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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.

BEEES and yellow VEN The Best excel. They
Italian Queens select Tested \$1.25 do all other
for sale in June Untested \$1.00 seasons. my
at Chenango Order early. E old custom.
Valley Apiary. Send for circular. E rs will say.
MRS OLIVER COLE, Sherburne, Chenango Co., N. Y.
Please mention this paper. 9tfdb

TESTED ITALIAN QUEENS.

\$1 each; untested, 75c; 3 for \$2.00, or 12 for \$7.00. Three-frame nucleus, with tested queen, \$3.00, now ready to ship. 11tfdb **GOOD BROS.,** Nappanee, Ind.
In writing advertisers please mention this paper.

Tested * Queens * Cheap.

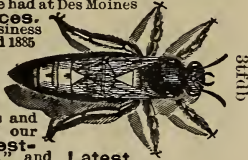
I have a number of nice tested queens, many of them raised last season, that I will sell for \$1.00 each. Hybrids, 25 cents each. 12tfdb

J. A. GREEN, Dayton, Illinois.

In responding to this advertisement mention GLEANINGS.

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 1835
Dovetailed Hives, Sections, Foundation, Extractors, Smokers, Veils, Crates, Feeders, Clover Seeds, etc. 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 selected 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.

Leahy M'fg Co.,

—UNDOUBTEDLY THE—

LARGEST PLANT IN THE WEST,

Built exclusively for the manufacture of Apiarian Supplies. One and One-Half Acres Floor Space. We sell as Cheap as the Cheapest, and our goods are as Good as the Best. Parties will do well to write us for estimates on large orders. We will send you our catalogue for your name on a postal card. Address **LEAHY MFG. CO.,** Higginsville, Mo. 7tfdb

Please mention this paper.

NEBRASKA

3-frame nucleus (without queen) \$2.00.
3-frame nucleus (with tested queen) \$3.50.
3-frame nucleus (with queen from our own apiary) each, \$2.50. Pure Italian queens, each, \$1.50. Descriptive price list free. **J. M. YOUNG,** Plattsmouth, Neb. Box 874. 7tfdb
Please mention this paper.

New Orleans Apiaries.

Untested Italian and Carniolan Queens, for May and June, \$1.00 each; after, 75 cts. 10tfdb

BEEES for BEAUTY and BUSINESS.

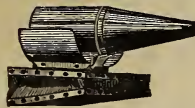
Purity and safe arrival guaranteed. Address

WINDER & SIPLES, 576 MAGAZINE ST.,

NEW ORLEANS, LA.

In responding to this advertisement mention GLEANINGS.

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 "	2 "	"	... 1.00
Little Wonder,	1 1/2 "	"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

11tfdb **BINGHAM & HETHERINGTON, Abronia, Mich.**

In responding to this advertisement mention GLEANINGS.

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per bushel; \$2.50 per bag of two bushels, bags included in each case, and no less in any larger quantity. We are still prepared to supply it at these prices. If any of our readers have some to sell, and failed to see the notice in last number, they will confer a favor all around, perhaps, by writing us at once, saying how much they have, and what they will sell for. We have filled orders in the East from New York and Vermont, and in the West from Illinois and Iowa, thus saving freight.

CONVENTION NOTICES.

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

The Carolina Bee-keepers' Association will meet in Charlotte, N. C., at the Court-house, July 30, 1891. A good program is prepared, and a full attendance is desired. A. L. BEACH, Sec'y., Pineville, N. C.

Wants or Exchange Department.

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

SPECIAL NOTICES.

Remember the special five per cent discount on lawn-mowers, as given in last issue.

SECOND-HAND 60-LB. CANS.

We have upward of 50 boxes of two 60-lb. cans that have been used for honey once or twice, in fair order, which we will close out at 50c per box; \$4.00 for 10 boxes, or 35c each if you take the lot. They are all clean, and free from leaks, and have screw-caps so far as we know.

HONEY-KEGS.

We can furnish honey-kegs in lots of 20 of small sizes, or 10 of large, delivered to any point on through R. R. lines east of Mississippi and north of Baltimore and Ohio River, at the single rate quoted on page 442, May 15th number.

4, 4 1/2, or 5-gallon.....	40c each;	\$3.50 for 10.
10-gallon.....	60c "	5.50 "
20 "	80c "	7.50 "

Kegs sold delivered will be shipped direct from factory in Townsend, Mass.

RUBBER STAMPS.

Rubber stamps are now furnished so cheaply that every one can afford to have his name and address, if nothing more. They are coming to replace the work of the printing-press in many instances. They are also better than stencils for marking packages of honey, etc., and the marking is more quickly done, especially with the printing-wheel. A rubber stamp, giving the name and address of producer on each section of choice honey, is a good advertisement. It is also neater, and more easily applied than a label. We have just issued a new 12-page price list of rubber stamps, which will be mailed free on application.

JAPANESE BUCKWHEAT.

Since the June 15th number was published we have secured and disposed of nearly 200 bushels of Japanese buckwheat; but, as we expected, we have had to pay a higher price than we had been paying, and more than we expected to pay. A good deal of it we have sold at cost to us. The prices we have charged for the past two weeks have been 5 cts. per lb.; 40 cts. per peck; 75 cts. per half-bushel; \$1.40

WANTED.—To exchange Simplicity hives, and L. frames, filled with combs, nearly all worker, for bees, any breed, or Barnes foot-power saw. 11tdfb L. W. NASH, West Kennebunk, York Co., Me.

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

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

WANTED.—To exchange pure Scotch collie pups for tested Italian queens. 12ftdb 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 12ftdb OLIVER FOSTER, Mt. Vernon, Linn Co., Ia.

WHAT am I offered in exchange for a complete printing-outfit? 12x18 Goding jobber, 6x10 Nonpareil, 2 H. P. engine, type, etc.; cost about \$800. 12-13d CYRUS MCQUEEN, Baltic, O.

WANTED.—To trade a 6-horse-power engine and boiler, for comb honey. Address J. A. ROE, Union City, Ind.

WANTED.—Two colonies bees, 1 in Heddon hive, 1 box; 1 circular saw, in exchange for wax, or offers. 13-14d L. L. ESENHOWER, Reading, Pa.

WANTED.—To exchange 1 water-tank; round, 7 ft. in diameter, 5 ft. high; never used; good poplar staves, 1 1/2 in. thick, for Barnes mortising-machine, or offers. H. H. RILEY, Brookville, O.

WANTED.—To exchange young Canary birds in pairs, for Italian bees or queens. J. FERRIS PATTON, 693 Freeman Avenue, Cincinnati, Ohio.

WANTED.—To exchange a complete one-half size Photograph outfit for offers. FRANK SHILLING, Jewett, Harrison Co., O.

WANTED.—2000 lbs. comb and 2000 lbs. extracted honey. Those having either to sell will please write me, stating amount, price wanted, how packed, and, if possible, send sample. Address 13ftdb S. RAY HOLBERT, Monongah, W. Va.

HONEY WANTED.

We shall need one hundred thousand pounds of choice comb and extracted honey this season. Let us know what you have, with particulars as to quality, price, and how put up.

J. A. BUCHANAN & SONS,
13tfdb **HOLLIDAY'S COVE, W. VA.**
In responding to this advertisement 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, N,
Bayou Goula, La.

Please mention GLEANINGS. 13tfdb

ITALIAN QUEENS, UNTESTED, { Reared from Doolittle's select mother by his method; 75c each, or 3 for \$2.00. 13tfdb
Please mention this paper. **P. BROWER, NEW PARIS, IND.**

DON'T you want to improve your stock? Don't you want nice large business Italians that will just "roll in the honey"? Seven years careful breeding from the best stock obtainable; 650 queens sold, and never heard of but one mismated. Queens large, yellow, and prolific. Warranted, 75c; 3 for \$2.00; or a select breeder, \$1.50. Your orders appreciated. Return mail.
13d **W. H. LAWS, LAVACA, ARKANSAS.**
In responding to this advertisement mention GLEANINGS.

LOOK HERE, FRIENDS!

20 COLONIES Fine, Yellow Italian Bees for sale, in two-story Simplicity chaff hives, at \$6.00 per colony.

THOS. L. THOMPSON,
Box 240. **Blairsville, Pa.**

In responding to this advertisement mention GLEANINGS.

FOR SALE.—200 Simp. brood-combs, about one-half wired. Price 8c each, or \$15 cash for the lot.
E. R. GIBBS, Norwalk, Ohio.

CARNIOLAN.

THE BEST BEE OF THE LAND.

All queens reared from first grade imported mothers, and warranted purely mated; 75 cts. each; six for \$4.00. Tested, \$1.50 each; six for \$7.50. Descriptive circular free. Address

A. L. LINDLEY, Jordan, Ind.
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 2½x1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

A. I. ROOT, Medina, O.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey.*—New crop Southern is now arriving freely from Florida, Louisiana, Georgia, and Texas, and demand good. We quote: Common, 70c per gallon; good to choice, 75 to 78c. Extracted, orange bloom, 7@7½ per lb. *Beeswax*, scarce and firm, from 28@30c, as to quality.
June 23. **HILDRETH BROS. & SEGELKEN,**
28, 30 West Broadway, New York.

ST. LOUIS.—*Honey.*—Comb market unchanged. Extracted and strained, slow at 6c here in barrels; 7½ in cans. Prime beeswax, 28½.
June 22. **D. G. TUTT GROCER CO.,**
St. Louis, Mo.

COLUMBUS.—*Honey.*—Choice white clover selling at 18c. Dark not wanted. Pack honey carefully before shipping.
June 20. **EARLE CLICKENGER,**
Columbus, Ohio.

DETROIT.—*Honey.*—No comb honey in market to quote. Extracted 8@9c, and selling only in small lots. *Beeswax*, 29@30c.
Bell Branch, Mich., June 22. **M. H. HUNT.**

MILWAUKEE.—*Honey.*—The supply of section honey has not been so small on this market for a long time, and shipments of choice will do well from this time forward. We quote choice 1-lb. sections, 18@20c; good, 16@17c; common, 10@15; dark, 8@10. Extracted, in bbls. and kegs, white, 7½@8½; in tin, 8½@9; dark, 6@7. *Beeswax*, 26@30.
June 15. **A. V. BISHOP,**
142 W. Water St., Milwaukee, Wis.

SAN FRANCISCO.—*Honey.*—Extracted honey is rather scarce. We quote 5½@6. The new crop is late on account of the cold and foggy weather. There is no comb honey left. *Beeswax*, scarce at 26@27.
June 11. **SCHACHT, LEMCKE & STEINER,**
San Francisco, Cal.

NEW YORK.—*Honey.*—Market at present is dull, no demand at all for comb honey, a few small lots offering, of 1-lb. fancy new Southern comb honey at 16c. Extracted, Southern honey from 75@80c per gallon; orange blossom from 7@8c per lb. California comb honey, none to speak of. Extracted, scarce, expecting new in shortly. *Beeswax*, firm at 27@30c.
June 20. **CHAS. ISRAEL & BROS.,**
New York, N. Y.

CINCINNATI.—*Honey.*—Demand is good for old and new extracted, at 6@8 on arrival. Choice comb honey is in fair demand at 14@16c in the jobbing way. *Beeswax.*—There is a good demand for this, at 24@28 for good to choice yellow on arrival.
June 16. **CHAS. F. MUTH,**
Cincinnati, Ohio.

ST. LOUIS.—*Honey.*—Comb honey, choice white-clover, 15@17, fair 12½@14. White-clover, extracted, cans, 6@8; barrels, 4½@6, as to quality. The market on honey rather slow, too many berries at low prices on the market.
June 13. **W. B. WESTCOTT & Co.,**
St. Louis, Mo.

FOR SALE.—New honey; extracted white-clover; sample on application. Address
J. B. MURRAY, Ada, Hardin Co., Ohio.

FOR SALE.—I have a lot of honey in 60-lb. tin cans, two cans in a case, which I wish to dispose of. I have also comb honey in one-pound sections.
Write. **J. D. ADAMS, Nira, Ia.**

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,**
11tfdb **San Diego, Cal.**

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.

Positively by Return Mail.

After June 20th, we shall be prepared to ship our beautiful Golden Carniolan and Golden Italian queens by return mail.

PRICES OF ITALIAN QUEENS.

WARRANTED.	TESTED.	SELECT TESTED.
1 queen, \$ 1.25	1 queen, \$ 2.00	1 queen, \$ 3.00
2 " " 2.25	2 " " 3.75	2 " " 5.50
6 " " 6.50	6 " " 10.00	6 " " 15.00
12 " " 12.00	12 " " 18.00	

Golden Carniolan queens each \$2.00.

If you rather see these queens before paying for them you can. Safe arrival and satisfaction promised in all cases. **HENRY ALLEY, WENHAM, MASS.**

Please mention this paper.

THOSE ALBINO ITALIANS

are the easiest kept from swarming, and are the gentlest bees. Try one. Tested queens, \$1.25; select tested, \$1.75; warranted 75c each. Safe arrival guaranteed. 12-13d **JOS. MOSER, FESTINA, IA.**

In responding to this advertisement mention

SUPPLIES!

