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"I tell you what, Jones, Levering Bros. sell the best goods and at the lowest prices of any one I've struck yet."

The LARGEST and BEST EQUIPPED BEE-HIVE FACTORY IN THE WEST.

THE NEW DOVETAILED HIVE A SPECIALTY.

Every thing used by practical bee-keepers by wholesale and retail. Send for our '91 illustrated price list and save money. Address 4-15db

LEVERING BROS., Wiota, Cass Co., Ia.

In responding to this advertisement mention GLEANINGS.

BEE-KEEPER'S GUIDE.

16TH THOUSAND JUST OUT.

Plain, Practical, Scientific. Every farmer and bee-keeper should have it.

PRICE REDUCED TO \$1.00. Liberal discount to dealers. Address 8-18db

A. J. COOK, Agricultural College, Mich. Please mention GLEANINGS.

Bee-Hives, Sections, Etc.

BEST GOODS at LOWEST PRICES.

We make 15,000 sections per hour. Can fill orders promptly. Write for free, illustrated catalogue.

G. B. LEWIS CO., WATERTOWN, WIS.

In responding to this advertisement mention GLEANINGS.

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, 21-12db New London, Wis.

In writing advertisers please mention this paper.

Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines Iowa, at Root's Prices. The largest supply business in the West. Established 1885. Dovetailed Hives, Sections, Foundation, Extractors, Smokers, Vells, Crates, Feeders, Clover Seeds, &c. Imported Italian Queens. Queens and Bees. Sample copy of our Bee Journal, "The Western Bee-Keeper," and Latest Catalogue mailed Free to Bee-keepers. JOSEPH NYSEWANDER, DES MOINES, IOWA.



In responding to this advertisement mention GLEANINGS.

Cash for Beeswax!

Will pay 28c per lb. cash, or 30c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 33c per lb., or 37c for best selecta wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

ITALIAN 75 CTS. EACH. LARGE, YELLOW, AND QUEENS, VERY PROLIFIC. TRY ONE.

I Breed from the Best of Stock. My Bees are Noted for Beauty, Business, and Docility.

E. D. ANDREWS,

NORTH NEW SALEM, FRANKLIN Co., MASS. 13-11-15. Please mention this paper.



30 Quarto pages—50 cents a year.

AN Elegant Monthly for the FAMILY and FIRESIDE. Printed in the highest style of the art, and embellished with magnificent Engravings. Sample FREE. Agents Wanted.

THOMAS G. NEWMAN & SON, PUBLISHERS

246 East Madison St., - CHICAGO, ILL.

Please mention this paper.

BEST ON EARTH



ELEVEN YEARS WITHOUT A PARALLEL AND THE STANDARD IN EVERY CIVILIZED COUNTRY.



Bingham & Hetherington Patent Uncapping-Knife, Standard Size.

Bingham's Patent Smokers, Six Sizes and Prices.

Doctor Smoker,	3 1/2 in.,	postpaid	... \$2.00
Conqueror "	3 "	"	... 1.75
Large "	2 1/2 "	"	... 1.50
Extra (wide shield)	2 "	"	... 1.25
Plain (narrow "	1 1/2 "	"	... 1.00
Little Wonder,	1 1/4 "	"65
Uncapping Knife.....			... 1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to 117db BINGHAM & HETHERINGTON, Abronia, Mich.

In responding to this advertisement mention GLEANINGS.

DR. TINKER'S SPECIALTIES!

The Nonpareil Bee-hive and Winter case, White Poplar Sections, Wood-zinc Queen-Excluders, and the finest and best Perforated Zinc now made.

Send for catalogue of prices, and inclose 25 cts. for the new book, **Bee-keeping for Profit.**

Address **DR. G. L. TINKER,** New Philadelphia, O.

In writing to advertisers please mention this paper.

IT'S OUT NOW

"ADVANCED BEE-CULTURE," a book of 85 pages, is now out. It begins with "The Care of Bees in Winter," and clearly and concisely goes over the ground, giving what its author believes to be the best methods, until the bees are again prepared for winter. Price, 50 cts. The REVIEW and this book for \$1.25. If you are not acquainted with the "REVIEW," send for samples.

W. Z. HUTCHINSON, Flint, Mich.
Please mention this paper.

FOUNDATION & SECTIONS are my specialties. No. 1 V-groove Sections at \$3.00 per 1000. Special Prices to dealers. Send for free price list of every thing needed in the apiary.

M. H. HUNT,
Bell Branch, Mich.
1tfdb

In responding to this advertisement mention GLEANINGS.

HONEY A NEW DISCOVERY.

Differing from all others ever yet made for the purpose.

EXTRACTOR.

It works strong, thorough, neat, handy and rapid, and is the cheapest Extractor known. Send 2-ct. stamp for a circular of 18 pages to REV. A. R. SEAMAN, Connellsville, Fayette Co., Pa. 5-15d

Please mention this paper.

IMPORTED QUEENS.

July, \$4.00; Aug., \$3.50; Sept., \$3.00. Send in your orders now. Untested Italian queen, 75c. 7-17db
W. C. FRAZIER, ATLANTIC, IOWA.

In responding to this advertisement mention GLEANINGS.

Queens - From - Texas.

Kind friends, I have untested Italian queens from now till September, at 75c each; \$4.00 for 6, or \$7.25 per doz. I have shipped hundreds this spring, and all by return mail so far. I have my breeding yards kept out on the lone prairie at safe distance. Give me your orders and see how promptly I can fill them. 100 nuclei running. 10tfdb

MRS. JENNIE ATCHLEY,
Box V., Farmersville, Tex.

In writing to advertisers please mention this paper. 3-8db

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap. NOVELTY CO.,
6tfdb Rock Falls, Illinois.

In responding to this advertisement mention GLEANINGS.

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

NEW FACTORY.

No. 1 Sections, \$3.50; No. 2, \$2.75. Fine Comb Foundation a specialty.

M. S. ROOP, 520 East Broadway,
6-17db Council Bluffs, Ia.

In responding to this advertisement mention GLEANINGS.

GOLDEN ITALIAN HONEY QUEENS

A combination of best honey-gatherers. Bred in America. Try one. Each, \$1.00; six for \$5.00.

THE MISSOURI BEE-KEEPER.

A monthly journal devoted to practical bee-keeping; 50c a year. Above journal one year and one queen, \$1.15. Sample copy free. Address

15-16d E. F. QUIGLEY, UNIONVILLE, Mo.

In responding to this advertisement mention GLEANINGS.

TESTED ITALIAN QUEENS,

REARED FROM IMPORTED MOTHERS,

At 90 cts. each; untested, 60 cts. each; 1/2 doz., \$3.00.

W. A. COMPTON, Lynnville, Tenn.

In responding to this advertisement mention GLEANINGS.

Boxes and Shipping-Crates.

EVAPORATED APPLE-BOXES and SHIPPING-CRATES A SPECIALTY.

In this line we take the lead. If any one reading this ad. will send us the name of driers we will make it right with them. Send for prices. Address

W. D. SOPER & CO., JACKSON, MICH.

15-17-19-21d 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 15tfdb

HENRY ALLEY, Wenham, Mass.

Please mention this paper.

Five-Banded Italians.

My 5-banded breeding queen, with her bees, took First Premium last fall at the Detroit exposition. Price of untested queens, \$1.00 each, or 6 for \$5.00; tested queens, \$2.00 each; select tested, \$3.00 each. Safe arrival guaranteed. Make money-orders payable at Flint, Mich. 1tfdb

ELMER HUTCHINSON,
ROGERSVILLE, GENESEE CO., MICH.

Please mention this paper.

16 SWARMS OF GOLDEN ITALIAN BEES FOR SALE at \$3 per colony; all on wired L. frames, built from foundation in chaff hives.

15-16-17d T. S. THOMPSON,
Box 240, Blairsville, Indiana Co., Pa.

UNTESTED QUEENS CHEAP. I have 25 untested queens which I wish to dispose of, and offer them at 50c each. They are reared from one of Doolittle's set queens. Those who wish a nice queen speak quick. P. BROWER, New Paris, Ind.

FALL HATCHING AND FALL PLANTING PATS. Brown and white Leghorn, Plymouth Rock, and Black Minorca Eggs, \$1.25 per 13. Strawberry plants, 100, \$1; 1000, \$9.50. Raspberry plants, 100, \$1.50; 1000, \$5. Illustrated circular free. GEORGE ST. MARYS, MO.
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.

14tfdb LEAHY M'F'G CO.,
HIGGINSVILLE, MO.

Please mention this paper.

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SPECIAL NOTICES.

Something new in hives in our next number. Look out for it in this department.

CHINESE ROSE WINTER RADISH.

Now is the time to sow this, the most handsome and delicate of all radishes, in our opinion.

SPINACH.

This is the month I should prefer to sow spinach for fall, winter, and spring use. We have a nice lot of seed, just gathered, of our own raising. Ounce, 5c; pound, 25c; 5 lbs. or over, 20c. per lb.

STRAWBERRY-PLANTS DURING AUGUST.

As we are having about all the orders we can handle, without any advertising, we do not feel very much like urging people to buy. The demand for the Sterling is already beyond our capacity; but we can probably keep up on any of the other four kinds. We are going to push the Sterling the very best we know how; but as it is slow in making runners and plants, we fear we shall not be able to catch up as we did on the Haverland last year.

THE AMERICAN PEARL ONION-SETS.

We have finally made out to get ten bushels of these new onion-sets, and we can fill orders promptly—at least so long as the ten bushels last—at the following prices: Pint, 20c; quart, 35c; half a peck, \$1.25; peck, \$2.25; bushel, \$8.00. If wanted by mail, add 10c per quart extra for postage. Now, please remember, friends, that all we can say for these sets is that, in our locality, they wintered over perfectly. We planted them in the fall, as I have told you before, and they came right up and made a nice growth; and every one—or, at least, nearly every one—started and grew in the spring, and made great big handsome white onions, long before any thing to be compared with them was found in the markets, and long before we succeeded in getting any good-sized onions from those started in the greenhouse. The great achievement is, that you do all the work in the fall of the year. They can be planted any time during this month or next. We shall put out our own at once. We do not know whether these are the same thing as the Bloomsdale or not. You will remember that some of Landreth's people think it somewhat risky to put out the Bloomsdale pearl in the fall, in our locality.

HONEY, COMB AND EXTRACTED.

We are beginning to get some inquiries for new honey, and also have a good deal offered us. A large part of the offerings contain honey-dew. We have only one or two outlets for such honey, and these seem to be well supplied at present. We have received several lots of choice extracted honey, which we offer as follows:

Lump (or basswood) honey, in barrels, @ 7½ cts. per lb.; in 60-lb. cans, @ 9 cts., or a full case of two cans @ 8½ cts. per lb. In lots of four cases or more, 8 cts. Clover extracted, 1 ct. per lb. more than basswood. We have also a supply of choice new comb honey in 1-lb. sections, 24-lb. cases, that we offer at 18 cts.

per lb., in lots of four cases or over. We have also a little of last year's choice comb honey in 48-lb. cases, 1-lb. sections, at 2 cts. per lb. less than this year's.

GLASSED CASES OF COMB HONEY MUST HAVE GLASS COVERED FOR SHIPMENT.

Among the recent rulings of the Western Classification Committee we find the following: "June 23d. Honey in comb, packed in boxes having glass fronts, should not be received for shipment unless fronts are fully covered and protected." From our experience this ruling will work mischief unless honey is crated as outlined on p. 643. If comb honey is so crated I think it will pass under the ruling, and it was no doubt intended to enforce such crating or protection that the ruling was made. If, however, instead of crating your honey you simply cover the glass with a board, as you will no doubt be obliged to do unless the ruling is changed, your honey will fare worse than before. When, by means of the exposed glass, the freight-handlers can see the contents they are more likely to handle with care than if in a solid box; at least, this has been our experience. From this point of view the ruling is unjust to beekeepers; and if they desire to have it changed, the person to write to is J. T. Ripley, chairman, Room 733, The Rookery, Chicago, Ill. Remember, this ruling applies on the roads west of Chicago and St. Louis, not in the territory east of these points.

GOODS FOR EXHIBITION AT FAIRS.

Inquiries are already coming in for our terms on goods for exhibition at fairs. We are prepared to make the same reductions we have done for several years past. The articles on which we will allow a discount of 25 per cent are only of our own manufacture, found on pages 10 to 27 of price list, and there are some exceptions on these pages; namely, Bingham and Quinby smokers, rubber gloves, implements for bee-hunting; Whitman and Smith sprinklers; Chicago zinc; Stanley extractors; honey-knives; burlap; cheese-cloth; duck; enamel cloth, etc. Only enough for exhibition purposes are furnished at this reduction, and on condition that you distribute judiciously the advertising matter we send along with the goods. We have hardly received sufficient returns from our return advertising cards to warrant offering an ABC or GLEANINGS free for their distribution, as we did last year. If, however, you will send 25 cents to cover postage we will furnish you GLEANINGS one year free. Or, for 40 cts., a cloth ABC free for distributing the advertising matter we shall send. Where we can send the printed matter with other goods by express or freight at your expense there will be no postage charge, and the terms will be the same as before.

THE PURPLE-TOP WHITE-GLOBE TURNIP.

We have received from one of our bee-keeping friends a whole two-bushel bagful of nice seed, on which we give you the following very low prices: Ounce, 5c; ½ lb., 20c; pound, 35c; 5 lbs. at 30c per lb.; 10 lbs. at 25c per lb. If wanted by mail, add 9c extra for postage and packing. We are now selling these turnips on our wagon, and they may be sown in most localities, with a good chance of a crop, almost any time during the present month of August. I have just learned *why* it is best to sow turnip seeds just after a rain rather than just before. If sown just before a heavy rain, in many soils the ground may bake so hard that the plants can not get through the crust. If, however, you prepare your ground before the rain, and then break the crust again just after the rain, and sow your seed in a loose soil, there is a good chance of its germinating and getting through the ground before another rain comes. Of course, all depends very much on the way the rain comes. The White Egg we place next for a late turnip. The Breadstone is perhaps the most toothsome of all turnips, but it takes longer to mature than the two first mentioned. If sown at once, however, and we have a late fall, you will get nice turnips for table use even yet. The Southern Prize and Seven-top turnips may be sown any time, for they stand the winter without injury.

SUPPLIES!

Standard Goods. Best shipping point. Reasonable prices. Thirty-page Catalogue free. WALTER S. POWDER, 175 E. Walnut St., Indianapolis, Ind.

HONEY COLUMN.

CITY MARKETS.

SAN FRANCISCO.—*Honey.*—There is a good demand for honey, both 1-lb. frame and extracted and the crop in California is only a short one. Comb honey will be in limited quantities, and later on an active demand, at advanced prices, is expected. We quote extracted honey, 5½@6. Comb honey, 1-lb. frame, 13@14; 2 lb., 11@12. *Beeswax* is scarce but without transactions; we quote 16@27c.

July 22.

SCHACHT, LEMCKE & STEINER,
San Francisco, Cal.

NEW YORK.—*Honey.*—Honey is coming in quite slow, still there is no great demand. From hearsay there will be a good crop, but it is rather early yet to predict what it will be. A few carloads California extracted honey were sold here from 7@7½ per lb. We expect a good trade this fall, as all the old comb honey of last year has been pretty well cleaned up.

July 27.

CHAS. ISRAEL & BROS.,
110 Hudson St., New York.

CINCINNATI.—*Honey.*—Demand is fair for new comb and extracted honey. The supply of comb honey is adequate to the supply; that of extracted honey, in excess, of course, as usual at this time of the year. Extracted honey brings 8@8c on arrival. Choice comb honey, 14@16c in the jobbing way. *Beeswax*, there is a fair demand at 25@25c on arrival for good to choice yellow.

July 20.

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

ALBANY.—*Honey.*—We have sold the consignment of honey referred to in last issue, at 16c. Have some on hand at present. Would advise early shipments if on only a few cases. Extracted, dull. We quote: clover in pound sections, 18c; 1½-lb., 15@16c.

July 20.

CHAS. MCCULLOCH & CO.,
393-397 Broadway, Albany, N. Y.

NEW YORK.—*Honey.*—About comb little can be said until season commences. Extracted is in fair demand; California is scarce for spot cash; selling at 7½, against 7c to arrive. Florida in good supply 7@7½; Southern, 7@8c per gal. *Beeswax* selling slowly; supplies are more freely offered; prices a shade lower, 25@29. F. G. STROHMEYER & CO.,

July 20.

New York.

BOSTON.—*Honey.*—No change in honey market. Slow sale. Little new honey ready now to be sent in. Expect to sell at 18c for best quality.

July 24.

BLAKE & RIPLEY,
Boston, Mass.

KANSAS CITY.—*Honey.*—Receipts of new comb arriving very slow. Choice white 1-lb. comb, 15@16; dark, 10@12; extracted, 6@6½. *Beeswax*, 22@25.

July 20.

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

ST. LOUIS.—*Honey.*—Market dead dull at 5½c in barrels; 7c in cans. Comb unsalable, *Beeswax*, prime, 26½.

July 22.

D. G. TUTT GROCER CO.,
St. Louis, Mo.

NEW YORK.—*Honey.*—Our market is well supplied with extracted. Receipts are heavy and demand rather light. Common, 65@68c per gal.; good to choice, 70@72; orange bloom, 7@7½ per lb.; California, 6¾@7. We received a few small lots of new comb honey, white, 1-lb., unglazed; same sells at from 14@15c. *Beeswax*, dull and declining, 26@28c.

July 23.

HILDRETH BROS. & SEGELKEN,
23, 30 West Broadway, New York.

DETROIT.—*Honey.*—New comb honey selling at 13@15. Not much demand. Extracted, 7@8c. *Beeswax*, 27@28c.

Bell Branch, Mich., July 20.

M. H. HUNT.

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

E. LOVETT,
San Diego, Cal.

WANTED.—Comb and extracted honey.

WALTER S. POWDER, 175 E. Walnut St.,
Indianapolis, Ind.

FOR SALE.—About 2000 lbs. of white-clover honey, in 60-lb. tin cans. For prices and samples, address
LEISINGER BROS., Ft. Jennings, O.

60-lb. cans extra linn honey, 7½ cts.; dark, 4½. Same in sections, 12-lb. cases, 13 and 7 cts.
OLIVER FOSTER, Mt. Vernon, Linn Co., Ia.

CONVENTION NOTICES.

The Rock River Bee-keepers' Association will hold its next semi-annual meeting on Thursday, Aug. 6.
J. M. BURCH,
Morrison, Ill.

The Darke County Union Bee-keepers' Society will hold a basket meeting on the fairgrounds at Greenville, O., Aug. 23d. All are invited.
J. A. ROE, Sec.

—MY NEW— THIN DOUBLE-WALL HIVE

Is the best summer and winter hive yet devised. Takes regular "L" furniture. Is lighter than ¾ single-wall hive; may be storified to any extent, etc., etc. Send for descriptive circular, mentioning the New England hive. Special low prices for 1891 to introduce it. A full line of bee-keepers' supplies always in stock. Catalogues free.

C. W. COSTELLO, Waterboro, York Co., Me.
Please mention this paper. 15-19-23d

Golden Carni-Italians

Golden Italian Queens mated to Carniolan drones produce the largest, gentlest, most beautiful and best working bees of any I ever saw. Queens, \$1.00 each. Sample bees and circular free.

15tdb

J. A. ROE, UNION CITY, IND.

Please mention this paper.

A FEW Carniolan queens for sale at 50c each.
A. A. SIMPSON, Swarts, Pa.

100 PURE ITALIAN QUEENS

For the next 30 days will be sold as follows: Tested queens, \$1 each; untested, 7c each; 3 for \$1.75; 5 or more, 50c each. All queens bred from select imported and home-bred queens. Safe arrival guaranteed.

L-19d

D. G. EDMISTON,
Adrian, Lenawee Co., Mich.

Please mention this paper.

WANTED.—To rent an apiary of one or two hundred colonies. Southern States preferred.
H. FITZ HART, Avery P. O., La.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they wish to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough in these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

75 hybrid queens for sale at 30 cts. each, 50 cts. for selected. Most are clipped and young.

CHARLES H. THIES, Steelville, Randolph Co., Ill.

A few mismatched Italian queens from a honey queen, 30 cts. each.

W. W. KULP, Pottstown, Montg. Co., Pa.

We have a few mismatched Carniolan queens 1 year old. They are fine, large, prolific queens. Prices: 1 queen, 25 cts.; 5, \$1.00.

F. A. LOCKHART & CO., Lake George,
Warren Co., N. Y.

25 mismatched Italian queens for 20 cts. each, or 6 for \$1.00.
J. W. TAYLOR, Ozan, Ark.

Hybrid queens for sale at 25 cts. each.

MRS. A. A. SIMPSON, Swarts, Pa.

PASTEBOARD BOXES.

CRAWFORD'S SECTION CARTONS ARE JUST WHAT YOU WANT.

SEND FOR NEW PRICE LIST.

A. O. CRAWFORD,

11tfdb **SOUTH WEYMOUTH, MASS.**
In responding to this advertisement mention GLEANINGS.

GOLDEN ITALIAN QUEENS.

Our 5-banded Italians are giving perfect satisfaction; gentle, excellent workers, non-robbers, and the most beautiful bees in existence. Won first premium at Illinois State Fair in 1890. The judge said, "The drones are the yellowest I ever saw." Queens warranted purely mated; and replaced if they produce hybrid bees. One warranted queen, \$1.00; six for \$5.10; tested, July, \$1.75; after, \$1.50; selected tested, \$3.00; breeders, the best, \$5.00. No foul brood. Safe arrival and satisfaction guaranteed. Reference, our P. M. S. F. & I. TREGO, Swedona, Ills.

Please mention this paper. 11tfdb

OTTUMWA BEE-HIVE FACTORY.

We have a nice supply of hives in the flat, which we will sell as follows: The A. I. Root Simplicity, for extractor, \$1.50; 5 for \$7.00. Simp. for comb honey, with 2 T supers, sections, foundation starters, wood separators, and honey-board complete, in flat, each, \$2.10; 5 for \$10.00. Portico hive with Simplicity upper story, in flat, for the same price.

The improved Langstroth-Simplicity, in flat, eight-frame, 1 1/2 story, each, 90 cts.; 5 for \$4.00; ten-frame, 1 1/2-story, each, \$1.00; 5 for \$4.50; eight-frame, 2-story, each, \$1.20; 5 for \$4.75; ten-frame, 2-story, each, \$1.30; 5 for \$5.25. Dovetailed hives, the same price as the eight-frame hives above.

