aug. 28.

BEE-PARALYSIS SLIGHTLY CONTAGIOUS; THE SALT REMEDY A COMPLETE CURE.

By your correspondents it appears that bee-paralysis (nameless bee-disease) is very prevalent. In my opinion it is caused somewhat by the quality of the honey consumed. I have been troubled in past years, but succeeded in curing the disease last year by the use of sugar syrup with a trifle of salt in it—about half of a level teaspoonful of salt to one pound of sugar. If too strong of salt it will kill the bees, as I found by experience. At one of my out-apiaries I directed the boy in charge to feed a colony that was badly affected. On my next visit I found half of the bees dead. The feed was stopped and the colony was cured. For an ordinary colony, feed a pint of syrup every three days. Sprinkling with brine often gave a short

stop, but no cure to the disease. The little salt that mixed with the honey probably produced the effect. I have noticed, that, when the bees gathered a better quality of honey, colonies slightly affected soon became all right again. I find the disease to be slightly contagious. Hives that were a few feet in front of the affected colony would soon be affected. Contact with the sick and dead bees that were on the ground apparently caused it. L. M. BROWN.

Glen Ellen, Ia., Sept. 15.

[Mr. Alley, of the *Apiculturist*, claims the idea of salt as a cure for the bee-paralysis, as you will see by editorials in Sept. 15th GLEANINGS. We are glad of your testimony to the same effect. Judging from reports, we are inclined to believe that the disease is slightly contagious.]

DO KING-BIRDS REGURGITATE? FACTS TO SHOW THAT THEY DO.

I notice in the Sept. 15th GLEANINGS that you solicit further testimony on the matter of king-birds having the power to regurgitate, or disgorge, which I think is just as good a word. I can say it is no hoax, as I have seen it done. A few years ago I saw one sitting on a fence-post within 30 paces of me, so there could be no mistake about it. He went through about the same motions as a pigeon does when feeding its young. I saw him plainly eject a wad as large as an ordinary tobacco quid (but not as nasty), which I poked apart with a stick, and found it composed of parts of insects, but no bees, although I have opened them many times and found worker-bees in the gizzard. King-birds are certainly a nuisance to bee-keepers, but I am inclined to think that, on the whole, like all insectivorous birds, they do more good than harm. E. D. BARTON.

East Hampton, Ct., Sept. 23.

[Friend B., I am sure you are right. I am personally acquainted with the gentleman who made the statement given in GLEANINGS, and I know he saw exactly what he states. He may possibly have been mistaken in the kind of bird; but there is certainly *some* bird that makes a practice of catching honey-bees, and, after it has squeezed out the honey, it disgorges the pomace.] A. I. R.

CRATES FOR CRATING UP CASES OF HONEY.

I see that you recommend crating comb honey for market in same size as I crated mine last year; and I also see that you make crates for sale. Now, I should like to know whether you make them the same as I did. If it is not too much trouble for you, I should like to have you give me dimensions of different pieces, and number required per crate.

MATTHIAS SCHNEIDER, JR.
McIvor, Mich., Aug. 11.

[We took the idea of crates for crating up cases, very largely from those you sent us last year. We have made up a small crate that will hold nine 24-lb. cases, or eighteen 12-lb. The bottom is made of a frame of $\frac{1}{2}$ "x2-inch stuff, 19x36, $\frac{1}{2}$ " inch. The long pieces stand on edge; the short pieces nail crosswise on top, and between them are nailed four pieces of 6-inch crating, $\frac{3}{8}$ " thick, 19 inches long. The handles are about four feet long and $\frac{1}{4}$ "x5 inches. On each side are 3 pieces of 6-inch crating, also 19 inches long, nailed to the outside of the bottom strip and to the inside of the piece forming the handle. These pieces of 6-inch crating 19 inches long are just what we used to make boxes to ship sections in; and as most bee-keepers have a surplus of these they can utilize

them in making crates. There are also three pieces across the top, about 21 inches long, and one up each end, about 17 inches long. The ends of the section boxes could be used to form the ends of the crate, as they are just the right length. Our shipping-cases, as we now furnish them, have glass on only one side. In putting them into the crates, the glass should be turned in so that none of it is visible. This, at least, will be required according to the new ruling of the Western Classification Committee.]

BROOD IN SECTIONS WITHOUT QUEEN-EXCLUDERS: ONE WHO CONSIDERS PERFORATED ZINC INDISPENSABLE.

In May 1st GLEANINGS, E. C. L. Larch and E. R. say they need no queen-excluders to keep brood out of sections. Will they please tell how they keep the queen from the sections without using something to keep her out? I use 10 L. frames in my hives. I use both wide frames and supers, and get brood in both. I have had half of 48 sections in wide frames spoiled with brood, and had lots of it in my supers. I often have them, when I fill the sections $\frac{3}{4}$ full of foundation, fill the bottom with drone comb and brood, and get plenty of worker brood in sections. I don't see how people can get along with eight frames. By the middle of May many of my hives had ten frames of brood; and where I had two stories of worker combs for extracting, some queens had 12 frames; now some have 14 frames of brood. E. D. HOWELL.

New Hampton, N. Y., June 5.

[You must have extra prolific queens. Our correspondents generally agree that it is not necessary to use the excluders for comb honey, simply for the reason that no brood gets into the sections. Perhaps we shall have to settle the difference on the bar of locality.]

WEDGING SECTIONS IN SUPERS BOTH WAYS.

Has any one ever tried wedging sections in the Dovetailed hive endwise as well as side-wise? It seems to us that it would be less work to put the sections on the section-holder slats without the end-pieces, and have an end-board as a follower, like the side, only of suitable length, with a wedge. The sections could then be wedged up perfectly square and true and tight, so that there could not be any propolis put between the sections at all; and then by using separators $\frac{1}{4}$ " in. wide, with insets cut in them to correspond with the sections, the bees could only touch the sections on the edge where they entered the sections and the inside. We had intended to try this method this season, but have had no chance on account of poor season. J. W. ROUSE & Co.

Mexico, Mo., Sept. 4, 1891.

[Oliver Foster, of Mt. Vernon, Iowa, wedges sections both ways; but it does not seem to be practiced generally. The object sought is a good one, but the methods for producing this double compression do not seem to be accepted.]

WAS IT THE WORK OF KING-BIRDS?

I had nine stands in chaff hives last spring, and had only two swarms issue this season. Now, did the king-birds take the queens when they were out on the wing? They were very thick here. My bees are not making very much honey this season. It has been very wet here. I think the birds took them.

GEO. PADDLEFORD.
Tunnel, N. Y., Aug. 27.

[King-birds had nothing to do with the swarms not issuing. It was due to your poor season.]

RETURNING SWARMS A LA DADANT A SUCCESS.

During the month of August I returned 17 swarms as directed by the Dadants, in reply to J. W. Murray, page 541, and only one of the 17 came out a second time, and that was over two weeks after they were returned. I cut the cells out of only one colony before returning the swarm, and that was a colony that I was changing from a single-wall to a chaff hive. The most of them were returned in 48 hours; but on account of rainy weather a few swarms were not returned until 96 hours. I consider this the best method yet devised to prevent increase, and shall practice it extensively on early swarms next season. S. W. TAYLOR.

Harveyville, Pa., Sept. 8.

CLOSED-END FRAMES IN A TIGHT-FITTING CASE.

I am afraid of the close space at the end of some closed-end frames, for I am sure to find the moth there in my locality, and yet I don't want a bee-space at the end of such frames. I shall try both.

I should like to ask Dr. Miller whether he ever tested queens from cells reared with caged queens, as mentioned on page 480 of GLEANINGS, 1890. Bro. Alley says, on page 120 of the *American Apiculturist* for May, 1889, that in some cases the queen was caged, but the queens reared in that way have proven worthless in my apiary. My experience confirms his.