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

6-13db 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

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, 1½ story, each, 90 cts.; 5 for \$4.00; ten-frame, 1½-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 5tfd

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

In responding to this advertisement mention GLEANINGS.

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 90 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.

10tfd **R. & E. C. PORTER, LEWISTOWN, ILL.**

In responding to this advertisement mention GLEANINGS



A glimpse of our Factory, now making carloads of Dovetailed Hives, Lang. Simp. hives, 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. 4tfd

E. KRETCHMER, Red Oak, Iowa.

In responding to this advertisement mention GLEANINGS.

PASTEBOARD BOXES.

CRAWFORD'S SECTION CARTONS ARE JUST WHAT YOU WANT.

SEND FOR NEW PRICE LIST.

A. O. CRAWFORD,

11tfd **SOUTH WEYMOUTH, MASS.**
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.**

21tfd In writing to advertisers please mention this paper.

NEW FACTORY.

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

M. S. ROOP, 520 East Broadway, Council Bluffs, Ia.

6-17db In responding to this advertisement mention GLEANINGS.

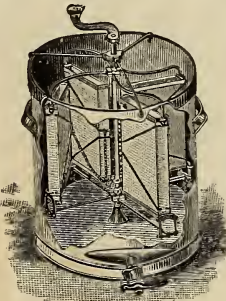
EVERY THING

USED BY

BEE-KEEPERS.

EDWARD R. NEWCOMB.

Pleasant Valley, N. Y.



5tfd

Please mention this paper.



CATALOG FREE

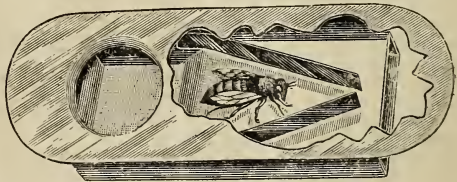
Bee-Keepers' * Supplies.

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.

21-20db

In responding to this advertisement mention GLEANINGS.





Published by A. I. Root, Medina, O.

Vol. XIX.

JULY 1, 1891.

No. 13.

STRAY STRAWS

FROM DR. C. C. MILLER.

I LIKE the Dovetailed hive.

WHITE CLOVER is now blooming, June 15.

CALIFORNIA'S honey crop, last year, was ninth-tenths extracted.

ALLEY says, "In future only a 7-frame (L. size) will be used in the Bay State Apiary."

THE *Bee World* has a Texas department conducted by Mrs. Jennie Atchley. It's good.

A TRADE-MARK for bee-keepers is characterized by editor Newman as "that trade-mark foolishness."

HOREHOUND HONEY. I think, has the reputation of being bitter. A. C. Aten (*A. B. J.*) says it is not.

"THE SOUTHERN STATES" is the heading of a department in the *Missouri Bee-keeper*, conducted by Mrs. Jennie Atchley.

CANADA has now a place where bee-keeping is taught—Ontario Bee-keepers' College, Guelph, Ont.; Rev. W. F. Clarke, Principal.

FIRST CLOVER-BLOSSOM here, May 22. Bees commenced working on clover ten days later. Ten days has been the rule for several years.

THAT DAKOTA MAN (L. R. HILLMAN, p. 476) has hit on my rule to prevent spring dwindling—keep 'em in the cellar till it's too late to dwindle.

CHICKENS are not likely to be hatched to any extent by bees, but there would be one advantage—the chickens would not get very lousy from the bees.

THAT CASE of brood in so many sections (E. H. Shaeffle, p. 475) is a tough one. Were separators used? How wide were the sections? How much room in the brood-chamber?

W. Z. HUTCHINSON, at the Toledo convention, admitted in a manly way that his plan of hiving swarms upon starters only could not be depended upon, in general, for securing perfect combs.

BEES HAVE CLAWS by which they can hang on to a board upside down. But if it's glass, the claws will not hold, and then an oily secretion of the foot allows them to stick. Wet the glass, and the oily foot will not stick; and down comes your bee.

WORMY COMBS are thus treated by Mrs. Jennie Atchley (*Bee World*): "Soak in clear water 24 hours, and hang out to dry, or throw water out with the extractor, and hang so they don't touch." If this settles the fat old fellows an inch long, it beats brimstone.

CARNIOLAN (or Krainer) bees come in for a good share of attention in the *Missouri B. K.* The claim there made is, that the gray type are the only pure ones, any showing of yellow being a showing of admixture.

BRACE AND BURR combs have always been confused in my mind till J. A. Green explained on p. 473 that brace-combs are built between combs, and burr-combs on top. Plain enough, when some one shows you. Thank you, Jimmie.

WAX-WORMS. The types on page 458 make friend Root say worms "generally live over" winter, when, of course, he meant "do not live over." My experience agrees, and I find the combs of a colony which has died invariably become wormy where the bees had clustered.

CONTRACTIONISTS seem to be all settling toward this point: "Expand your colonies all you can; get them just as strong as possible up to the time of the chief honey-flow; then contract." I feel sure the expansion is all right; I don't know so well about the after-contraction.

BURR-COMBS are desired by some, as ladders to climb up into the supers. With as much space as a good many of my hives have over top-bars, I think the bees would like them; but with only $\frac{1}{4}$ inch space, any smart bee ought to be able to rear on her hind feet and reach up without a ladder.

DOOLITTLE advises, in *Am. Bee-keeper*, to allow about two square inches of drone comb in one of the outside frames of each hive. Then you will know just where to look for it, and can shave off the drones' heads every 20 days, and the bees will not try so hard to build drone comb elsewhere.

THE CHERRY CROP at Vacaville, Cal., formerly large, has of late years been a very uncertain quantity. One firm, thinking that the decrease in bees might have something to do with it, last year introduced several colonies of bees, with a very gratifying increase in the cherry crop. They are testing the matter more fully this year. (*A. B. J.*)

ROBBERS. The *C. B. J.* says if robbers attack a weak colony, and you remove the colony, put in its place an empty hive with a bee-escape, so the robbers can get in but not out. "Leave the bees fooling around in the empty hive until night, and then open it and let them go home just about sundown, and they will come to the conclusion that there is very little profit in that kind of business. They won't be caught there more than two days in succession."

BEE-PAPERS, years ago, rather ignored the existence of each other, and there didn't appear to be any great friendship between their editors. Then animosity seemed to fade away, and they treated one another politely, although somewhat as strangers. Latterly this polite age

seems to be giving way to a sociable age, and there seems to be a very friendly feeling growing up. Instead of ignoring each other's existence, they quote from each other, and the correspondents of the different papers have lots of fun making good-natured flings at each other.

GENERAL CORRESPONDENCE.

HOW SWARMING IS CONDUCTED.

AGRICULTURAL EDITORS WHO NEED POSTING.

Picking up an agricultural paper lately, I was surprised to read the "bee-department," in reply to a question asked of the editor, that "only old bees go with the swarm," while in another paper I find that the young queen in the parent colony "hatches in less than twenty-four hours after the swarm has issued." Coming, as these statements do, from as high authority as editors, they ought to be correct; nevertheless, all my experience with natural swarming goes to prove them incorrect. If editors are not sufficiently well posted to know how, and under what conditions a natural swarm issues, it might be well to have a little light on the subject for the "rank and file" of bee-keepers, and especially those young in the business; so, with friend Root's permission, I will say a few words regarding the matter in GLEANINGS, the same being more especially designed for those who have not been in the bee-business for any great length of time. I have always used natural swarming as a means of increase, and experimented largely, to know under what conditions swarms issued, as a rule, and have found, as regards the age of bees, that bees of all ages in about equal proportion leave the parent hive, from the old forager to the bee that has not been out of its cell for more than a day or two. Many times have I seen the ground in front of the hive nearly covered with bees so young as to be unable to fly; and as often have I seen the veterans with their jagged wings hanging with the swarm, as well as those having their pollen-baskets filled with pollen. Thus we have the field-bees, the wax-workers, and the nurse-bees, in about equal proportions, thus showing that the all-wise Creator knew how things should be when he pronounced all which he had made, good. If it were not for young bees going with the swarm, the hive would be nearly depopulated by the bees dying of old age, before the brood could hatch out to take their places. Again, if all were old or field bees, the hive could not be filled as profitably with comb; for when, in a normal condition, the bees between the ages of eight and twenty-four days old are the ones which do this work. That this division of bees in a swarm is just as it should be, is the reason that I prefer natural to artificial increase.

But, let us look inside of the hive when preparations for swarming are being made, and see if we can not arrive at the truth in the matter, as regards the condition under which the swarm issues, when the first queen hatches, etc. The first indication of swarming is the laying of eggs in the drone comb. While eggs in drone-cells is not a sure sign that a swarm will issue, yet, as far as I have observed, swarms never do issue without eggs being laid therein.

If the weather is propitious, the next step is the building of queen-cells, soon after which the queen deposits eggs in them. In three days these eggs hatch into larvæ, and said larvæ are fed an abundance of food by the nurse-bees for six

days, when the cells containing the embryo queens are sealed over. If no bad weather has intervened, the swarm issues the next day, the old queen going with the swarm. Now, bear in mind that this is the rule with the black or German bees, and generally with all the other races; still, the Italians, Cyprians, and Syrians often swarm when the eggs are first laid in the queen-cells, and sometimes without the least preparation at all except drones, in a time when swarming runs high in an apiary. All good authorities admit that the queen larva remains seven days in the cell, as my experience also proves, and I can not see how any one could make such a mistake as to say the queen hatches in twenty-four hours. When bad weather occurs, the thing is barely possible for the swarm to be kept back for six days after they would naturally issue, in which case the first queen would hatch in twenty-four hours. But this is something I have had occur but very few times since I kept bees, for in such cases the bees generally destroy the queen-cells, and postpone swarming for an indefinite period. So I find, as a rule, that the first queen emerges from her cell from six to seven days after the first swarm. If more swarms issue, they usually come out two days after, or from the eighth to the ninth day after the first, and never later than the sixteenth day. As soon as it is decided that no more swarms shall issue, all queens in the cells are destroyed, when in from five to nine days the queen goes out to be fertilized, two days after which she commences to lay. If the apiarist stops all after-swarming by the cutting of cells, or any other means which keep all of the bees in the old hive together after the first issue, I find that the young queen is much slower in going out on her wedding-trip, and often does not commence to lay till the twelfth to fifteenth day. Where any one wishes to make artificial increase it is well to understand just how natural swarming is conducted, for with such knowledge one is more apt to succeed in having the right proportion of both young and old bees in the two parts after dividing.

G. M. DOOLITTLE.
Borodino, N. Y., June, 1891.

SOMETHING SCIENTIFIC ABOUT WAX OF ALL KINDS.

HOW TO DETECT ADULTERATION IN BEESWAX.

The following article is taken from the pages of *Le Rucher*, one of our French exchanges. Although somewhat scientific in spots, we believe it is of such general interest that we are warranted in giving place to it. The entire treatise on this subject extends through several numbers of our valued exchange, and we feel that they have done bee-keepers a good service in probing the matter with that thoroughness which is so characteristic of the Europeans. The original article is, of course, in French, which our proof-reader translates as follows:

Lately I was unwrapping, in the presence of one of my friends, a package the contents of which I wished to show him. Scarcely had I opened it when he exclaimed:

"Oh! see what a pretty piece of beeswax!"

"Beeswax!" said I; "nary a bit."

"You are deceived," said he; "it is beautiful wax;" and, taking a piece in his fingers, he began to examine it more closely. After he had examined it in every way he added:

"And you speak in earnest?"

"I do. In that product which you hold at this moment there is not to be found a gramme of beeswax."

He looked at me smilingly; but noticing my serious looks, together with the positive tone of my words, he manifested his surprise.

"Well, now," said I, "take the pains to smell of that stuff and tell me whether it has the agreeable odor of beeswax."

"Why, it is absolutely odorless; but sometimes wax loses its odor. I can hardly believe that it is not pure beeswax."

While he spoke I took from my pocket a second package, which I soon unfolded before his eyes. "See," said I, "a piece of pure yellow beeswax—genuine wax this time. Compare the two products. The one you are holding is odorless and nearly transparent; the other emits the odor of beeswax, which you know so well, and is quite dull. On the one hand you have a mineral product; on the other, an animal product. This animal product is pure beeswax which we get in our hives, and which we furnish in business, such as you see there. This mineral product is ceresin, or purified ozokerite, of which so much is said now, and which did considerable at first, for which a substitute has been found. The unscrupulous speculator began by mixing with his beeswax, little by little, this stuff; and, emboldened by the success of his speculation, and the greed for gain, at last ended by selling this foreign product, unmixed, for pure beeswax, realizing, for the more beautiful product, a profit of 90 per cent. Genuine wax has not ceased to fall in price; and from 68 cts., at which it was sold several years ago, it has actually fallen to 47 cts. in consequence of this fraud. Consumers do just what you have done. They trust to appearances, and buy ceresin for beeswax."

My friend could hardly believe his ears, which is, however, easily to be understood, for he, like everybody else, was ignorant of these things.

Let us leave him to his surprise, and talk seriously. I seem to hear the buzzing of several thousands of voices who put to me the same question:

"What is ozokerite?"