SHIPPING-CRATES.

12-lb. crate, 11 cts. each; 16-lb., 13 cts.; 24-lb., 14 cts.; 48-lb., 16 cts. each.
Comb foundation.—Heavy brood, 48c; thin, 58c; extra thin, 68c.

Pound sections, snow-white, at \$3.50 per 1000. No. 1, cream, \$3.00. Bee-veils, cotton tulle, with silk tulle face, 75 cts. each. Bingham smokers at manufacturer's prices. Write for prices to 5tfdb

GREGORY BROS. & SON, OTTUMWA, IA. SOUTH SIDE.

In responding to this advertisement mention GLEANINGS.

TAKE TIME TO ORDER,

And get New Stock into your Apiaries For the Next 30 Days.

Golden Italian queens, bred for business! bees work on red clover. Tested, \$1.10; 3 for \$3.00; untested, 70 cts.; 3 for \$2.00; 12 for \$7.00. Nuclei at a bargain. Hives, Sections, Foundation, and all kinds of Bee-keepers' Supplies in stock. Catalogue free. 9tfdb

JOHN NEBEL & SON, High Hill, Mo.

Please mention this paper.

Porter's Spring Bee-Escape.

We guarantee it to be the best escape known, and far superior to all others. If, on trial of from one to a dozen, you do not find them so, or if they do not prove satisfactory in every way, return them by mail within 9 days after receipt, and we will refund your money.

PRICES:—Each, by mail, postpaid, with full directions, 20c; per dozen, \$2.25. Send for circular and testimonials. Supply dealers, send for wholesale prices. 10tfdb

R. & E. C. PORTER, LEWISTOWN, ILL.

In responding to this advertisement mention GLEANINGS.



A glimpse of our Factory, now making carloads of Dovetailed Fives, Lang, Simp, plain Lang, hives, Alternating hives, Chaff hives, sections, etc. Many articles not made by others.

We can furnish, at wholesale or retail, Every thing of practical construction needed in the apiary, and at Lowest Prices. Satisfaction guaranteed. Send for our New Catalogue, 51 illustrated pages, free to all. 4tfdb

E. KRETCHMER, Red Oak, Iowa.

In responding to this advertisement mention GLEANINGS.

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

SEND NOW to P. H. Fellows, Brodhead, Wis., for Strawberry-plants. Crescent and May King, 60c per 100; \$4 per M. Bubach and Jessie, 75c per 100. Mention this paper. 14-15-16d

ITALIANS

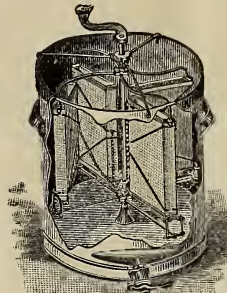
Tested queen, \$1.25; Untested, 75c. Nuclei, brood, and bees by the lb. Send for price list.

9tfdb Box 77. **MRS. A. M. KNEELAND,**
Mulberry Grove, Bond Co., Ill.
Please mention this paper.

I RE-QUEEN EACH SEASON,

Consequently am selling fine one-year-old Italian queens, tested, at 75 cts. each.

14-15-16d J. C. WHEELER, Plano, Illinois.



5tfdb

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EVERY THING USED BY BEE-KEEPERS.

EDWARD R. NEWCOMB

Pleasant Valley, N. Y.



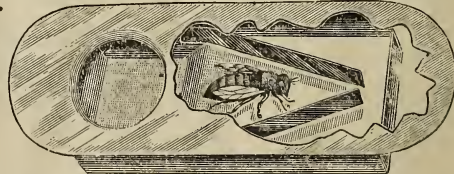
Bee-keepers' Supplies.

We are prepared to furnish bee-keepers with supplies promptly and at lowest rates. Estimates gladly furnished, and correspondence solicited. Our goods are all first class in quality and workmanship. Catalogue sent free. Reference, First National Bank, Sterling, Ill. Address

WM. McCUNE & CO., Sterling, Illinois.

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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

Published Semi-monthly at \$1.00 per year, by A. I. Root, Medina, O.

Vol. XIX.

AUGUST 1, 1891.

No. 15.

STRAY STRAWS

FROM DR. C. C. MILLER.

COOL summer.

"THE CARNIOLAN race, or strain, of bees is the original yellow race."—Henry Alley. in *American Bee-keeper*.

KILLING QUEEN-CELLS is a nice thing in theory, but we're tired of it at our house. Some cells are sure to be missed.

E. R. IS MIXED about that foundation-fastener. It's one of the things I thought worth trying, and I tried it the first good chance I had.

PROF. COOK says, in *A. B. J.*, that a student came from Japan to Michigan Agricultural College purposely to take a course in apiculture.

"WHENEVER YELLOW is found among bees in Carniola it is to be taken as evidence of Italian blood."—Frank Benton, in *American Bee-keeper*.

SAY, E. R., isn't that rather heavy stimulative feeding to use quart jars and then "put about a dozen of these feeders to each hive"? (p. 561).

THE NAMELESS DISEASE, if I am not mistaken, is called bee-paralysis (*Bacillus depilis*) in *B. B. J.* It's time the nameless thing had a name.

THE *White Mountain Apiarist* champions the black bee, and says it is as good as, if not better than, the Italian for honey-gathering and wintering.

LATELY I found a good-sized worm in foundation that had been lying a year with paper packed between the sheets. I never met the same thing before.

WHEN A QUEEN flies away when you catch her to clip, we are told just to let her alone and she'll come back. Sometimes she does with me, but oftener she doesn't.

PRICE OF HONEY hasn't come down as much as I expected at this date (July 16). In a good many localities honey will be honey this year, and it may not be wise to sell it for a song.

FRIEND ROOT, tell E. J. Purcell (p. 557) to put his queens in penny cages and give them to a colony to care for. I've kept seven in one hive. But it's safest to cage the queen of the colony.

DADANT & SON (*A. B. J.*) say that queen-excluders are a nuisance; that only a few queens go up into supers not oftener than once every four or five years. In working for comb honey I haveno need of excluders to keep queens down; but for other purposes I think a good deal of an excluder that excludes.

CALVES, the other day, in the Wilson apiary, amongst other mischief, knocked off five supers which the bees robbed out. Sheep are not so bad, although they have moved some hives on their stands, and horses have never done any harm at all.

COLD NIGHTS, or something else, has hindered the bees in their work a good deal of the time. Still, I think I'm going to have a better crop than for years. White clover is a sea of white; linden, enough to make itself felt; and four or five hundred acres of cucumbers will keep the bees out of mischief till frost.

BRITISH BEE-KEEPERS are asking for a cheaper rapid bee-feeder, 75 cents being considered at present low for any thing in that line. Why don't our British cousins try the Miller feeder at one-third the price, holding 30 pounds, and requiring only to lift the cover to refill? Since Mr. Warner improved it, it is really a valuable article.

WHITE CLOVER is the only thing I have ever counted on for surplus, but I find there is more linden here than I had supposed; and for a few days it made quite a difference in the storage. Every tree seemed to have all the blossoms there was place for. Without a good deal of looking, one doesn't always know thoroughly the honey resources of his locality.

J. M. HAMBAUGH, the man that secured \$500 annually from the legislature for the bee-keepers of Illinois, produced 15,000 pounds of honey from 18 miles of territory. He figures out that, if the whole State produced at the same rate from its 56,000 square miles, it would produce 46,665,000 pounds, or nearly double the census report of 1890 for the whole United States. (*A. B. J.*)

LANGSTROTH, in his book, gave a cut showing a cell made by the bees, having an acute angle. Cheshire referred to it, and gave a cut to show that the cell "is such that no bee ever did or could construct." Without naming either, Cowan, in the "Honey Bee," gives illustrations of several acute angles taken from actual combs. But Dadant, who has found several such cells, says they don't go the full depth in that shape.

THOSE REPLIES on page 555 make me scratch my head. All agree that I have no right to overstock territory occupied by another bee-keeper, and I'm afraid some one will yet say that there ought to be some kind of a law to secure him in his rights. For pity's sake, don't. It's all right to make laws about every thing else under the sun, so as to make bad people do right; but bee-keepers are exceptions, and don't need any laws to make them do right.

FRIEND BINGHAM, you almost frightened me by suggesting, on page 556, that I withheld

credit from father Langstroth. Of course, I wouldn't. But is it necessary to use his name every time we speak of movable frames? Have you done it? Rather than withhold any credit from him, however, I'll say closed-end Langstroth movable frame, Hoffman-Langstroth frame, or how would you write that item on p. 457, any way? But, say; why are you coming at me for it? I'm only using names that others have been using this long time. Go for those New York fellows, and don't come at me just because I live out west.

DIVIDING COLONIES AFTER THE HONEY HARVEST.

WHAT DOOLITTLE THINKS ABOUT IT.

Beside me lies a letter containing the following, in substance: "Our harvest of white honey will soon be over, and my colonies are all strong as to numbers. Not having as many bees as I wish, I propose to increase those I have, by division, as soon as the flow is over, and wish to do it in such a way that a good crop of honey may be secured from fall flowers. How shall I do this?"

There are various ways of doing this; but as I have a way which is successful with me I will give it here for the benefit of all who may care to try it. In the first place, nuclei should be started at once, so that we may have laying queens at our disposal when we come to the increase. Having these queens, the honey harvest being over for the present, and we being otherwise ready for action, the second thing we shall want is a box holding about a cubic foot, wire-cloth sides, similar to what I have described in back numbers of *GLEANINGS*, and the same as described in "Scientific Queen-rearing;" together with a large funnel, such as is used to put up bees by the pound with. These, with our lighted smoker, are to be taken to the apiary, when one of the hives is to be opened, the queen found, and the frame she is on set outside of the hive for the time being, till we have taken out a third of the combs with the adhering bees, when this frame is to be returned. The frames now outside of the hive are to be gently jarred a little to cause the bees to fill themselves with honey. While they are filling themselves with honey we are to go to another hive and treat it exactly the same as we did the first, when we go back to the first and shake all the bees off the combs which are outside the hive, down through the funnel into the box, immediately taking it to the second hive and shaking the bees there down into the same box, when the frames of brood and honey are to be returned to their respective hives, after first removing the funnel and closing the box. If this work is done toward night no trouble from robbers will be experienced, and the bees will be better prepared for what is to follow. Just before dark, taking plenty of time to find the queen readily before it is too dark, go to your nucleus and secure the queen from it, having her in a provisioned cage, the new West cage being particularly adapted to this purpose. Having the queen in the cage, go to your darkened, cool room (where the bees should be left while they are in the box), and, by setting the box down suddenly, drop them all to the bottom, when the caged queen is to be hung in so the cage touches the top of the box, and the bees left till the next morning. When going to put the queen in, you will find them in great commotion, and "crying" over their queenless condition; but in an hour after the caged queen has been put in they will be all quiet, and send forth a satisfied note, as much as to say, "We

are now prepared to make a future home of this place if need be;" while in the morning they will be clustered as snug and compact as any swarm. Early in the morning, before robbers are around, the same two hives are to be opened, and a third of the combs are to be taken from each, having the honey and brood correspond in about the same proportion as that left in the hives, the bees from these combs all brushed off and allowed to go back, the hive filled out with combs, comb foundation, or dummies, as you prefer, when these new beelless combs of brood and honey are to be put into an empty hive, the same placed on the stand you wish it to occupy, and the one-third vacant space filled out the same as you did the others. The clustered swarm of bees is to be lived in this hive, the same as you would have a natural swarm, the same being accomplished by removing one side of the box, which should be easily removable for this purpose. In this way you will have three good colonies in place of two (which would be as great an increase as I would recommend at this time of year, if I expected to secure a yield from fall flowers), and it is one of the very best plans of artificial increase that I know of. If done early in the season, when the bees are about to swarm naturally, it would do well to take half the bees and half of the combs, so that the colonies could be doubled, if increase is preferred to honey.

Many, who can not be with their bees, on account of work which keeps them away from home during the middle of the day, will find in this an easy and good plan of controlling swarming, and yet have their bees in good condition all the while. I forgot to say in the right place, that, as the bees are running into the hive, the queen should be let out of the cage and allowed to run in with them. Formerly I always put the queen in with the bees after they were "crying" for her, without caging, and, so far as I am concerned, generally had good success; but some report failures, which thing can not result by the plan here given, for the queen can not be harmed until she has become a part of the newly formed colony, when, of course, they will not injure her. In reading this many will exclaim, "This is lots of work!" but after a little practice you will find that it takes hardly as much time as it does to read this article, and put you in a place where you are master of the situation, every time, and also gives you just the right division of matters and things, so that the right proportion of bees and brood is in each hive, and all ready to go to work to the best advantage, on all subsequent bloom, so that all are in readiness for winter when it arrives, and generally a good yield of honey.

Borodino, N. Y.

G. M. DOOLITTLE.

FUSSING WITH BEES.

SOMETHING ON THE OTHER SIDE.

"Don't fuss too much with your bees," say some of the writers for the bee journals. "Don't tinker with your bees unnecessarily," says Dr. Miller. "Mr. G. de Layen's plan for an out-apiary is to have very large hives, and visit them only twice a year, spring and autumn" (Dr. Miller, page 155, *GLEANINGS*). "If you wish a large yield of section honey, keep prolific queens, and let the brood-combs alone, after they are once filled with brood in the spring," says G. M. Doolittle.

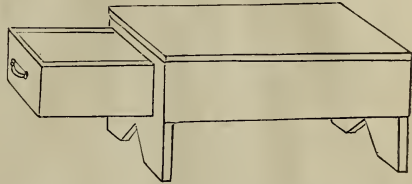
My young bee-keeping friends, and those of the South in particular, don't let such statements and advice as the above lead you astray.

Some of it is all right, and more of it may answer fairly well for men of such experience as can tell pretty nearly the condition of a colony by a glance at its entrance or in at the top of the hive; but I will venture the opinion that he who does not examine each colony sufficiently to know its exact condition, at least once in from one to two months, and oftener in the working season, will find plenty of evidence, through the year, to prove that a little closer attention would have been profitable. Don't fuss too little with your bees. "Prevention is better than cure" in bee-keeping as well as in the care of one's bodily health. The very best way I know of to prevent the evils of fertile workers, foul brood, queenless colonies, starving out, drone-laying queens, ants in the hives, mice, robbing, etc., is to "fuss" with your bees often enough to thoroughly know their condition, and remedy these evils before they exist, or, at any rate, as soon as the first symptoms appear.

In Florida it is possible to carry on an apiary year after year without the loss of a colony. I do not know that there was a colony lost from my apiary, from any cause, for nearly three years at one time, and yet in some of the apiaries here it is not uncommon for the number of colonies to vary from year to year as much as in poorly kept apiaries of the North. Why is this? If it is not for the lack of sufficient intelligent fussing with the bees, then I should like to have some one rise and state the cause. Without close attention to the apiary, bee-keeping goes back to a matter of luck, as of old; and he who trusts to luck usually gets it and becomes a malcontent in the long run, though success for a time may make him proud of his method, or lack of method, rather. Do not understand me that I advise overhauling each colony from top to bottom, every four or five days, though a novice who begins this way is more apt to succeed eventually than one whose interest is not so thoroughly awakened; but do not, even at the end of the honey season, close the hives and then forget them for months. Through the fall, many queens are superseded. Some may get lost in mating. If you watch them you know where this is the case, and you also know whether you have ripe queen-cells to supply the need. These may be plentiful today, but hatched to-morrow. If you are not well acquainted with your bees you have to start from the egg, even though there are such cells in the next hive, or you will not discover the need, and after a while you see a case of robbing; and, looking into the hive, find another case of the bee-moth eating up your bees. Too late then to save the colony. Is it a fact that it is as harmful to the prosperity of the bees to open a hive as many declare? I think not. Neighbor O. O. Poppleton tells me that, instead of the moving of bees being a detriment to them, if properly done and not carried too far, in his experience it has proven a benefit, and seemed to stimulate them to more energetic work. He has had a good deal of experience along this line, is a careful and observant man, and not inclined to hazard his reputation as a skillful apiarist on mere guesswork. His statement I accept with confidence, though contrary to the teachings of some; and, if true, I should say that the disturbance of looking over a colony of bees, when there is honey in the fields, should stimulate them sufficiently to more than counterbalance the cost in time and honey. I will also say, that I believe that a bee-keeper who is thoroughly posted at all times on the condition of his bees will also be so alive to their requirements and prejudices as to get all the information necessary without the bees hardly noticing his presence.

SEATS WHILE WORKING OVER HIVES.

What shall we sit upon when opening hives? Why, stools, of course. Is a hive-cover, a box, or any other device so handy and comfortable as a light stool with a drawer opening at the end, in which to carry the bee-brush, smoker-fuel, matches, scissors, slates, queen-cages, and queen-cells? Then at the other end have a couple of sockets—one for pencil, the other for a heavy knife or chisel. Take this stool by the wire handle in one hand, your smoker in the other, and you have all you need for ordinary work. Something of this kind, but of a different pattern, was illustrated years ago in GLEANINGS. This one is better than that was, as the tools can be got at while sitting upon it;



and scraps of wax, with honey adhering, can be shut away from robbers. I was surprised that friend Root did not call attention to that one when this matter was up for discussion lately.

HIVE RECORD.

Like Mr. Root, I can not understand the line of reasoning that can cause a bee-keeper to use either bricks or heavy stones on the cover of a hive, as an indicator of the colony's condition, when so handy a device as a little slate is so easily obtained. My slates hang at the back of the hive on one of three tacks. Its position shows whether the colony requires immediate attention—attention as soon as convenient, or is in good shape every way. The slate gives particulars, also the age of queen, and whether clipped or not. It takes me nearly a year to cover one side of one of these small slates, as I have a system of indicating a good deal in a small space.

SHADES.

Then, too, the idea of handling a big shutter of boards or iron, or some other material, in addition to these heavy rocks, etc., every time a hive is to be opened, is one that fills me with wonder, and makes me tired to think of. If I had them I don't know but I should be content to fuss very little with my bees, and get a very little crop of honey as a consequence. Here I have, as before stated, a light arbor covered with palmetto-leaves, or scuppernong grapevines. The first are lightly tacked on with a four-penny nail through the stem close to the leaf. These can be easily knocked off in the fall, and make a good mulch for the orange-trees. The grapevines put on leaves and fruit at the time shade is required in the spring, and drop the leaves at the right time in the fall. Nothing could be pleasanter than these shades to work under in the summer, and they serve every purpose of shade, both for bees and owner. If something of this kind is constructed in the northern apiaries, I feel sure that they will be found far more satisfactory than the shade-boards and rocks. If the covers blow off, construct them differently, or use hive-clamps. I have never had a cover blow off that I know of, and I use no device to hold them on. There is no chance for the wind to get hold of them.

It must be remembered, however, that a good bee-tent, to be placed over hives that are opened during a honey dearth, is an absolute necessity. Without this prudent protection

against robbing, a very little fussing may become altogether too much, and that in a very few minutes. Judgment should enter into all your work.

Hawks Park, Fla., June 17.

W. S. HART.

A VISIT TO MR. THOMAS PIERCE.

BY BRODIE G. HIGLEY.

I previously notified Mr. Pierce of my intention of paying him a visit. After wading through the mud for five miles on foot, which took me about two hours, I was at the station. Stepping aboard the train, which soon arrived, I was soon on my way to Gansevoort. On arriving here I was directed to Mr. Pierce's dwelling, which is only a step from the depot. Knocking I was soon in the presence of my young friend who has lately retired from business, being somewhere about 70 years old. Through the foresight of his genial companion they had put off dinner till I came. How my heart filled with joy after sitting down, to hear praise go up to the God that had cared for him all his life! Our conversation naturally led to bees; and by the time dinner was over the bees got quite lively; and before they became quieted we were out in the bee-yard.

THE BEE-YARD.

His bee-yard is very nicely arranged, some 10 or 12 rods from the road.

"Do the bees trouble your neighbors?" I asked.

"No, not to amount to any thing. I generally remedy it all by giving the persons troubled some honey, which keeps them good natured."

STOREHOUSE FOR HIVES.

The next place was his barn, which is now used for storing away hives and fixtures in the barn. He has a box which is moth and mice proof for the storing-away of combs. In this he also keeps his swarming fixtures, which have before been illustrated in GLEANINGS. His honey-house is nicely arranged some few steps from this.

WORK-SHOP.

In this he has an improved engine which runs a planer (one of the best kinds), and saw. The saw is one of his own make, being strong, to be run by steam power. He used to make the old-fashioned 2-lb. nailed section, which looked almost as nice as our four-piece dove-tailed sections. He buys his sections now, they being so cheap that he can not afford to make them. Those he made showed fine workmanship.

STORE FOR SUPPLY-HOUSE AND BEE-CELLAR.

A store built some 20 years ago is now used for a store room. This is a commodious structure, and gives plenty of room for a bee-keeper's supply-house. As Mr. Pierce is a supplier, it comes quite handy. His bee-cellar is under this. He was wintering about 75 stocks. They were wintering rather badly. He attributes it to low temperature, saying that bees winter better with him with a high temperature, say 50° to 58° F. To maintain this temperature he uses artificial heat. He furthermore says he can show a good average in favor of high temperature for the past five or six winters. This is the cellar that is shaken every time a train goes by.

HIS HIVE AND WAY OF WINTERING.

For winter he places a sort of Hill device over the frames, and over this a cotton cloth, which is attached to a box without top or bottom, which fits the top of the hive. Upon this

a chaff cushion is put, then he raises the hive from the bottom about two inches by blocks. This, he says, gives them sufficient ventilation and escape for dead bees. His hive is the modified Langstroth, two Manum clamps exactly covering the top of it.

MIDDLEMEN, PRO AND CON.

"Mr. Pierce, what do you think about middlemen in connection with the honey industry?"

"Well, there are some that are a damage to the producer, but on the whole they are an advantage."

CHEAP OR COSTLY CONTRIVANCES.

"Well, Mr. Pierce, what is your conclusion as to the advisability of using cheap or costly hives and fixings? Do you think that it would pay to go to the extra expense of having every thing of the very best?"

"No, I do not, for a hive that would cost half the cost of mine would answer just as well."

"Don't you think that this is too often the case with the over-zealous beginner?"

"Yes, I do; for a great many go into the business with the idea that, the more money they can get invested, the more will be their returns. But it is generally the other way."

"What do you think of the idea of putting a swarm of bees worth \$3.00 into a hive worth \$4.00?"

"I think it is like driving a \$100 harness on a \$50 mule."

CARNIOLANS OR ITALIANS.