Galesburg, Mo. W. L. SMITH.

HOW TO CARRY BEES INTO THE CELLAR WITHOUT BOTTOM-BOARDS.

I should like to have some one tell how to manage to keep bees quiet while putting them into a bee-cellar, without bottom-boards, or raised from the bottom-board, as some recommend; also method of setting out.

Greenville, Mich., Aug. 25. L. C. LINCOLN.

[As we have before explained, the bees should be set in the cellar when the air has a tendency toward frost; that is, just enough so that the colony is contracting toward their wintersphere. With ordinary caution, scarcely a bee will fly. As we explain in our price list and A B C book, we prefer to carry colonies into the cellar with bottom-boards; and when inside, lift the hive off and set it in its position.]

KEENEY METHOD OF WIRING FRAMES.

I would say that I have about 40 brood-frames of each of Keeney's method, and the horizontal method drawn taut, and have not a single perfect comb of the former, nor a single imperfect one of the latter, all on medium foundation. If drawn tight, the wire will sag enough to correspond with sag in foundation.

Bees have done fairly well this year, but the quality of honey is not up to the standard. It is dark, with some little honey-dew.

JAS. A. DIMICK.

Anderson, Ind., Aug. 26, 1891.

BEES AS FERTILIZERS.

Prof. Cook:—Please explain through GLEANINGS how bees fertilize flowers. The honey crop has been very good here. Bees are gathering honey from a bitter weed. I will send you a sample.

JOE SMYLLIE.

Wilson, Miss., Aug. 20.

Each flower of most plants bears stamens and pistils, or male and female organs. The stamens bear the pollen, or fertilizing element, which must reach the pistil and pass to the ova, or seeds, else they will fail to produce. In many cases the stamens are on one tree, and the pistils on another, as in the willows. In this case, wind or insect must bear the pollen dust from

the stamens to the distant pistil. Often the seeds will not develop unless the pollen from another flower, even though the flower has both stamens and pistils, is brought to fructify them. Thus we see that bees and other insects in performing this valuable service are of immense importance to vegetation. In many cases they must bring pollen from distant plants, as the male and female organs are widely separated; in other cases they must cross-fertilize, as close fertilization is impotent. Every bee-keeper knows how bees get covered with pollen, and how they bear it from flower to flower. Notice the bees at this season, August, as they visit the snapdragons. The pollen is white, and often the bees have a white line the whole length of the back where they rub against the stamens, and bear off the pollen. As they pass to another flower this pollen is rubbed off on the pistil, and passes on to the seeds. J. S. will be interested in the other article sent to GLEANINGS, on "Bees as fertilizers." See page 732.

Ag'l College, Mich. A. J. COOK.

SALT A GOOD REMEDY FOR BEE-PARALYSIS.

I notice what is said in regard to bee-paralysis and the remedy. I had one stand this summer that had it. I took one handful of salt and put it under the stand, on the platform, and in the entrance, and crowded it up against the front of the hive, and now the same bees are well. I don't see that any are being killed. Some of those bees would look black and shiny, and the other bees in the same hive would kill them. I salted every hive in the same way.

Moulton, Iowa, Sept. 28. S. S. BUCKMASTER.

THE DOVETAILED HIVE WITH HOFFMAN TOP-BARS.

I have had about a dozen of your Dovetailed hives in use this season; and to say I liked them from the start is putting it mildly. I find that they do much best with foundation wired in. It seems so nice, after using the old Simplicity frames so long, and being bothered with burr and brace combs, to watch the bees fill the frames (Hoffman), with the assurance that there would be no such nuisance to bother. But the regular white-clover flow set in, and the hives were just running over with bees, and honey coming in lively; and, didn't these little knots of combs begin to grow right before my eyes, and right up through those exact spaces between the frames where we were assured by the junior editor of GLEANINGS that the soil would not produce a growth of these noxious weeds! But they grew up through these spaces, and entirely across the top of the frames. In several hives the space between the frames was half filled with these impediments to morality.

Well, seriously, I think if you will add $\frac{1}{4}$ inch to the depth of the Hoffman frame you will have it about right for this climate.

The wedging-up process, as applied to the Dovetailed hive, is not satisfactory. It does not draw the frames close enough together to keep out propolis. But I still like the Dovetailed hive, with all its faults.

Henderson, Mo., Sept. 23. S. S. LAWING.

[The hives which you had were among the earlier lot of the season, and did not have the scant $\frac{1}{4}$ -inch bee-space, as we had not at that time learned that the bee-space was one of the prime essentials in the riddance of burr-combs. Instead of making a standard frame deeper, we make our hives shallower, which accomplishes the same results. Out of our 80 colonies in the Shane yard, only one had burr-combs above the top-bar, and that over only one or two frames.]

DADANT ON SULPHURIC-ACID WAX RENDERING.

Friend Ernest:—After reading your remarks on the use of sulphuric acid, pages 703 and 714, I had about made up my mind not to reply, because I thought the arguments which I could give you against the ground you took would be of but little importance, but in reading Dr. Miller's opinion on this subject as given in his *Stray Straws* I find his views to agree so well with my own that I will give you what arguments I have on this point.

We find that the more beeswax is manipulated, the more it is re-melted, the more it loses its fine honey flavor, and therefore the more objectionable it is to the bee-keeper's taste, and the more readily bees will object to it. There is not a doubt in my mind concerning the healthfulness of beeswax refined by the sulphuric-acid method, and I believe that this method is advantageous to cleanse black wax or refuse, since we use it ourselves; but to use it on all grades will simply make an insipid material of the sweetly perfumed article produced by the bees. I have often heard parties wonder what sweet-scented substance was used in the manufacture of foundation, when it was only the perfume that Nature put into the blossoms that could be so plainly detected. All the secret of this was the use of clean water in rendering the combs. For this reason, I should be sorry to see any of our bee-friends use the dangerous oil of vitriol when another process much more simple will do as well. Let us teach bee-keepers to render their wax in the sun or in clean tin vessels with clean soft water, and we shall make the very best foundation that can be obtained.

C. P. DADANT.

Hamilton, Ill., Sept. 18.

[I believe what you say is true, that melting and re-melting does to some extent destroy the peculiar aroma that is present in virgin beeswax. Whenever visitors go down into our foundation basement, they usually exclaim, "How good it smells!" adding that the odor is suggestive of honey. In regard to the sulphuric acid, perhaps I should explain that we have tested it on only the very darkest grades of wax, and the whole amount rendered in this manner will be small compared with the sum total used in foundation-making. But we find that bee-keepers clamor more for the yellow color of wax than for its peculiar odor; so even if all the wax were refined by sulphuric acid (which will never be the case by a long way) it would not be objectionable to bee-keepers.

I have been making some further experiments in regard to acid testing in wax, and have finally succeeded in detecting a very, very slight trace of acid in wax rendered with sulphuric acid; but the amount is so infinitesimally small I feel sure it can do no harm; and although I do not know positively, yet I do not think it would be objectionable to bees.] E. R.

HOW I GOT EVEN WITH THE ANTS: A NOVEL PLAN.