"What is ceresin?"

To answer briefly, it is necessary to say: Ozokerite is a crude mineral wax, or, rather, a mineral wax that has been subjected to only one melting. Ceresin is mineral wax which has been completely purified—that is, ready for use. Little known at present, although sold in large quantities, it has received at different times the following names:

Mineral wax; ceresin; cerosin; ozocertine; ozokerite; ozocerite; fossil wax; odoriferous wax; native paraffine; fossil Moldavian wax.

Several authors and dictionaries have described it.

1. It is a carboniferous combustible, belonging to the bitumens, which resembles wax; can be kneaded, like wax, and emits an agreeable aromatic odor.

2. It is a mineral which was discovered at Slanik, in Moldavia, in sandstone, accompanied with lignite and rock-salt. It is found, in this repository, in such abundance that the inhabitants use it for lighting purposes. It is, in fact, a combustible composed entirely of carbon and hydrogen—a true carburet of hydrogen. Ozokerite resembles beeswax in its consistency and transparency; it possesses, at the same time, a marked aromatic odor. These properties have given it the name of fossil Moldavian wax.

3. Again, it is a substance composed essentially of paraffine, burning with a very brilliant flame, and it is found in sufficient quantities in the bosom of the earth in Moldavia, near Slanik

and Zetriska, which the people melt and run in molds to make wax tapers.

4. It is a mixture of hydro-carburets, of high molecular weight, of a waxy consistency; of a general brown or greenish cast, a peculiar aromatic odor, greasy to the touch; is found at Slanik, Vienna, Borislav in Galicia, and in the coal-pits of Urpeth, near Newcastle, England.

In short, ozokerite is a substance which is found in the bosom of the earth in Galicia, in Romania, and on the western coast of the Caspian Sea. It has received the name of mineral wax on account of its resemblance to beeswax. To extract it, it is necessary to bore wells to get to the place where it is found in strata. These wells can not be made except with extreme caution; and the men who do this work have time only to escape; for it nearly always happens that the material, crowded by the gas stored in the mine, rises rapidly, even to the surface of the ground.

Crude ozokerite, such as is taken from the ground, more nearly resembles the smooth wax with which we are familiar, and, like it, admits of being kneaded; but it soon becomes hard, and assumes a marbled appearance—sometimes clear yellow, sometimes dark green, and sometimes even black. It is only after having been melted and re-melted several times that it looks like beeswax. There exist several varieties of mineral wax, known under the names of *wax*, or *mountain suet*; *fichtelite*, *hartite*, *ixolite*, *koulite*, *scheerenite*, *Urpethite*, and *Zetriskite*, which are of a greasy nature, sometimes opaque, sometimes transparent, but commonly of a yellowish white or a grayish white, and hold, so to speak, a middle place between resins and bitumens. How shall we recognize the presence of ceresin in beeswax? It is well known, that it is difficult to analyze pure beeswax. It is even claimed that this operation is impossible; as witness the *Revue Internationale*, where the following lines may be read:

"Wax is but little known; and even chemists like to talk but little about it. Some years ago I received some wax, of which the odor, the specific gravity, and the melting-point, showed adulteration. To be sure of it I applied to the Polytechnic School of Zurich, and asked if they would be willing to put that wax to a quantitative and qualificative analysis, in order to ascertain not only what material was used in its adulteration, but also in what proportions, and to enable one to find, on that analysis, a complaint before the courts. The answer was no. They declared to me that the state of chemical science would not permit of making any such analysis."

Nevertheless, it is possible to recognize the presence of mineral wax and paraffine in beeswax by using the following method:

Place in a porcelain dish some sulphuric acid. Warm it over some alcohol; and, in order that the wax may be attacked more violently, scrape it off in shavings as for bleaching. The shavings being thin, the beeswax is immediately attacked and carbonized by the sulphuric acid, while the mineral wax or paraffine is not affected—or, at least, only partially so. After boiling for half a minute it is allowed to cool. The beeswax is in a heap like a carbonized (or charred) sponge, and the ceresine forms a transparent film on the surface. If there is a film, there is ceresin or paraffine. If there is only a charred mass, there is no ceresin.

[Are we to understand from the above that chemists at the present day, in our country, are unable to detect impure wax by chemical analysis? I should like to have Prof. Cook answer it. Some years ago we experimented considerably with ceresin; but I believe it is universal-

ly decided that it would not answer for making foundation, even though only a small per cent of ceresin be added to pure beeswax. When the contents of the hive are subjected to the extreme heat of summer, the combs melt, and the contents go to the bottom of the hive in a heap. The man who gets such foundation is damaged far worse than if he received counterfeit money.]

CHIPS FROM E. FRANCE.

HOW OLD MAY WORKERS BE, AND STILL GATHER HONEY AND BUILD COMBS?

On page 421 Bro. Doolittle takes up the subject of old bees secreting wax. He thinks I made some mistake about that colony spoken of on page 319, that built comb for six weeks. He thinks that perhaps there were some frames of brood put into the hives with the swarms. No, sir; there was no mistake about the statement at all. There was no brood put in with the swarms. I don't know how long the bees lived; but one thing I do know—the second swarm, or the old bees in the second hive, lived long enough to raise other bees to take their places. They wintered outdoors, and came out in good condition the next spring. I am going to test this same thing again this summer. I had a swarm on the 9th of June, and another on the 10th. I gave them nothing but frames with 1½-inch foundation starters. I intend to keep those bees building combs, as long as they will live, and not allow them to hatch a single bee; then we shall see whether 45 days will finish them. I don't think it will.

I am now going to tell you another. I have known bees in my home yard, that I knew to be 61 days old. On the 13th day of April I was looking over bees in the home yard. I found two queenless colonies. At that time there was not a particle of brood in either of them. No. 1 I marked down, "No queen, no brood, no eggs." This was a medium colony, not strong; had a little honey. I thought the bees would keep the combs clear of moths until I could use them, so I let it stand just as it was. No. 2, queenless colony, April 13, were strong for that time of year. They, too, had no brood at all—had more honey than they could use. They were in a two-story L. hive, eight-frames in each story. I took out five combs of honey to feed other bees with, and left them in that way with an empty space where the five combs were taken out. To-day, June 13, just two months, No. 1 has about a pint of old bees—combs clear of moths. No. 2 has over a quart of bees—old shiny fellows. But they are at work gathering honey, and are making more than a living. How old those bees were before April 13, I don't know. But it is my opinion that No. 1 at least was queenless when they went into winter. They both wintered out of doors.

Now, friends, some of you who have plenty of bees so you can spare a swarm, just give a good swarm and keep them building comb as long as they will. Take away all brood before any hatch out, and see if 45 days will use them up. If the honey-flow gives out, feed them all they can use.

C. G. Looft, in May 15' GLEANINGS, page 219, tells how to catch and clip queens. We clip as many queens as most folks; but we can not follow his directions. We have only two hands to work with. His way requires one hand to hold the comb, one to catch the queen, and another to use the shears. When it comes right down to business, we catch the queen as we can—by the wings if we can. But we can not always do it. If we see one we catch her any way we can. Most likely she is on a run, and

we have to secure her before she is lost sight of. If we can not get hold of the wing, just pick her up as you would a pig—not by the ears, but any way you can get hold of her. Don't squeeze her hard. Very often we find the queen in the hive after all the combs are out. There is not much danger of injuring a queen after one gets used to handling them.

Bees have gathered considerable honey-dew—black strong stuff. They appear to be working very strong now on clover. We must get all the combs emptied now as soon as possible, to get rid of the dark dew honey. I left the home yard and helped the boys clip queens in the out-apiaries, commencing on the 9th. The home yard began to swarm, and has been at it every day since. Over 40 swarms have come out. I hived 8 of them on empty combs. The others are returned, and have put on the third stories. E. FRANCE.

Platteville, Wis., June 13.

[Friend F., haven't circumstances something to do with this matter of the age of worker-bees? In introducing Italian queens it has sometimes seemed that worker-bees did not last more than five or six weeks during the gathering season. At other times they seem to hold out about as long as you mention. Any one who is acquainted with friend France would probably know that, when he starts to catch a queen, he usually gets her; but I confess I always feel nervous when they begin to squirm in my fingers, and twist around and bite, and try to get away. A good many times I am so afraid of pinching her highness that she twists out of my fingers and flies away. Then what an anxious time it is for the novice! All he has to do, as a rule, is to sit down or lie down and she will soon come back and alight on the combs, or go in with the other bees into the entrance.]

BEE-ESCAPES.

A SUCCESSFUL REPORT FROM J. A. GREEN.

I tried a number of different devices last season. Almost all of them worked very satisfactorily. The one we liked best, though, was the Porter spring escape. It cleaned the supers of bees about as rapidly and thoroughly as any, and they *stayed* out. With some of the other escapes the bees would sometimes find their way back; but with the Porter escape they can not do this.

Having been the first one to call the attention of bee-keepers to the fact that they were neglecting this valuable invention, I can say that the bee-escape is no longer an experiment with me, but an appliance of great practical value. By its use some of the most laborious and disagreeable work of the apiary is almost done away with. This reduction of labor makes it invaluable in large apiaries; but even in the smallest it will save time, stings, and annoyance. The bee-keeping world owes a debt of gratitude to Mr. Reese for giving his invention so freely and generously to his fellow-men.

CUTTING OUT QUEEN-CELLS TO PREVENT SWARMING.

I once believed, as many people do yet, that keeping the queen-cells cut out would prevent bees from swarming. That faith received a rude shock when I found that bees often swarmed before they had started queen-cells, sometimes even not starting them for two or three days afterward. This was with Italians. It is possible that, with black bees, the method could be made to succeed, although it is not at all practical. The objections are, the great

amount of labor required, and the great liability of overlooking one or more cells. If any are left they might as well all be left. The same objections apply to this method of preventing second swarms. I once received a communication from a man who had a new method of preventing after-swarming. He had the highest opinion of its practicability and value. He said it would be worth \$50.00 a year in every apiary of any size. I agreed to help him test it more thoroughly before he made it public, and then he revealed to me the great secret. What do you suppose it was? Simply cutting out all queen-cells but one as soon as a colony swarmed. Considerable correspondence, though, failed to convince him that it was not something entirely new and valuable, and very likely he will be highly indignant at me for revealing it now.

J. A. GREEN.

Dayton, Ill., June 11.

[Friend G., your man's valuable secret is right in line with the principal part of the great secrets offered for a sum of money.]

THE DADANTS ON PREVENTING INCREASE.

WHEN TO CUT OUT QUEEN-CELLS, ETC.

What do the Dadants mean when they say (Question 186), "To prevent increase, return swarms 48 hours after swarming?" also, "cutting out queen-cells does no good?" For many years I have cut out the queen-cells (if the queen was not removed), and immediately returned swarms. Of course, this was likely to have to be repeated. Swarming is now on; and if their too indefinite reply involves something valuable, I should be grateful for immediate information on the subject.

Excelsior, Minn., June 10. J. W. MURRAY.

[We sent the above to the Dadants, who reply:]

Friend Root:—Replying to the inquiry of J. W. Murray, we will say that we have repeatedly found that the cutting of the queen-cells when the colony is preparing to swarm has very little effect on them, for the reason that they start new ones, and, if crossed in their purpose, will even swarm with only eggs or young larvæ in the queen-cells newly built.

If we return the swarm 48 hours after swarming, the queen-cells have been destroyed by the young queen, and the bees get rid of her or of the old one when the swarm is returned, the swarming fever being usually over by that time. If the young queen is not yet hatched when the swarm is returned, the old queen usually goes about the work of destroying all queen-cells herself. We do not know but that it would be safest to destroy all queen-cells before returning the swarm; but this should be attended to only a few hours before the returning of the swarm or it will be done to no purpose, as the bees have eggs and larvæ at hand from which they can raise new queens without end.

Our aim has always been to take the shortest way of arriving at our purpose, and we will repeat that we have found out two things: 1. Destroying the queen-cells to prevent swarming will avail nothing unless the season proves also unfavorable to the swarming-fever, as the bees at once rebuild new ones in the place of those that we have destroyed; 2. After the colony has swarmed it is sufficient to return the swarm after two days, to insure the destruction of the cells or of the young hatched queen or of the old queen, at the bees' choice, except, per-

haps, in isolated cases which are exceptions to the rule.

The objection which we have to the method mentioned by Mr. Murray, of destroying the queen-cells and returning the swarm at once, is, that the swarming-fever is not over then, and it often happens that the bees simply begin the work over at once by rebuilding new queen-cells, as we infer was the case with Mr. Murray, since he says, "Of course, this was likely to have to be repeated." If he will try keeping the swarm 48 hours, he will find much less need of repeating the operation, and will not need to remove the queen-cells; since it is always or nearly always done by the queen. If he has ascertained that the bees have a young queen already hatched, he can either destroy her or the old queen before returning the swarm.

Another objection that we have to destroying the queen-cells in any case is the difficulty of making sure of having found every one of them. As a matter of course, with a great deal of attention a bee-keeper can make sure of that; but it is hardly necessary to tell the reader, that during the swarming season a bee-keeper has his hands full, even if he does not run a farm and a bee-supply shop besides.