"Which kind of bees do you prefer, Carniolans or Italians?"

"I tried one Carniolan queen; and if the progeny of all Carniolans are the like of this, I have had enough of them."

These were some of the topics talked over. When looking at the clock it said train time, so my very pleasant visit had to come to an end. With good wishes I left Gansevoort, and arrived home in four or five hours, feeling well paid for my visit.

BRODIE G. HIGLEY.

Hartford, N. Y., April 27.

THE NEW BENTON CAGE.

WHAT AN EXTENSIVE QUEEN-BREEDER THINKS OF IT.

Friend Ernest:—I think the new small Benton cage is the best that I have ever seen, and the item of postage is a considerable one when a person has to send off many. I think there is plenty of room in warm weather for eight bees and the queen. In colder weather it will hold about sixteen bees, and be a little crowded, which is better in cold weather, though when we have to send off bees in as cold weather as I had to send some this past spring, I feel as if I should like a cage that would almost hold a little nucleus; but I believe this will do to send queens in safely in most parts of the United States, at any time of year. It being shallower than most cages, and having sufficient length, the bees and queen seem to be comfortable and easy; while if they had more room, by giving more depth they become more excitable every time they are moved or handled on their journey.

I concluded to try an experiment as soon as I received the first lot from you. I had a small dark queen which I had rejected, so far as sending her out to any one, but I concluded to keep her in one of my hives for the purpose of building up. This queen I placed in one of the improved cages, with exactly one dozen bees, on the 1st day of July. To-day, the 18th, there

is not a dead bee in the cage, and the queen is lively, and they have. I think, about three days' rations, which I hope will be enough to land her safely at the Home of the Honey-bees. This queen and bees were placed, when first caged, in a bureau drawer, and have been there ever since. They have been in fine condition. Of course, I don't expect you to keep the queen, as I don't consider her of any value, but she will answer for the experiment; and if you find that she arrives all o. k., and you deem it worthy of trial, you may renew the candy and mail her back, and I will report what condition she arrives in. Would it not be a good idea for us to take a queen, as in this case, and mail her back and forth, and report the condition she arrives in each time, and see how long they will last in the improved cage? If you deem it worth a trial we can start on this one after having been caged 15 days. J. D. FOOSHE.

Coronaca, S. C., July 18.

[There is no doubt, friend F., but this cage is a big step in advance. Costello's penny-postage feature, and our method of making it a successful introducing-cage, are two of its distinctive features. The cage containing queen and bees arrived in excellent condition. We put in fresh candy, and return them to you today (20th), and no doubt they will arrive to you in good order, even after being confined over three weeks. Since we adopted the new cage, by mistake a queen was sent to the wrong man; but he very indignantly returned it, saying he had not ordered any queen. It so happened that the queen had originally come from you, and had been lying on the table for some five or six days. The total length of time that it had been out was something like three weeks, and she was still in good order, and was successfully introduced into our apiary. How many more weeks' journey she would have stood, we do not know. As she was a good queen, we did not like to put her to any further test. Of the hundreds of queens we have sent out in these new cages, the number that we have had to replace has been remarkably small—I think it is about one in a hundred; and even this hundredth one might be eliminated if we could *always* make the candy just right. Candy that will do for cooler weather is not as good for real hot weather; and sometimes sudden changes of weather so affect the candy as to cause the one in a hundred to die. Mr. Fooshe uses, with excellent results, granulated sugar and the best quality of extracted honey kneaded into a stiff dough, the honey having been first warmed until it is of about the consistency of milk. We also warm the honey, but use instead pulverized sugar. We are not sure it is any better, although we have excellent results. The Good candy, or, more properly, the Scholtz, as described in the earlier editions of "Langstroth on the Honey-bee," is one of the elements in the successful mailing of queens.] E. R.

THE KEENEY WIRING.

C. A. HATCH EXPLAINS: HOW TO WIRE FOUNDATION HORIZONTALLY AND NOT HAVE IT BULGE.

Friend Root:—I want to say a word about the Keeney method of wiring frames, or, rather, say what I should have said last year at the time I made my experiments in wiring, that were reported in GLEANINGS. It was rather cool weather, and the report was made as the facts then stood; but I found, later on in the season, when the weather got warmer, that I had the same trouble that Ernest speaks of.

and ask pardon of the brethren for not reporting the subsequent failure as well as the success. However, there is one point that is not explained; i. e., how the foundation is kept from lopping over between the top wire and the top-bar; there is where I had trouble with that method. May be Ernest has explained all this; but if so, I have forgotten. The only way we could obviate this trouble was by rubbing it down to the top-bar, which made so much bother it was all given up in disgust. The foundation we used was part of our own make and part of Dadant's, and it ran about six sheets, L. size, to the pound.

HOFFMAN FRAMES.

I did not expect to come out anywhere but second best in my argument on the Hoffman frame: for who could expect to prevail against two such able advocates as the junior editor and Dr. Miller? In fact, "thou almost persuaded me." But to Dr. Miller's ideas about

SPRING DWINDLING.

I must cry out, "Shan't either!" In the first place, I am sure that brood-rearing in the cellar has nothing to do with it. I would have indorsed every word Dr. Miller had said about it previous to this spring; but my experience this year has knocked all my preconceived notions endwise. First, I never set bees out with as little brood as this year, none having more than two patches the size of one's hand, and some almost none; and yet I never had as bad a case of spring dwindling, and nothing seemed to check it—chaff packing, warmth, feeding, nor even new pollen. There was no stop, apparently, until all the old bees were gone. Colonies that were apparently in good condition when set out, all went "where the woodbine twineth." I thought, when my bees were set out, that I had a pretty fair lot; but there was no let-up until fully 50 per cent were dead. What was the cause? Don't know. I know they had more or less honey-dew, and perhaps it is as well to lay it to that as to any thing else. But the worst cases were fed on Good candy in the cellar. Would leaving in the cellar until dwindling time was over have saved them? I do not think it would have been over until all had gone just the same. The weather was not bad; on the contrary, unusually favorable I thought. This experience has put me all at sea in regard to spring dwindling, and I am sure of only what I don't know.

Ithaca, Wis., July 9.

C. A. HATCH.

[Your experiment, friend H., being made in cool weather, would make quite a difference; and I do not wonder that you decided on wiring by the plan as you originally gave it in GLEANINGS, for I too encountered the same difficulty in fastening the foundation to the top-bar, and decided as you did. This year, a mere accident showed me conclusively that the other side up was much better. The top of the foundation we fastened on to the comb-guide, and we had no trouble. But perhaps I should say that a common knife will not answer. We use in our binding department what we call "bones" for folding papers. They are something the shape of a strong heavy paper-knife, about six inches long, no handle, and blunt at both the ends. They are nicely polished, and the edges and ends are beveled, the ends also being slightly rounded instead of square. I tried rubbing foundation on to the comb-guide with a knife, and gave it up in disgust. Then it occurred to me that one of these bones that they use in the paper-room would be just the thing. I at first did not succeed; but finally I got the knack of it by dipping the bone fre-

quently in water, so that I could show the girls how to do it. It is something that I can not explain; but any one who tries such an implement will discover the *modus operandi* after a little practice. A piece of hard wood shaped after the bone might answer.

I might say, further, that we are now getting some beautiful combs. They are equal in every way to those made on the perpendicular plan.

It has been a great puzzle to me for a year or so back how the Dadants, George E. Hilton, and others could use plain horizontal wires, without having the foundation bulge. Somebody, perhaps Geo. E. Hilton a year ago, said the secret was in *not* drawing the wires taut. Something interrupted, and I did not have an opportunity to try the experiment; but I now discover that we can wire frames horizontally as well as perpendicularly, providing the horizontal wires are left not drawn taut. When the foundation sags in drawing out, the wires sag with it a trifle, so there is no more bulging of the foundation than if simply put on the comb-guides without wire. Do you see? Well, this means that we can use plain *horizontal* wiring, if it is more convenient than the Keeney, *providing* we use thick top-bars, or bars that will not sag, and foundation cut a trifle shorter than the inside depth of the frame. The Keeney helps to sustain the top-bar, and I think it is a little stronger than the horizontal plan, but it's more work.

In regard to the Hoffman frame, I desire only that its merits shall be seen and appreciated as the users and admirers of this frame do. For be it far from me to come out ahead in discussion simply for the sake of it. I did feel, and think so yet, that if you were to try a few Hoffman frames, and *accustom* yourself to them, you would be so convinced of their merits from practical use that you would adopt them exclusively, in preference to any other style of *new* frames that you put into the apiary. I am not sure that it would pay any bee-keeper to transfer his combs from loose frames to the Hoffman; but if he is going to buy a lot of new frames, to be used in an out-apiary, the Hoffman is the style that he should adopt, providing he has tested a few to know that his locality will admit of their use. There, there! I have encountered that old bugbear "locality" again. However, I suspect the time will come when we shall find that it is not so very great a factor after all, in the use or disuse of fixed frames. I have studied this propolis question in a good many States; and I am loth to believe it is so essentially different as to make fixed frames impracticable.] E. R.

A POOR HONEY SEASON IN KENTUCKY.

HOW BEES THAT WOULD'N'T STAY HIVED WERE MADE TO STAY AT HOME; GARDENING, ETC.

This has been a poor season for honey here. The long drouth of two months cut off our usual white-clover supply; and though some has bloomed since the recent rains, there seems to be no sweetness in it. Many of our largest bee-keepers report no swarms at all. However, I've had three swarms from four old stands; and while it has been our (my wife and I are partners) first year with bees, we have secured an ample supply of honey for our own use, and some really amusing as well as useful experience. Coming home from my office one afternoon I found my wife with the A B C of Bee Culture in one hand, and a box with a queen in it in the other.

"I'm trying to find what will make those bees stay in the hive. I have put them in twice, and they are out again. Hurry, or they will be back before you are ready."

The queen had her wing clipped. I had heard something about getting a frame from near the center of another hive, containing "unsealed larvae," etc., and so I rushed and procured one, and had it in the new hive by the time the swarm came back; and as soon as they were going in rapidly, we released the queen and they remained contentedly afterward.

There is one hive of vicious hybrids, and, like Dr. Miller, I wish the queen could be "mashed up very fine;" but some other fellow will have to do the mashing.

While I enjoy the bee-department of GLEANINGS very much, the "crop" of garden notes is always read first. My first attempt at growing Spanish onions for seed this season, I call a success already. They are just cracking the ground open in their haste to get large. Some are as large as one's fist now, and the tops look green enough to grow all summer. As soon as they were out of my hotbed, celery seed was sown, and a good supply of extra-fine plants, which were put out the 8th inst., is the result. My Hubbard squash were entirely eaten up by the little striped bug, while the common, or field squash, was not hurt. If I get nothing more of benefit from Terry's strawberry-book I shall think myself well repaid from the instructions obtained as to setting plants alone. Six hundred were put out by firming the ground around each one, and throwing some loose soil over this, and not three plants were lost. Some of my neighbors lost all, some half, just in proportion as they were carefully put out. Give us more "Terry sermons." WALTER STUART.
Winchester, Ky., July 13.

AN APPROPRIATION OF \$500.

WHAT THE STATE OF ILLINOIS HAS DONE FOR ITS BEE KEEPERS.

Hurrah for the great State of Illinois! Hurrah for the Bee-keepers' Association of the State of Illinois! Did you hear that the last General Assembly of Illinois has passed the first law ever made in Illinois, recognizing the existence of the little bee? Why, they have given us five hundred dollars per annum, to be used in promoting the interests of our great, glorious, and honorable industry in Illinois! Now let any misguided person try to have the courts declare bee-keeping a nuisance, and we will rise up in our indignation and say, "Sir, would the State of Illinois appropriate five hundred dollars for the maintenance of a nuisance?" and our enemies would retire, covered with confusion.

There lies in front of me a book entitled "Laws of Illinois, passed by the 37th General Assembly in session at Springfield, January 7, 1891—June 12, 1891." Turning to page 7 I read as follows:

An act making an appropriation in aid of the Illinois Bee-keepers' Association.

Whereas, The large and growing industry of bee-keeping in the State of Illinois is worthy of proper encouragement by the General Assembly; and

Whereas, The Illinois Bee-keepers' Association, an organization composed of the leading apiarists of the State, is engaged in promoting this industry, and desires an appropriation to assist in this work;

Therefore—

Section 1. Be it enacted by the people of the State of Illinois, represented in the General Assembly, that there be and hereby is appropriated for the use of the Illinois State Bee-keepers' Association the

sum of \$500 per annum; provided, however, that no portion thereof shall be paid for, or on account of any salary, or emoluments of any officer of said association; and that said sum be expended by said Illinois State Bee-keepers' Association in the publication of such reports and information pertaining to this industry as will tend to promote the growth and develop the apiarian interest for the years 1891 and 1892.

Section II. That, on order of the President, countersigned by the Secretary of the Illinois State Bee-keepers' Association, and approved by the Governor, the State Auditor shall draw his warrant annually in favor of the Treasurer of the Illinois Bee-keepers' Association for the sums herein appropriated.

Approved June 16, 1891.

Brother Root, this is one of the grandest things that has happened to us bee-men for many a year. I think I see Dr. Miller's eyes snap with pleasure at the good news. Illinois is now and will be the cynosure of eyes all over the world, and this good move on her part will be the signal for more decided recognition of our industry, and for similar appropriations in other States.

Let this be the signal for bee-keepers in Ohio to get this matter thoroughly digested, and in form for presentation to the next General Assembly of Ohio.

"Forward" be our watchword,
Hearts and voices joined.

Chicago, July 20. HERMAN F. MOORE.

[This is indeed important; and, as a precedent, it will be invaluable. Now, if there is any organization that needs such an appropriation, it is the North American Bee-keepers' Association. Although the stamping of medals, etc., is now under way, to be awarded to affiliated societies, in accordance with the constitution, we need other benefits that we can award to members that we can not now give from the treasury. The Ontario Bee-keepers' Association gave to each of its members one year a copy of Langstroth's Revised; the last year, I believe they gave a copy of Cowan's scientific work, The Honey-Bee. The Ontario association has had an appropriation, so that it is able to give its members substantial benefits. This is just what we need for the national association. Bee-keepers are not after presents; but benefits conferred in one way and another would help very much to enlarge the membership of our national association. This will be a proper and a timely subject to discuss.] E. R.

CENTRAL ARIZONA AS A HONEY COUNTRY.

A TRIP OF 40 MILES IN THE WILDS OF THE COUNTRY.

As I sat on a stone by the roadside and took my first square look at the Verde Valley, the thoughts uppermost in my mind were, that, if that were a honey country, I had at last found something more marvelous than the manufacture of nice jelly out of old boot-heels. It was the afternoon of Sept. 21, 1888, and I had been tramping most of the time for the previous 24 hours. I had walked until 9 o'clock of the previous evening, and then rolled myself up in my one blanket, stretched myself out on the bare dry ground, and slept, though I had no idea as to where I was nor how far I was from human habitation. I only knew that I was on the road from Prescott to Fort Verde, and to what I hoped and expected would be a good honey country. I slept soundly till midnight, when I awoke with the cold; for the nights in the mountains of Central Arizona are rather cool for sleeping out in only one blanket. I "turned

out" and walked a few miles until I got warmed up again, then stopped and caught about an hour of sleep, and concluded I had slept enough to carry me the remainder of the distance. Even though I was a "tender-foot," I rather enjoyed the novelty of the situation. There was a romance about the awful stillness of the wilderness, broken occasionally by the startling yell of coyotes, which I suppose just suited young blood, for I did actually enjoy it.

As I had walked through that wilderness during that long day, seeing nothing growing on the barren rocky ground which I thought could possibly yield honey (though I afterward found I was mistaken) I had consoled myself with the thought that I should see a different-looking country when I came in sight of the valley, for "verde" certainly means green. But I must confess that I felt green—or, rather, blue—as I sat there on that rock, weary and footsore from a tramp of 40 miles through a wilderness where neighbors and water were from eight to ten miles apart. The river, which lay about 1000 feet below me, and about three miles away, could be seen occasionally through openings in the narrow belt of cottonwoods growing along its banks. The sight of these green trees and the water did look good; but still my eyes ached for the sight of some green grass; for from that point I could not see the alfalfa ranches, though I afterward climbed to a point of about the same elevation, and looked down upon another part of the valley. I think I never saw a more beautiful sight than that presented by the bright green fields of alfalfa, and the cottonwoods, with the river shining through them in places, as contrasted with the barren hills and mountains which hemmed in the little valley.

The valley is about thirty miles long, and from one to five wide. From the point of which I speak I had a fine view of the surrounding country. Away to the northward, about 80 miles, could be seen the San Francisco Peaks, the highest points in the Territory, of which one or two are extinct volcano-craters. These peaks are often snow-capped for nine months in the year. Further to the west of these can be seen Sitgreave's Peak and Mt. Bill Williams. In the east rise the Mongollon range into the timber line, and there, within 100 miles of Phoenix, are hundreds of square miles of the finest pine timber I ever saw, rotting and going to waste for the lack of proper shipping facilities, while the bee-men of the Galt River Valley, I suppose, are shipping their lumber for hives from Michigan via Bro. Root's factory.

As the remainder of my journey was not eventful enough to warrant my occupying any more space, I will begin upon my subject; that is, the honey resources of the country, which, I will say to begin with, proved much better than my first impression led me to expect; for, after becoming better acquainted with the peculiarities of the country, I learned to like it, and shall count my two years' sojourn there as two pleasant and profitable years of my life.

I went there to take charge of an apiary owned by Mr. F. E. Jordan, an enterprising man from New England, who has made Arizona his home for the past fourteen years. Although he was but a novice in apiculture, he yet saw an opportunity for making an apiary a source of profit to him if run in connection with his other business (fruit culture, milling, and stock raising). Wishing to adopt the Heddon hive and system of management, he wrote to Mr. H. to send him a man who had been in his employ, and one who understood the system of management which is such a necessary accompaniment to this hive. Having a desire to see something of the West before locating permanently

in the business, I was ready to take this opportunity when it was tendered me.

The principal honey-plants of the country are the famous alfalfa, clover, and mesquite, which correspond to the white clover and basswood of the East. Perhaps I can give the best idea of the honey resources by describing the honey-flow as it came last year. Early in February, pollen began to come from the alder which grows in the river bottom. Unlike an Eastern climate, the days of February are generally uniformly pleasant, and warm enough for bees to fly well, though the nights are cold and frosty. There is seldom a week of weather during the entire year severe enough to confine bees to their hives; but still there is often a range of 50° between noon and midnight temperature. Following the alder comes the "filleree," or alfalaria, a California plant which is fast taking possession of this country. This plant, like buckwheat, yields honey only a few hours in the morning, and it is a beautiful sight to see the hills and *mesas* (tablelands) take on a pink tinge for a few hours on those bright warm mornings. In places the little pink flowers cover hundreds of acres like a bright pink carpet, while a delicate pink tinge can be noticed clear to the top of the surrounding mountain, though the flowers are not as abundant on the hills as in the valley. As the flowers begin to close about 10 o'clock, the color fades; and by noon all is green or gray again.

Sometimes at this season of year there are patches of bright yellow poppies and other wild flowers, and of blue wild flax, upon the carpet of green and pink; and the fruit bloom which comes at this time of year gives still another color, making the valley, when viewed from the surrounding hills, a most beautiful sight, and in striking contrast with my first view of it. The honey which comes at this time of year is dark, and of little value as surplus; but coming as it does where there is but a small working force of honey-gatherers, and a large quantity of brood to care for, it is used about as fast as gathered. By the first of April, strong colonies begin to show signs of swarming; and by the 15th of this month swarming is in full blast.

In February, mesquite and cat's-claw begin to bloom, and then begins our white-honey harvest; and I think some of the honey which came from these shrubs in the season of 1889 was by far the nicest honey I have ever tasted. It was as clear as sugar syrup, very thick, and of a delicate flavor. The mesquite shrub (pronounced *mes-keet*) has a very wide range as regards its time of blooming, for I have seen bees working on it constantly from April till August.

Early in May the alfalfa begins to bloom; but there it yields but little until the plant is in full bloom, and about ready to cut. I am not prepared to gush upon the merits of this as a honey-plant; for, from my experience, it is not a great yielder, and the honey is almost amber in color. The flavor is not as fine as I had been led to expect, by reports from other localities.

Mr. Jordan's apiary was located within bee-range of 1000 acres of alfalfa. Perhaps some one may say that it was not hot enough; but when the mercury gets up to 114° in the shade, it's hot enough for me—plenty. I have no doubt but that it will yield large quantities of honey under favorable circumstances; but just what are favorable conditions I don't think is known yet. I am inclined to think that locality and circumstances have a great effect upon the quality of honey secreted by this plant.

In June we get some honey from a shrub called *palo verde* (green pole), which grows on the surrounding hills. After this there is usu-

ally but little honey gathered from any source except the different crops of alfalfa; but last season was an exception to the rule, for the bounteous summer rains, which began about July 1st, brought us a rank growth of a peculiar weed of the mint family, the name of which I have been unable to learn. This yielded quite a quantity of honey, which in quality was dark and strong, but it served to keep the bees out of mischief.

During the late summer and fall months the bees gathered a little honey from a plant similar to the Mollie O. Large honey-plant, which grows in the sandy river-bottom.

Though there was only about two weeks during the entire season, from February until October, during which the bees were idle enough to rob, yet our average yield was only 106 lbs. per colony, over two-thirds of which was extracted; so you can see that the honey came very slowly. It came too slowly for the production of a nice article of comb honey, a fact which I learned by dear experience.

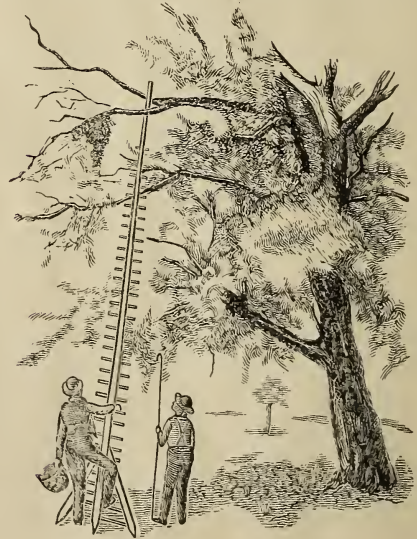
Brecksville, O., July 18.

L. W. BELL.

SWARMING-LADDER.

STRIMPL'S DEVICE.