This vicinity has a sandy soil, and, being loose and warm, it is inhabited by myriads of ants. The struggle for existence among them makes it necessary for them to prospect every nook and corner for food. They came up into the house day and night, and soon learned the way to the cupboard. No barrier would prevent them. After failing with several expedients I determined to give them a satisfactory feed. I took a large bottle and dropped into it a quarter of a teaspoonful of Paris green. To this I added a tablespoonful of alcohol to make it more soluble, and filled the bottle up with sugar syrup. Then I got a piece of a pane of glass and poured them out a meal on it, setting

it in their trail on the floor. This was in the afternoon at 5 o'clock. The whole colony was awakened. They streamed in all night, passing around by the edge of the carpet, over which they would not crawl, and filled up on the deadly feast and went back again—hundreds, thousands of them, hundreds of thousands. The next day by ten o'clock not an ant was to be seen. Once since, the colonies in the rear of the house were induced to come to a festival with like results. Not one died in the house. The bottle is yet half full, waiting any further encroachments.

C. H. MURRAY.

Elkhart, Ind., Sept. 22.

KEROSENE EMULSION AND HOP-LICE.

Mr. Root:—Do you know what would be the best to spray hop-vines with, to kill the lice? Every hop-yard in Oregon is loaded down with the louse. The growers are spraying, but it does no good. Please publish in *GLEANINGS* what you think would kill them.

Butteville, Or., July 21.

LUCIEN GEER.

[We forwarded the above to Prof. Cook, who replies:]

The hop-lice, like all other plant-lice, can be subdued by use of kerosene emulsion. I have previously given both formulæ for this valuable insecticide in *GLEANINGS*. Those needing them may well try both, as it requires but little trouble, and use the one that works best. In making any kerosene emulsion it is necessary to agitate very violently. Simple stirring is not enough. Pumping the liquid forcibly back into itself is always effective. A one-fifteenth emulsion—that is, kerosene one-fifteenth of the whole—is always fatal to aphides, or plant-lice, and never harmful to foliage.

A. J. COOK.

Agricultural College, Mich.

DIAGNOSING COLONIES; HANDLING FRAMES LESS.

I have closely read what has been said in *GLEANINGS*, especially by the large guns, and more especially the remarks that follow, either by A. I. or E. R. Root. I have taken a deep interest in the arguments over the closed-end frames, for it is with us here in the South to get the most for the very least labor possible to accomplish the best results; and the handling of hives instead of frames has been my practice since coming to Florida. My hive is a ten-frame short or crosswise Langstroth, loose bottoms, and can put on as many stories as the colony can use, so that I can nearly always, by handling the hive, tell what their wants are.

E. R. struck the key in his remarks when he used the word "diagnose." To be able to do this is the first step toward successfully handling the hives instead of frames. You must first practically learn to make a correct diagnosis of the colony, the same as a successful doctor will with his patients. The practiced eye and ear can very closely tell what bees need by their looks and movements at the entrance, and by the hum of their wings. Colonies in want of stores are smaller, have a pinched and drawn up look, restless in their movements, and often give off the hum of distress, similar to a colony with no queen. First learn to diagnose your hives (*bees* would be the word), and then you can save a vast amount of labor; then you can handle hives instead of frames; still, with less labor with loose-bottom hives.

JOHN CRAYCRAFT.

Astor Park, Fla., Sept. 26.

SNEEZEWEED HONEY, AGAIN.

F. H. French, Florence, Ala., sends me some flowers of the sneezeweed, *Helianthus tenuifoli-*

um. from which he says his bees have gathered much honey and pollen for the whole of August. The honey, he says, is of a beautiful golden color, but is so bitter that it is unfit for table use. He says it was brought from Texas by a physician because of its medicinal qualities, which, it was claimed, resemble those of quinine. The plant has spread widely, and ruins all the fall honey, except for food for the bees. Mr. French asks whether this plant is valuable for medicine.

By looking in GLEANINGS for 1890, p. 672, it will be seen that I received very much the same information and inquiry about this plant from Mr. C. P. Coffin, Pontotoc, Miss., last year. This is an introduced plant, and is naturalized all through the South. It is closely related to goldenrod, sunflowers, asters, etc., and so we need not wonder that it is a rich honey-producer. It is to be regretted that the honey is bitter. We can only advise that it be kept separate as much as possible by extracting all other at the dawn of its blossoming, and use it in winter and spring to feed the bees. That it may have decided therapeutic qualities is not improbable. To answer this, careful experiments would need to be made. A. J. COOK.

Ag'l College, Mich., Sept. 15.

STINGLESS BEES.

In *Youth's Companion* (Sept. 24, 1891) it is stated that they have stingless bees in Australia. Is that true? If so, why are they not imported into this country? E. BRUBAKER.
Philadelphia, Pa., Sept. 28.

[There are stingless bees in some parts of Africa, South America, Mexico, and, we believe, in Florida. So far as we know, they are worthless for practical use. Those we tested in our yard were about equal to bumble-bees as workers.]

ANSWERS TO QUESTIONS

FROM OUR A B C CLASS.

E. T., York, Neb.:—Pouring boiling water into the extractor, and then revolving the basket, might disinfect an extractor that had been used for extracting honey from foul-brood combs. The better way would be, if you can, to cover the extractor and then turn in a jet of steam and let the steam whistle into it for half an hour. If you can not get access to steam, put in a great deal of hot water. Fill the can full of boiling water, and let it stand until the water cools.

D. P., Vicksburg, Mich.:—If your bees have built your combs crosswise, cut them out and transfer them into the frames right, as per "Transferring," in the A B C of Bee Culture. To avoid a recurrence of such, use foundation. Even narrow strips fastened to the comb-guides will answer to get the bees started right, although almost all bee-keepers prefer to use full sheets, and generally wired, at that.

F. J. S., Canaanville, Ohio:—It is too late now to try to increase your colonies. Don't attempt it until about next May, and then you can do it by dividing, as you suggest; but when you divide, be sure to put all the hatching brood into the new location, and at the same time carry two-thirds of the bees there. This will secure a nearly equal division of both, because the old bees will return to the old stand where their queen is.

HIGH-PRESSURE GARDENING.

BY A. I. ROOT.

Here it is October 2d, and the beautiful weather continues. Some tomato-plants which I put out so late (on ground that was vacated) that some said they were sorry to see me wasting my time, are now ripening up beautifully. Those cucumber-vines are also yielding enormously. There has been a little frost on the creek bottom, but none at all on high ground. The market-gardener should own a hill as well as a valley; and where it is desirable to escape frost, his gardening should be on the highest ground. Underdrain and surface-drain so as to avoid wash. Have your furrows run horizontally instead of up and down, and you can have many things to put on the market after the frost has spoiled them for everybody else; and this, too, without sash. The hilltops are just the place for strawberries.

We dug our nice crop of Puritan potatoes with the cheap potato-digger. The principal reason why the ten-dollar digger is not as good as the hundred-dollar one is because it does not leave all the potatoes on the top of the ground; therefore when potatoes are worth any thing like a dollar a bushel, your ground should be cultivated after digging, and have some boys pick up the potatoes. We did the cultivating with our two-horse cultivator, and the boys picked up about twelve bushels more from a piece that had given us something like 200 bushels. You can see from this whether you want a cheap potato-digger or not. After the cultivator had gone over the ground it was in beautiful shape to fit for rye; but as the ground is comparatively new, and has never had much manure, we gave it a heavy dressing, say 25 loads to the acre, right over this cultivated surface, and we are plowing it now. The ground is so hard that, ordinarily, it would be impossible to plow it; but this ground has been made so mellow in cultivating potatoes, and later in digging them, that it plows up splendidly, providing we do not run the plow too deep. This reminds me of an experiment we made in order to test the value of rye. Last winter a strip of rye a few rods wide ran right through where our potato-field is now. The rye was put in in September, and in the spring it had made such a beautiful mass of feed that we commenced giving it to the cow. By the time we had got it all off once, where we first cut it it was ready to give another cutting. About this time we plowed it up for potatoes. As we cut such a quantity of green feed from the strip, I did not suppose the stubble would be of any advantage to the ground. To my surprise, however, the potatoes all along during their growth looked much finer over the rye strip; and the yield this fall showed a marked difference in favor of the place where the rye stubble was plowed under. A part of this stubble, however, was green and growing, as I explained. Somehow or other I always find a specially keen enjoyment in making garden and in sowing seeds in October. The cool nights and mornings act as a tonic, and give me enthusiasm. We have some rye that is now three or four inches high; some more just coming up, and the piece I have mentioned, where we have just been getting ready to put in the seed. The sight of the beautiful rank thrifty rye and spinach, when every thing else is exhibiting only death and decay, gives to me a special enjoyment. Owing to the unusually warm fall, one lot of spinach has got too large and has run up to seed. There is usually no sale for it until frost comes, because so many other things are on the market.