The words "swarming-fever" which we have used in the above are well known to practical bee-keepers. This term has been used by the old masters, and very fitly describes the condition of the bees when they make preparations for swarming. These remarks are not intended for old bee-keepers like yourself, friend Root, but for the many beginners who read these pages. When the bees have the swarming-fever, they have no rest till they succeed. We have divided a colony into three artificial swarms while they were making preparations for swarming, and each of these swarms sent forth another swarm. It is this excitement which makes all attempts at prevention so futile on the part of the bee-keeper, unless the weather becomes unfavorable. But when the colony has swarmed, this excitement promptly goes down unless they are still crowded and ill at ease, and for that reason the returning of the swarm is more likely to be successful, especially if the apiarist takes pains to give more room, more ventilation, and more shade, at this time. This rule is not infallible, but it is the best we have ever found in these circumstances.

Hamilton, Ill., June 20. DADANT & SON.

MORE CYCLOPEAN BEES.

MILLIPEDS, ETC.

Mr. G. A. Cussy, of Hilbert, Wis., sends me six one-eyed worker-bees. He rightly says, "They seem to me to be curiosities. Are such common? What is the cause? Please answer in GLEANINGS."

These bees are entirely like the ones received a few days since from N. Staininger, of Tipton, Iowa, and of which I wrote as follows in the *A. B. J.*: "A cyclopean bee. That does not mean a giant bee, nor even one that is extra large, but one with only one eye. The bee is in nowise peculiar, except in the one eye and the absence of ocelli, or simple eyes." These bees received to-day are like that one. They have one very hairy eye, exactly in front, and high up on the head. Back of the eye is the vertex, or upper part of the epicranium, which is about as wide as the eye, and also very hairy. The bees are well marked Italians, and I can see no deformity except the one named. They are curious monstrosities, and I should like to know whether all are from one hive, and whether they are good honey-gatherers. I presume

some peculiarity of the queen results in this deformity. It would be interesting to raise queens from this queen, and see if her bees are the same. It might be possible to breed a race of one-eyed bees. I presume they would be no better, but, like five-toed chickens, they would be curious, and, if as good for business, would find a ready sale, if only for curiosity's sake.

Ag'l College, Mich., June 13. A. J. Cook.

[Friend Cook, if you had only one or even two of the bees described, it would be nothing more strange than the monstrosities we meet every little while. But it seems to me strange that there should be a whole half-dozen, and these all alike; and, besides, you have several bees entirely alike, from two different individuals, widely separated from each other. This seems to me something very strange, and it is unlike any thing in the way of monstrosities that has ever come under my observation.]

CLOSE OR WIDE SPACING OF BROOD-FRAMES.

THE NATURAL SPACING OF COMBS; UNEVENNESS OF COMB SURFACE.

After all the discussions on this subject, it seems not to be exhausted yet. The Keokuk convention had to talk it over, and still some things were, in my opinion, left untouched, or, at least, unfinished, that have an important bearing upon the matter. I judge by the report of proceedings, for I was not there. One important item was brought to light; namely, that in nature the spacing of combs is irregular, and that the closest spacing is in the center—in the brood-nest, the distance apart increasing with the distance from the brood-nest. That is just as I want it. An inch and three-eighths, it seems, is the natural spacing of brood-combs. I settled upon that as the proper spacing several years ago. If we are to have a brood-chamber for brood alone in the summer season, it would seem that $1\frac{1}{8}$ is right, according to nature.

If expedient it may be a good thing to space the frames further apart for wintering, especially if wintered out of doors; but push them closer together in the spring. Mr. Clarke does not believe in crowding the frames together at any time. If he told why not, it does not appear in the proceedings. I do believe in it, and I will tell you why. Whenever the brood-chamber becomes crowded with brood and honey, as is sure to be the case when honey is coming in rapidly, as far as the frames are filled with honey there you will find but a bare bee-space between the combs. Bees never seal honey except in times of great dearth, and leave $\frac{3}{8}$ or $\frac{1}{2}$ inch space. And since nature is satisfied with $\frac{3}{8}$ of an inch between brood-combs, why not put them that close together? It is claimed that bees will fill the frames more with brood and less with honey if thus closely spaced. While I think that it has that tendency I am not certain that close spacing *always* has that effect. But I am certain that the honey lost by lengthening and filling the cells might be profitably saved for surplus receptacles.

Frames spaced $1\frac{1}{8}$ in. apart are generally no more easily manipulated than those closer together. True, there is more room between the partitions filled with brood. But unevenness of comb surface is one of the greatest hindrances to the easy and rapid manipulation of frames. Where combs are thick this unevenness is all the greater, and makes the interchanging of frames all the more difficult.

When inserting empty combs or hiving swarms on them I always shave them down even and thin, and space them closely for that reason. And, by the way, nothing promotes the building of uneven comb surfaces more than the interchanging of frames, and nothing better counteracts this tendency than close spacing. Now, perhaps some one rises here to say that nothing also so promotes the bridging of combs. I say, not a bit more than when placed $1\frac{1}{2}$ in. apart.

When hiving on frames of foundation I would not place the frames further apart than $1\frac{3}{8}$ inches. Further than that will give us thicker and less even combs. I generally hive on empty frames with starters, and in that case $1\frac{1}{4}$ in. is better. The combs will be less wavy, and less drone comb will be built.

PREMIUMS ON CANDIED HONEY.

Why should not fair associations offer premiums on candied honey—or, more properly, perhaps, why should not bee-keepers take the matter in hand and prevail upon them to do so? We have been for years telling one another to teach folks that the candying of honey is the best test of purity. Yes, and we have been trying to teach them, too, but still many do not know it or will not believe it. The work of education is incomplete. Let us go on in the work we have been doing, but let us not stop there. What better way to educate the public than by a good fair-exhibit? That is what fairs are for. Stockmen, poultrymen, inventors, manufacturers, horticulturists, bee-keepers—all look upon a fair as a place to make competitive exhibits of their wares—to advertise, to educate the people; to show them what they have to offer; to present the claims and test the qualities of their products. And fair associations look to stockmen, etc., to present their interests before them as well as at the fairs. Bee-keepers must do this or their claims will not be duly recognized. We bee-keepers have, of course, urged the claims of our industry more or less, but we have been derelict concerning the matter I mention. Let us see to it that no apiarian exhibit nor premium-list is complete in which candied honey does not occupy a prominent place.

GEO. F. ROBBINS.

Mechanicsburg, Ill.

CLOSED-END FRAMES.

NOT PRACTICAL IN A CLOSE-FITTING BOX.

I have been very much interested in the discussions in GLEANINGS regarding closed-end frames, but quite a number of things are not very plain to me. First, I think the closed-end, as Elwood and Captain Hetherington use it, is a long way ahead of either hanging or Hoffman frames; but when we come to use it in a hive-body of limited capacity, do we not lose some of its most valuable features? If we have no case we can get the frames apart a great deal faster and easier; and then another reason is, that, with a strong colony in the month of May, eight frames are hardly sufficient. Every year I have been obliged to give more room above or take away brood, and this I do not like to do, for it weakens the colony when the honey-flow comes; still, if I do not they are sure to swarm when the first honey comes from apple-blossoms. Would it not be better to have a hive in which you can use from ten to twelve frames, and then remove all but your regular number at the beginning of the honey-flow, giving them to weaker colonies? Now, why do you have such a wretched-looking cover or cap on the Quinby hive? Why

not use simply a crate and dovetailed cover, the same as any hive?

We are having the worst drouth we have had in 30 years—no rain to speak of since April 15. Every thing is all burned up. We do not expect any honey from white clover, as there is very little left. It is very discouraging. Prospects never were better for a large yield until the drouth came.

I wish you could see my strawberries. They were set May 1st, right in the dry weather; but they were strong plants, and came from M. Crawford. I put on coarse manure at the rate of 80 loads (all two large horses could draw) per acre. It makes a first-class mulch, and all the plants on such ground are growing nicely in spite of the dry weather, while a few that I tried on ground without manure all died.

LESTER JUDSON.

East Sidney, N. Y., June 15.

[You are right. We have come to the conclusion that a closed-end frame in a tight-fitting or closely fitting case or hive is not a practical success, and so we are going to take that frame out of our price list. They may answer for a shallow frame like the Heddon, but will hardly do in a deep one. We do not make the Quinby hive. You will have to talk to those who use it, in regard to the cover.] E. R.

[A mulch of coarse manure is certainly a splendid thing, not only for strawberries, but for currants, raspberries, and blackberries. Where you can get it for a dollar a load or less, I believe it is the best and cheapest way to manage these fruits. If the weeds come up through the manure they must be pulled out as fast as they make their appearance.] A. I. R.

GETTING DILATORY AND BAD MEN TO PAY UP.

WHAT OUR BEE-JOURNALS CAN DO IN THE MATTER.

The kind word below suggests the title to this article:

Friend Root:—I received to-day a letter from—, with remittance to balance account. Bankers and attorneys could do nothing with him; but a word from you brought him to account. If you are not a popular man, there never was one. Inclosed find a dollar for your trouble. SETH WINQUIST.

Russellville, Oregon, June 4.

My good friend W., we are very glad indeed that we were able to assist you in getting your pay; but we wish you and all others to distinctly understand that we are not in the *business* of collecting bad debts—at least, we do not take *pay* for what collecting we do, therefore we place the \$1.00 to your credit, thanking you all the same. I may explain to our readers, that the man alluded to ordered several dollars' worth of the Oregon Everbearing strawberry-plants, but he would neither pay for them nor make any reply. We wrote him, and finally succeeded in getting an answer. What do you suppose his excuse was for not paying for the goods he ordered? As a fair sample of the way in which people try to excuse themselves under similar circumstances, we give that part of it here, of course omitting the name:

Mr. Root:—After receiving the plants I made up my mind that they were either the old Mexican Everbearing renamed, or seedlings from it. I now think them the Mexican renamed. If you can find any party who has tried them, and will give you one good point in their favor, I will submit.

Now, even though it be true that the Everbearing strawberry is of little use or no use here in Ohio, our friend certainly did *not* know such

to be the case when he received the plants, any more than when he ordered them. When we order new and untried things, and receive them in good order, of course we should pay the bill. If the amount we invest is considerable, and the goods prove a failure, it were no more than fair to ask the introducer for a rebate. If he grants it, well and good; if not, well and good. Very likely our bee-journals may accomplish many things that bankers and attorneys can not do; for if a man has a spark of honor left, he will keep his name out of the papers. If friend W. were to see the letters we frequently get, from those whom we have succeeded in bringing to time, he would decide that we are, at least with some people, most decidedly *unpopular*.

FRIEND TERRY GIVES US A LITTLE SERMON.

HE ALSO TELLS US WHERE TO BUY OUR PLANTS.

My Dear Mr. Root:—I want to say a little more about the souls of great corporations vs. those of individuals. I suppose most bee-keepers have homes, and are interested in making their grounds beautiful. So far as I have noticed, they are more interested in this direction than we common farmers. You will remember that, last fall, a landscape gardener wanted to fix up your grounds and mine; also that we both decided to do the work for ourselves. We had the general outline and foundation laid, with a few beautiful evergreens, shrubs, trees, vines, etc., that we had scrimped ourselves to buy, years back when money was scarce. Last year we felt that we were in shape financially to spend quite a little in beautifying our home surroundings. We could afford to hire more help, if necessary, to take care of things. We all love flowers and shrubs and climbing vines, however, and are willing to work a little extra to take good care of them. It isn't work, though, but recreation.

Well, instead of hiring our horticultural friend at a large price to arrange things for us, and furnish them, and set them out, we spent some days at odd times in studying over where flower-beds would look best, and where shrubs, and what would be best for this position and what for that. Then I drew a rough plan of the grounds, with the beds, etc., located, and the height of plants or shrubs that we should prefer in each place—that is, the height when they had attained their growth. That was as far as we could go, certainly, as it was hard to decide on every thing from catalogue descriptions. With this plan I went to a large nursery, and at the office they kindly placed a pleasant young man at my disposal, who told me all about every tree, shrub, or plant, and advised about which would do best or look best in certain locations. In half a day we picked out 171 shrubs, plants, and bulbs, and I learned briefly any thing that it was necessary to know about setting them out, and after-culture. While picking out the plants the price was never asked of a single thing. I wanted the best that I could get, and was willing to pay for it. But when I went to the office with the list, and they handed me the bill, I was greatly surprised. It was for \$21.30 only, and in the list were four grafted rhododendrons, and the same number of azaleas, which are high-priced plants. Not one word was said about price. They charged me regular rates, that any one buying as largely could get, and would get without the asking. "But," you ask, "have you forgotten the text you started out with?" Not at all. I have just got around to it. While I was in that

office a woman came in, an agent, not employed by the firm, but one who buys and sells, or, rather, sells and then buys. She had just got her order filled, and it was somewhat larger than mine. Had she paid her bill and kept her own counsel, the cloven foot would have remained hidden. But she had been figuring up what she was to receive for the stuff, and, I was going to say, woman-like, she couldn't resist the temptation to show how smart she was, and so she held her memorandum-book over to the book-keeper who was waiting on her, and said, "There is what that bill of goods brings me." It was about \$127.