Swarms usually alight low, so that the ordinary swarming implements previously described will reach them from the ground. But there are times when they will settle on pretty high limbs. It is then that a ladder is called into requisition. If it will not reach the swarm it will at least land the climber among the upper limbs, so that he can step from one limb to the other, and finally reach the bees. But it is difficult to stand an ordinary ladder against a limb of a tree so that it will be secure for climbing, on account of the unevenness of the limbs. A Bohemian by the name of R. Strimpl, of Schetschan, Bohemia, sent us a drawing of a ladder



STRIMPL'S SWARMING-LADDER.

that can be lodged—that is, the upper part of it—securely on some limb above. The following engraving illustrates its principle of application.

The two side arms, or forks, prevent the ladder from revolving; and it will be observed

that the ladder terminates in a single pole, which can be very easily lodged in the fork of a limb where a two-pronged ladder would not. The three prongs below the ladder are sharpened at the ends, and securely pushed into the ground; and the perfect lodgment of the other end in the crotch of the limb makes it a safe means of ascent. Aside from this, the ladder will be lighter and less top-heavy, and this latter is quite a desirable feature. ERNEST.

CONTRACTION, AGAIN.

C. W. DAYTON'S ARGUMENT FOR IT; LARGE VS. SMALL HIVES.

Friend Root:—On page 167 is an article on contraction, on which you and I differed, and from which you appeal to Messrs. Dadant and France to tell why contraction is not advantageous. Mr. Dadant replied on page 354. To show, from a contraction standpoint, how the opponents of contraction manipulate that subject, is my excuse for again encumbering your columns with an article on the above subject.

First, Mr. Dadant says, "A queen from July to August can lay very little in a small hive."

There is nothing strange about this assertion but the dates. By reading my article it will be seen that the dates I gave were to contract on "June 15 to 20," and continue during the honey harvest, which lasts "scarcely 20 days." That the date should be jogged along 40 or 60 days is deserving of a row of Mr. Heddon's "guide-boards" (lately described in the *American Bee Journal*), so thickly posted around the assertion and its promulgator that the inexperienced can not see through them.

Mr. D. should understand that a contractible hive is an expansive one also; and that the last time around, to extract or remove sections is the season when this expansion is applied; and this expansion continues onward, as much as possible, for 340 to 350 days, or until the approach of another honey harvest.

Mr. D. also says, on page 354, that his "hives are larger than a twelve-frame Langstroth; and when white clover begins to bloom, nearly every one of them is full of brood, and of bees ready to bring honey into the upper story."

This statement carries with it a strong inference which thousands of bee-keepers have demonstrated to be a fact; which is, that "ready to bring honey into the upper story" happens only after those capacious brood-combs are packed with brood and honey; always later than the beginning of the harvest.

Mr. D. estimates the number of bees in the brood state as 75,000 to 80,000. Now, I ask what Grant could have done before Richmond if 75,000 of his soldiers had been in their cradles, and had to be rocked by the remaining 25,000. But Grant said he would fight all summer there; where, on the contrary, the bees have "scarcely 20 days." It should be remembered that brood does not gather honey, neither are honey-gathering bees propagated in less time than 30 days.

On page 355 it says, "The new doctrine which advises bee-keepers to contract" is "laborious." Let us see. The principle of "the new doctrine" consists of the insertion of two sheets of perforated zinc in a twelve-frame hive, so as to confine the queen in an apartment containing four or six brood-combs. This is done at the opening of the honey-harvest. These six combs the queen is allowed to fill solid with brood, while the six combs remaining on the outside will gradually have all the brood hatched out, and be filled solid with honey—probably 35

pounds. These six combs may be set away for winter, and wide frames filled with sections put in their places; whereas, if the queen were allowed to travel through the whole hive it would be impossible to remove a comb without taking brood also; because, as Mr. Doolittle says, "there is much brood and honey throughout the hive, but not much of either in any single comb." But suppose the extractor is used, then it is less labor to extract 35 pounds of honey from six combs than twelve, and then it is a tedious job to turn the extractor when extracting the twelve combs so slowly as to avoid throwing out the young larvæ. Many consumers do not know that the black putrid worms they skim from the barrels were once young bees. It is next to impossible to strain thick honey, and that is the kind most apt to contain young bees. Mr. Dadant's wholesale management may not involve these points so closely; but nine-tenths of the bee-keepers manage exactly as described. While Mr. D. amassed his whole article against the "new doctrine" as "stopping the laying of the queen," it was nearly a total miss shot, as that is not the most valued function. This valued one is the consolidation of honey and brood in the receptacles provided to receive them. This saves labor, saves combs, saves hives, saves time and vexation.

There is one advantage which the large hives possess over the old "doctrine" of contraction, and which advantage is admissible, and inscribed entirely within the range of the "new doctrine" of contraction.

By the *old* "doctrine" of contraction by using "dummies," the bees were to be forced or driven, at the beginning of the harvest, through a honey-board into a dry uninviting super or chamber, where, on the other hand, Mr. Dadant's supers are not an upper story, and are full of combs more enticing than "baits." But then, instead of the bees coming up into them immediately they are coaxed along from comb to comb, close by the side of the brood in the lower hive until they have stored one-third to one-half a crop, and the duration of the harvest half gone.

Now, it is a rule that, when the honey-harvest has been on hand ten days, many colonies, though filled with brood and bees at first, are twice as large as then; and the hive, even if of large size, literally boiling over with bees.

At this time of the harvest no one complains that bees are not in the supers; but the complaint is, that they do not begin in the supers until the harvest has partly gone by. By *old* "doctrine," the sections were drawn and filled, then the winter stores looked after, when, with large hives, it is just the opposite.

Whatever the hive may be, the successful operation is to get the receptacles for honey near to the brood; and this "new doctrine," which Mr. D. may have mistaken for the *old*, admits the sections and extracting-combs into the lower story so close by the brood that thirty-five pounds of large-hive winter stores may be obtained in marketable shape, besides saving the propagation of a host of young bees which are of no use except to help crowd the old working bees from the brood-chamber into the super.

Without contraction many colonies crowd the honey into the brood-nest so compactly that the queen can not find cells in which to propagate a sufficient colony for winter, while a few queens will keep so much brood that a hive full of combs does not contain enough honey for winter. This difference is very much owing to the manner of the queen's laying eggs. Some queens appear to prepare their colony for the harvest, while others use the harvest for the enlargement of their colony. Contraction

is a regulator. One writer, speaking of contraction and the queen, says: "I am willing for her to run her little realm just as her motherly instincts prompt her." By following out the same line of reasoning he could turn over the affairs of the barnyard to any presuming old biddy who would sit on a nest of 40 eggs, hatch out three chicks late in the fall, and lose them all by the rigors of approaching winter. That the queen and bees should not be corrected in their affairs as well as other domestic animals, is simply superstition. C. W. DAYTON.

Clinton, Wis., May 15.

BALDENSBERGER'S APIARY IN JAFFA.

THE KIND OF HELP HE HAS TO PUT UP WITH; MOHAMMEDANS AND THEIR PRAYERS.

Mr. Root:—Jaffa, the landing-place of Palestine, is shown in the picture. It is supposed to be the oldest, or, at least, one of the oldest, cities in the world, founded by Japhet, according to some. In the Scriptures we know the prophet Jonah embarked here for Tarshish,

afternoon, sunset, and nighttime. All devout people are then expected to kneel down and pray, no matter where they may happen to be—on the street, in their houses, fields, shops; a fervent prayer is expected to be in white, and have no stains on his clothes—a fact very difficult to observe for the busy times. The man on the right of the apiary in white, and armed from head to foot, is supposed to listen attentively to the directions he is receiving from your humble servant at the left of the apiary. I had some trouble to make him stand still. As he is a strict follower of Mohammed, he has visited Mecca, and is now styled "Pilgrim," or Haj Mohammed, his own name. The Koran forbids the "making of the likeness of any thing living," taking it stricter than the second commandment enjoined, whence they have copied it, undoubtedly. I told him I would be responsible for the sinfulness of the thing, though he gave it unwillingly. He guards the bees by night now. When extracting time is very urgent it is difficult to go ahead with him, as he always has to perform his prayers. Now, this is not simply to kneel down and pray, but he has to wash himself all over if he touched



BALDENSBERGER'S APIARY, WITH A VIEW OF JAFFA, IN SYRIA, IN THE BACKGROUND.

and Japho was in the tribe of Dan. It has been built and destroyed over and over, as have almost all cities in Palestine, the last notable invasion having been by Napoleon I., then General Bonaparte. It changed hands again in 1833 and 1840 from the Sultan of Turkey to the Viceroy of Egypt, and vice versa, and seems to have been flourishing since then. Although oranges have been planted here, yet the orange-groves as seen lying between the apiary and the town for nearly a mile have been planted since, and are greatly extending all the while. The building on the left hilltop is the British Hospital; on the main hill is the French Hospital, and a church (not shown) belongs to the Franciscan friars. Away down is the minaret on which the Mohammedan "muaddin," or "caller," calls out for prayer five times in twenty-four hours; i. e., at daybreak, midday,

any unclean thing. The prayer itself doesn't take more than five or ten minutes; but the clothes he has on for work are all to be changed. Should he omit one of these prayers, he can recall it next day about the same hour, along with the regular one; and should he have omitted ten prayers, he has to pray ten prayers. Not one is forgotten; and if he die in the meantime, there is supposed to be a fiery iron plate at the "gate of hell" where he is to perform them. Of course, he is burned or roasted every time, and gets restored again when he has said one prayer. When all his prayer-debts are paid he is allowed to enter heaven. His prayers are known by heart. He has a form of prayer to repeat two or four times at every prayer, consisting of the first of the Koran, and some other similar repetitions, about God the only one, and Mohammed his prophet, to be kept from

the devil, etc. Such chaps are very difficult to be had just the moment you want them, for they are either preparing to pray or praying, and can not be disturbed for any thing in the world.

The hives are placed about four paces apart on each side, and covered with tiles individually in winter time; in summer there are no rains, consequently they are taken away. Such a hive weighs from 60 to 70 lbs. before the honey-flow begins; and this is, taking eight hives per camel, pretty near what such an animal can carry. The value of a camel ranges from 40 to 60 dollars.

A railway, the first one in Palestine, is now building, and will likely diminish the earnings from camels; consequently, also, the value of the animal itself. The first Palestine railway, from Jaffa to Jerusalem, is now in construction. It was begun on the 31st of March, 1890. Possibly in future bees will be transported by rail instead of camelback, as it has been done hitherto, with great risk to the camel's life.

and tallest of all, in the Arab clothing, and having an Arab bee-veil on. Many hives have been already transported to the thyme-fields. This is why the rows are incomplete. The extracting-house is away in front.

This will give you only a faint idea of Jaffa and the vast orange-groves. In the season of 1889 and '90 there were exported to England alone, thirteen million oranges. I do not know exactly how many to other countries.

PH. J. BALDENSPERGER.

Jaffa, Syria, May 27.

[Friend B., it is to be hoped that our missionaries may soon make progress in Palestine, and let the real spirit of God's holy word supplant the superstitious traditions you tell us about. I am afraid I should lose patience, and tell the fellow you speak of that I preferred somebody for a helper who did less praying, and what he did do, of a better kind. I do not know how profitable you make bee-keeping; but we Yankeees would be continually inquiring, "Does it



ANOTHER VIEW OF BALDENSPERGER'S APIARY, JAFFA, SYRIA.

I send another photo, taken by an amateur in my apiary. It was taken in spring. The hives in front are nuclei; the hinder ones, with the supers on, full colonies; the ground whereon the hives are standing is covered with weeds, and the weeds with snails. In the background are the orange-groves of Jaffa. Jaffa is on three hills, in the horizon, the main town being between and behind the two figures to the left, looking at the photo. The first man on the left is my brother Henry, with a comb in his hands on the hive before him, a pair of gloves, and next to him an Arab holding a "Palestine improved" smoker. The bellows is to be driven with both hands, as no spring opens it. Next is your humble servant, with Bingham smoker in one hand, and my little daughter, aged five, with bee-veil, beside me, and behind the earthenware indigenous bee-hives, out of which the bees and comb have been taken and transferred into movable-frame hives. My man is the last

pay to fuss so much and run such risks of loading bees on camels, etc.?" The views of the orange-trees at the foot of hills remind me so vividly of California that I feel a great longing to see an orange-grove again. Whenever I taste our Messina, Sorrento, and Palermo oranges, I think of the immense quantities our neighbors across the great ocean produce in order to send them so far away, and still they are sold at from only ten to twenty cents a dozen. During the past year we have frequently found oranges by the dozen cheaper than apples by the dozen.]

BEES AND STRAWBERRIES.

A REPORT FROM VIRGINIA.

I carried 18 hives through the winter on summer stands, without any loss. By natural swarming I now have 49 doing well. Some of

my earliest swarms, about the 8th and 10th of May, are now full, the sections being ready to come off. I keep Italians from six or eight different breeders. All are pretty and good; but Doolittle's select tested queens have given me the greatest satisfaction.

Strawberry season is over. I have gathered a good crop. My largest berry was the Mammoth, bought a few years since by a friend from a nurseryman in New Jersey. The berries were the largest I have ever seen, and I have been raising berries for market for nearly 20 years; and during that time I have tested more kinds than I could name. About one-fourth of the fruit was flat, or coxcombbed. The largest specimens were shaped more like a cantaloupe than any thing else I can think of. A few ladies offered me 5 cents for one berry. Of course, it was given them without money, as I was selling them for 15 cents per quart. If I live I shall await with a great deal of anxiety the equal contest between them and the Saunders, next season, so highly recommended by you and friend Crawford. The most prolific variety was the Old Kentucky, which I have cultivated for a dozen or more years. It has always been in the lead as to productiveness. Last year I sold the Kentucky for 12½ cents by the crate; this year, 8 and 9 cents by the crate, when others, before they came in, were selling for 6 cents per crate. I always get from 2 to 4 cents more for the Kentucky than the medium crop brings. I had my first strawberry feast on Sunday, May 10; my last yesterday, the 19th, being 41 days. I was selling about 30 days. My earliest berry I bought for Sharpless; but it is something else, being both more acid and a darker red than the Wilson; about as dark as the Cramer. I have been taking runners off from them to-day, and find a good many berries here and there now, notwithstanding they had ripe fruit 41 days ago. By the way, I bought some Ohio from Mr. G. L. Miller, of your State; he claims that it is a seedling of the Kentucky, and considerably later and more prolific. If this should prove true with me I intend to give him a nice suit of clothes, for introducing such a bonanza. R. JEFF. JONES.

Design, Va., June 20.

ARIZONA AS A HOME FOR BEE-KEEPERS.

AN INTERESTING LETTER FROM A. J. KING IN REGARD TO THE GREAT ALFALFA FIELDS IN ARIZONA.

When writing the articles on Cuba for GLEANINGS a few years ago I little dreamed that there was a country anywhere in Uncle Sam's dominions rivaling if not excelling that famous island as a paradise for the bee-keeper; yet such is the fact, and Salt River Valley in Maricopa County, Arizona, is that country. Fully equal to Cuba in honey resources, it is not beset with the many disadvantages of that beautiful island, such as the lack of good society, schools, churches, the universal prevalence of a language foreign to our own; the unjust exactions of the Spanish government, and, lastly, the duties—both export and import—on honey, amounting to over two cents per pound. A country ever so well adapted to the keeping of bees, yet wanting in these and other important respects, we could not conscientiously recommend as a desirable place for the many home-seekers of the East, so we will briefly describe this country before speaking of its adaptability to honey production.

By reference to a map it will be seen that Maricopa County is situated somewhat south of the center of the Territory, being a little larger

than the combined areas of Massachusetts and Delaware. Salt River Valley occupies the center of the county, and extends east and west. It is at an elevation of 1200 feet above the sea level, and walled in by mountains. The valley is 50 miles in length by about fifteen in width; and the Salt River, running near its center, travels its entire length from east to west, the valley gradually sloping in the same direction. It also slopes from the base of the mountains on either side down to the river, the inclination being about ten feet to the mile. Along the bases of these mountain chains, canals extend nearly the entire length of the valley, receiving their water from the river far up in the mountains. The water is soft, clear, and fresh, being the product of melted snow. From the canals, laterals extend at convenient distances toward the river; and from these, ditches are dug, so that the entire country is well irrigated. The soil is deep and extremely fertile, producing not only the crops raised in the East, but the semi-tropical as well. The farmer having rain (irrigating water) just when needed, a failure in crops is unknown.

Here is the home of most of the semi-tropical fruits, figs yielding two and three crops each season, and grapes two crops. Oranges, lemons, dates, olives, pomegranates, almonds, walnuts, peanuts, etc., all grow in profusion. Better peaches, apricots, prunes, and pears I never saw or tasted than were produced here the past season. Apples do fairly well in the more elevated places near the mountains, but not so well as in more northern latitudes. Stock of all kinds thrives prodigiously on the thousands of acres of alfalfa (Chilean clover), forming a rich green carpet the year round. This clover is cut from four to six times during the season, and yields about two tons per acre at each cutting.

This valley has been well denominated "a beautiful oasis in the dreary desert" that stretches from the cornfields of Kansas to the orange-groves of Southern California. Well do I remember the feelings of joy which came over me on leaving Maricopa, a station on the S. P. R., and running 30 miles north over the desert; of the sudden appearance, on nearing Tempe, of the green fields stretching away as far as the eye could reach, and covered with groups of fat horses and cattle. The mental picture I had formed of the country from reading the glowing accounts of others, I found, were living realities; and now after more than a year's residence I find the picture is not dimmed, but heightened and brightened in nearly every particular.

The climate is something wonderful to experience, having, on an average, about 300 cloudless days in the year. We have neither the cyclones and blizzards affecting the countries further east, nor the fogs and dampness of the Pacific coast. Malaria, rheumatism, and all diseases of the throat and lungs, find no lodgment here; and persons so affected—if not too far gone—receive immediate and permanent relief in the dry and salubrious atmosphere.

June, July, and August are sometimes inconveniently hot, the thermometer ranging from 80 to 110; yet the hottest days, owing to the almost total lack of moisture in the air, are more endurable than a temperature of 80° in the Atlantic States; and were it not for the thermometer, one could not believe it so hot. The work of the agriculturist and horticulturist go steadily on; and the first case of sunstroke has yet to be recorded. The nights are all enjoyable, and the total absence of dew renders sleeping out of doors in the open air on cots both agreeable and fashionable.

The evenings and mornings are something grand to behold. The twilight lingers far into

the night; and the constantly changing hues of the sky form an ever varying picture of beautiful colors, fit only to be described by the pen of an artist deeply imbued with a love for the grand and beautiful in nature. That this noble valley has so long escaped the notice of most travelers and immigrants is probably owing to its distance from the great thoroughfares of travel extending from the Atlantic to the Pacific, coupled with the lonely aspect of the country lying between. That it was, ages ago, densely populated by a comparatively civilized people, is attested by the remains of ancient canals, cities, and towns, together with pottery and implements of stone scattered over its entire surface from end to end. It now contains quite a number of towns, the chief of which is Phoenix—now the capital—which has a population now estimated at 8000. The buildings, mostly of brick, are tasty and substantial. It has one railroad, two horse-car lines, three daily and two weekly papers; is lighted by electricity; has fine schools, and churches representing all the prominent denominations; and, in short, it compares favorably with any city of like population in the East.

The entire valley is well provided with schools wherever the population will justify, and the same buildings are occupied on Sundays for religious purposes. No one need hesitate to emigrate here on account of any lack of moral and intellectual facilities. We should like to expand the descriptive part of our article to include many subjects that space in a bee-journal would hardly permit; so we will devote the remainder to apiculture.

Bees were originally brought here from California, and are nearly all hybrids, being the common bee mixed with Italians and Syrians. They are large and industrious, being fully equal to pure Italians in honey-gathering qualities; but their tendency to bunch on the combs, hang down in festoons, and finally drop from the frame, renders it difficult to find the queen. Such qualities, inherited from the blacks, are so objectionable that I shall re-queen with pure stock, and advise my neighbors to do the same. Unlike the East, here the farmers nearly all keep bees—enough, at least, to supply their own tables; yet only a few understand bee-keeping well enough to produce honey for the markets. The few who do are making the business quite profitable, usually averaging from 200 to 300 pounds to the hive. Dr. Gregg, of Tempe, told me that twelve hives once averaged him 480 pounds each. This will doubtless look like a "fish story" to some of your readers; yet, knowing the immense honey resources of the valley, and the character of the man, I can easily credit the statement.

The greatest source of supply is alfalfa, of which there are thousands of acres. It is mown from three to six times during the season, and affords a constant succession of bloom. The honey is light-colored, of excellent quality, and commands the highest price in market. Next in importance is the mesquite, which is abundant in all parts of the valley. The honey is thick, light, and of excellent flavor. The tree much resembles the locust, and blooms two and three times a year. Next in importance among the trees are the ironwood and palo verde (or green pole)—both evergreen—which produce a honey much like the mesquite, only not so thick. The palo verde is highly ornamental, the bark being perfectly smooth and apple-green. It blooms profusely, and its large tresses of small yellow flowers are fragrant to a surprising degree. The cactus family is well represented, and are all honey-producers. The giant cactus, of which there are thousands in the foot-hills, attains a height of from 20 to 50

feet, and a circumference of from 3 to 6 feet. It usually has from three to seven branches, each of which is surmounted by a crown of large white trumpet-shaped flowers, rich in nectar, which attracts the bees the same as does the basswood in the East. The fruit ripens in June, is about the shape of short plump cucumbers, which they much resemble, each of which is filled with a rich pulp, which looks and tastes like strawberries. Other honey resources are cat's-claw, arrow-weed, greasewood, cottonwood, asters (all varieties), and thousands of beautiful flowers, the names of which I would not attempt to enumerate, and which afford a constant season of bloom, so that there is not a month in the year when the earth is devoid of flowers, or in which the bee is not at least self-supporting. If this letter draws forth any questions, please send the same to the editor and I will answer them through the columns of GLEANINGS.

A. J. KING.

Phoenix, Arizona, June 8.

[Perhaps some of our readers may think that friend King has rather overdrawn his bright picture of Arizona. Either our good friend K. has not had GLEANINGS during the past year, or he forgets that we have had a couple carloads of that same Arizona honey, and quite a few of the readers of GLEANINGS will remember that Arizona, at some seasons of the year at least, produces some *very poor* honey, as well as some equal to any found in the world. The pure alfalfa, and perhaps also the pure mesquite, is certainly good enough for any market. But I suspect there are many other kinds that are liable to get mixed in at certain seasons of the year. As my next younger brother has for some time been a resident of Tempe, Arizona, I have had occasional glimpses all along of almost every thing that friend King mentions; and I believe it is true that the particular valley of which he speaks promises a great future, not only in bees and honey, but for fruit, vegetables, and almost every thing else that grows. By the way, why can't we have some of those cacti fruits? My brother found some growing by the roadside in Southern California, which I came pretty near pronouncing the most delicious fruit I ever tasted. Has anybody ever tried it, to see whether they would bear shipment to the East? The writer of the above, A. J. King, will be recognized by many as the former editor of the *Bee-keepers' Magazine*, of New York.]