On this account it is well to make frequent sowings of spinach, lettuce, etc. One lot of lettuce that I had planted for Thanksgiving has already commenced shooting up to seed. Never mind; we have sold enough of it at 5 cts. per lb. to pay the cost of the crop.

MYSELF AND MY NEIGHBORS.

He that loveth not his brother whom he hath seen, how can he love God whom he hath not seen?—I. JOHN 4:20.

A few days ago the text above suddenly burst upon me. I was pretty sure it was in the Bible somewhere, but I did not know where. I thought first it sounded like James. But we finally found it as above. When it first came to me, my impression was that it read *neighbor* instead of *brother*—"He that loveth not his neighbor whom he hath seen, how can he love God whom he hath not seen?" Well, shall we make any mistake if we read it *neighbor*? I think not. John may mean brother in the church or a brother-Christian. But we are admonished by the Savior not only to love our neighbors as ourselves, but to love even our enemies. In the prayer-meeting and at church, in considering the matter we say, "Well, I do love my neighbor;" but when we come to week-days and to week-day tasks and duties, do our actions surely indicate that we have that constant and *abiding* love? Do we not often become discouraged, and say, "Well, I declare! I do not believe there is any use in trying. I really *can't* love that man?" But, hold on, my friend. Your next step will be to say you can not love God. This epistle of John is a very kind, loving, and gentle one. We can imagine John as an old gray-headed man. In the second chapter he commences with the expression, "My little children." In the third chapter he also uses the expression, "my little children;" and his talk is almost constantly about love; yet in the very verse from which I have chosen my text, John uses some fearfully strong language. Why, it almost makes me shudder to read it. When I hear the word "liar" used by people who are talking, it almost always gives me a start; and when some one calls another, with whom he is talking, a *liar*, it sends a chill, as if I had heard an oath uttered; but John uses the word *liar* right in connection with our text. In fact, the verse commences with the sentence, "If a man say, I love God, and hateth his brother, he is a liar." Oh! let us beware when Satan so gets into our hearts that we begin to feel hatred. Let us remember what John says. We are really uttering *lies* when we pretend or profess to love God, and are at the same time conscious of cherishing in our hearts hatred toward a brother.

In these days of anarchy and various organizations whose leaders (if not followers) utter fierce, hard, uncharitable speeches toward their fellow-men, how quickly we see hatred toward God follow along in the footsteps of hatred toward humanity! Somebody says there is no such *thing* as fairness in this world; and if he cherishes this thought, and associates with a class who think they are misused, and do not have a fair chance, very soon comes the charge that God has *not* created all men free and equal. Some of you may feel inclined to dispute the matter, even now. Please bear in mind, my friend, that one of the first things in the Declaration of Independence, on which our system of government was founded, is this statement; and love and obedience toward God follows as a matter of course, immediately aft-

erward. I can not take space, however, at present, to go into the affairs of government. I am dealing with Our Homes and Our Neighbors; and I am pleading with you to have more love, more faith, more confidence, in neighbors you find wherever you are. There *is*, of course, such a thing as having a foolish, unwarranted confidence in your neighbors; but we so seldom meet with this, compared with the grievous troubles resulting from a lack of confidence, that I am sure I am safe in dwelling continually on the latter. Yes, I feel sure I shall make no mistake if my *whole life* be spent in encouraging that virtue that "suffereth long and is kind," and that "thinketh no evil." Some lessons I learned in my recent sickness are yet vividly before me. Most of us are given to falling into notions. How much has been said about bee-keepers getting into ruts, or getting into notions, and sticking to them in spite of reason or remonstrance from friends! Now, inasmuch as Satan is watching to entrap us, even during the delirium of fever, he is also watching for a chance to mislead us through this same matter of notions. He is ever prompt and active to suggest that such and such a neighbor is a "rascal;" and, if it is possible, he will encourage this feeling until we fail to listen to reason or to good sense. Oh do beware, dear friend, that he does not entrap you in this way. When he begins to whisper that *nobody* is any thing but a downright rascal, spring up at once and turn upon him with "Get thee behind me."

For many years I have had a "notion" that my lungs were weak, and that probably I should go into consumption before a great while; and I have had another notion that I was laboring under partial paralysis that I should likely never get over. And during long years it has never occurred to me that *Satan* had more or less to do with these notions. I wish to mention this, because I think that some of you may have been tempted in a similar way. While I advise you to have faith in your family physician, I do not by any means advise you to run for him every time you feel bad. Well, while under the doctor's care I asked him about my lungs. He said they were all right. But I felt so sure they were not that he made an examination, and declared that my lungs were perfectly sound. In fact, he said I was remarkably sound in body in almost every way—that all my trouble resulted from overwork, and that, too, mostly of a mental kind. At a time during the fever when I did not seem to get along very fast, and at the solicitation of friends, a distinguished physician from Cleveland was called in for consultation. Our regular physician introduced him, and then told me he had not informed him in regard to my case at all. He said he wished Dr. Bennett to look me over and question me, and then make his decision. Then he laughingly suggested to me that I would have an opportunity of seeing how well "doctors" *do* "agree." You know there has been a good deal of sarcasm, and a good many insinuations to the effect that no two doctors decide alike. If some of the friends who say this should meet with the conventions of the physicians or our land, or read some of their class journals, they might think differently. Well, Dr. Bennett gave me a very thorough examination. He tested my lungs with expensive modern instruments, and decided positively that they were strong and sound in every "corner." Why, dear friends, it has been worth twenty-five dollars to me since then to feel that I have a pair of sound, capable, healthy lungs in my body. I draw great long breaths every little while, and thank God for healthy lungs. Then he went all over me—punched me and pinched me, felt of the different organs of my

body, and declared me physically sound in every way, with the exception, of course, of the malarial fever and the nervous condition of my system. He said that what I have called paralysis of my right side was simply nervousness brought on by too much mental work. As yet there was no organic derangement *anywhere*; but he cautioned me that there soon would be if I continued to abuse the good strong body God had given me. When he spoke of my paralysis I told him I should have to tell him about the "one-sided medicine" our own physician used in helping the chills on that special side, and also in helping me out of some of my notions I had for years held on so tenaciously. And I think, dear reader, I will tell you about it. After I awoke from that refreshing and "dreamless" sleep I told you about (after my sleepless night of suffering) the doctor came in, shaking vigorously in his hands a bottle of labeled whisky. Said I, "Surely, doctor, you are not going to give me whisky, are you?"

He knew all about my feelings in regard to alcohol, opium, and such like dangerous (dangerous to both body and soul) drugs; and, during my whole sickness, he has not prescribed anything of the sort. In reply to my question he said, "Why, this is the 'one-sided medicine' I told you I would bring."

"But, doctor, have I got to take it?"

With a characteristic twinkle in his eye he replied, "No, Mrs. Root must take it."