He said: "I congratulate you, madam;" and, being a Christian gentleman, as I should judge, I do not see how he kept from saying, "But how about the people who have trusted you, and whom you are cheating so outrageously?" After this woman had gone out (I can not call her a lady, although she was well dressed), a member of the firm said to me, "Those cost her just about the \$27. Why will people pay such prices instead of dealing directly with the nurseries?" Now, which soul looks the whiter—that of this great and wealthy corporation, that employs an army of men, and by fair dealing and doing a great business on a small margin of profit has grown to vast proportions, or that of this individual, quite poor, perhaps, who was taking a mean advantage of the ignorance of others? I am so sorry it was a woman! But I am reporting facts.

Now a more pleasant theme. You will remember our landscape gardener (a *man* this time, not a woman) excused himself partly for the exorbitant price put on his work, by saying that many of the plants would die, and have to be replaced. Well, with careless treatment I presume they would. But I have to report that every one of the 171 we set out, green at the business as we were, is growing nicely. This shows again that the great corporation had a soul. The plants came in perfect condition. I will tell you just what we did to insure their growing. Where a shrub was to be set we cut a circular hole a foot deep and four feet across, in the turf, and drew away the dirt and drew back choice soil from the richest part of our clover-field that we were just about to plow for potatoes. With a sharp spade we shaved off the clover-plants and took the soil with clover-roots in it. We took out a strip, say two feet wide, and then left two feet so as not to spoil the soil in the field. The dirt brought from the lawns was put into the holes in the clover-lot. Flower-beds were dug out, and filled with clover soil in the same way. We did this early in the spring when we were not busy. Then, after carefully setting, we have kept the surface constantly mellow by using a potato-hook, such as was formerly used for digging potatoes. Wife and I delight to do this. No manure was used. My! how things do grow with such care! Of course, out of this long list there will be some things we shall discard after trial. We will keep what pleases us best and does best on our soil. A bed of *Helianthus multiflorus plenus* is a delight to me just now, from their luxuriant growth. I look at them more times a day than I do the potato-field, and that is saying a good deal. By the way, friend Root, have you any rhododendrons? If not, you must get a few. I never in my life saw flowers that seemed so perfectly exquisite as our pink and crimson and lilac colored rhododendrons. The girls thought every thing of the white one; but they did not seem so perfectly lovely to me as the other colors. We tried to use, so far as possible, shrubs and hardy perennial plants to ornament our grounds, so as to save the expense and trouble of fussing with

many annuals. We should like them too; but we are farmers, and can not spare a great deal of time for such work, and want to make all that is possible out of what time we can put in. □ Hudson, O., June 20. T. B. TERRY.

[Friend Terry, I want to say, "May the Lord be praised for putting it into your heart to write the above at just this crisis." The sad part of the story is what you tell us about that woman who is agent. But it only illustrates the way in which the greater part of agents, both men and women, get their pay for traveling from house to house, and taking orders. Perhaps this woman, if she could see this article, might excuse herself on the ground of "traveling expenses." If she delivers her plants she must make two trips to every home. But even if this be true, I think it is a tremendous argument in favor of going to the nearest nursery yourself and picking out what you want. A very good friend of mine—in fact, it is none other than the father of W. J. Green, of the Ohio Experiment Station, Columbus—has a beautiful nursery right in our own county; and I have heard him lament, again and again, that people living comparatively near his nursery would persist in paying traveling agents three or four times the proper price for certain things, and then get poor stock besides. Worse still, they are persuaded into buying something that is totally unfit for their locality; whereas, if they had gone to the nurseryman he could have given them intelligent advice in the matter, and would not, under any circumstances, have urged them to take something which he knew would disappoint them. You may say, all nursery men are not like those mentioned by Mr. Terry. My friend, I believe that those who build up a great business are, as a rule, conscientious and honest. The real cheats are those who travel about without name, home, or reputation.

I felt like smiling when you told about going to the clover-field for good soil. I have thought of doing the same thing, but I could hardly bear to spoil my nice fields by "robbing Peter to pay Paul," if that is a fair illustration. We make our stuff grow by mulching the ground with manure, or by digging manure into the ground; and this process will in time make nice soil for any kind of plants, if you work in manure enough.

The first rhododendron that I ever saw came from one of the great nurseries. It was shipped in full bloom; and when I unpacked it and stood it up I could think of nothing but the king as he stood in mute astonishment when Cleopatra was unrolled and placed on her feet before him. Our folks here have good reason to know, I think, about rhododendrons and azaleas. Some years ago, when I saw a beautiful plant in full bloom in the window of a florist in Utica, N. Y., right in the depth of winter, I fell in love with it to such an extent that I carried it to our bee-keepers' convention, where it graced the table right by the president, until the close of the meeting. Then I brought it all the way home, and displayed it triumphantly in the office, just before noon service; and then we kept it in our home for more than two weeks, where it was a thing of beauty and a joy for—a good many days. Advising people to go to plant-dealers near their own homes would cut off our own business in sending plants by mail and express, I am aware. But, never mind if it does. If somebody near your home makes a business of raising plants, by all means go and get them of your neighbor, and thus encourage home industry; and finally, dear friends, please remember that all great firms and corporations have *probably* earned their money by honest indus-

try rather than by fraud and cheating; for if they were frauds and cheats they *could not, in the nature of things*, have built up a great business.]

NUBBINS.

A GOOD REPORT FROM BEE-ESCAPES.

The bee-escapes are genuine seed corn, filled to the tip. They succeed with us, and are regarded as invaluable, both in extracting and removing comb honey. Three cheers for Mr. Reese.

The nubbin is ahead of the "stray straw." We make Doolittle's cups work. Come up, doctor, and learn how. We will feed you on strawberry shortcake.

It is too bad that that little "stray straw" of an editorial "we" rests so ill in the doctor's intellectual stomach. Of course, all good customs are based on some reason. If I say "we" it is a general expression, and the sentence or thought containing it represents the paper. I say "I," and it means me—my own personal property. How better make this important distinction?

ANALYZING SAMPLES OF HONEY TAKEN FROM OUR MARKETS, BY OUR BEST GOVERNMENT CHEMISTS.

The Chemical Department at Washington is having 50 samples of honey secured on the markets analyzed by several of our best chemists—Prof. Scovell, of Kentucky, among the others. This is wise and good. Whether this will be satisfactory remains to be seen. If not, it all helps. Prof. Scovell tells me that he finds dextrose in several, and he does not suppose dextrose could ever be found in genuine honey. This is a full ear, no nubbin. I hope this result will give us many. I look eagerly for the full report.

A. J. Cook.

Agricultural College, Mich.

WHY THE BEES MAKE CELLS HEXAGONAL.

A DAY-DREAM.

I had read a good deal about the reasons why hexagonal cells are best, and had seen that difficult mathematical demonstrations had been used in connection therewith. I wondered whether all that was necessary, and thought of it off and on for a long time. One hot day I sat by a hive in which a swarm had just been housed, and the steady humming of the bees all around me gave me a sort of drowsy feeling. I said to myself, "How do those bees know how to start cells? They have worked more or less in them, and perhaps done some repairing, but they have no knowledge or experience at actually starting cells, for all the cells in the old hive were started long before they were born."

Just then—was it imagination, dreaming, or what?—I heard one of the bees in the hive saying, "There, we've quite a lot of wax plastered around; let's put it in shape."

"What shape?" said a pert young miss.

"What shape should it be, but the shape cells always are—six-sided?" was the reply.

"Oh! that's so old-fashioned," said the young one: "I'm tired of those everlasting six sides."

"Say!" spoke up a very eager young voice, let's make them five-sided. There's very little less in five than six, and it will be quite stylish to have something different from our neighbors."

"Something different! I guess you would have something different," said a bee with ragged wings. "And you'd have something differ-

ent in the way of work, for it would take ten times as much wax, and we wouldn't get our combs built all summer, and basswood coming on, they say, in a week or two. Oh, yes! It *would* be something different."

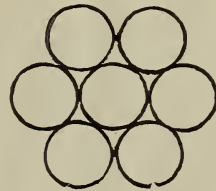
"No," said another bee with an experienced look. "leave that sort of thing for those human butterflies who are never happy unless they can put their hair up in a different way every day"—here she gave a little push at her back hair to see if it was all smooth and straight. "We folks have no time for any such foolishness. We must take the plan that will need the least wax and take up the least room."

"Yes, business is business," said another; "but is there no chance for improvement? This is an age of progress, and it isn't clear to my mind that something else may not be just as economical as six sides. You know we heard of some bees up in Canada making cells with four sides. Why should they make them so if they didn't think it would be an improvement?"

"Just because they're like you, old Cranky," snapped out a nervous-looking bee.

But the bee with the experienced look appeared very thoughtful, and, in a half-meditative manner, said, as if slowly talking to herself, "I'm not sure but I know a plan whereby we may find out a better way if there is one, or else confirm the opinion that six sides is best."

Then rousing herself, as if from a reverie, she said, in a very business-like manner, "Here, some of you youngsters, roll up a number of balls of wax, perfectly round." And as they went to work on the balls which they very soon had finished, she went on to explain, "You see, the cells are to accommodate the babies, which are round—that is, I don't mean they are round like a ball, but round like a straw, and then round like a ball at each end. Now, if we can find how to place together a number of wax balls so as to have them the closest together possible—that is, with the least waste space between them—then we'll know just how to make our cells."



Then she placed one of the balls on the floor of the hive and said, "Now I want to put this ball just as close to the next one as possible. You see that it makes no difference which side I put it; so long as it touches, they are the same distance apart from center to center; for every point of the surface is at the same distance from the center. So we'll put it at this side. Now I want to put a third ball as near as I can to these two. As we found before, we can not get two balls any nearer together than to touch; and if this ball touches the others, that's as near as they can be got together. So we'll place it here."

A low hum of approval ran through the throng, and the one they called Cranky looked somewhat fidgety.

Then old experience continued, "Now for a fourth one. Just as before, we can't do any better than to have it touch two of the balls, for, you see, put it where I will, I can't get it to touch more than two balls, so I'll put it here, touching the first and third."

At this point Cranky interrupted, saying, with eagerness, "But, if you please, it's different with four than with three. Can't you get four closer together by putting them in a square, that is, four together? You see, it gives only one space between, instead of two, as you have it."

"Yes, but the one space is bigger than the other two put together, smarty," said the pert miss, and she fanned Cranky with her left wing in a rather tantalizing manner.

"That's easily said," said Experience; "but how do you know it is so? Can you prove it?"

"No, but it looks so," said the pert miss, somewhat crestfallen.

"Looks are often very deceiving," was the reply. "Let us see if we can't determine which four take up the most room. You see that the two measure just the same from right to left, for what the first ones gain at one end by being slanting, they lose at the other. Measuring the other way, you will see plainly that they measure the least; so, placing them square doesn't gain anything, but loses."

"Of course," said the pert miss, looking very much reassured.

"I think, then," continued her elder sister, "that we may consider it settled that there is no better way, and we may continue indefinitely adding to the number, only taking care that, as each one is added, it shall touch two adjacent balls. The next question is, How shall this space between the balls, or the cells, if you please, be filled up?"

"Oh! just fill it all up with wax, and leave the cells round. That will be so sweet," said the same giddy miss that wanted five-sided cells.

"Yes, it would be wondrously sweet to make all that extra wax," said another.

"Well, then," said the giddy miss, "just make the cells round, and leave the spaces filled with air."

"That," said another, "would still take more wax than a single wall; and, besides, think what a comfortable hiding-place that space would be for young worms."

"You are leaving out of account something still more important," said Experience. "A perfectly round cell, entirely filled up with the baby-bee, would have no place left for air to get in for it to breathe, unless it should be trained to breathe like a human baby, through its mouth, and you know that all well-regulated baby-bees have their breathing-places on their sides. To get at what will take the least wax, just start at the middle point of the space, and build a straight wall to the three points where the balls touch. In other words, make a line tangent to the two balls at their point of contact."

"Why, that brings us right back to the hateful old six-sided cells," said the giddy miss.

"Exactly so," said Experience. "We now have remaining the problem how best to make the septum. Just fasten together in a flat slab eight or ten balls, and then a second slab of them in the same way. Now place one slab on the other, so they will sit, each ball exactly on the other. You see that you could not make the two take up any more room unless you raise the upper slab so it doesn't touch the lower slab at all. Now push the upper slab along a little, and you see it slides down of its own accord till each of the upper balls rests exactly over the center of the space below. It is evident that there can be no way in which it can be placed to sink any lower, or, in other words, to take up less room. We are confronted again with much the same condition as we had before, a condition in which it will take a great deal of wax to fill in between; and it is clear

that there is no better way to meet the difficulty than to do much as we did before, and make a little wall tangent to the two balls at each point where the two come in contact. You see that makes three such walls at the bottom of each cell, for each ball touches three of the balls in the other slab."

"Just then the queen came around and said, "What are you about there any way? Do you want me to cover the bottom-board with eggs while you're fooling there?"