UNITED STATES HONEY-PRODUCERS' EXCHANGE.

REPORT UP TO JULY 10, 1891.

Our reports from most States are very complete this month. We have devised a plan whereby the questions are sent out on three different dates. In this way the reports from distant points reach us as quickly as those near by. They were answered from the 6th to the 13th of July, the average date for the whole of the reports being July 10.

The average crop of honey gathered up to date for the whole of the U. S. is 47 per cent. This is much better than last year up to this time. In many of the Northern States linden was just opening when the reports were made out, and the prospects for a good flow from that source were reported to be excellent; but advices since, received from portions of New York and Vermont, say that linden is almost a failure. There are some localities in several of the Northern States where the season has not been as good as last, and bees have had to be fed up to July 1st, to keep them from starving.

In some instances it was caused by a severe drought, and in others by excessive rains. We now hardly expect to see a large crop of honey this year. It will probably be a little below the average; but that it will be better than last, there is no doubt. The quality of much of the white honey will be poor, on account of being mixed with honey-dew—some of it rendered entirely unmarketable. It is to be hoped that every bee-keeper who has been so unfortunate as to get any that is not palatable to himself will not put it on the market, and thus spoil the sales for thousands of pounds of good honey.

The following are the questions sent out to the respondents corresponding to the tabulated replies below:

1. What per cent of increase up to date?
2. What per cent of an average crop of white honey gathered up to date?
3. Prospect for a full crop? (1 indicates good; 2, fair; 3, not good.)
4. How does this compare with last year same date?

The tabulated answers correspond to the questions by numbers above, and are as follows:

STATE.	Qu. 1.	Qu. 2.	Qu. 3.	Question 4.
Alabama.....	65	100	1	50 to 75 % better.
Arizona.....	15	10	1	About the same.
Arkansas.....	30	35	2	Some better.
California.....	20	25	3	Half as much.
Connecticut.....	25	50	3	Slightly behind.
Colorado.....	35	15	1	Better.
Florida.....	25	50	3	Better than 1890.
Georgia.....	25	95	1	Much better.
Iowa.....	35	41	2	Some better.
Indiana.....	60	65	2-1	Some better.
Indian Territory.....	5	10	1	Better.
Illinois.....	30	25	3	More honey-dew, less h'y.
Kansas.....	50	35	2	Not as good.
Kentucky.....	20	75	3	Not as good.
Louisiana.....	60	90	1	75% better.
Maine.....	50	75	1	Better.
Massachusetts.....	50	75	2-1	Some better.
Maryland.....	35	60	1	Much better.
Michigan.....	15	10	3	About the same.
Minnesota.....	30	5	1	Linden just opening.
Mississippi.....	35	50	2	Much honey-dew.
Missouri.....	40	20	1	Much better.
Nebraska.....	10	5	3	Much poorer.
New Hampshire.....	50	75	1	Much better.
New Jersey.....	15	100	1	Much better.
New York.....	35	20	3	Little better.
North Carolina.....	15	25	2	Little better.
Ohio.....	50	60	3	Some better.
Pennsylvania.....	15	60	2	Some better.
Rhode Island.....	15	50	2	About the same.
South Carolina.....	50	80	1	Much better.
Tennessee.....	40	90	1	Very much better.
Texas.....	50	35	1	Better.
Vermont.....	75	50	1	Much better.
Virginia.....	20	50	3	Much better.
West Virginia.....	40	75	1	Much better.
Washington.....	20	35	1	Much better.
Wisconsin.....	25	10	3	About the same.

P. H. ELWOOD, PRES.
G. H. KNICKERBOCKER, SEC.

LADIES' CONVERSAZIONE.

SOME FLORIDA BEES AND BEE-KEEPERS.

HOW THE BEES CAME TO THE RESCUE DURING THE YELLOW-FEVER EPIDEMIC.

Since reading about Deacon Homespun's "knowin' bees," in the April 1st number of your journal, it occurred to my William (he's my husband) that perhaps your readers would like to know something of the bees that live and flourish in the "Great Lake" region of our flowery land.

We live, William and I, in a little village near one of the largest and most beautiful of Florida's lakes, and there are a few in our neighborhood who are or have been interested in bee culture. Whether it pays or not, I will leave you to judge when you have read all I have to say.

Four years ago my mother, who lived with us then, heard that an old man near had a "July swarm" that he would sell "at a sacrifice." As it was a late swarm, and he was very busy, he would ask "only three dollars" for it—in a box! Mother bought them. Two years after, all our State was under quarantine on account of the epidemic of yellow fever; and as we were a small community, our supplies were often delayed; and for weeks there was no sugar to be had for love or money. Thanks to the busy bees, this old man and his wife were well provided with sweets. They could hardly have got on at all without their honey, and were very enthusiastic in praise of their "good bees." In a few weeks he sold off his black bees to buy new colonies of Italians. The blacks were too vicious; and either he did not know of Italianizing by introducing an Italian queen, or else he was simply tired of bee-keeping, for he failed to buy more, and turned his attention to horticulture. He sold three colonies to a miller, who thought it would be nice to raise his own honey. When an examination was made as to the condition of his (the miller's) hives, one had become a prey to the bee-moth, induced by the close robbing of the first owner, and the whole colony had perished! The surviving bees were then placed under a shed, but the owner was unable to go near them, as, at his approach, the bees rushed at him, and inflicted so many stings he was glad to beat a hasty retreat. After a year of such experience, during which time one swarm issued and escaped to the woods, and no honey had been taken to recompense him for his numerous routs, a brimstone match was applied, and the fiery tribe annihilated, in order that the few pounds of dark strong honey might be enjoyed (?), as there was no other way to wrest it from its producers. Poor innocent bees! Who would not protect his home, his family, and the product of months of unceasing toil! Alas! all that was left of the much-praised honey-gatherers belonging to this knowing old gentleman were those my mother bought, concerning which more anon.

Then, in the opposite direction, lives another old man who keeps bees. He has stands and stands of them. His orange-grove is dotted all over with them till the darkies are afraid to venture from the fence to the house, except through the regular front path. Wise old man! he needs no dog—his watchers live at home and find themselves. His hives are about 8x12x14 inches, without frames, and these he considers rather too large! He has so many new swarms each year that more than half are not even hived, but allowed to move to the woods. A gentleman told me these swarms were quite large too—would make a ball eight or ten inches through. This remarkable apiarist doesn't rob his bees very often, and has very little honey on his table; but he thinks *he* ought to know something about the size of hives and the productiveness of bees, for he has had "forty years' experience" with them, and has got away beyond movable frames and patent hives, and gone back to the old box hives of our ancestors!

Well, down west, on the lake shore, lives a man who caught a runaway swarm, hived it in a goods-box, and, after some weeks, as no one seemed to know where it came from, he sold it to a neighbor for a couple of dollars, as he didn't wish to keep bees, for his enterprising boy made things lively every day by poking a stick into the hive-entrance to "make them more industrious." This neighbor had, some years ago, handled bees considerably, and in due time came with his wagon to carry home his new treasure. He intended to make an improved hive, and in a few years would supply this community and a city, some five or ten

miles away, with all the "lymph of industry" that would be needed. He meant to send for a "king and queen" of some of the finer kinds of bees, and have such gentle and industrious stocks that he'd always have honey and never have stings! Success attended the removal, and all things were progressing nicely, when, lo! one fine morning, such as the Great Lake region of Florida alone can boast, he went to inspect them, and not a bee was to be seen! They had all decamped, or died from some unknown cause; so that poor man was out his \$2.00, and not a pound of honey left behind to show to his interested neighbors, as a sample of what "might have been." Then, too, he was deprived of the opportunity of testing his "king bee" (!) much to the dismay and disappointment of some of us. MARIA MARIGOLD.

REPORT FROM MRS. HARRISON.

Emma Wilson wished to know how I succeeded with those combs that I stored in the cellar, whether moldy or not. As soon as the bees had been removed from the cellar, and the latter thoroughly cleaned, I returned hives of empty combs to it. Some of these combs had not been used the year previous. Whenever I found a hive destitute of bees I cleaned it, cut off all queen-cells, and prepared it for a swarm, and carried it into the cellar. These combs were all removed from the cellar by the last of June, and none were moldy (as the cellar has sub-earth ventilation), and not any had moth-grubs in them, with two exceptions; and these were put in late, and belonged to drone-laying queens, and had grubs in them when discovered. My opinion is, that combs that have been exposed to freezing, and stored in the cellar before the bee-moth is flying, would not be infested with them, provided the windows were covered with wire gauze. I never kept my combs as well, or with as little work, as I did this year, and the increase in colonies has been about equal to the loss in wintering.

I have done but little work in the apiary this year. The two preceding seasons of severe drouth destroyed the white clover, and we could see no profit in feeding when there was no prospect of a flow of honey. Bees have made but little more than a living, and much that they gathered was honey-dew. There has been abundant rain, and all nature is green and flourishing, and crops of all kinds were never more promising. July has been cool, and the prevailing winds have been from the north and west. Vegetation is so thrifty there may be a flow of honey during the fall. The largest flow of honey that this locality ever had was at this season. MRS. L. HARRISON.
Peoria, Illinois.

A LADIES' BEE-HAT.

I bought a man's large white straw hat for 10 cents, and wore it several times; but the straws would catch in his hair, and pull it, and make me feel cross. Then I got some cheese-cloth, and faced the brim by sewing a piece near the edge on the outside, then turning it under, and gathering it to fit the crown, and faced the inside of the crown with a plain strip. To finish it off, I took about a quarter of a yard, and turned the edges in and looped about the outside of the crown. That made it look nice. It is so light and comfortable that, without the veil, it is nice to wear in the garden or when picking berries. I make over veils of cheese-cloth, with black net face, and draw-strings at the top and bottom. I pin my hat on with long hat-pins. I handle bees only to hive them. MRS. HANNAH RINEBOLD.

Overton, Pa., May 6.

HOW TO PREVENT SWARMS FROM ALIGHTING ON TALL TREES.

I wish to ask about hiving swarms with clipped queens. I lost swarms last season by their going into the top of a large apple-tree. I have never tried clipping queens. My hives are large chaff hives, and sometimes I am alone. I think I could move some of them, but I should like to hear the different methods discussed by the ladies. MRS. E. M. CROSSMAN.
Batavia, N. Y., May 8.

[We would advise you to clip your queens' wings. When a swarm issues, catch the queen at the entrance, put her into a cage, and the latter into a swarming-basket. The bees will probably return soon unless they have a virgin. Where swarms with a queen start to alight on high limbs they can usually be driven away and forced to alight on a lower position with a fountain-pump. We should like to hear how the ladies manage when their men are away.]

For the benefit of Mrs. M. A. Shepard, I will say that, if she will dip her fingers in kerosene, she can clean the propolis off easily.

MRS. A. B. WINDER.
Grand View, Iowa, May 6.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 190. *Would you have any drone comb in a hive? If so, how much?*

Yes—from two to four square inches.
New York. C. G. M. DOOLITTLE.

Yes—about half a comb in each colony.
Wisconsin. S. W. E. FRANCE.

Yes, a small piece the size of your hand in one of the outside combs.
Vermont. N. W. A. E. MANUM.

Yes; the women like to see the men around—a small amount.
Illinois. N. W. C. MRS. L. HARRISON.

I would not leave any in the hive when transferring. The bees will soon have enough and to spare.
New York. C. P. H. ELWOOD.

I prefer to have all worker comb; and even then there will be drones enough reared when occasion demands them.
New York. E. RAMBLER.

Yes, I would leave from five to twenty square inches in each hive. The extreme desire of the bees for some seems to justify it.
California. S. R. WILKIN.

No, I would not have any drone comb in the hive if I could help it just as well as not—a cell. None is necessary. I know by extended experience.
Michigan. S. W. JAMES HEDDON.

One need not feel small on the existence of the poor drone. If you have from 20 to 200 drone-cells dispersed over 10 frames composing your brood-chamber, your colonies are well supplied.
Ohio. S. W. C. F. MUTH.

If you have but one colony, and no other bees near, I would leave a piece of drone comb as large as your hand or a part of a frame. With

100 colonies you will probably have drones enough, though you make no special provision to rear them.

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

No; the bees will always build enough when they need it. I use drone combs only in the upper story for extracted honey, with a queen-excluder.

Louisiana. E. C. P. L. VIALLO.

No; you will always have more drone comb than you wish, in the average colony. But we do furnish whole sheets of drone comb to our choice colonies, so as to raise good breeding drones.

Illinois. N. W. DADANT & SON.

Very little or none, except in one or two of the best colonies. Drone comb and drones are not profitable. Better prune the comb closely, so as to exclude the drones.

Michigan. C. A. J. COOK.

No, I just wouldn't. They'll have a few cells in spite of you; but if I could help it I wouldn't have a bit of drone comb, except in one or two hives in which were best queens.

Illinois. N. C. C. MILLER.

It is the normal condition of a colony to raise some drones. The most prosperous colonies I have ever seen had considerable drone-brood during the swarming season. I practice removing only an excess of drone comb.

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

Why, yes; I'd leave drone comb in a hive unless I wanted to make it into wax; but I'd put it above a queen-excluder honey-board. If I wanted to raise drones to use in impregnating queens, I'd raise them in choice colonies, and raise none in other colonies.

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

I leave just as little as possible, which is enough. I don't mean to say that I go over the hives every week to remove drone comb, but all my colonies are originally all worker, and I try to keep them so. The bees will almost always find some place to put a few cells of drone comb, and this is all they need.

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

I should much prefer not to have all drone comb rigidly excluded from a hive. Let each of the outside brood-combs have a piece four or five inches square. In that position it will not be used unless they eagerly want some drones; and when they do it is better to yield to them. I should expect brood in the sections, and refusal to build worker comb anywhere, of a colony denied their wishes to proceed according to nature.

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

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

THE UPPER STORY FOR BUILDING OUT CELLS NOT ALWAYS A SUCCESS.

I have had a large lot of cells torn down—or, rather, since honey has ceased to come—in the upper stories. Bees have gone back on me. While they will work out cells they fail to perfect them in some way, which I have not exactly caught on to yet, but I have lots of valuable experience. When the cells are within two or three days of hatching, they tear them down.

It will not do in all seasons to risk an upper story as a nursery to keep cells in. I have tried it to my satisfaction and sorrow and disappointment, which I regret more than any thing else. I have about overcome the disappointment, and now have a fine lot of cells ready to hatch, which I hope to have and queen up every thing for the August rush.

Coronaac, S. C., July 17. J. D. FOOSHE.

[We have been using the upper story for the rearing of cells with very good success in our apiary, and so far we have not experienced any bad results; but you are no doubt right in saying we can not always rely on it, especially after the honey season. I believe Doolittle admits as much; but he says that, when the bees refuse to complete the cells, feed them a little daily, so as to put them in the condition of a colony that is bringing in honey. By the way, feeding a colony always puts it into a normal condition—that is, if no honey is coming in from natural sources. It is a good plan, in introducing, you know, after the honey-flow, to feed the colony a little to make them good-natured. Bees are quite disposed to be contrary and to do things not in the regulation way, after nectar has stopped coming in.]

E. R.

FULL SHEETS VS. STARTERS IN THE BROOD-NEST.

I have been watching the discussions in GLEANINGS about full sheets vs. starters in the brood-frames. I have no ax to grind, as I never made a pound of foundation. I always hire my wax worked up or buy my foundation if I have not enough wax to make what I want. I have come to believe that, if there ever was an honest man, you are the one; but how you come to think that it does not pay to use full sheets of foundation is more than I can understand. There must be a great difference in locations. Here in Vermont I am very sure it pays to use full sheets. In 1888 I tried the experiment to my own satisfaction. I hived a swarm of bees on full sheets one day, and the next day I hived a swarm on starters equally good as the first, for any thing I could see. The swarm on full sheets filled the hive and four clamps, 64 one-pound sections, and nearly finished the whole of it. The swarm on starters did not fill all the frames with comb, and barely had enough to winter on.

Orwell, Vt., May 5.

V. V. BLACKMER.

YOUNG BEES AND LARVÆ CARRIED OUT; WHY.

I have a swarm of bees that brings out young dead bees, some in the larval form, some in the shape of a bee, only white; some almost full grown. Last summer they did the same thing. I examined them last summer when they were doing that. There were no moths, and, if I remember right, some bees that were full grown, or nearly so, were alive.

D. A. GAYLORD.

Rockland, Wis., May 9.

[We usually trace such results to the work of moth-worms; but in your case we should have to guess that the brood had at some stage been chilled or overheated.]

HONEY-DEW DRIPPING OFF THE LEAVES.

I inclose you a clipping in regard to honey-dew.

W. G. McLENDON.

Gaines' Landing, Ark., July 10.

I met a young lady who told me that she had been engaged in teaching a school up on the Boston Mountain, and that she had seen places where the pure honey was dripping off the green leaves in such abundance that on one occasion she dipped her bread in it and got honey enough in this way to make a good dinner of bread and honey.

QUEENS BY MAIL TO AUSTRALIA; BROOD-COMBS; HOW LONG SHALL THEY BE KEPT?

Referring to your notes about sending queens to Australia, I have had four queens from Benton arrive alive after from 42 to 49 days in the mails; but only about one in ten arrives alive. I have ordered them from various breeders in Carniola, England, and America, but have never received a queen alive except from Benton. I should like to ask how long you keep brood-combs in use in the brood-chamber. This question arises in my mind, because, here in New Zealand, owing to the prevalence of foul brood, it is unsafe to let the bees winter twice in succession on the same combs, and we are beginning to question whether, given the right conditions, and old combs, the disease will not naturally develop. Is foul brood more prevalent in California and those States of America where the bees fly every fine day during the winter, than in those States where they are kept confined during three months or more by cold?

T. G. BRICKELL.

Dunedin, New Zealand, Mar. 24.

[Although we have had success in mailing queens to Australia, and failure too, for that matter, we may meet with entire failure. We have sent quite a number to Australia and the distant islands of the sea this summer, but as yet it is too early to receive reports. We shall promptly give the results as soon as we hear.]

Regarding brood-combs, we have some that have been in use ten years that are good yet, and we see no reason why they should not be perfectly good for ten years to come. You must have foul brood pretty bad in New Zealand if it is not wise to winter or use combs the second season. It is quite possible that, where bees can fly nearly every day, the disease spreads more rapidly, and, at the same time, is more difficult to eradicate. If your countrymen would follow up your foul-brood law as the Canadians are doing, is it not possible that your foul-brood trouble would, in two or three years, be a thing of the past?

E. R.

BEES ON SHARES, AND NO QUARREL IN SETTLING.

I have just read an item on bees on shares, page 558, and am somewhat surprised at the position you take as to the inevitable quarrel, etc. Some ten years ago I took a lot of bees on shares of a friend—no writings but a verbal agreement to keep them as long as I wished—we sharing equally the honey, and also expenses of new hives, etc. I to return original hives and half of the increase. In five years I got quite enough of the bee-business, and we divided up. Then I put out my part to another friend, on same conditions. He has them still. There has never been the slightest misunderstanding or hard feelings between either of us. I have known of some others taking bees on shares, but have never heard of any quarrel.

Hyde Park, N. Y., July 15. A. T. COOK.

FEEDING SUGAR SYRUP TO FILL OUT PARTLY FILLED SECTIONS.

I have about 150 sections about half filled, which I should like to have finished for our own use. Could we feed sugar syrup and have them finished? Would it keep?

July 16. A SUBSCRIBER.

[No, don't feed sugar. Feed nice extracted, if any thing. Even though you did intend to use the sugar-fed honey yourself, the practice on general principles is bad. While it would be all right in your case, the general public might interpret it otherwise.]

E. R.

SUCCESSFUL BEE-HUNTING IN FLORIDA.

In the A B C of Bee Culture you speak of the danger of smashing every thing when cutting bee-trees. I have had no trouble, and I have cut seven since I purchased my hives of you. You know in Florida there are acres and acres of forest, and it don't make any difference if I do cut a tree. After we find a tree we just carry a hive to it and cut it down. The instant it falls you must stop the hole up or you will have a lively time of it. Then we give them a good smoking; then chop notches in the side, and split the hollow open, from one end to the other. We then cut the brood and honey out. We take the best pieces of brood and fit them into the frames. After we get all the comb out of it we proceed to hive in the usual way. I believe I got over half a barrel of honey out of the seven, and still it was early. This is how I got my start with bees. I am going to Italianize them—after a while.

H. C. HAVEN.

St. Francis Lake, Fla., May 10.

A FAILURE OF HONEY IN PENNSYLVANIA.

Honey season is over for this season, and almost a total failure. From 86 colonies, spring count, I took about 700 lbs. of comb honey, and increased to 120 colonies. This is the second year we have had an abundance of white clover, but no honey in it. The weather seemed to be about right too, but no honey. I can not account for it; so far as I have heard, the honey crop is no better.

OSMAN McCARTY.

Millsboro, Pa., July 13.

EARLY-BLOOMING LINDEN.

I have a linden on my place that seems at least two weeks earlier in blooming than any other specimen about here. Has an unusually early variety of linden ever come under your notice? I inclose a specimen of seed-pod, and also one of the common variety, which you see has not yet opened.

LEVI DE FREEST.

Troy, N. Y., July, 1891.

BEES BOOMING IN MINNESOTA; 24 LBS. FROM ONE COLONY IN ONE DAY.

Bees are booming on basswood. One colony on the scales yesterday gained 24 lbs. We are having clear bright weather, and every thing looks lovely for the bee-keeper.

F. B. JONES.

Howard Lake, Minn., July 12.

[Friend J., that sounds like friend Hosmer of old. You don't tell us how many colonies you have in that location, where one gained 24 lbs. in one day. Let us know more about it, and please give a report of your whole crop.]

SUCCESSFUL WINTERING IN THE DOVETAILED HIVE WITH CHAFF CUSHIONS.

I use the Dovetailed hive, and, with the chaff cushions, I have wintered out of doors and lost but two swarms out of thirteen, and they not by cold. One lost the queen in the winter, the other died for lack of stores. We have had a long cold winter in this region.

Spencer, Mass., May 4. J. S. GLEDHILL.