Now, I am a firm believer, as you may all know, in the doctrine that man and wife are one; yet in all of the triumphs that medicine has made, even in recent times, I had never before heard that a sick man might be cured by giving the medicine to his wife, even though the twain *are* one. In answer to my perplexity he replied, "This one-sided medicine is simply whisky and cayenne pepper. Your wife is to take it, as I said, but she takes it and bathes your defective side when the chills come on. I told you some time ago that the paralysis that you worried about was little more than skin deep—that there was no derangement at all except an affection of the nerves that lie near the surface. You are beginning to have considerable faith in medicine, and now see the demonstration of what I have been trying to convince you of."

Well, the chills came on before long, and my wife applied the medicine, rubbing it in briskly, as the doctor directed. Sure enough, the chilly side was fully as warm as the other, and may be a little more so. I remember of dreaming, during the fever, that my wife had put that cold right foot into a stocking made of red-pepper pods. It was a glossy bright red, but it made my right foot very warm and comfortable. A good many years ago a patient whose fever had just left him was in such a feeble state that he was fast sinking. This same doctor advised getting up a circulation by rubbing briskly with cayenne pepper and whisky. For a time the patient seemed to pay no attention to it, and some of the friends found a good deal of fault because he thus disturbed the last moments of a dying man. Pretty soon, however, the patient began to scold because the rubbing made his flesh smart. The operators began to look inquiringly at the doctor; but he was smiling, and told them to go on. Said he, "If you can get him to feel the pepper you will start a circulation and he will live." And he *did* live. Now, the point I wish to make here is, that you should have confidence in your friends and in your family physician—enough confidence to put aside your *notions*, and be guided by his knowledge and skill.

Pardon me if I dwell considerably on the adjuncts of the sick-room. I think that perhaps

some of my suggestions may help others as I have been helped. When I began to mend I was impatient to get out of doors, and especially to get over to the office and see to the folks. The doctor had cautioned me repeatedly. He had not, however, said just when I might go over to the factory and when I must not. One beautiful day, when I was feeling pretty strong I ventured cautiously out on the street. After sitting down a good many times I reached the factory. Then I went back home and lay down. Of course, they were all worrying about me; but I was so certain that it would do me no harm I made another trip after a while. Very cautiously I climbed the stairs that lead to the office. My slippers made no noise, and I was nearly in the center of the room where a dozen were at work, before any one noticed me at all. The roomful of clerks were so intent, each on his or her own business, that not one of them noticed my presence. Have you ever heard of unkind speeches about the way "hands" behave when the "boss" is away? And yet, after several weeks' absence, here each one was working so industriously and faithfully—so intent on the real work before him—that I stood some little time unobserved. During that time a prayer of thanksgiving went up from my heart for these faithful friends who were all doing their work so well in their employer's absence. Finally the young lady who opens the mail raised her eyes and uttered an exclamation of surprise. They gathered around me and shook hands, and then commenced scolding me, and telling me to go "*straight back home*." I asked them if that was the way they *always* treated their company. Well, before the day was over I had been to the factory *four* times and upstairs *twice*. The last time I started out, Ernest was so vehement that I did not know but he would take me by the collar and march me back home. He is usually so mild, and especially so deferential to his father, that it was really a "big joke" to me to see the tables turned—myself the child (in fact, I felt weak enough to be a child, certainly) and he the father or guardian. I insisted, however, all the while, that I knew what I was about; that I was not suffering in the least; that I was not imprudent. When the doctor came, however, there was a general stir of the young and old Roots and their relatives, and they made such a "fuss," as I termed it, that I replied something like this:

"Look here, friends, please do be quiet, and don't go on any more. And even though I am sure you are foolish and mistaken, for the sake of peace in the family I will submit—not because I believe there is any need of it, but because of the importunities and urgent entreaties of my very best friends and relatives."

Had it not been for these urgent entreaties and expostulations I do not know how many more trips I should have made before the day was over. In fact, I think I went to sleep with the strong conviction that I was right and that the whole lot of them, including the *doctor*, were full of "*notions*." However, on the line of reasoning, as Paul put it, "If meat make my brother to offend, I will eat no flesh." I submitted to them. Do you guess the outcome? Why, next morning my legs ached in a way I had not known since my childhood days when I used to have what they told me were "growing pains" in my legs. It laid me up and set me back a full week; and although several weeks have passed, I fear I have not got over it *yet*. Love to your neighbor or to your brother includes also a faithful attention to, and at least a consideration of, his honest convictions; and when a lot of brothers, or neighbors, if you choose,

are unitedly against you, the chances are that they are right and you are wrong. If you are wise you will put aside your own convictions, and listen to them, especially those who are your best friends. There *may be*, it is true, circumstances when a man is justified in going against the advice and counsel of his friends and relatives; but in the present existing condition of things I think these circumstances are very rare.

God seems to have so constituted us that one can not safely live alone. The Robinson Crusoe idea does very well for a romance or a story, but it is not practical. He who becomes misanthropic, and declares he is going to stay by himself, and ask no odds of anybody, is in a dangerous position. This matter has come up in our bee-conventions. The bee-keeper who stays at home, and does not meet with his fellow-men, suffers. No one's education can be complete until he has got out of school and school ruts, and has been knocked about through the busy world. Contact with our fellow-men should soften us and make us better. The man who flies into a passion, and uses strong words, is the one who in one sense is ignorant. The active business of the world makes us familiar to some extent with humanity as it averages; and one who is wise, especially if he is wise in the Bible sense, is slow to anger. He stands cool and unmoved, even though he be misunderstood and abused; and with his heart full of love to God and love to men, as in the language of our text, he can *love* the sinner while he *hates* the sins. He is often-times obliged to admit that a certain state of affairs is bad; he often feels that something should be done, and that speedily. But then comes the question, "What is the wisest way to remedy the matter?" Yes, as we Yankees put it, "What is the cheapest way to remedy the present existing state of affairs in many directions?" The wisest and cheapest way is, first, to *love the sinner*, and then "go for him." Don't let him keep on in his evil way, but wait for a good fitting opportunity, and then try the effect of good neighborly counsel and neighborly exhortation. He may be getting into a *rut*, just as you and I get into ruts. If *one* of you can not pull him out, get three or four good Christians, and take hold of him unitedly. Oh, if this were only done more frequently, how many *bad* lives might be made *beautiful* ones! As professing Christians we *must* love God. But our text tells us in the plainest terms, that we can not love God until we *first* love our brothers, or, if you choose, until we first love our *neighbors*. Dear brother or sister, how is it with you as these words meet you to-day? Can you honestly say, before God, that you have in your heart love for your neighbors and for the brothers and sisters whom God has seen fit to place round about you?

TOBACCO COLUMN.

Send Mr. Dick Emley one smoker free. He has quit tobacco. He has two nice stands of bees, and will pay if he uses the weed again.
Eupora, Miss., Aug. 14. W. B. ENOCHT.

I have quit the use of tobacco after using it 12 years. I have not used any for 20 months, and no more of it for me; and if I am entitled to a smoker, please send me one.
Ben Franklin, Tex., July 18. T. J. GROSS.

Charley Ellis has quit the use of tobacco, and wishes you to send him a smoker. If he ever

uses the vile stuff again, and he does not pay for the smoker I will, as it was through my influence he quit. He has not used any for about three months.
N. A. E. ELLIS.

Rail, Mo., Aug. 7.

I am 29 years old the 21st of this month, and I concluded to stop using tobacco in every shape and form; and if I ever commence again I will pay twice the worth of one smoker.

CALVIN D. CHELLIS.

Brookville, Ohio, Aug. 14.

Please send a smoker to E. T. Judson, Richmond, Vt. He has quit using tobacco after using it for years. If he ever uses it again I will see that you have your pay.

J. D. WRIGHT.

South Starksboro, Vt., Aug. 12.