"That's so; we are fooling, and that's a fact," said one of the workers who had been listening to the explanations very attentively. "Come on, and let's make up for lost time. Say, girls, this is a better hive than the old one. Do you see the end-bars fit close together, and you remember how the cold air came in between the end-bars last winter? What's that old fool dreaming about, sitting out there by the hive, anyhow?"

C. C. MILLER.

Marengo, Ill., June, 1891.

A VISIT TO L. E. MERCER.

CALIFORNIA YIELDS.

A short time since, after a ride of 37 miles, I found myself at Castac, this State, where the Santa Clara River begins flowing on through the famous valley of like name, in Ventura County, to the ocean. On alighting from the train I found Mr. L. E. Mercer, of Ventura, awaiting me.

A drive of four miles up Castac Valley, then half a mile up one of the numerous picturesque canyons, brought us to Mr. Mercer's mountain home and location of his home apiary, the foundation of which at one time composed the greater portion of Mr. Wilkins' famous Sespe apiary, which Mr. Mercer bought, moving it to its present location. As a matter of interest to your readers, I will give a few details of California bee-keeping, with Mr. Mercer as the subject.

Mr. L. E. Mercer's bee-keeping experience began in 1871, at Orion, Ill. He came here in 1883, locating at Ventura. The whole family, composed of Mr. and Mrs. Mercer, and four energetic sons, are all practical bee-keepers (the new daughter-in-law being the only exception), as the following record of the past seven years is conclusive.

Product of 1884.....	40,000 lbs.
" " 1885.....	A failure
" " 1886.....	24,000 "
" " 1887.....	A failure
" " 1888.....	30,000 "
" " 1889.....	42,000 "
" " 1890.....	68,000 "

The greater portion was extracted honey. Last year's report includes 14,000 lbs. of comb honey. He has received an average price of 5 cents for extracted. He prefers the L. frame for extracting; for comb honey, a 16 $\frac{1}{2}$ x6 $\frac{1}{2}$ frame, suitable for the T super. He has tested the Hoffman and many others, but considers the ordinary hanging frame, for this section, preferable to any other. His honey-house for extracting is a model of ingenuity, and is so arranged that the cases containing the combs are run in on rollers to the uncapping-can, adjoining which is a large six-frame reversible extractor, to the left of which is another set of rollers which carry the combs out again as fast as they are taken from the extractor. The honey from the latter runs into a three-inch pipe, about 200 feet long, emptying into a twelve-ton receiving-tank; besides which he has several of the following capacity: Two of 7 tons each; three of 3 tons each; one of 2 tons,

and two of 1 ton each. Capacity for storing, 39 tons. He has used 800 pounds of foundation thus far this season. He manufactures his brood foundation on a Given press, and thin foundation on A. I. Root's six-inch mill. He supplies the greater portion of Ventura Co. with foundation. He thinks wiring frames unnecessary labor; and as evidence of this he stated he had 800 combs on foundation drawn out during last season's honey-flow that were not wired, and only two broke down, extracting twice from the 800. In former years he was a firm believer in wiring, using the bent wire nail ten years ago.

His home apiary contains 550 colonies; first out-apiary, 300 colonies; second out-apiary, 200 colonies; son Edward's, 200.

Within a radius of five miles of the home apiary there are nearly 5000 colonies, so one can surmise that the hills and mountains must supply some forage for such an army. The fact is, the greater portion of that mountainous section is adapted for nothing else; and when we consider the amount of nectar distilled by dame Nature in this Eden of the honey-bee, it is not surprising to hear of the enormous yields of honey in what is yet the infancy of the honey industry of California. There is much to be said of bee-keeping on this coast, but time and space forbid.

In 1893 California's apicultural display at the World's Fair will rank second to none; and, with this end in view, our prospective representatives are now being considered. Mr. Mercer has the indorsement of a large circle of bee-keepers; and the indorsement of his own county adds testimony to his worth; so I voice the sentiment of not a few for Mr. L. E. Mercer as California's representative of the honey industry at the World's Fair in 1893.

GEO. W. BRODBECK.

Los Angeles, Cal., June 17.

[Friend B., we are greatly obliged to you indeed for the bird's-eye view you give of friend Mercer's work during the past six or eight years. I shall ever have cause to remember him and his good wife—in fact, all the family—for the pains they took in giving me glimpses of the thousand and one wonderful things connected with those mountain bee-ranches and wild canyons. The very mention of them makes my heart thrill again. I second your suggestion, that friend Mercer be invited to represent California in 1893.]

A. I. R.

CHEAP HONEY.

LOWER COST OF PRODUCTION.

One of your correspondents, Mr. A. F. Brown, page 459, makes a point which is indeed a "gem," in that it carries an immense amount of weight with it. He says, "Give me a hive having frames at fixed distances, with a plain zinc queen-excluder, these escapes (bee-escapes), and a good reversible extractor, and I will show you how to produce honey at less than half the cost nowadays." He probably means at half the cost it could be produced eight or ten years ago, and he is undoubtedly correct. I have noticed in all the bee-papers, from time to time, some one always had some scheme elaborately written, which, if followed up, would increase the price of honey (?). Of course, if producers of any commodity can keep the price up on an article, it is to their interest to do it; but, on the other hand, how can it be done if it is to be sold readily? For instance, put nice comb honey up to 25 cents a pound, and I warrant you will find it a slow seller; but put it down to 15 or 16 cents, and it will move right speedily. Why? Because it is in reach

of everybody. How can a laboring man, earning, say, nine or ten dollars per week, afford to eat honey at 25 cents a pound, or even at 20? With him it must ever remain the sternest of luxuries. They tell us there is about 12 pounds of honey in a gallon; and 12 times 20 cents is \$2.40. How does that compare with the price of maple syrup?

Mr. Brown is correct in his idea that bee-keepers should aim to produce their honey cheaper. It can be done, or, rather, it *should* be done. Look over the prices of hives in A. I. Root's price list, or any other house that does a large business, and note how much cheaper every thing is in the hive line to what it was six or seven years ago. Those who have price lists that old, just look them over; then get the latest edition, and compare prices. Yes, sir, Mr. Bee-keeper, you have got to set your wits to work, and produce your honey cheaper; and why not? The bees charge you nothing for gathering. All it costs is to produce, or, in other words, to *assist* the bees in getting it into marketable shape. Now, it must become bee-keepers (if they wish to keep up in the race of human progress) to keep their eyes open, to grasp every thing that practically suggests a short cut over former methods. Your grocer will be much more willing to handle your honey at as low a price as it is possible to name than he will to have you "tuck" it on; for high prices on any thing greatly hinder its rapid conversion into money, and that is one thing which will make honey a much-used commodity, because all dealers, from producer to commission man, jobber, and retailer, delight in a quick-selling article at a fair profit.

Again, the grocers in your own town, if it is a town of any size, can sell, without doubt, twice the amount they do if it is properly exposed. Pile up a nice imposing lot so it will look large and nice; put up the price on a tag; never mind about a glass case. Leave it entirely open. Never mind the dust; take ordinary care of it, and you will sell the whole pile out before the dust has a chance to settle on it.

Olean, N. Y., June 17.

GEO. SHIBER.

[While we should, by every means possible, cheapen the cost of *production*, we ought not to be in too great haste to reduce its selling price. If comb honey is held at, for example, 25 cents per pound at retail, and it sells slowly if at all, it is evident the price is too high. Of course, honey will sell faster if lower in price; but—how much faster? Competition, and the flooding of certain markets, will bring down the *selling* price of honey fast enough, and I think we as bee-keepers should be cautious about *helping* the price down.]

E. R.

COBS.

Friend R.:—I am not so arrogant as to try to pass the following as nubbins—only as cobs of the nubbins; and if you should find a kernel here or there, you are at liberty to pick them out.

The shallow half-story frame for extracting has the advantage of being uncapped easier, containing more ripe honey; admits of being handled in supers to better advantage; bees will enter the half-story quicker. My bees ripen honey better than I can possibly do it. I extract after sealing.

The season of 1890 was exceedingly poor for this location; the average number of pounds stored was 18.

One pure Italian colony stored 90 lbs. in sections—the first time in 16 years that an Italian has outstripped my blacks. The above colony had been formed in early spring, of three

dwindled stocks, all three not making more than half a good colony.

The escape is a great help, both for raising comb and extracted honey. All the different styles of escapes have worked well with me, on an average.

K. P. Kidder, in his "Secrets of Bee-keeping," 1868, says that Langstroth did not invent the movable frame—only made it more movable by adding bee-spaces between and around the frames. We have given Mr. L. the praise for years for having given us the readily movable frame; but now we are going back, doing away with bee-spaces, etc. Isn't it queer?

Doolittle says: "Size of queen-cell indicates quality of queen." Dzierzon and Vogel agree that the size of the cell has nothing to do with the quality of the queen. They assert, that the smallest cell allows the development of a large queen—amount of proper food being the only governing factor.

In the following I may disagree with many of our authorities; but I find ready sale for dark honey in the comb; no sale for dark extracted, and I find it advisable to run my bees for extracted honey in the early part of the season. After clover and basswood are past, I use section cases. By following the method above I gain two points: 1. I harvest a salable article; 2. I get the brood-chamber well stocked up with dark honey, which is fully equal to basswood and clover for winter food if sealed. I have never been able to get a sufficient amount of honey for winter use stored in the brood-combs when running for extracted honey, except by feeding after the harvest, or by taking the supers off before the close.

Feeding for winter stores, I dislike. I do not want to meddle with my bees after the honey season is over. Give me chaff hives, or one packed with almost any material—moss, planer shavings, sawdust, cork, hair, etc., for outdoor wintering; light single-walled hives for cellar wintering; closed-end frames for out-apiaries. Naples, N. Y., June 22. F. GREINER.

HONEY-DEW AND THE APHIDES IN 1891.

SOMETHING FROM PROF. COOK.

Prof. A. J. Cook:—The trees here are covered with a sort of plant-louse, a sample of which I send you by mail to-day. The bees are simply swarming on it. Is it the aphid that gives the so-called honey-dew? The honey is any thing but nice. Would it do to extract and feed to bees for winter? RANDOLPH CUYLER.

Alexandria, Va., June 20.

[Prof. Cook replies:]

The insects sent by Mr. C. were so broken that I could make out only by their wings that they were plant-lice, or aphides. These insects are very common this year, the country over. I have lived in this place twenty-five years, and I never saw so many before. Plum-trees, cherry-trees, linden-trees, and many others, are literally covered with these little pests. On the plum they first caused the leaves to roll, and now they have migrated to the stems of the fruit, which are often invisible, so fairly shingled are they with these green plant-lice. Not only in Virginia, but here and elsewhere, the bees have secured much honey-dew from these aphides. Our plum, cherry, and other trees have been roaring with the hum of the bees for days. Now the evergreens, especially the arbor-vitæ and our oaks, are infested with a scale or bark louse. These are large, brown, and plump. These also secrete nectar, and are humming with the noise of bees, even before

four o'clock in the morning. The leaves are fairly coated with sugar secreted by the scale-lice. Of course, it is evident that, if this nectar gives strong rank honey, it is a calamity. We are going to test it often, and so know just the effect. We now have a great area of clover bloom, and I hope this will counteract the rank flavor that may come from the honey-dew. It behooves all to be most watchful this year, that they do not get a quantity of unsalable sweet mixed with their honey. I hope the season will have no such evil in store for us; but to be forewarned may be to be forearmed. Let us watch, so that, if the evil does come, we may make it the least possible. A. J. Cook. Agricultural College, Mich.

THE UNITED STATES HONEY-PRODUCERS' EXCHANGE.

A REPORT UP TO JUNE 22, 1891.

The season so far (in most localities) has been more favorable for bees than last year, and they are generally reported to be in much better condition. The per cent of increase averages 5 greater than last year at this time, although in a few States the season is reported to be two or three weeks later than usual. In most of the States the reports seem to indicate that the prospect still continues good for a fine crop of honey; and all that is lacking is the right weather for the secretion of nectar during the coming month.

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

1. What per cent more of good honey-gathering colonies are there in your section than last year at this date?
2. Per cent of increase up to date?
3. Per cent of an average crop of white honey gathered up to date?
4. How does this compare with last year, same date?

In column No. 2. under Qu. 1, the dash before a number indicates less than last year, 1890.