SOLICITUDE FOR A. E. MANUM.

My solicitude goes out for Mr. Manum with his 600 stocks of bees to work all alone. How can he stand this and live? Better not, Manum, is my judgment.

B. C. VANDALL.

Monterey, Cal., May 2.

From 100 colonies I have not 50 lbs. of good honey, the rest nothing but honey-dew.

ERNEST SHUMAN.

Breckenridge, Mo., July 13.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LIKE TO RAISE CROPS.

WHAT WE ARE SELLING IN THE WAY OF GARDEN-STUFF, JULY 15, AND WHAT WE ARE GETTING FOR IT.

Kidney wax beans have been on the market for about ten days, and we are still getting 10 cts. a quart for them, or \$3.20 per bushel. Just think of it! I suppose we might just as well, while we were about it, have planted enough so that we could have sold them at 50 cts. a bushel; but we were afraid of getting too many of them, and so we planted only a limited area for the first crop. Fruit has been scarce and high, and this has seemed to make garden vegetables scarce and high. We are getting 50 cts. a peck for peas, and have been for the last six weeks. Some of the time we had 60 cts. We are having quite a trade in Eclipse beets at 5 cts. a pound, tops and all. As some of them weigh a pound, it makes a pretty good business. We might sell them lower; but we sowed such a limited quantity that they would not hold out if we did. We get 5 cts. a pound for Jersey Wakefield cabbage. It is the same with this as with the others—we were afraid of getting too many. If we should get more than the market could use, we could come down to two or even one cent a pound, and at this price it does not pay very well. Cauliflower we succeeded in putting on the market, even before we had new cabbage, and I think we can do it every time. The cauliflower makes heads before the cabbage does. We started it at 15 cts. a pound; but as we planted almost too much, we put it down to the price of cabbage, and could not get rid of it all even then. A good many would pay more for cabbage than they would for cauliflower. Perhaps friend March's fine strain of seed has had something to do with our getting nice heads of cauliflower so early. We can dispose of more cauliflower in our market quite late in the season, say after frost has killed the cucumbers, than we can where it is put on the market so early. By the way, we have a fine lot of cauliflower-plants that we are going to put out about the first of August, to have a good lot for pickles. We have been selling White Plume celery for about two weeks. We got at first 20 cts. a pound for it; but now we have just a cent an ounce, and we are having a nice little trade on it. You may remember that we planted some Corey's Early corn in our steam hotbed. There was just enough to go under two sashes. It was planted between onions under the sash; and when the onions were big enough to pull, the corn had all the ground. Well, the many frosts in May made us considerable trouble in handling the sash; but we have just sold the last of the corn for \$1.63—about 80 cts. per sash for corn, to say nothing of the onions, so we certainly received more than a dollar per sash, which is very good business, even if the sash did have to be moved a good many times. I am ashamed to say, that, up to the present writing, we have not been able to get a cucumber of our own raising—no, not even by starting them under glass. Perhaps you think we are very awkward. Well, that is what I think. But I feel just like saying that the cucumbers have been very "awkward" too during this past season. We are selling about half a bushel of Grand Rapids lettuce per day. We get only 5 cts. a pound for it, but it pays tiptop to raise it at that price. We have been selling onions, started under glass, for more than a month. The White Victoria is certainly the handsomest and sweetest. They are now as large as good-sized apples,

and I believe they make large onions quicker than any other that has been on the market. The Spanish King is growing with great vigor, but it does not mature so soon as the Victoria. Early Puritan potatoes are now down to 35 cts. a peck. The first we dug brought 60 cts. We sell radishes at 5 cts. per bunch of one pound. We have been getting 10 cts. a pound for summer crookneck squashes, for perhaps ten days. It seems almost wicked to charge so much, but we can not supply the demand as it is. Purple-top White Globe turnips are selling tiptop at 4 cts. a pound. We have some beautiful ones, bigger than the biggest kind of apples, and, when properly cooked, they are certainly nice.

Now a word about the high prices we get. Quite a few have accused me of a lack of conscience because I consent to take such prices. Why, dear friends, I am trying to demonstrate that farming *does* pay—that is, *my* kind of farming. We have tried, at times, putting the prices down; but the boys would sell out their supply before they had gone three or four blocks, and then our customers further along on the route would not get any at all. The only way I know of is to let supply and demand regulate the price—that is, charge enough so that what we have to put on the wagon will be sure to go around, or pretty nearly so. For instance, when we had our first large heads of cauliflower, I said, "Boys, I am sure that somebody will give 15 cts. for that head of cauliflower. If they won't, bring it back."

Sometimes Mr. S. says that people scold a good deal about the prices we charge. Said I, "But you sell *out* every day what you have, don't you?"

"Yes, the people buy them, even at the high prices, because there is no opposition, and they can not get them anywhere else. But still they complain."

"Oh! never mind the complaining so long as you have nice stuff, and sell it all out."

Now, may be you think this is hard philosophy, but I don't. There is quite a tendency to think that farming and even market-gardening are not aristocratic. Very few people want to engage in either one. That is all right. Every man to his taste, and let every one do what he likes. But where there is no opposition, there is certainly nothing wrong in taking what your product will bring. We are selling red raspberries at 18 cts. a quart now. A great many scold about it; but there is not a raspberry in town anywhere; and if we get only 15 or 20 quarts a day, I think there is nothing wrong in taking 18 cts. By the way, there is something the matter with raspberries this year. They act contrary. Even friend Terry said that his raspberry-patch that he used to take so much delight in is now a place to be avoided. He laid it to the frost. But I am inclined to think that raspberries have been spoiling from blight, or something of that sort, for two or three years back. It seems to be getting worse and worse. No matter how much we cultivate and manure the ground, they won't grow and act thrifty in the way they used to. Even new plants on new ground act the same way.

GETTING UP A SUMMER SHOWER BY ARTIFICIAL MEANS.

A few days ago we tried spraying about half an acre of our market-garden with the new steam-pump. It took us about two hours to wet the half-acre down pretty thoroughly, and it took 200 barrels of water. The windmill went right at it and replaced the water in a few hours; but it was pretty severe work for one man for two hours to throw the water over the ground evenly, and then it took some little time more to put away the things. The water

was not applied as evenly as a natural shower, after all, and a good part of the ground looked dry after about 48 hours. Even where you have the best of appliances right on hand, it is expensive work to irrigate by throwing the water. In our market-garden stuff, it seems to me it will be considerable trouble to run it in the furrows; but I guess that running it in the furrows will be the cheapest way after all. One difficulty is, that the ground must be graded so that the water will run just fast enough and not too fast.

Perhaps I have been dull heretofore, but it was an astonishment to me to find that the spray of the steam-pump thrown high into the air toward sundown will produce as handsome a rainbow clear across the sky as anybody ever saw put up by dame Nature. I sent Huber to tell the women-folks over at the house to come over on Ernest's lawn and see the beautiful rainbow. No one came, however. They looked out at the sky, and did not see any rainbow, and wisely concluded there was not any. Then I sent an invitation to the girls in the office to come. They also looked out of the window, but they didn't see any rainbow, and therefore thought there wasn't any, and so did not come. Yet a hundred persons while seated on the edge of the lawn might have seen a most beautiful rainbow spreading its perfect arch over the whole heavens; and it was just as plainly painted on the sky as the moon and stars that have the sky for a background. The reason I mention this is because it illustrates so clearly how differently things look from a special point of view. On the lawn where I sat, there was a rainbow. Over at the house and up in the office there was not a speck of a rainbow, even if I did say so. These good friends, however, might say, "Well, what is a body to do? Can't one believe the testimony of his own eyes?" I answer, "No, my friend, you can not always believe the testimony of your eyes. The statement of a friend is very often more to be relied upon than what you see with your own eyes, or, if you choose, what you *do not* see." And this brings out another great truth. There is no rainbow across the sky under any circumstances, and *never was*. Next time you look up and see a beautiful bow placed there by the Almighty himself, remember that there is not any bow there at all. The bow is really in your own eye, and only *seems* to be on the sky. If somebody disputes this, you just tell him it is true, because Uncle Amos said so.

RAISING CELERY-PLANTS.

With all the celery there is planted out at the present day, I have many times wondered where people get all their plants; and I have wondered, too, how many seedsmen can offer them so low if they are all transplanted. As the seed catalogues lately do not say any thing about transplanting, I am forced to conclude that it has been, to a great extent, skipped or omitted. But in that case I wonder how it is that customers succeed in making them grow. Where they are grown in the seed-bed, unless the seed is carefully spread over considerable ground, or unless the plants are thinned out afterward, the result is a big spindling top with very little root. Transplanting is the only way of getting even, regular-sized plants with large bushy roots, that I know of. We have this season succeeded in getting very early White Plume celery without having scarcely a plant send up a seed-stalk. In the first place, we got our seed of Livingston, of Columbus—the same seed that gave us such beautiful plants last season. I think our first sowing was about January 1st. When the plants had two or three second leaves they were put into shallow boxes with the poultry-netting frames we have de-

scribed. They were kept growing in the greenhouse during the winter months; and by the time they could go outdoors each plant had a great bunch of bushy roots with comparatively small tops. These roots had so interwoven themselves through the shallow plant-boxes that the whole could be taken out of the box, like a sod of turf. We just took the butcher-knife, and cut this sod up into little squares, each plant being the center of a square. Although this was a dry time when they were set out, scarcely one plant in a thousand failed, and we commenced selling the celery toward the last of June. Now, there is one thing about raising celery-plants that we have learned by experience. They will grow and do well where they get almost no sunshine at all. Our plant-beds, that were made some years ago at so much expense and pains, some of them having even the sub-irrigation (of father Cole memory) under them, we could not very well throw away without quite a loss. The reason why they are fit only for celery, is that the new buildings we have been putting up have cut off most of the sunshine. Well, for years back we were coming to the conclusion that celery did as well as, or even better, when shaded most of the time, than when right in the sun. So this past season we have put our cabbage-plants in our new garden across the road, and filled the old plant-beds and greenhouses entirely with celery, and we never had celery do so nicely, suffer so little loss in transplanting, with so little trouble in shading. With a hose and sprinkler, we simply keep the ground wet when it does not rain; and almost every plant, even if put into the ground by awkward boys, takes right hold and grows. Now, if one wants to raise celery-plants for sale as a business, he wants to use a place that will be in the shade during a greater part of the daytime.

MAKING ONE CROP QUICKLY TAKE THE PLACE OF ANOTHER.

With our highly manured, thoroughly drained, high-priced ground, we can not afford to let it lie idle any more than we can afford to let a high-priced competent man stand around waiting for a job. In fact, to make it pay, the ground must be cropped incessantly—certainly during the summer time if not during the fall and early spring, and sometimes even during the *winter*. For an illustration, let us take Wakefield cabbages. Some plants head up very quickly—sometimes only two or three weeks after they are put out into the ground, providing the soil is very rich and the plants are very large and strong. Well, after the head is cut, what then? Why, the cabbage then becomes at once, to all intents and purposes, a weed. Cabbage and cauliflower, with the heads cut out, should not be tolerated on the ground for 24 hours. Pull them up, shake off the dirt, and give them to the pigs; or, if there are too many, put them on the compost heap. Then what? Why, plant another cabbage or cauliflower in its place, and so on. We have, in a nice piece of ground, kept a continuous crop of cabbages almost all summer. If you don't want cabbages you can put in tomatoes, a hill of white beans, melons, or squashes. But there is one objectionable feature about *mixing* crops in this way. It is a good deal more trouble to gather them, and they are a good deal more liable to be neglected. If you fill up cabbages with *cabbage* it makes no confusion in this way. There are objections, however. First, you can not clear the ground off entirely for some other crop; second, the ground is liable to become hard in the row, unless you spade up the place where the plant has come out, before you put in another, and this is too much work. Now for a

plan that we have begun practicing this season, that seems to fill the bill, and at the same time makes tilth supplement manure. As a matter of course, we keep the horse and cultivator going constantly; and with the trouble we have had from drenching rains, especially on that side hill by the windmill, we have found it necessary and desirable to hill up most of our crops, making a pretty deep furrow between the rows—not such as is made with a shovel-plow, however; but we are greatly pleased with a sort of *small* shovel-plow that goes on the back end of the Planet cultivator.

We like this, especially where the soil is not as deep as is desirable. By running this shovel-plow or furrower between the rows, it throws fine soft ground up around the potatoes and other plants, and *doubles* the depth of soil, as it were. I have known for years that I could get a good crop by pulling up the surface soil round the plants so as to make a broad flat-topped hill, as it were. This hill is of fine soft earth; and it makes the "dust blanket" we have read about, and keeps the ground from drying and cracking. Of course, we can not have our stuff so close together when we do this. Friend Terry recommended putting strawberries four feet apart; and while we had our marker ready we have put potatoes, cabbages, and some other things, four feet apart. Well, at this distance we are just in shape to make a furrow between the rows, and double the depth of soil around the plants, at the same time leaving the hill so broad that it does not dry through, neither does the rain all run over into the furrow. And when we have these tremendous rains that make mud of every thing, these raised-up rows with a pretty deep furrow between them are just the thing. This sort of shovel-plow on the Planet cultivator will, if you push it down deep, leave the *bottom* of the furrow almost hard and bare, and the ground will be likely to crack. To obviate this, the next time through we go with a cultivator rigged out with the small teeth only. This mellows up the bottom of the furrow down as deep as the plow went, and sometimes, may be, a little deeper. I know this is opposed to the teaching of Terry and others who practice flat cultivation; but with sandy soil the flat cultivation may be better; but with our clay soil I do not like it—that is, especially for a wet season. Now, then, when your cabbages are, some of them, almost ready to be cut, and your early potatoes so you can commence digging them, I will tell you what we do.

We run the cultivator on the bottom of these furrows until the ground is so fine and soft that you can easily put your hand down into it all over. When it is in this condition, plant between the cabbages, potatoes, or any other crops, more cabbages, more celery, tomatoes, white beans, or any thing else that matures quickly, and by the time the plants are well up and ready to grow, remove your first crop and then work the cultivator in the same way where the first cabbages or potatoes stood; and I am not sure but you could put in a third crop of spinach. This enables the cultivator to fine up the *whole* of your ground. In fact, while you are fining it up to make the first crop grow, you are also preparing the very nicest kind of seed-bed for the succeeding crop. You can in this way manage so as to have a strong heavy crop cover the ground almost all the while; whereas if you wait until your vegetables are all off from the ground, and then plow and harrow it all over, and sow your seed, there will be several weeks when no crop of any account occupies the ground. The seed must germinate, and the plants must get to be of sufficient size for the roots to occupy the ground. During all this

time your high-priced, highly enriched ground is, comparatively, wasting its time; and this, too, right in the best growing season of the year. It is like letting a big strong man do a child's work because you have nothing else for him to do. Another thing, one of the most important things toward getting a crop is to have your ground *thoroughly pulverized*, and nothing does this so effectually as running the cultivator through it every three or four days for several weeks; then try it and see how things will take hold and grow right in the middle of the furrow, where your cultivator has been going back and forth all the fore part of the summer. Then when you get the first crop out of the way, and repeat the process between the furrows of the second crop, your ground is in most beautiful condition so far as tilth is concerned. Few people have any idea of the amount of stuff that a piece of ground can produce when it is all the time covered with a rank growth of vegetation, about as thick as it can stand. Ground in this condition also suffers much less from drouth; for where it is pretty thoroughly shaded all the while, the sun does not seem to have a chance to dry out the moisture. A few minutes ago I wanted to find some carrots large enough for the wagon. Many of them had good-sized tops, but no bottoms. Finally I found where a Hubbard squash had run over the carrots so as to shade them pretty thoroughly. This had the effect of keeping it still damp from the last shower; and right here I found carrots twice as big as where the ground had not been shaded. There are quite a few things that will do better in the *month of July* if they are pretty well shaded from the burning rays of the hot sun; and a luxuriant growth of almost any thing, so as to cover and shade the whole surface of the ground, does this.

A VISIT TO W. I. CHAMBERLAIN.

A FARM THAT HAS BEEN UNDERDRAINED FOR
15 OR 20 YEARS.

Before we take leave of friend Terry, I wish to say something more about his nice potato-fields. At one time I climbed over the fence and went out in the rows and kicked my feet in the soft dirt, and said:

"Friend T., if I understand you these potatoes have never been hoed at all."

"You are right. There has never been a hoe in the field."

"That is, the weeds were all so thoroughly destroyed by the cultivator, Breed's weeder, and similar tools, before they came up, and after they came up, that no hoeing was necessary."

At first sight there did not seem to be a weed in the field; but I commenced examining hill after hill, for it seemed to me almost impossible that there should not be a weed lurking in the potato-tops sooner or later; and, sure enough, I found a stalk of red-top. This is a peculiar weed that our boys can not see. They will go through a field and get out every thing else; but this looks so much like a potato it eludes their vigilant eyes. It makes me think of what Prof. Cook has told us about the mimicry among insects and small animals. Friend T. smiled as he added:

"It is true, Mr. Root, we did not use a *hoe*, but we did have a man pull out the occasional weed that escapes the horse-tools. A relative, who is not able to do severe labor, has this season taken care of the bugs; and he also, while doing this, gets out these stray weeds. But even the sharpest man is liable to skip that kind of weed now and then."

"And you don't even *now* use any Paris green nor any sort of poison?"

"Oh! we could not afford it. As we plan our work, the poison *alone* would cost more money than we pay the man who keeps the fields free from bugs."

Now, friends, please notice that Terry's whole system of working is all hinged or interlocked together. With such land as you and I have, or, rather, with land in the trim that yours and mine is, a good deal of it, he would probably use hoe and Paris green both. He has kept weeds from going to seed for many years on his grounds. He has also got every acre so it is fine and soft, and all works readily under the harrows and weeders, and in a like manner the bugs have been prevented from "going to seed" until very few of them make their appearance on his premises. If he should let the bugs get ahead of him, as you and I do, very likely poison would be the cheapest way to "catch up." And in like manner, if the *weeds* should get ahead of him as they do of us, it would be only a question of hoes or a loss of crops. I do not mean that you and I must *always* use hoes and poison, for we can get our land in trim just as well as he can—some of us better, because we have better ground. I am getting up to it gradually. The potatoes we are digging now, and which come pretty close to 400 bushels per acre, have never been hoed. We are retailing them around town at 30 cts. a peck; but I am expecting every day that competition will bring them down to an even dollar a bushel. To-day is the 24th of July.

THE FREEMAN POTATO.

Perhaps some of you have heard of the Freeman potato. Wm. Henry Maule gave Terry a barrel of these potatoes, asking him to make as many bushels of them as he possibly could. Now, Terry does not fuss with greenhouses and hotbeds, so the best he could do was to cut the potatoes to one eye, and then split the eyes. He has done this, and made them cover pretty well $1\frac{1}{2}$ acres. Of course, they do not look quite as strong and thrifty as his regular fields, but they come pretty near it. This crop of Freeman potatoes will be worth, at Maule's prices, several thousand dollars. I copy the following from the *Practical Farmer*, of July 18. It is what friend Terry says in answer to a query in regard to these potatoes:

I like the shape and looks of the Freeman potato very much. It is simply perfect, being oval-shaped, with eyes on the surface. It certainly has strong vitality or we could not have got a good even stand on $1\frac{1}{2}$ acres from a barrel of seed. It is a pretty hard test when one asks a full top from split eyes. We shall get it, and cover the ground, if we have a reasonable amount of rain. Of course, such small beginnings can not stand drouth as well as larger ones. The eating quality? Well, we did not eat very many at \$3 a pound! I will tell you about that a month later. As a keeper—a very important point with me—it is all right. I should judge our seed was dug as early as August, at least, and we kept them through till May in good shape. I think I can keep them in a pit, without a sprout starting till that date. As far as I have got, I expect great things from the Freeman potato, but it will need more time to actually prove it.

SECURING NICE POTATOES FOR THE TABLE IN APRIL AND MAY.

Friend Terry has made a good many experiments in reference to this matter. He is so certain that he wants all his potatoes hard and firm, without any sprouts when planting-time comes, that he buries all his potatoes for the seed, in a pit. This is covered with straw and earth in the usual way, but he puts on only a little at a time. When there is a good hard crust frozen over the potato heap he puts on more dirt and lets *that* freeze, until the potatoes

are finally incased in frost. Then straw is put on over this frosty coating, to prevent it from thawing out; and in this way he keeps them until planting-time in May.

Before I started away he wanted me to go down cellar and look at a new potato called, I believe, Early Rochester. His good wife objected to taking Mr. Root into the cellar, on the ground that it was not "slicked up." I managed to get permission, however, all the same. I wish all the readers of GLEANINGS had cellars capable of being slicked up like this one. The different rooms in the cellar were made as nice and clean with cement and plaster as most living-rooms. The Freeman potatoes were great whoppers; and although the sprouts had been rubbed off several times they were firm and solid, and just splendid to eat, as I found out afterward; and this, mind you, was on the Fourth of July. Now, there is something peculiar about this potato. It was sent to Terry to try with his own; and on the first trial he pronounced it not equal to some he had already. For some reason, however, he gave it another trial, and the *next* year it showed marked superiority; and this season it is just doing grandly. The moral is, don't be in haste to condemn a thing from one season's trial only.

I confess I felt a little sorry when I was obliged to bid good-by to this pleasant home with its pretty dooryard and surroundings. I will tell you one reason why it is possible for friend Terry to keep his place so neat and clean and tidy. He is a *specialist*, or a *specialist farmer*, if you choose. He has not, lying scattered around his house, barn, and premises, the traps and "calamities" that a great many of us have for so many various lines of industry. He does *one* thing, and lets his neighbors do the other things. I do not wonder he likes to stay at home. The man or woman who would not, with such a home as his, would be a wonder.

Prof. Chamberlain's farm is not very far from friend Terry's, and close by the town of Hudson, Summit Co. Even though it was the Fourth of July, I found his son and hired man in the barn, painting a wagon. I mention this because most farmers' boys would think they could not work on the Fourth.