If you are still sending out smokers, please send one to H. O. Sluytes. He has quit smoking and chewing. If he should use it again I will pay for the smoker. He is sixty years of age.

W. E. SMITH.

Randall, Kan., July 13.

In answer to your communication of Aug. 25, I would say that Fred H. Jewhurst is my only son, and has been induced to give up smoking cigarettes through reading your Tobacco Column; and if he resumes, he or I will pay for the smoker.

MRS. B. JEWURST.

Richmond, Va., Aug. 31.

I still claim that smoker from you. I quit smoking pipes and cigars about ten months ago, and I never stooped so low as to chew or snuff. I have also quit raising the weed. The reason I wanted the smoker was to remind me of my pledge.

J. W. SWITZER.

Bucklin, Mo., Aug. 27.

I have, through the influence of the Tobacco Column, induced Mr. Freddie De Witt to stop the use of tobacco. He agrees to pay you for a smoker if he ever uses tobacco again. Please send me a smoker for him; and if he ever breaks his pledge I will send you 70c cash.

MATTHEW H. DEWITT.

Sunny Side, Md., July 15.

I believe I shall have to lay in a claim for a smoker, as I have thrown away my pipe and tobacco, and I need something else to raise a smoke with. I will agree to pay for the same if I ever take up the pipe; but I don't think I shall ever use the weed again.

JOSEPH W. BELL.

Valle Vista, Cal., Sept. 1.

I must tell you that I have quit the use of tobacco, but I do not claim a smoker, as I am supplied. You remember the man from Texas who said if you would give him a smoker of gold studded with diamonds he would not give up tobacco. Your reply to him caused me to wonder if I could not quit. I was a great slave to tobacco, chewing and smoking; but by God's help I have not taken a chew nor a smoke since the evening I read the article referred to in GLEANINGS, which was the 6th of last March. I had a terrible struggle, but came out victor. If all would give up the use of tobacco, and give to God's cause the amount each year they had been spending for tobacco, the cause would not suffer for want of means. I hope God may spare your life many years yet, and that you may be instrumental in doing much good.

H. C. HEDGES.

Lumbersport, W. Va., Sept. 2.



I know, O Lord, that thy judgments are right, and that thou in faithfulness hast afflicted me.—PSALM 119: 75.

How about those bees? Have they been united and fed?

THE very warm weather spoken of in our last issue lasted until the morning of Oct. 5. We are having at this date (12th) a beautiful October frost.

REPORTS are beginning to come in, showing that salt is a good remedy for curing the bee-paralysis (nameless bee-disease). We have not yet had a case in our yard since the salt was suggested to us; but that the fact may be established in the mouths of many witnesses, we should be glad to have many more reports from those who have tried it. The remedy is so simple, and so easy of application, that, if there is any virtue in it, we do not want to pass it by.

DR. MILLER says he will be at the Albany convention of the N. A. B. K. A. Good! If we can have him and that other doctor, A. B. Mason, present, there will be no lack of fun and enthusiasm. How is it, Dr. Mason? If you *expect* to be present, the fact should be known in advance, to help "draw," you know. By the way, Dr. Miller wants to know whether we will be present at the Illinois State convention at Chicago. We are inclined to say we will. We will try to go, any way.

WE have just been advised of the safe arrival of a select tested queen by H. L. Jones, Goodna, Queensland, Australia. It begins to look now as though the mailing of queens to Australia and to the distant islands of the sea had not only passed beyond the point of possibility, but had entered the realm of practicability. Our success has been such during the past summer that we mailed to-day a dozen queens to different parties in Australia. The air, when we put them up, was quite cool, and no bees were flying. We are afraid we may not have as good results with this lot; for if the present cool weather continues, the bees will have a week of cool weather overland through the United States before they will get to a warmer climate. However, we await the result. In about three months from now we shall be able to notify our readers of the results. Oh, yes! G. M. Doolittle sends two queens to Australia in our cages.

ONE of our customers expresses a fear that the green wire cloth that is used in shipping-boxes would be poisonous to bees, and therefore dangerous. We have used this green wire cloth for years; and while we know there is arsenic in Paris green, we do not think it has ever done any harm. By looking on our books we find that, out of 363 nuclei that we sent out from May 1 till Sept. 15, current year, we had to replace only two; and out of these, one was misdirected, and was some two or three weeks in arriving at its destination, and the bees starved. The other one was broken open in transit through the express company, and the bees escaped. All the rest of the 361 were reported to have arrived in excellent condition. Almost every customer wrote that scarcely a bee was dead. When the fact is known that every one of these nuclei was screened with *green* wire cloth, it would seem conclusive that there is no

danger from its use. In our *queen*-cages we use *black* cloth, not because the other may be poisonous, but because we can see the queens easier.

QUITE frequently we receive articles, machines, devices, and what not, by express, sent from all parts of the country, without the sender first writing us to ascertain whether such articles would be acceptable. While we appreciate the kind motive on the part of our friends in sending us these things with a desire to contribute toward the advancement of apiculture, it will save them and us a good deal in the way of express charges, besides some disappointment, if they will first describe the articles they wish to send to us. We can then write them whether we should be glad to see the articles themselves or not. We have a repository, or sort of museum, where these traps are kept, and this repository is now filled to overflowing. The result is, we have a good many traps on our hands that we hardly know what to do with. We hesitate about destroying them, because the owners have given us no orders for their disposition. We do not wish to discourage in the least any worthy efforts in the line of improvements; but if you will write us, telling us what you have, we can tell you very soon whether the thing has been antedated, is useful, or otherwise; and if valuable, whether we want it sent, and whether by express or freight.

CLOSE-FITTING FRAMES IN A DEEP HIVE, AGAIN.

WE see we are misunderstood again in regard to the impracticability of the closed-end close-fitting frame in a deep hive. One correspondent in the *Review* can not see how E. R. can argue that a deep frame of this description will work more with hitches than the shallow one. We will explain. In *practice* you will scarcely ever find a frame of any description that is *perfectly* square—that is, it will have a tendency to be diamond-shaped. The deeper the frame, its other dimension being in proportion, the further will the diagonally opposite corners project from the true square of the frame. Let us take an illustration: A frame, for instance, a foot square, is a little diamond-shaped. Placing the same on the side of a steel square you will find, for instance, that it is an "eighth out." Suppose we reduce this frame to one inch square, the angles of variation being just exactly the same as those of the larger square. Now place this inside of the steel square, and the departure from the true rectangle will be imperceptible. Again, suppose our friend measure a good many of the L. hives in use; he will find that the length inside near the top of the hive won't always tally with the length near the bottom-board. Now, then, taking into consideration that frames in practice are not absolutely square, that hives are not always square if there is only an eighth-inch end play in close-fitting frames, you can see that the diagonally opposite corners are pretty apt to hit at the top or bottom; and the effect of withdrawing them is the hitch that I spoke of. Perhaps we have been misunderstood; but if the Heddon *shallow* frames and the shallow Heddon hive are made as Mr. Hutchinson described on page 699 we do not think there would be any trouble from hitching. This is substantially what we said at the time. But let the depth of the hive be increased 10 or 12 inches, and there would be. This is not theory, friend Taylor, but actual practice and observation on a number of hives. But, Mr. Heddon, we understand, is selling a deep hive with close-fitting frames, and he says they are a working success. We could not understand how that could be till we

learned that he leaves the *bottom*-bars out of those deep and close-fitting frames. There is the secret, and we agree with him when the frames are made thus. To what we had reference was a deep and close-fitting frame, with both top and *bottom* bars. There, don't you see when we get our heads together we pretty nearly agree after all?

COMMENCING MY TRAVELS.