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

STATE.	Qu. 1.	Qu. 2	Qu. 3.	Question 4.
Alabama.....	-5	50	90	Very much better.
Arizona.....	10	5	25	About the same.
Arkansas.....	20	25	25	Some better.
California.....	10	15		Two to four weeks later.
Connecticut.....		15	2	About the same.
Colorado.....	-25	30	95	About double 1890 crop.
Idaho.....	50	60	100	Much better.
Iowa.....	-10	2		About the same.
Indiana.....	-5	10		About the same.
Indian Territory.....		10	5	Prospect rather better.
Illinois.....	-10	5	12	Season wet, backward.
Kansas.....	25	15	50	About the same.
Kentucky.....	15	60	75	Much better.
Louisiana.....	-60	5	2	Not as good.
Massachusetts.....	-50	10	15	Same, but fewer bees.
Maryland.....	15	20	50	Much better.
Michigan.....	-10	2		About the same.
Minnesota.....	-5			About the same.
Mississippi.....		10	15	Same, season later.
Missouri.....	5	12		About the same.
Nebraska.....	25	25		About the same.
Nevada.....	5	2		About the same.
New Hampshire.....	15	10	100	Much better.
New Jersey.....	10	20	5	About the same.
North Carolina.....	5	15	25	Little better.
Ohio.....	10	25	30	Much better.
Pennsylvania.....	-5	15	5	Little better.
Rhode Island.....	25	50	10	Much better.
South Carolina.....	30	60	100	Much better.
Tennessee.....	10	25	90	Much better.
Texas.....	25	50	25	Some better.
Vermont.....	-10	5		About the same.
Virginia.....	-15	10	25	Late; about the same.
West Virginia.....	10	22	40	Much better.
Washington.....	25	15	25	About the same.
Wisconsin.....	-15	3		Dry; compares well.

P. H. ELWOOD, Pres.

G. H. KNICKERBOCKER, Sec.

HONEY—PURE NECTAR.

SHALL THE BEE-KEEPERS' UNION PROSECUTE ADULTERATORS? GENERAL MANAGER NEWMAN SETS FORTH THE SITUATION.

As there has been considerable said of late in regard to the Bee-keepers' Union prosecuting adulterators of honey, we thought that we could do no better than to copy the article entire, from General Manager Newman, on the subject:

The last issue of the *Bee-keepers' Review* has "Adulteration of Honey" as its special topic. It is quite exhaustively treated. There are some things, however, which we wish to comment upon, and we will here give the gist of the arguments.

Byron Walker starts out by saying that "the Bee-keepers' Union ought to prosecute adulterators." On page 119 he adds: "What we need is a Bee-keepers' Union of at least 5000 members; then we can compel these corporations to respect the laws enacted for our protection."

This is a proposition upon which we must entirely disagree with Mr. Walker. The National Bee-keepers' Union was not created for such a purpose. It was constituted simply for "defense," and not to wage an aggressive warfare against adulteration, or any other moral or social evil!

Regarding on this subject, the editor of the *Review*, on page 128, says:

"As I understand, a change in the constitution of the Union would be necessary before money could be used for this purpose; but, if the Union could put an end to what adulteration there is, and what is of far more importance, convince the public of this accomplishment, I believe its usefulness would be increased a thousand fold."

Brother Hutchinson is quite right—a change in the constitution would be necessary before it could undertake any such superhuman task. More than that, it must also change its executive officer. The present General Manager could not consent to undertake any such impracticability.

While, perhaps, it should not be publicly admitted, it is nevertheless a fact, that there is no sure "method" by which the adulteration of honey can be detected."

Pure honey has very often been analyzed and pronounced adulterated by chemists in New Jersey, Ohio, Illinois, and other States; and even the United States chemist has blundered in many ways when endeavoring to enlighten the public on the matter of honey-adulteration. Samples which we know were genuine, have been branded as either "adulterated," or "probably adulterated"—simply because there is no reliable test for such analysis.

Honey varies so much in its component parts that no analysis of it can be reliable. That from the hill-sides varies in color from that in the valleys. Atmospheric conditions, soil, and climate, even change the color as well as the body, flavor, and ingredients.

In view of these facts, it would be a wild-goose chase to start the Union after adulterators—especially if there are as many as Byron Walker avers—several hundreds of retailers of such stuff in a city no larger than Detroit. The Union is in better business, and should never leave that in order to delve into the slums of abominable sophistications.

Let us build on the other wall. Produce honey of such fine flavor, put up in such admirable condition for market, and properly labeled with the producer's name and address, that a demand will be created for that honey, and the guarantee for purity shall be the name of the apiarist, and not "a trade-mark," or the indorsement of any society or periodical.

There are plenty of laws on the statute-books in Michigan and other States, and the local bee-keepers can attend to the matter of prosecution without the aid of the Union. Let them follow the example of Harmon Smith, at Ionia, Mich., as is shown on page 129 of the *Review*, in the following words:

"Upon learning that a can of adulterated honey had been sent to a grocer of his town, he went to him and said, 'The first pound of that stuff you sell, I'll prosecute you.' The 'stuff' went back to the mixer."

"There was no blow nor bluster—no publishing of the matter in the papers. It was a case of 'silent influence.'"

If such is done promptly, we shall soon hear no more about adulterated honey.

Prof. A. J. Cook very wisely remarks, on page 124:

"Thus let us spread the information that honey stamped with the name and locality of the producer is sure to be pure. Such knowledge will help, not hinder our sales."

"Again, if we have not laws against such adulteration and fraud—Michigan has a good law—let us have them. Let us see that any man who sells any product under a wrong name is rendering himself liable to fine and imprisonment. If he stamps his product 'glucose and honey,' or 'manufactured honey,' no one will be wronged, and he is welcome to his profits."

Then he adds these paragraphs, to the first of which we have previously made exceptions:

"Having a good law, let us set the law to work through the Union, to stop the nefarious business. We had a good chance in Detroit last winter. I would have the Union employ a good lawyer, and have the matter pushed to the bitter end. A few convictions would not only stop the frauds, but would educate the people to the truth that only pure honey could be sold as such."

"The Union, through its able manager, has done right royal service already. There is here a grand opportunity to win even brighter laurels, and to confer, as I believe, a greater benefit upon the bee-keeping industry."

That "trade-mark" foolishness gets a black eye from George K. Weller, on page 122 of the *Bee-keepers' Review*, in these words:

"The proposed 'trade-mark' remedy would only advertise the evil gratuitously; and unless a standard of excellence were agreed on, and every package examined by inspectors, the remedy would be worse than the disease."

"There is no way to prevent members of the trade-mark federation from 'glucosing' honey, if there is money in it, except through our statute laws, and it would be no aid in enforcing them. It would be a fine cover under which to dispose of inferior but pure honey, creating a suspicion of adulteration in all who ate it."—*American Bee Journal*.

CUTWORM MOTHS.

PROF. COOK MAKES US ACQUAINTED WITH THE PESTS.

Can you or Prof. Cook give in GLEANINGS the history of the cutworm, and how to destroy them? They have caused great damage in this section this spring. ALFRED SOPER.

Eau Claire, Wis., June 10.

[Prof. Cook replies:]

There are several species of cutworms which belong mostly to two genera of moths—*Agraxis* and *Hadena*. The moths are of sober color, fly wholly at night, and so are called night-fliers, or are said to belong to the family noctuidæ. These moths fly from July to September, and lay their eggs about grass-stems, strawberries, or other perennial plants. The eggs soon hatch; and the larvæ, which are usually dirty white, gray, or nearly black, feed on the plants. During the autumn they are so small that they do no conspicuous damage. The next May and June they are large and plump; and if the grass was plowed for corn or garden vegetables, like cabbages, tomatoes, etc., they often do alarming damage. I have tried several successful methods to withstand these enemies. Wrapping the stems of tomatoes and cabbages with sized paper, holding the same with earth at the bottom, is a success. Tin about trees and vines, keeps the caterpillars from crawling up in the night and eating out the buds. Planting turnips or other early vegetables often protects orchards. For field or garden we may trap the worms by using mullein or bunches of grass. If these are put about the field in bunches, the worms gather under

them, and may be gathered early each morning and destroyed. If the grass is thoroughly poisoned by use of London purple, we may not need to collect the worms; yet we are more sure if we gather and destroy them. I have known a large pailful of worms to be gathered in a few hours by use of such traps. This may seem like a severe task; but where cutworms are very abundant it often pays a great profit for the time spent, and saves labor and expense of replanting. I have known many to use this on a large scale, among whom are D. M. Ferry & Co., who have been more than pleased with the result. In case of a cornfield, the traps or grass bunches—small forkfuls—should be placed every two or three rods apart each way, just before the corn comes up. If these are examined each morning, the cutworms will be found beneath them, and are easily gathered and destroyed. We have used these traps this spring, and previously, with marked success, and so I can recommend them to Mr. Soper.

MYRIAPODS.

The insect sent me by W. P. Root is a millipede, or "thousand-legged worm." This is one of the lowest orders of myriapods. These are many-legged, cylindrical, harmless, vegetable-eating myriapods. They sometimes eat vegetables, and do much harm. We find them in considerable numbers under our cutworm grass traps. The millipeds never have 1000 legs, but they may have over 200. These species may be handled as safely as an angworm, though many people regard them with dread and serious alarm.

The flat myriapods have fewer legs, two instead of four to each joint, and only about sixty in all, and often many less than this. These are quick, carnivorous, and poisonous. Ours here are so small, however, that their bite is not serious. I never hesitate to pick them up, and have never been harmed. A. J. COOK.
Ag¹ College, Mich.

[Friend Cook, you just briefly touched on the one point that interests me most in the above. You admit that myriapods are poisonous; but in the next sentence you intimate that it is only when they bite *you*. Now, suppose you bite *them*—then how about it? We have heard many stories of people who ate a millipede that was curled up in fruit, say near the stem of a peach; and a good many have been frightened because a thousand-legged worm was found between the loose leaves of a head of cabbage. Well, if one of these worms should be cooked with cabbage, would it poison the people who ate it? I feel quite certain that you will say no. But so many have got this notion, we should like to have you tell us the truth about being poisoned in this way.]

DOOLITTLE'S METHOD OF QUEEN-REARING.

FRIEND NEBEL'S SUCCESS WITH IT.

Having been in the queen-breeding business for the past ten years, we have, during that time, tried all the methods which have been recommended for rearing queens, but have found by the "Doolittle method" we can raise better and finer queens than by any other method we have ever tried. Last year we raised and sold over 800 queens by this method. This season, from April 15th to June 1st we raised nearly 400 queen-cells. We do not use the wooden strips to fasten the artificial cell-cups to, but fasten from 12 to 18 cups to a frame of

comb, which is cut in two—that is, using only a half-comb, as shown on page 56 in Doolittle's work on queen-rearing. In this way we get from 10 to 16 large cells, which hatch larger queens than any we ever had to hatch from colonies that prepared them previous to swarming.

The plan of using an upper story with a queen-excluding honey-board between upper and lower stories is of valuable service for raising queens during the swarming season, and the upper story is also a good queen-cell nursery. We have sometimes from three to five lots of queen-cells in such a nursery. The bees take care of them the same as if they had no queen in the lower story. As these lots of cells are of different ages, we cut each lot of cells out on the 10th or 11th day. Considering all the good points which are gained by the above-named method of queen-rearing, we would not dispense with it for any other known method now in use. JNO. NEBEL & SON.

High Hill, Mo., June 4.

[We have been using an upper story of a strong colony for a queen-nursery, with considerable success. It is far ahead of the old lamp-nursery, in that the bees will take *partially* completed cells and finish them up. We just take frames of cells from good strong colonies with good queens, brush the bees off carefully, and set the whole in the upper story, queen-nursery above the queen-excluding zinc. In this we have cells in all stages of growth; and when we want cells we go to this upper story and cut out those that are, so to speak, "ripe." Doolittle's book is first-class.] E. R. R.

OFF FOR CALIFORNIA.

DR. MERCHANT REPORTS TWO CASES OF CALIFORNIA FEVER.

Mr. Editor:—Some weeks since I was represented in your columns as having a dangerous attack of bee-fever, which, I am happy to say, ran its normal course, reached its crisis, and, under the skillful hands of a trained nurse, terminated in convalescence. I now have the melancholy pleasure of reporting two cases of "California" fever, which have recently come under my observation. Although my case was considered critical by my friends, the prognosis of these two cases still remains in doubt.

A gentleman from York State, whose principal business seemed to be *rambling* around the country, chanced to be traveling this way, and fell in with Mr. Arthur C. Miller, a native and resident of these plantations. With them it was "hail fellow well met." Both being adepts in the science and art of bee culture, this subject, of course, engaged their attention from the start. Among the many knotty questions and projects discussed by them was the advantage of California as a honey-producing section, compared with the East, and also that most charming climate which is said to be the finest in the world. The low price of honey in that State, the frequent appearance of foul brood, the excessive heat in the interior towns, and the frequent droughts, with a consequent failure of the honey crop, had no terrors for them. The cases of the California fever in this section of the East are sporadic. With Miller the premonitory symptoms began to develop some three or four years since; but of late, his friends cherished the hope that the disease had been eliminated from his system; but not so. The germs were "not dead, but sleeping," ready to

spring into action under any circumstances favorable to their development. It was different with Rambler. He inherits this migratory disposition, and this present attack is simply the outward manifestation of a constitutional disease.



RAMBLER, HIS COMRADE, AND THE DOCTOR—
THE TABLES TURNED.

The discussion continued to a late hour, the fever running higher and higher. Alarming symptoms having set in, I was summoned at midnight, and arrived just in time to see the lamp of life flicker in its socket, ready to go out. I lost no time in administering cordials and stimulants to bring about a reaction. The stimulants seemed to agree with Miller. He soon felt better, was himself again, and called for more. Not so with Rambler. He was positive the stimulants made him worse. As a last resort I spread two large mustard plasters, and applied one in front and the other behind; and in due course of time I inquired how he felt. He being a modest, well-bred man, simply replied that he realized, with a *tenderness* he never felt before, the exact position of a sandwich in the community. Reaction now being fully established, matters began to look more encouraging. I therefore excused myself for the night.