One of the first things that attracted my attention was a cistern to supply his cow and horse stables with water. This cistern was both above ground and under ground; that is, it was built entirely above ground originally. This saved the expense of digging. In the second place, it was entirely under ground, so as to be safe from frost, for it is under the bank that leads to the upper story of the barn. The cistern is 9 feet deep, and 15 feet in diameter. The barn stands on a slight side hill, so it is an easy matter to lead the water from the extreme bottom of the cistern right into the horse and cow stables, into an appropriate watering-trough for each. Now, the most of us would think that, if we had the water so it would run by opening a valve, that would be handy enough. But friend Chamberlain has a large tub with a float in it, so the water always stands just so high. It is large enough for several horses to drink from at once; and just as fast as they drink the water out, more comes in. This apparatus has been in use for 17 years, and has worked perfectly, and without repairs, except new hoops on the tank, and without freezing. When we take into consideration that every barn should have eavespouts any way, the arrangement is not so very expensive. The cistern holds 350 barrels. Only those who have had a similar watering-arrangement so as to have water always at hand right in the stables can realize the amount of time and labor saved compared with the way many farmers manage

to water their stock. Another thing, I believe it is pretty generally conceded that rain water is more wholesome for our stock than any other; and friend Chamberlain declares that, if all the water is carefully saved that falls upon the roof that shelters the horses and cattle, and their hay and grain, it will give them all the water they will ever need to drink; therefore all that is wanted is the necessary spouting and a cistern to hold the water. With this arrangement, mind you, there is no pumping at all; neither are you obliged to trouble yourself even so much as to open a valve. The horse is simply led up to the watering-tub; and as it is located right where he passes when he turns around to come out of his stall, when he is used every day, he waters himself.

The farm is so rolling that most people would think there was not any need of underdraining. Some of the drains have been in use for 17 years. His orchard is underdrained, and this we examined first. On the underdrained portion very few trees have ever died out, while on the other part a great portion of them had to be replaced. My impression has been for some time, that more fruit-trees are killed by too much wetness than by almost any thing else. On our own place, wherever, by any accident, a puddle of water has stood for even a few days near a fruit-tree, it has been either injured or killed outright. The most marked feature of underdraining, however, was soon brought to our attention by our enthusiastic friend in his own peculiar and emphatic way. He took us to his grass land, and where it was quite rolling, too, and showed us how many kinds of weeds, especially plantain, had made their way on to the farm, and crowded out the timothy and clover. It were well to state right here, that friend Chamberlain has been absent from his farm for eleven years, and returned only last fall. He was for many years secretary of the Agricultural Department of the State of Ohio, and more recently President of the Iowa Agricultural College. But last fall he came back to his own farm, and has so far refused all appointments to leave it. He wants to be at home. Well, during his absence of eleven years many things had, as a matter of course, run down. He showed us the fields infested with plantain—that is, in spots. This land was not underdrained. Then he took us to the opposite slope where it was underdrained years ago, and showed us a wonderful growth of clover and timothy both, without any weeds or plantain to be seen. The point is, that plantain survives on wet places, where grass and valuable crops are killed out by wet. I had suspected this before, but was not prepared for such a wonderfully marked exhibition of the good effects of underdraining. Perhaps I should mention that our little party included Mr. L. B. Pierce, of Tallmadge, O., who is so well known as a writer for our agricultural papers, and our good friend Gould, who has for so many years written for the *Ohio Farmer* as "Sam." Sam is a dairyman, and, of course, was alive to every thing pertaining to growing cow-feed. Some of those present suggested that perhaps the two pieces of ground had different care. It could not be called two pieces of ground, however, because it was one large field of timothy; and in order to demonstrate the advantage of underdrained ground, they had for years worked and sowed the ground in strips or lands running directly across both pieces; so the drained and underdrained had precisely the same care and treatment in every respect. It would seem that, no matter how sloping the ground, if it be thought desirable to plow it to put it into crops, it is also desirable to have it underdrained, and this in a soil that is considerably more gravelly and

porous than our Medina clay. Friend Chamberlain uses phosphates largely on his land; and he has been in the habit for years of running the drill once or twice through a field with the phosphate shut off; and this year the effect of shutting off the phosphate through a strip of wheat was so marked that friend Pierce suggested his hired man must have made a mistake and shut off not only the phosphate but the wheat also. I have seen the same thing on our own grounds. Shutting off the phosphate on a piece of poor ground was almost equivalent to shutting off the grain also. In fact, it made a clearly defined lane all through the field. Friend C. keeps cows, and, of course, has immense quantities of manure to spread on his land; and we saw great flat-topped pyramids already deposited in the field, ready to be put on the wheat with the manure-spreader when springtime comes. Friend C. is also a strong advocate for osage orange for hedges. This was a little surprise to me, for so much has been said about robbing the soil of its fertility near the hedge, and the labor of keeping them in trim, that I had begun to think they were mostly abandoned. In reply to my question, our host called us to a hedge along the roadside, that had been there more than a dozen years. It was, perhaps, 3 ft. high, or may be a little more in places, and not more than 2 or 2½ through. It certainly did not occupy very much room above ground; and as a proof that it did not below ground, we saw good wheat growing so close that the well-filled heads were right up against the hedge. And so it seems that hedge fences, like many other things, need only a little care, if that care be given at just the right time. I have forgotten how many rods he trimmed with a sickle, before breakfast; and this trimming is needed so seldom that it certainly could not be considered a very great bill of expense. There are no posts to rot off, no boards to be blown down by the wind, no sharp wires to injure animals. Besides, the fence is exceedingly pretty, and more ornamental than any other fence I know of, and by no means "as homely as a hedge fence." The trouble with all these fences is like the trouble with a great many other things, only it works the other way. If you neglect a hedge fence it gets bigger and bigger (and *home-lier*), instead of tumbling down and going to decay as most other fences do. A landscape gardener has been at work at friend C.'s doorway, and a great variety of shrubs and plants are making an excellent growth, and giving promise of future usefulness and beauty. As I shall probably have occasion to refer to this visit a good deal in the future, I shall say nothing more about it just now.

MYSELF AND MY NEIGHBORS.

Remember the sabbath day, to keep it holy.—Ex. 20:8.

This subject has been again brought to my mind by the Sunday excursions that are being pushed, not only in our own county, and on our own railroads through our county, but even abroad and all over our land, to a greater or lesser extent, judging by the advertisements I see in the papers; and, by the way, I have been surprised and astonished that editors of home papers should permit a railroad company or anybody else to advertise broadly and unblushingly a pleasure-excursion to some pleasure-ground on *Sunday*. Very likely more than one good friend of mine who reads GLEANINGS will feel like saying something like this:

"Look here, friend Root; you have your

opinion in regard to these matters, and are no doubt conscientious and honest. But is there not a large class who are also conscientious and honest, who have different opinions? Many of us are compelled to work in stores, factories, or offices, the whole week. Our bread and butter depends upon our sticking to our places unless our bosses will let us off for a day now and then. We need the open air and outdoor recreation just exactly as much as you do. If there is no opportunity afforded for taking it any other day in the week than Sunday, and while our health and the health of our wives and children is suffering for this same rest and recreation in the open air, may it not be possible that we are *right* and you are *wrong*?"

Dear friends, I have considered this matter well and carefully. It has been presented to me by smart, intelligent men—by men who are managers, and who occupy other high positions in our railway corporations; and I have waited until I have examined the evidence carefully on all sides before undertaking to speak to you on this subject in print.

I confess that, in my boyhood days, I had a sort of feeling in regard to Sunday that might possibly have had some superstition in it. For instance, I satisfied myself by many and repeated trials that nothing prospered in the way of work or play if I undertook it on Sunday; and I have known other boys to say the same thing. If you go fishing you have bad luck, as a general thing. If you go nutting, or go out riding or hunting, there seems to be a sort of fatality following such things sooner or later. Now, you will say this surely must be superstition. In one sense it is superstition, and in another it is not. The Christian religion and Bible teachings are certainly founded on sense and reason, if any thing in this whole wide universe is founded on sense and reason. Most of you know how little patience I have with any thing that approaches "signs," or even forms or ceremonies. There are places in the world even now where they pretend to cure diseases by saying over mysterious words. There are places where they believe in witches and witchcraft. Yes, there are people among our own neighbors, not to say in our homes, who doctor their horses and cattle, sow their seeds, etc., by rules that have no sense nor reason about them. There are people who follow old superstitions that have been handed down for ages, when there is no possible chance for any thing but nonsense about it. Now, is this idea that nothing prospers, if undertaken on Sunday, superstition, or is it sense? You may know of people who refuse to go into any undertaking on Friday because Friday is an unlucky day. I hope there are not very many such, however. Now, perhaps some of you would ask, "Bro. Root, do you mean to tell us that there is something mysterious about it that makes Sunday an unlucky day in just the same way that these people believe a mysterious fatality hangs over the day of the week called Friday?" No, I do not believe any thing of the kind? and I do not mean to teach any thing of the sort. You may remember that I urged very vehemently in a former paper that our days of the week were all alike—as much alike as two peas or two grains of sand. The sun shines and it rains on Sunday just exactly as it does on any other day. Furthermore, it is most emphatically true (for it can certainly be proved without question) that the days of the week as we have them now are simply of man's making. They were so named for convenience; and if people got out of joint, as they used to in earlier times, and hitched a day forward or backward, it would certainly make no difference to anybody, if all were agreed in the matter. In

sailing around the world in one direction a day is to be dropped; but if you sail in the other direction, there must be two Mondays or two Fridays as the case may be. This is necessary in order to catch up or "catch" on to the days of the week where you happen to land. If this be true, why shouldn't every one decide for himself in regard to what day shall be Sunday, or whether there shall be any Sunday at all? Perhaps if you were a Robinson Crusoe, and lived on an uninhabited island, such might be the case. I think, however, our Robinson Crusoe would find it convenient to set apart one day as Sunday; and if he had a Bible with him, I am inclined to think he would decide to keep the day according to Bible teachings. I recently heard a public speaker make the remark, that, if he were living alone on an island he would have no scruples against getting out his horse and buggy Sunday afternoon and taking a little ride all alone. Why, then, would it be right on this island, and not right as we are situated with "neighbors" all around us? Because God wishes us to obey his commands in the *spirit* of them, and not in the *letter*. A crazy man, we are told, chopped off his right hand because the Bible commanded it. He took an *exceedingly* literal interpretation of the Bible teachings, and put it in practice; and I am afraid some, otherwise good Christian people, make mistakes in a like manner, although, of course, none of them carry it to such a terrible extreme as did this poor brother with his crazed brain. Of course, none but a crazy person would think of doing any thing of the kind. Thank God, we are not crazy—at least not many of us. Now, do you ask if you are to obey the Scriptures, or be religious, simply because our *neighbors* are looking on? Not at all. I will try to tell you what I do mean. I said, a little while ago, that the Bible commands are reasonable. If we look into the matter a little we shall find that they commend themselves to reason and good sense. Well, the most prominent command in the whole Scriptures—in fact, the first of the ten commandments—enjoins us to turn our thoughts to the great Creator of the universe. A keen critical lawyer gave it very glibly when Jesus turned it back on himself, and asked him how he read the Scriptures. He said, "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy strength, and with all thy mind, and thy neighbor as thyself." Now, we all recognize the God of the universe, even if we do not all recognize him at the same time as God the Father. Reason and common sense also indicate *emphatically* that we owe something to the Author of all things. The Being who gave us life and reason and sense is surely entitled to some recognition, from the highest type of life that this world contains. There is a limited number of people, of course, who say in their heart, "There is no God." We can not afford to take time just now, to answer or even consider this class. The larger part of them have probably denied the existence of a God because they want to be stubborn and contrary, and we are not talking to stubborn and contrary people on the subject before us to-day. Now, following right along in the thought before us, we have God's command in the language of our text, "Remember the sabbath day, to keep it holy;" and right along with it we read, "Six days shalt thou labor and do all thy work." This is Bible, I know; but is it not sound common sense? The great Author of the universe demands comparatively little of us. We are free agents, and honored with a free will. It is our privilege to step upward toward heaven, or to rush downward to ruin. But with all this wonderful liberty God insists on and demands a

few things; and he also asks us for a small part of our time. Six days are granted to us to do our work, and to do almost as we please. The seventh only is set apart for the consideration of our Creator. If the whole plan of the world and humanity were submitted to a reasonable being before the world was, and the Author of the universe should submit the question, who could say that it were any more than fair that man be asked to give one day in seven for the consideration of something besides *selfish* matters? The next step would be for humanity to ask of God, "What, then, shall we do, or how shall we make use of this one day in seven?" And herein comes our text—"keep it *holy*." What does "holy" mean? I have submitted the question to a great many young people, frequently in the Sunday-school class, sometimes even to children. I do not know how it comes about; but there seems to be a general understanding, and a pretty general *agreement* in regard to this word "holy." Very likely only a few men can define the word "holy" in plain words; but almost any urchin of a dozen years, sometimes only half that, will tell you what is *not* holy. When I ask what the word means, very often I get no reply at all. If I change my manner, however, and say something like this, "Boys, do you believe you are remembering the sabbath day to keep it holy when you go fishing on that day?" the reply comes, prompt and ready:

"No, sir; going fishing is not being holy."

"Well, if you go out buggy-riding Sunday, is that remembering the sabbath day, to keep it holy?"

The responses are nearly as clear and decided in this case; and by asking a variety of questions we can gather pretty nearly just what each one thinks God meant when he gave us the command. The whole world recognizes it. In discussing the matter with a lawyer who was sent to us by our new railroad to see whether they could have permission to pass through the new curve on our grounds with an excursion train on *Sunday*, I propounded the question to *him*. Although he was a church-member, he defended the excursions on the ground that it gives fresh air to folks shut up in cities. When I asked him if he thought Sunday excursions were strictly in keeping with the command to keep the day *holy*, he frankly admitted that it was not, but plead that it was the *lesser* of two evils. Of course, they make great promises in their handbills and posters, that order and sobriety shall rule. In fact, a man was selected for one of the Sunday excursions, for the special purpose of going along to see that every thing that was done was strictly in keeping with the sacredness of the day. Do you smile? Well, I smiled a little, and I wondered where this *good* man would be found, who would consent to act in such a capacity. The demand was for a man something like this: Some good faithful Christian—no, no, not *Christian*, but some one who would go on a railroad train with a band of *excursionists* to keep them decent and in order. How did it turn out? Why, as you might expect. This blind leader of the blind, before the day was half spent, needed a guardian *more*, perhaps, than any of those he was sent to guard!

We are now ready to consider why it is that Sunday seems to be an *unlucky* day for business or recreation. For successful enterprises of any kind we want *good* men. A good man can not be found who will undertake business or enterprises for pleasure on Sunday. We may sometimes meet with pretty fair men who have no regard for Sunday; but, no matter what a man *believes*, he must certainly be uncivil and

ungentlemanly, to say nothing of being irreverent toward God, who will deliberately set aside the time-honored custom of keeping Sunday as a day of rest. I have tried it myself. At one time in my life I argued that Sunday was no better nor worse a day than any other. I had a lot of bees located in a swamp, perhaps ten miles from home. Well, one Sunday I decided to look after my bees, as I hadn't time week days. In going to this out-apiary in the morning, I met strings of people going to church. The sight of them was a rebuke to me that I shall never forget. In going back home I met the same people returning from church. I noticed the peaceful, quiet look on their faces, which springs from a happy consciousness of having done one's duty, and of having obeyed God's holy command. While riding along I promised God mentally that, if he would forgive the disobedience of that one day I would try to take care that the offense should never be repeated again. It was my first prayer, or perhaps the first sentiment in my heart approaching a prayer, that I had felt for many a long year. Now, if you undertake any sort of business enterprise on Sunday, you are of necessity obliged to choose from a class of people more or less devoid of conscience. They do not hesitate to rob God, and, as a rule, they would not, of course, hesitate to rob *you*. Is it to be wondered at? Our railroad companies have had so much experience of just that kind, that many of them have decided they want nothing more to do with Sunday excursions. Suppose, however, you decide to do some work for yourself—you won't ask anybody to help you at all. The offense shall be yours and yours only. Why should it turn out differently from any other day? Because, my friend, in deciding on this step you have violated the instincts of your own conscience; and no man is prepared to do his *level best* when he is in a disturbed state of mind. Very likely there are those who have set aside the sabbath for so many years that their conscience is hardened, and they feel no qualms of conscience in boldly breaking away from public opinion and from the laws of God. But even if this be *so*, such persons are not the successful ones. They may be successful in making *money*, perhaps; but the present age does not recognize a man simply because he has money or because he controls property. In fact, it is getting to be rather the other way. The world *honors* the man who is helpful to his fellow-man, who is honest toward his neighbors and toward his God. I can remember that, in my childhood days, when I disobeyed my parents, or when I did something on Sunday I knew I ought not to do, I did it with a certain nervous and excited feeling that unfitted me for using my ordinary caution and good sense, therefore trouble came; and for the same reason trouble will come to you, dear friend, when *you* set aside and ignore God's holy command at the head of this talk. "The wicked flee when no man pursueth." Of course, they do.

I do not know how many editors read these pages. Well, the editors of this land have very much to do with the morals of our land. They preach to audiences much larger than are reached in pulpits. They reach *mixed* audiences, and they too often preach *evil* as well as good. Dear brother, if you have been induced to give publicity to Sunday excursions, or to lend your influence in getting people to attend these excursions, dinners, or dances to be held on Sunday, please believe me when I tell you that you are *losing* money by so doing, instead of gaining. Do the boys of our land need any urging in the way of Sunday excursions or bicycle excursions, on God's holy day? The road

that leads to ruin is *downward*. People go almost themselves, just as a ball goes down hill. The narrow path that leads to eternal life and glory is not only straight and narrow, but it is constantly *up hill*. Even grown men and women are in danger of fainting by the way. Is it to be wondered at, then, that young people without any very fixed ideas in regard to morals or godliness get weary, and perhaps reckless? Think for a moment of exhorting them on the *downward* way. Well, an exhortation to a *poorer* or more *feeble* observance of Sunday is *certainly* on the downward course. I think that none can deny it, no matter what may be their belief, providing, of course, they recognize God as the Creator. Some may ask, "Brother Root, do you not think there is such a thing as too much strictness and too literal an observance of God's commands or supposed commands?" A few times in life I have met with cases of that kind. As I write, however, just now I do not know that I recall one. When Jesus was on earth, a class whose religion consisted almost entirely of outward forms were going so far as to let their strict ideas prevent them from relieving suffering or want on that day, and Jesus reproved them. The present age is not much given to such folly. Where somebody is suffering, you will scarcely find a man, woman, or child who will hesitate a minute to spring to the relief of such a one because it is Sunday; and I think we as a people honor God for taking it for granted that he wishes us to use good common sense in solving all such difficulties.

When *shall* we have excursions? Why, on week days, of course, just as our forefathers did. I am sure there are very few industrial establishments whose proprietors would not much rather give their employes a holiday at some season of the year when business is comparatively dull, rather than to see them go on Sunday. In fact, Christian people are so mixed in and sprinkled through all classes of humanity, that it would be next to impossible to induce *all* the members of any factory to go on Sunday. Their *best* help would not be seen in such a crowd. Sometimes I have felt almost helpless when I see how Sunday excursions have been increasing. May the Lord be praised, some *other* things are increasing also. The Endeavor society I have frequently written about has now here in our United States more than a *million* members. The recent national convention at Minneapolis gave us a glimpse of their numbers and power; and they have already with success taken hold of this matter of Sunday amusements. Base-ball playing, and Sunday theaters, even in large cities, have been obliged to give way before them. They are live and wide awake, and are keen and fearless; and they are on hand *everywhere*, just as *sin* and *Satan* are on hand everywhere. May God's spirit continue to be with them, and bless the efforts they are just now making to induce all the world to—*remember the sabbath day, to keep it holy*.

Queen was received in good shape yesterday morning, on a *four-days'* order—quite different from a queen-raiser in Mississippi I ordered from last fall. It took four *weeks* to get one, and then took the second letter to hurry him up. I. B. OLMSTEAD.
Charleston, Ill., June 29.

GLEANINGS, AND THE GOOD THINGS IN IT.

Having been in the printing business nearly twenty years, during which time I have read or reviewed a great number of various publications, I am free to say, that, after *thoroughly* digesting the last three volumes of GLEANINGS IN BEE CULTURE, I have found less chaff and more good things than in any other publication devoted to trades professions or otherwise.

Marysville, O., June 22.

L. G. ENGLISH.



All the law is fulfilled in one word, even in this: Thou shalt love thy neighbor as thyself. - GAL. 5: 14.

MR. E. FRANCE, of Platteville, Wis., writes, "We have secured 30,000 lbs. of honey, some good and some poor."

THE West queen-cell protectors are a big success in our apiary. Nearly all the cells given to our colonies now are protected by them.

ALTHOUGH we have been trying hard, for some reason or other we can not make the bees accept the Doolittle cell-cups—at least not more than two or three out of a dozen. This is somewhat humiliating, as others are reporting success.

THE nameless bee-disease seems to have broken loose again. From the reports that are coming in, it seems to be starting up with unusual virulence in a great many localities, and some write that removing the queen does not bring about a cure. How is this, friends?

IN response to the call for criticisms and suggestions as to the various departments in GLEANINGS, the majority write in effect to "keep GLEANINGS as it is—it is all good." There has been no dissenting vote on any particular department. While all this is very encouraging, we shall endeavor to make improvements from time to time.

THOMAS G. NEWMAN & SON, of the *American Bee Journal*, have removed from their former location to larger and more commodious quarters at 199, 201, 203 East Randolph St., Chicago. This doubles their floor space, of which they now have over 10,000 square feet. They will now be found upon the third instead of the fifth floor. We congratulate our friends on the change.

DON'T hang on to your first honey with the expectation of getting higher prices. The sooner you can move off the first of your crop, providing there is no other in the market, the more you will be apt to get. Sell it in your own home market, or, at least, do not rush it off to the city. When the buyers around home are supplied, then look elsewhere. Indications point to a large honey crop this year—at least, in most localities.

THE Western Classification Committee, of which J. T. Ripley is chairman, calls foundation "bee-comb stuff," and then qualifies the words by calling it, in parenthesis, "artificial honey-comb." We have entered a protest, and hope all supply-dealers will do the same. We want our product named correctly. It is true, we need a term besides the word "foundation," for the general public; therefore on our freight-bills we call it "wax in sheets." That is just exactly what it is.

We are greatly annoyed by many of our customers calling for imported queens of a bright yellow. We do not pretend to rear bright yellow bees or queens. We say in our price list, and have repeated through the journal many times, that the progeny of imported queens, as well as the queens themselves, are, as a rule, leather-colored. If you want bright yellow queens, don't order imported. Our select tested

queens come the nearest, and yet we do not guarantee that even these shall produce the golden Italians.

We have just been advised of the successful mailing of a select tested queen from our office to Jamaica. She was sent in a large Benton cage, and was on the road 18 days. The customer says she arrived in excellent condition, and was successfully introduced. Score another one for the Benton cage.