Just a week ago, Oct. 7, I commenced by making a small trip first; and I enjoyed the rare pleasure of looking over the farms of friends Chamberlain and Terry. I tell you it was a pleasure, and I learned lots of things that I propose telling you about in our next issue. What a lot of interesting things and interesting people there are in this world, to be sure! I am just aching to tell you some of the things now; but the forms are almost full, and I shall have to put it in the Garden Department for Nov. 1.

HIGH PRICES.

SOMEBODY said this morning that eggs were worth 25 cents a dozen; and I not only *said* I was glad, but I *felt* glad. The usual price for eggs in our locality is about a cent apiece. When they are scarce they sell for 15 cents, rarely 18. I always feel glad when prices advance on rural products, and it does not make any difference whether I am buyer or producer—at least I hope it does not. My wife remarked that, at 25 cents a dozen, she was sure she could make a living raising eggs; and I replied that, as poultry-keeping was the hobby of my childhood, I thought that "we two" might go into the chicken business in our old age. One reason why I rejoice in good prices for those who work in the open air is because the tendency is, at the present time, so great for everybody to push into the towns and cities. A young man told me yesterday that I had men in my employ who own *good farms*. They had left their farms and come to *town* to work for 14 cents an hour. Dear me! what a state of affairs! By the way, did it ever occur to you that there are but few lines of business in the world where you get cash returns not only every *Saturday* night, but every night? The expert egg-producer can have something that will sell for cash the first day he commences business; and if he is faithful, and knows how, he will have something to sell at the close of every day, winter and summer; and this something just now brings 25 cts. a dozen.

THE PUNIC BEES.

SINCE I am able to be around and look after business, my attention has been called to the Punic bees; and Ernest greatly astonished me by the information that we had two queens in the apiary, and young bees hatched out. I have just been to look at them. The oldest are only about a week old. If nobody had told me that they were Punic I should have unhesitatingly declared that they were ordinary black bees. Very likely they are a little smaller than most strains of blacks, but in no respect can I discover at present writing that they are any different. I suppose that most of our readers have heard the wonderful things claimed for these bees. First, they won't sting; but our bees, a week old, put out their stings when picked up by the wings, just like any bees, rather more than the Italians; and they certainly run about on the combs, and act frightened, much more than the Italians. Of course, we can not yet say in regard to their flying when it is too cold for other bees to be outdoors. The queens are certainly very prolific. No doubt they shake off readily, as has been claim-

ed. And now a word of caution: Many of our older readers—perhaps most of them—have had some experience with Cyprians, Holy-Lands, Carniolans, etc. When our friend Jones told us of the peculiar traits of these new bees the whole bee-world became enthusiastic. Some of the traits were so wonderful that it seemed to me an utter impossibility that time would demonstrate that they were no better than the Italians. At present writing, however, they have, in most cases, been dropped; and, with some of our veterans, the Italians have been dropped also—or at least partially dropped.

THE RURAL NEW-YORKER.

DURING my convalescence I took hold of a great heap of agricultural papers that had been accumulating for months—some of them for years. I had been telling my wife that she must not sell them for paper-rags, because *some time* I was going to overhaul them thoroughly. Before long I selected three or four periodicals from among our many agricultural exchanges; and since reading them thoroughly I have felt as though I must say a word in their praise. Prominently among these select ones is the *Rural New-Yorker*. 1. The fact shines from every page that the paper "loves righteousness and hates iniquity." 2. Its editors seem to be leaving no stone unturned in their efforts to get out the latest developments in "high-pressure farming." 3. They are equally in dead earnest in striving to educate the farmer so that he may know his real friends from his enemies. They are constantly interviewing the best and wisest men of the present day on all these great social topics that come up before us. 4. They are expending an amount of money in fully illustrating and describing every thing pertaining to rural industries, that has before been almost unheard of. 5. Every new thing that comes out in our seed catalogues or anywhere else is at once promptly tested and tried by some of their people. 6. And this follows as a natural sequence of the last: They are exposing, without fear or favor, every thing approaching the character of a fraud. I might say more, but I guess the above is enough. I believe they deserve it, any way. The price of the *Rural* is \$2.00. It can not very well be less, with the amount of money and hard work they expend on it, especially as it is a weekly paper. When you are subscribing for GLEANINGS, if you will send us \$1.25 more, making \$2.25 in all, we will send you both journals one year. The above includes their free seed distribution. I hardly need tell you that the seeds sent out by the *Rural* are none of the old and discarded novelties.

A PROSPECTIVE RAID AMONG THE BEE-KEEPERS OF THE GREAT WEST AND THE PACIFIC STATES.

AMONG the other pleasant surprises that have come to me lately was an invitation from Prof. Cook, his wife and family, to join them in a trip to the Pacific States, where they expect to spend the winter. Our boys have told you that the doctor has prescribed three months' traveling, among his other bad doses. You may wonder why I say "bad doses." Well, the prospect of such a trip with such companions has *certainly* nothing uninviting about it; but when I think of leaving things here, and the good friends, to get along the best way they can in bearing the burdens and cares of the business while I go off on a "playspell," it makes me feel guilty. As they urge it, however, and as I am frequently reminded that I am hardly well on my feet yet, I have decided to go, Providence permitting. Just think of it, friends—going through these wonderful scenes

once more, with such a traveling companion as Prof. Cook! I have already warned him that it may not be much recreation or rest for *himself*, for I shall ask him so many questions, and may prove more tiresome than his whole class of pupils. However, he has decided to take the chances, and just now startles me again by suggesting that we ask the people to work up or pre-arrange some bee-keepers' conventions at different points where we stop. Here is a little extract from his last letter:

Dear Mr. Root:—We arrive at Salt Lake, Dec. 3; convention at Salt Lake, Dec. 3 and 4; or if for only one day, Dec. 4th. Leave Salt Lake, Dec. 5; arrive at Reno, Nevada, Dec. 6; leave Reno, Dec. 8; arrive at Colfax, Dec. 8; stay two days; leave Colfax Dec. 11; arrive at Sacramento Dec. 11; call a convention for Sacramento, December 16 and 17. Do you like this? Can't you arrange for the meetings at Salt Lake, Utah, convention, Dec. 3 and 4, and Sacramento Dec. 16 and 17? We go to Los Angeles Dec. 24. Why not arrange for a convention at Los Angeles about Jan. 6 and 7? It will be very pleasant to meet the men, and they will be glad, I think.

You please look after the conventions. I think a note in GLEANINGS, saying that we shall be in the places such dates would secure the meetings if suggested.

A. J. Cook.

Ag'l College, Mich., Oct. 10.

Now, then, good friends, at or in the vicinity of Salt Lake, Sacramento, or Los Angeles, please set to work at once and have the thing worked up; secure a hall; make the announcements in your local papers, etc.; and, take my word for it, if you are obliged to travel a good many miles to see and hear such a man as Prof. Cook you will not regret it. Not only may the State of Michigan be proud of having such a man in her midst, but well may the whole United States thank God that we have Prof. Cook among us to lead us and to direct us, and to teach us faith, hope, and charity. Yes, let not only bee-keepers come, but anybody else who is interested in the growing of crops, or in solving the great social problems of the present day. I do not know as yet what Prof. Cook proposes to do with the rest of his time while he is visiting the Pacific States; but I do know that it will be worth your while, all of you, to arrange so as to be near where he is as often as you can.

SPECIAL NOTICES.

On account of uniting, we have some three or four dozen of nice young untested queens which we will dispose of as long as they last, at September prices; viz., 75 cts. each. Speak quick if you want these queens.

REMNANT PIECES OF PINE.