ONE of our advertisers, Mr. A. A. Byard, West Chesterfield, N. H., writes: Take out my ad., as it is getting late in the season. It has paid for itself; and almost every one who sent for the goods mentioned GLEANINGS." As we have, in times gone by, given instances of unprofitable advertising in our columns, it may be admissible to give this as a sample of the other side. This is only one of several others we have received, of a similar import.

Now is the time to infuse new blood among your bees if you intend to do it at all. Untested queens are now the cheapest they will ever be in the year, and most apiaries are or very soon will be doing little or nothing in the way of getting stores. The time to requeen is during the month of August, when brood-rearing is not necessary, and, in a good many cases, undesirable. Look over our advertising columns, and order the queens you want.

As an illustration of the extent to which honey is now being used by bakers, we make the following extract from a private letter just received from the United States Baking Co., Mansfield, O.:

Mr. A. I. Root:—We have been buying honey from Tatt, of St. Louis, a very fine article, at 5½ and 6 cts. per lb. We just bought from him yesterday 92 barrels at 5½ cts., said to be equal to the last lot we bought of him at 6 cts.; if so, it is a very good purchase.

Yours respectfully,

UNITED STATES BAKING CO.

(Crawford-Taylor branch).

Mansfield, O., July 29, 1891.

How do you like the new design on the front of the cover? This was ordered about a year ago, but we told our engravers to do their level best, without regard to time or cost. The representations of clover, and bees on the wing, are unusually accurate. You see the idea. The little gleaners are gathering the sweets from far and near. The goldenrods are also excellent, and the whole design represents a handful of clovers, goldenrods, and other bee-plants that have been gleaned on the way. The engravers seem to have held in mind distinctly the idea of a gleaner, or, better, a GLEANINGS IN BEE CULTURE, and it is no little gratification to us that they have succeeded in combining so well not only beauty but the eternal fitness of things.

PARAFFINE FOR CANDY-HOLES OF QUEEN CAGES.

We are just lining all the candy-holes of our Benton cages with paraffine. The idea of this is to prevent the candy, or moisture in the candy, from soaking into the end or grain of the wood, thus causing the candy to dry up and become hard. After the cages are filled with candy, the candy itself is covered with paraffine paper. All this seals the candy up practically air-tight, with the exception of the feed-hole; and the candy around this is kept fresh by the bees eating out their daily rations. The use of paraffine in this way in keeping the candy soft is old, but we believe there is something in it. Recently a customer returned the cage in

which the queen had died. Upon examination we found that most of the honey had soaked into the wood, leaving the candy as hard as a brick. This and other returned cages has decided us in favor of paraffine lining. With an ordinary five-cent brush, and a little vat of melted paraffine, one person can paraffine about five hundred cages in half a day. We shall watch the results narrowly now for the next few weeks, and report later for the benefit of our readers.

THE OLD COMB-HONEY CANARD BROKE LOOSE AGAIN.

THE old sensational falsehood about artificial comb honey is breaking loose again. To show how stale it is, we reproduce it.

ARTIFICIAL HONEY.

Artificial honey, which is much more common in the market than consumers know, is made of potato starch and oil of vitriol. Some rash optimists think that they are sure of getting the genuine product of bees and flowers by purchasing honey in the comb. They do not know that the exquisite white comb that pleases them is often made of paraffine wax.—*Herald of Health.*

That old twaddle about "potato starch" and "oil of vitriol," and "rash optimists," is more than stale. Our thousand dollars is open to any one who will prove that comb honey can be successfully manufactured of potato starch and oil of vitriol so that rash optimists or anybody else can not detect the difference. This offer was made some five years ago, and we see no use of recalling it, for nobody has ever yet written to us about it. The item has been appearing again in a number of local papers. It has probably got into the "boiler-plate" matter which is sold for so much a yard to country papers, and now it will go the rounds for a while. This appeared originally in the *Herald of Health* a number of years ago, and every once in a while it bobs up. Our subscribers can do more to get their local papers to refute it than we can, and we trust they will seize their opportunity without delay. We will furnish plenty of our reward cards to help substantiate your statements.

HOW TO CLARIFY BLACK AND DIRTY WAX WITH SULPHURIC ACID.

We have been experimenting for the past few days in rendering wax with sulphuric acid. Although we knew the Dadants and one or two others were using it with excellent results in clarifying old dark wax, somehow or other "we hadn't got around to it." For several months back we have been saving up our old inky pieces of wax, and, besides this, the scrapings from the floor, and other odd accumulations from broken bits of comb. This week we procured some sulphuric acid and proceeded to clarify first the dirty scrapings from the floor, putting them into a copper boiler holding about half a barrel. We first put in about two pails of water, and then about three ounces of sulphuric acid, and afterward the scrapings. We next let on steam, until the wax began to come to the top. We first dipped off the clear wax floating on the surface, and poured it through a cheese-cloth bag. We next scooped out the residue, including the dirt, dumped it into the cheese-cloth bag, put it into our wax-press, and squeezed it under a gentle and increasing pressure. The wax, as it oozed out, ran into the vat, which, upon cooling, proved to be nice yellow wax. On former occasions, the same treatment without sulphuric acid, would give us wax about as black as ink—or, at least, of a very dirty and muddy color. The action of the acid is to carbonize, or, in other words, burn the organic matter, and this frees the wax that is mingled with it, and allows it to separate

and rise to the surface. We have repeated this operation with sulphuric acid on several lots of very dirty cakes of wax, many of them almost perfectly black; and each time we had, as a result, several nice yellow cakes of wax, and a small pile of black organic matter that had been freed by the acid. We followed the proportions given us by friend Salisbury in a recent article; viz., about a pound of commercial sulphuric acid to about a quarter of a barrel of water. Into this we introduced a steam-pipe, and then filled up the receptacle with the wax accumulations, or dark cakes of wax which we desired to lighten up. Sulphuric acid mixed in water in the proportions given will not make a solution strong enough to be corrosive to the hand, nor dangerous to the bees after it has been re-melted and worked over into foundation. We expect to render all our dark wax into nice yellow cakes, so that it may all be of good color and ready for use this fall, or for next season's trade.

HIGH PRICES FOR GARDEN PRODUCE, AND VICE VERSA.

AFTER reading the proof of what I have said in another column, about taking all we can get for the stuff we raise, I fear it did not convey just the meaning I wish. Let me give another side to it. I *may*, perhaps, have a thousand bushels of potatoes from less than three acres of my little ten-acre farm. At present we are getting 80 cents a bushel; but the prospect is that the price will go down very much. I might dig them in haste and market them in haste, and perhaps get a good deal of money for them. But it is not the money I am after. I am going to enjoy selling them at the market price. If they go down to 25 cents a bushel, I hope—yes, I believe—I shall enjoy just as much giving our customers great beautiful Puritan potatoes for 25 cents a bushel as I do now in getting 80 cents. Then why not dig them and sell them for 25 cents a bushel *now*? Because, dear friends, it would be doing a great wrong to a large class of people. I should break the price down prematurely, and justly incur the ill will of farmers and everybody else who have potatoes to sell. We inquire every day what potatoes are selling for at the groceries, so as to avoid breaking down prices. At the same time, we want to be prompt in coming down just as fast as *they* come down. I want to be fair, honorable, and just with all my neighbors, and I am happy in it, and enjoy doing it. The amount of money that comes into *my* pocket ought to be, and I hope is, a secondary consideration. I do especially enjoy seeing consumers get nice products at a low price—that is, when the crop generally is so large that a low price is the right and proper price. Now, then, hurrah for the big Puritans!

MY "POSY-GARDEN" THE FIRST OF AUGUST.

MAY be some of you have thought that I don't care for a *posy*-garden, but I tell you I do. It is just across the street from the office. It is part of that hotbed that is warmed by steam in winter. It was so conspicuous right on the street, you know, that it seemed too bad to have the beds vacant, even in summer. We were fixing the ground for strawberry-sets. It was made fine and mellow, and very rich, and then covered half an inch with lake sand smoothed down as level as a floor. This lake sand looked so pretty and clean that I told the boys we must have some flowers. Perhaps it was first suggested by the spider-plants that came up quite thickly. We were so careless as to let them get killed by the frost, however, two or three times, but now they are doing finely. But the flowers that please us so much are

from the portulacas growing right in this white sand. The green foliage contrasts very prettily with the sand; and every forenoon the many-colored blossoms are to me startlingly beautiful. I gaze at the passersby, and look at the boys, and wonder how they can be unmoved by such entrancing beauty. Then another thing that makes portulacas attractive to *me* is, that the bees so delight in hovering about them, and crawling down into the blossoms before they are yet quite opened; and how they scramble to get out when they have rifled the blossom of its store of nectar! Then they dance about the expanded blossoms as if they *too* were enchanted by the brilliant hues. A great many times, when I admire beautiful flowers in the florists' windows, and hear the *prices*, it gives me a feeling of pain. I confess I do not greatly enjoy high-priced flowers, especially when they go away up into the dollars. Well, now, my portulaca-bed was the product of only a small part of a five-cent paper of mixed portulaca seeds. Why, if the whole wide world could see that bed, just as it looks to me now out of the window, it seems to me that such a bed would spring up straightway in front of almost every home. It is worth more than it costs, just to show the children, while you teach them and lead them to think of the great God over all, who planned and fashioned the flowers for no other purpose than to please his children *whom he loves*.

SPECIAL NOTICES.

EARLY-ORDER DISCOUNT.

We begin now to offer 5% discount on all goods of our manufacture found on pages 10 to 27 of our price list, ordered for use next season. This discount applies on all orders for such goods during the months of August, September, October, and November, when the discount is claimed.

BEESWAX DECLINING.

The market on beeswax shows a downward tendency, and there is always less demand at this time of year than in the spring. We will pay, till further notice, 26 cts., cash, 28 trade, for average wax delivered here. Our selling price will be 31 cts. for average, 35 for select yellow. We will make no change in price of comb foundation, because our early-order discount of 5 per cent begins this month, which more than compensates for the drop in wax.

CRATING COMB HONEY FOR SHIPMENT.

Comb honey in sections, put up in suitable shape for market, is put into light cases, usually called shipping cases, or crates. These vary in size from 12 to 48 lbs., and usually they have been sent to market without any further protection. This may do very well in full carloads, where it is not transferred; but it is not safe to ship such cases in less than carload lots without additional protection. Your honey will reach the market in so much better shape that it will pay you several times over for the extra care in preparing it for shipment. The plan of crating has been given once or twice, but it will bear repeating at this season when you are about to ship your honey to market.

Make a rough crate that will hold a pile of cases weighing 150 to 200 lbs. Let one piece on each side project at each end so as to form handles to carry it by. Make the bottom solid; and, before putting in the cases of honey, spread in two or three inches deep of straw or hay, to break the jar if the crate should be dropped. The crate should be made of such a size as to hold a certain number of cases snugly; and it should be covered over the top, and pretty well covered on the glassed sides, so the glass need not be broken. If your honey is in 24-lb. cases, put either two or three piles three cases high in a crate, and double the number of 12-lb. cases can be put into the same-sized crates. If any prefer to buy crates rather than make them, we will furnish them in flat, right size for nine 24-lb. cases, or eighteen 12-lb. cases, at 50c each; \$4.00 for 10.

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 advt 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 Simplicity hives, and L. frames, filled with combs, nearly all worker, for bees, any breed, or Barnes foot-power saw.
11tfdb L. W. NASH, West Keenebunk, York Co., Me.

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

WANTED.—To exchange pure Scotch collie pups for tested Italian queens. 12tfdb
N. A. KNAPP, Rochester, Lorain Co., O.

WANTED.—To exchange a 10-inch Pelham fdn. mill, a Wilson No. 1 bone and feed mill, bees, honey, and supplies, for a small printing-press, shotgun, wax, or offers. Send for price list to 12tfdb
OLIVER FOSTER, Mt. Vernon, Linn Co., Ia.

WANTED. To exchange Golden Italians or Carniolan queens, for nice straight worker combs in L. frames, or pure-bred poultry. J. A. ROE,
14tfdb Union City, Ind.

WANTED.—A man to take charge of my bees.
14-fd J. S. COOPER, Quebec, Tenn.

WANTED.—Exchange with the "Home," St. Petersburg, Fla., and get our "mailing lists" free. 9tfdb

WANTED.—Two pairs tame fox squirrels. Will pay cash or exchange colony pure Italian bees.
CHAS. McCLAVE, New London, Ohio.

WANTED.—To exchange select tested queens for potatoes of northern production.
15-16d L. C. CALVERT, Poplar Flat, Ky.

WANTED.—An oil-tank, coffee-mill, scales, candy and spice cans, show-case, and combination safe.
A. C. FASSETT, Watson, Allegan Co., Mich.

WANTED.—All the names of persons running apple-driers. Will pay liberally for same.
15-18db W. D. SOPER & Co., Box Makers, Jackson, Mich.

WINTER cases in flat, or made up, for dovetailed hive, or supplies of all kinds, and bees and queens, in exchange for either comb or extracted honey. 1 tfdb
HILL MFG CO., Dennison, Ohio. Box 120.

WANTED.—Situation and good home in small family of an experienced bee-keeper in any State, by a woman. Am willing to help with house or bee work. Address with references,
P. O. Box 35, Roseville, Warren Co., Ill.

WANTED.—To exchange new Odell type-writers for comb or extracted honey. Write for illustrations and samples of work. Valued at \$15.00.
GEO. E. HILTON, Fremont, Mich.

WANTED.—A few of the American bee keepers to send me a sample of their best strains of Italian or Carniolan queens. I will pay postage in any case, and postage and 1/2 times regular cost of queen if she comes through alive. See GLEANINGS, last Jan., page 72, for Mr. Roof's instructions as to mailing.
15-16d AENEAS WALKER, Redland Bay, Via Frisco, Queensland, Australia.

WANTED.—To exchange 90 colonies Italian bees, in 2-story 8-frame L. hives, for Safety bicycle, lumber, horses, buggy, honey, or machinery for box making.
14tfdb L. J. TRIPP, Jackson, Mich. With W. D. Soper & Co.

On Their Own Merits.

I am making a specialty of breeding **Gold n and Albino Italian Queens**. My five-banded bees are equal to any as honey-gatherers, and they are the most beautiful and gentlest bees known. Warranted queens, May, \$1.25; six for \$6; after June 1, \$1; six for \$5. Satisfaction guaranteed. I have a few 3-banded tested queens at \$1 each.

CHARLES D. DUVAL,
9tfdb Spencerville, Montg'y Co., Md.
Please mention this paper

BEESWAX

FOR SALE.—Crude and refined. We have constantly in stock large quantities of Beeswax, and supply the prominent manufacturers of comb foundation throughout the country. We guarantee every pound of Beeswax purchased from us absolutely pure. Write for our prices stating quantity wanted.

ECKERMANN & WILL,
5-16db Bleachers, Refiners, and Importers of Beeswax,
Syracuse, N. Y.

In responding to this advertisement mention GLEANINGS.

WE WILL BUY YOUR OLD COMBS.

F. A. SALISBURY, SYRACUSE, N. Y.
Please mention this paper. 14tfdb

Tested Italian Queens.

By return mail, \$1.00 each. Hybrids, 20c; 6 for \$1.
J. A. GREEN, Dayton, Illinois.
Please mention this paper. 12tfdb

FIVE-BANDED GOLDEN RED-CLOVER BEES.

If you want bees that will work on red clover, try one of our 5-banded queens. Queens in August, untested, 75 cts.; 1/2 doz., \$3.60; tested, \$1.50; select, \$2.00; the very best, \$4.00. Descriptive circular free.
LEININGER BROS.,
10tfdb Ft. Jennings, Ohio.

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

J. STAUFFER & SONS,
15-ftdb Successors to B. J. Miller & Co.,
Nappanee, Ind.
In writing advertisers please mention this paper.

THE CANADIAN

Bee Journal | **Poultry Journal**

Edited by D. A. Jones. Edited by W. G. G. Peter.

75c. Per Year.

75c. Per Year.

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

The D. A. Jones Co., Ltd., Beeton, Ont.
Please mention GLEANINGS.

HEADQUARTERS IN THE SOUTH

For the manufacture and sale of
BEE-HIVES AND BEE-KEEPERS' SUPPLIES.

Untested Italian queens until Nov. 1, 75 cts.; \$8.00 per dozen. Tested queens, \$1.50; select queens for breeding, \$2.50. Bees by the pound, 75 cts. Four pounds in light nucleus with frames of brood, \$3; with untested queen, \$3.75. In lots of 5, \$17.50.

P. L. VIALLO,
Bayou Goula, La.

Please mention GLEANINGS.

13fdb

Queens! Queens! Queens!

If you want bees that will beat anything you ever saw in every respect, try our strain of Italians. Warranted queens, each, 80c; six, \$4.00; doz., \$7.50. Swift arrival guaranteed.

ORDER NOW, PAY UPON ARRIVAL.

JAS. & F. B. YOCKEY,
NORTH WASHINGTON, WESTM'D CO., PA.

In responding to this advertisement mention GLEANINGS.

~~~~~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.

## Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have doubled the amount of bee-hives, etc., to make, and we expect to do it all with this saw. It will do all you say it will."

Catalogue and Price List free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. Root, 23tfd

## VANDERVORT COMB-FOUNDATION MILLS.

Send for samples and reduced price list.

1tfd **JNO. VANDERVORT**, Laceyville, Pa.  
Please mention this paper.

## 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 2 1/2 x 1 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.

## THE PEGOS VALLEY THE OF FRUIT BELT NEW MEXICO

Over 100 miles of irrigating canals now completed, each from 13 to 60 feet wide and carrying 5 to 7 feet of water. Over 300,000 acres of the richest lands in the world already available for irrigation and farming under these canals, twenty-five per cent. of which are still subject to entry under the homestead laws.

Other lands for sale at \$15 to \$30 an acre and on easy terms. The Pecos River being fed by never failing springs of immense size, the water supply for all the canals can carry it assured.

Climatic and soil conditions here are superior to those of Southern California. All the fruits grown there can be produced here, except oranges and lemons, while the Pecos Valley grows all the cereals, vegetables and grasses that can be grown anywhere on this continent, while the neighboring mines afford a home market for all products.

Our farmers raise two crops a year of grain and vegetables, five crops of hay, and stock grazes out doors all winter. Our climate is a perfect antidote for consumption and all throat and lung diseases.

Send for maps and illustrated pamphlets, giving full particulars.

## PEGOS IRRIGATION & IMPROVEMENT CO., EDDY NEW MEXICO.

In responding to this advertisement mention GLEANINGS.

## ITALIAN QUEENS FOR SALE.

July and August, tested, \$1.00; untested, 75 cts. Bees at \$1.00 per lb. Make money order payable at Waynesburg, Greene Co., Pa.

9-16db **MRS. A. A. SIMPSON**, Swarts, Pa.  
Please mention this paper.

## YELLOWEST ITALIANS.

My bees are the brightest and gentlest bees, and for honey-gatherers are equal to any. Send 5 cts. for sample and be convinced. One queen by mail, \$1.00.

**J. F. MICHAEL**, German, Darke Co., Ohio.  
Please mention this paper. 11-16db

In responding to this advertisement mention GLEANINGS.

## ITALIAN QUEENS.

If you want queens that are bred for business, send to me. See adv't in GLEANINGS of June 15th. Every cent guaranteed in every respect. Price 75 cents each.

**JAMES WOOD**,  
NO. PRESCOTT, MASS.

11tfd

Please mention this paper.

## ITALIAN 100 QUEENS.

Untested Queens, 60 cts. each. \$6.00 per dozen. Now ready to mail. 9tfd

**H. Fitz Hart**, Avery p. o., New Iberia, La.

In responding to this advertisement mention GLEANINGS.

## PATENT WIRED COMB FOUNDATION HAS NO SAG IN BROOD-FRAMES.

## THIN FLAT - BOTTOM FOUNDATION Has No Fish-bone in Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made.



**J. VAN DEUSEN & SONS**,  
Sole Manufacturers, 51fd  
Sprout Brook, Montgomery Co., N. Y.

## MUSICAL INSTRUMENTS MURRAY & HEISS CLEVELAND OHIO. SEND FOR CATALOGUE.

Please mention this paper.

# WINTER BEES SAFELY AND CHEAP

—BY USING OUR—

## NEW OUTSIDE WINTER-CASE

—on your Dovetailed hives, or with our—

### New Thin-Walled Hive.

The outside case, with **CHEAPEST** and **MOST** **CONVENIENT**. It is the same size as the 8-frame Dovetailed and contains the same inside furniture. Send for special illustrated circular. Address

**THE W. T. FALCONER MFG. CO.,**  
**JAMESTOWN, N. Y.**

Catalogue of all bee-supplies, and sample copy of **AMERICAN BEE-KEEPER**. (The Am. Bee-keeper is a 24-page monthly, 50c a year.)  
 Please mention this paper.

## 1878 DADANT'S COMB FOUNDATION. 1891

**HALF A MILLION LBS. SOLD IN THIRTEEN YEARS. OVER \$200,000 IN VALUE.**

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretchmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wis.; J. Mattoon, Atwater, O.; Oliver Foster, Mt. Vernon, Ia.; C. Hertel, Freeburg, Ill.; E. T. Abbott, St. Joseph, Mo.; **E. Lovett, San Diego, Cal.**; **E. L. Gould & Co., Brantford, Ont., Can.**; Page, Keith & Schmidt, New London, Wis.; J. Stauffer & Son, Nappanee, Ind., Berlin Fruit-box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilman, Theilman, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Powder, Indianapolis, Ind.; Martin & Co., 1141 15th St., Denver, Col.; I. D. Lewis & Son, Hiawatha, Kan.; F. C. Erkel, LeSueur, Minn.; Mrs. J. N. Heater, Columbus, Neb.; Buckeye Bee Supply Co., New Carlisle, O.; Levering Bros., Wicota, Ia.; G. Dittmer, Augusta, Wis.; John Roy East Saginaw, Mich., and numerous other dealers.  
 It is **the Best**, and guaranteed every inch equal to sample. All dealers who have tried it have increased their trade every year.

**SAMPLES, CATALOG, FREE TO ALL. SEND YOUR ADDRESS.**

## 1852 LANGSTROTH ON THE HONEY-BEE. Revised. 1891

Those who wish a book in which they will find, without difficulty, whatever information beginners desire, should send for this work. Its arrangement is such that any subject and all its references can be found very readily, by a system of indexing numbers. It is the most complete treatise in the English language.

—A FRENCH EDITION JUST PUBLISHED.—

### HANDLING BEES, PRICE 8 CTS.

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