We have now a considerable lot of these accumulating; size, 11 inches long, 2½ wide, and ¼ inch thick, planed one side. Price 25 cts. per 100, or \$2.00 per 1000. If you have any use for such pieces, keep it in mind when you are ordering other goods—that is, if you don't need enough of them for freight orders. The side that is unplanned is quite smooth, as it is sawed with a very fine saw.

MAPLE SUGAR AND SYRUP.

Notwithstanding the cheapness of ordinary sugars it does not affect very much the demand for honey and the products of the maple. These sweets have a flavor peculiar to themselves which secures for them a ready market at prices considerably above ordinary sweets. We are prepared to furnish choice maple syrup in almost any quantity, put up in gallon cans, at \$1.10 per single gallon; \$10.00 for 10 gallons. We have a limited supply of maple sugar at 7, 8, and 9 cents per lb. in small lots; ½ cent less in 50-lb. lots, or 1 cent less in barrel lots of about 300 lbs.

CHOICE COMB AND EXTRACTED HONEY.

We shall be pleased to hear from those not too far distant, having choice honey to sell, either comb or extracted. The fact of our having disposed of five carloads of honey last season has given us quite a prestige in the market, and we are having a good many inquiries and a nice trade, and we are often able to place a lot of honey, shipping direct from the producer to our customer, thus saving freight charges and risk in handling. In writing us, tell us how much you have to sell, whether comb or extracted—how it is put up, the quality, and, if extracted, send sample by mail; also tell how much you will take for it.

EARLY-ORDER DISCOUNT.

We desire to remind all you forehanded people who take advantage of early-order discounts, that the time is rapidly growing shorter when we allow the largest discount. Only a little over a month remains in which to secure the 5 per cent we allow on orders sent for goods for next season's use. On Dec. 1st the discount drops to 4 per cent, as you will see by referring to page 4 of our price list, where you will also find the limit of the goods to which the discount applies. I believe the number is increasing each year, of those who take advantage of this discount; and those who try the plan once, usually continue to do so, for they learn the great advantage of having their goods on hand to make up during the winter months, when time is plentiful; and when busy spring returns, and the bees begin to require "fixin's," they are at hand for immediate use, ready to secure the best possible results from the bees. The forehanded bee-keepers pursue this policy; but the slipshod ones wait till the last minute, when they haven't time to send for the best-made goods without incurring a loss in honey or swarms, and very often have to put up with a makeshift in the way of hives and fixtures. We have heard of cases of this kind so often that we offer the advice for your good, as well as to secure a larger proportion of orders during the dull season, when we have time to give them most careful attention. Many things point to a good season next year. Anticipate your needs, and order early.

EMPIRE SAFETY BICYCLE.

The Safety-bicycle fever runs high in Medina at present. Thirty-eight wheels, of all descriptions, were counted in a recent parade, and a good many of the boys have the fever bad, but think they will wait till next season before investing, and in the meantime save up the necessary cash to purchase. Naturally the wheelmen are looking into the merits of different makes of wheels. It has been claimed that the high-priced (\$135) wheels are the cheapest in the end. It has seemed to the writer, however, that, like the old high prices of sewing-machines, there is on these high-priced wheels a large margin for profit, not only to the manufacturers, but to dealers, agents, and sub-agents. Three years ago we began offering to our readers the low-priced first-class Singer sewing-machine, shown on another page. Since then we have sold 261 of these machines, and the sales are constantly increasing. Especially where one has gone into a neighborhood, it has given such satisfaction that it has advertised itself, and many mo.c orders have come from the same locality. This shows that the claims of old-line agents, who sell at old-fashioned prices, that the machines are worthless, are not borne out by the facts, and that they are valuable machines, and a boon to many a household. During the past year the company who make these sewing-machines have begun making Safety bicycles, which are thoroughly high grade in every respect, and yet we are able to offer them at \$40 to \$50 less than the high-priced machines. The writer has had one now for some time, and is giving it thorough and severe testing, so as to be able to speak of its merits from experience. Most wheels are sold through State and local agents. The territory is doubtless better worked by this method; but the service comes high, and the user has to pay for it in liberal commissions, besides a large advertising account. These Empire wheels are sold on the same plan as the sewing-machines, by interesting the newspapers and merchandise dealers by offering very low prices, and thus a large expense is saved, and the user gets the chief benefit of this saving. We shall be pleased to give by mail further particulars, with illustrated circular, to those interested.

J. T. C.

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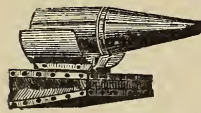
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Books for Bee-Keepers and others.

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In buying books, as every thing else, we are liable to disappointment if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults, so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I especially approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

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This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.

- 7 Farm, Gardening, and Seed-Growing**..... 90
- This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.
- 10 Gardening for Pleasure, Henderson*..... 1 40

While "Gardening for Profit" is written with a view of making gardening pay, it touches a good deal on the pleasure part; and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations.

- 12 Gardening for Profit, new edition**..... 1 85
- This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts.
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This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

- 10 Garden and Farm Topics, Henderson*..... 75
- Gray's School and Field Book of Botany... 1 80
- 5 Gregory on Cabbages; paper*..... 25
- 5 Gregory on Squashes; paper*..... 25
- 5 Gregory on Onions; paper*..... 25

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

- 10 Household Conveniences..... 1 40
- 2 How to Propagate and Grow Fruit, Green* 25
- 2 Injurious Insects, Cook..... 25
- 10 Irrigation for the Farm, Garden, and Orchard, Stewart*..... 1 40

This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

- 3 Maple Sugar and the Sugar-bush**..... 35
- By Prof. A. J. Cook. This was written in the spring of 1887 at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest syrup and maple sugar, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.
- 1 Poultry for Pleasure and Profit**..... 10
- 11 Practical Floriculture, Henderson*..... 1 35
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- 10 Profits in Poultry*..... 90
- 10 Small-Fruit Culturist, Fuller..... 1 40
- 10 Success in Market-Gardening*..... 90

This is a new book by a real, live, enterprising, successful market-gardener who lives in Arlington, a suburb of Boston, Mass. Friend Rawmill has been one of the foremost to make irrigation a practical success, and he has irrigated his grounds by means of a windmill and steam-engine whenever a drought threatens to injure the crops. The book has 208 pages, and is nicely illustrated with 110 engravings.

- Ten Acres Enough..... 1 00
- The Silo and Ensilage, by Prof. Cook, new edition, fully illustrated..... 25
- Talks on Manures*..... 1 75

This book, by Joseph Harris is, perhaps, the most comprehensive one we have on the subject, and the whole matter is considered by an able writer. It contains 366 pages.

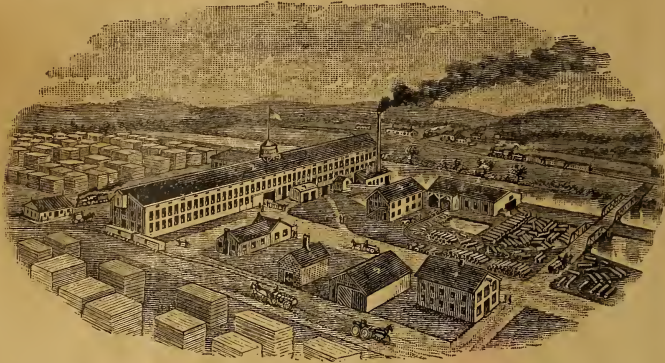
- 2 The Carpenter's Steel Square and its Uses..... 15
- 10 The New Agriculture; or, the Waters Led Captive..... 75
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- 3 Winter Care of Horses and Cattle..... 40

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages and 4 cuts.

- 8 What to Do and How to be Happy While Doing It, by A. I. Root..... 50
- 3 Wood's Common Objects of the Microscope**..... 47

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