On calling the next morning I found my patients able to get from the bed to the table, and from the table back to the bed again, and their heads level, especially on the bee-business. So, in order to settle matters for good, and retain the friendship of my patients, I suggested a change of climate. I advised them to go west, and halt not until they reached the Golden Gate.

"That is the best prescription you ever gave," said Miller. "I go. To friends, hobbies, and home, I bid adieu. I sacrifice every thing. I turn my face toward the setting sun."

"Same here, brother," said Rambler.

"To my own dear Lake George, those broad valleys, those rough and rugged hills my eyes have scanned for half a century, I bid adieu for ever. Of my ancestral home, a spot than which none other seems so dear, I take a long farewell. Your prescription, doctor, is as sweet as honey. I swallow it at one mouthful. My eyes are fixed on the Golden Gate. I go. I take nothing with me but a paper collar."

I suggested, in the most tender and gentle manner, the propriety of his taking his clothes and a few shekels of silver along with him. Miller acquiesced, acknowledging that, perhaps, some time he might feel the need of them both.

Finding my patients now in a happy frame of mind, and able to travel, with a warm wave of the hand I bade them adieu, wishing them a God-speed on their journey. J. M. MERCHANT.

Warren, R. I., April 3.

NO DUTY ON IMPORTED QUEENS.

FURTHER PARTICULARS, AND WHO BROUGHT
ABOUT THE SPECIAL RULING.

Friend Root:—We have won all along the line. Although an excellent lawyer, himself an official high in government employ, told me that he saw no hope under the present law, except by special legislation, I did not rest the matter, but wrote an elaborate memorial to Sec. Foster, urging a liberal construction. This is now given, and we can receive queens *by mail*, and *free of duty*. Three cheers for U. S.! I inclose the letters, which I am sure will be of interest to the readers of GLEANINGS.

Ag'l College, Mich., June 18. A. J. COOK.

[When we saw the item in the daily papers, as reported editorially in our last issue, we surmised that Prof. Cook had been doing some good work; and from the above it appears that we were correct. Perhaps an ordinary individual would have been discouraged and left the matter as it was, with 20 per cent ad valorem duty. Not so with our energetic and indefatigable friend Cook. This makes twice that he has rendered distinguished service to bee-keepers—first, in securing the privilege of sending queens by mail; second, in securing the release of the duty on imported queens. Three cheers for Prof. Cook, and for Assistant Secretary Spaulding, of the Treasury Department! Hip, hip, hip!—

The following is a copy of the letter from the Acting Chief of the Divisions of Customs, Andrew Johnson:

DIVISIONS OF) TREASURY DEPARTMENT,
CUSTOMS { OFFICE OF THE SECRETARY,
7702. Washington, D. C., June 15, 1891.

Prof. A. J. Cook, Zoological Department, Agricultural College, Mich., Sir:—You are hereby referred to the Collector of Customs at New York, for the Department's decision of the 12th instant on the case mentioned in your letter dated 15th ultimo, relative to entry of queen-bees. A copy of the decision is herewith inclosed. Respectfully yours,

(1 Encl.) ANDREW JOHNSON,
Acting Chief of the Divisions of Customs.

The next is a copy of the instructions to the Collector of Customs, containing the decision which brings about the relief:

TREASURY DEPARTMENT.
7702-F. OFFICE OF THE SECRETARY.

Washington, D. C., June 12, 1891.
Collector of Customs, New York, N. Y., Sir:—The Department is in receipt of a letter from Mr. A. J. Cook, Professor Zoological Department, Michigan Agricultural College, dated the 15th ultimo, in which he incloses a copy of letter addressed by you to Mr. W. C. Frazier, Atlantic, Iowa, in relation to the admission to free entry of queen bees under the provision of paragraph 482 of the Act of October 1, 1890, which exempts from payment of duty "any animal imported specially for breeding purposes," but prescribes that "no such animal shall be admitted free unless pure bred of a recognized breed, and duly registered in the book of record, established for that breed," and that "certificate of such record and of the pedigree of such animal shall be produced and submitted to the customs officer, duly authenticated by the proper custodian of such book of record, together with the affidavit of the owner, agent, or importer, that such animal is the identical animal described in said certificate of record and pedigree."

It has been represented to the Department, and it is doubtless true, that queen-bees, which are classified for duty as animals, are never imported for any purpose other than breeding; that they are always of superior breed, and adapted to improve the stock in this country, but that, from the nature of the case, the keeping of books of record of the recognized breeds and the furnishing of certificates of registry, as required by said provision of law, is impracticable.

Queen-bees were admitted to free entry under the provisions for animals specially imported for breed-

ing purposes, contained in Title 33 of the Revised Statutes, and the act of March 3, 1883; and the regulations applicable to other animals were modified as to bees so as to dispense with certain requirements on their importation as to inspection.

In other cases, where the production of statutory evidence was impracticable, and the importation came clearly within the spirit of the law, such evidence has been waived, as in the case of works of American artists, imported after their decease, on the ground that the law does not require impossibilities.

The Department is therefore of opinion that it was not the intention of Congress to change the practice in the matter of the free entry of queen-bees imported for breeding purposes, and that queen-bees of recognized breeds may properly be admitted to free entry under the provisions of paragraph 482, without requiring the certificate of record and pedigree specified therein.

You will therefore be governed accordingly.

Respectfully yours,

O. L. SPAULDING,
Assistant Secretary.

[Now, the question naturally arises, "What shall bee-keepers do who have already paid the duty on their imported queens?" It will do no harm to write to the Collector of Customs as above, reminding him of the decision, and asking whether a rebate on shipment upon which duty has been paid can not be made. You will see by Our Own Apiary, elsewhere, that we received an importation of fifty queens, and paid duty on the same. We shall at once ask for a rebate on the duty.]

LADIES' CONVERSAZIONE.

STONES ON HIVES.

SOME IMPORTANT MATTERS DISCUSSED BY MRS. AXTELL.

When we began keeping bees we thought it very necessary to put a stone on top of each hive, as we have very high winds sometimes, especially in summer; but because of the trouble and hard lifting we left them off and have not used any for 15 years or so. I can't remember of having the covers blown off, except six or eight at two different times, which did no harm to the bees or honey.

I remember writing to the late Moses Quinby (as we got our first hives of him), and telling him we should have to put a very heavy stone on the top of each hive, or stake them to the ground, or the wind would blow them all to pieces, because the sides and ends were not nailed, but clasped together and dovetailed at the bottom-board; but we have never had a hive blown over or even moved by the wind off its foundation.

LARGE GOURDS AND SQUASHES FOR BEE-FEEDERS.

I notice that gourd seeds are advertised by Christian Weckesser, of Niagara Falls, N. Y., that will raise gourds that will hold from four to ten gallons. I wonder why they would not make first-class feeders, both for feeding out of doors and in the hives. The inner walls of the gourds would be so rough that the bees could readily climb out; and the pulp, when dry, would act as a float; but possibly it would become too soft, and would need to be scraped out and something else substituted as floats. A small opening at the top of the gourd could be cut out, and deep grooves or notches could be cut in, and the whole covered up with a cloth if fed in the hives, or they could be halved and used as feeders, and they would not leak or dry up as wooden feeders often do.

Last fall I picked a summer squash and laid it up to get thoroughly ripe before saving the seeds. I forgot to attend to it until several months after, when I found it had dried up so hard that I could not cut it with a knife, and had to take a hatchet to cut it open. I thought, "Why would they not make a good bee-feeder?" The pulp was dried hard, like shavings or chips; also the flesh was dried up. Nothing remained but a hard dry rough shell, inside and out. One side is large and flat; the other is small, so that it would readily stand up and not tip over. A lid could be cut off the top, and deep notches cut in, so that the bees could crawl in when covered over with a cloth, and there would be no leakage nor drowning. The greatest objection to such feeders would be, it would raise the honey-boards too high above the frames. It would leave much air space (cloths could be tucked in around them), but it would not make so much difference in the fall when all the brood was hatched out, and would not make more empty space than section cases would.

FEEDING OUT OF DOORS.

The way we are feeding our bees just now (fearing some colonies would starve before we could feed them and some being too weak to be exposed in feeding in the hive), we put two long shallow boxes in a little room at the out-apiary, the ends of which came up to the little window that is taken out, and a board fitted into the window, making a shelf for bees to alight on. Cool days the feed was poured in warm, and the room warmed by the stove in the back end of the room. The bees fill themselves and fly straight to their hives, and do not alight on the tops of the hives, and chill, on cool days, as they do when fed out of doors; and it is but slight labor to feed thus 250 or more colonies of bees compared with having to feed in the hives, and seems to us a better way early in the spring, if there are not too many bees of the neighbors within a mile. If any are very near, so their bees get the benefit of the feed as much as the one who does the feeding, he ought to be willing to bear his proportion of the expense of the sugar fed.

When night comes on, and the bees do not get it all taken out, it does no harm, as they will find it the next warm day and take it all up, working at it leisurely with little or no robbing or loss of bees, and it makes the bees pleasant to work with. We do not feed regularly, and then the bees do not hang around the feeders like a cat for her morning meal; but if they can fly out at all, the first few bees seem to tell the rest quickly. If one will put a little resin into a dish, and melt it as hot as can be, until it smokes profusely, it will attract the bees very quickly to the feed. Honey fed in this way would make them too excited and wild. The syrup should be diluted much thinner than if fed in the hive or honey-house.

Just before I wish to work with bees I like to fill the feeders, and then I have no trouble with robbing if I do not needlessly expose combs of honey while opening hives.

Later in the spring, when bees can fly nearly every day, sorghum syrup is just as good as sugar if one has it of his own make, using but a little at first, and increasing until they can use half sorghum; but as sugar is now so cheap there is nothing saved by buying sorghum. We thought this spring we would feed in the hive, as almost everybody else does; but it is so little trouble each day to feed out of doors, and it works so nicely, we can't see but it is much the cheapest and best way for us. Others who have neighbors near who have bees and would not be willing to bear their share of the expense, could not do so unless their time were

worth more than what sugar syrup the neighbors' bees would take.

Strong colonies will take much the most, just as strong colonies will gather more honey; but the weak ones do take their proportion, working just as hard according to numbers as the strong ones, and it seems to stimulate them to brood-rearing just as much or more than if fed in the hive. Warm days we do not warm it—simply stir water into the sugar and pour off the water. If none is melted, the bees will pick up the grains of sugar and carry it out of the feeder and waste it. Just as they carry it out of the hive, or the hard candied honey in their cells, they will carry out grain by grain.

I think it would not be well to thus feed in the fall unless all colonies were scarce of feed and weak in numbers, which, with us, is now the case. Some colonies will have twice and sometimes five times the most honey, so that it becomes necessary to feed individual colonies.

When a colony of bees gets the swarming-fever bad, swarming two or three times, if empty combs are given them, and the sections for comb honey taken away, they will settle down at once to active work and stop swarming, and generally raise a young queen to supersede the old one. I think they are not satisfied with the old queen, the reason they swarm more than once; that is, the first swarm when it swarms more than once. We often hear the remark, that Mr. France, the Dadants, and some others, have but very few swarms; but it is not because they extract their combs and do not run their bees for comb honey, rather than any other management different from other people? The colonies we run for extracting seldom swarm, especially if we do not let them get too full of honey as it daubs their wings and makes them unable to fly if too thick.

I should have mentioned, that, in the feeders, must be placed wooden floats that will remain just so far apart, or many bees will get drowned. We use thin slats nailed together, standing up on their edges, about $\frac{1}{2}$ inch apart, enough to cover the top of the troughs. The troughs should not be too long to handle easily, so as to turn over occasionally and brush out; and if they get to leaking, resin, melted with a bit of lard to soften it, melted very hot, and poured in on one side, and the trough lifted and let run around the seams at the bottom and up the sides will make it secure. That is one reason we prefer to have the feeders in a house to prevent their drying up. At the home apiary we are feeding in the same way, only we use an upper room with a south window thrown open. They fly round and round in the room but very little, but fill themselves. MRS. L. C. AXTELL.
Roseville, Ill., April 16.

[I have often thought of gourds for feeders and other utensils. Perhaps nothing else of the same capacity can be produced so cheaply; but they are of such rude and irregular shape that we can not nest them away as we do tin pans, wooden butter-dishes, etc. They have already been advertised for sugar-troughs, for making sugar. Another objection is, that, if any thing sours in them, it is so much more difficult to keep them clean and sweet than tin utensils. Your idea of having a feeding-room where all the bees in the apiary can be fed, even during cool weather, I believe is an excellent suggestion. I once used a small greenhouse or cold-frame for the purpose, and I never saw brood-rearing go on more to my satisfaction than with this arrangement. Bees seem to do better when they take wing to get their feed. The objection to my plan was, that sunshine was a necessary adjunct, and this we often failed to get in springtime. Your plan of a stove

in the back end of a room, it seems to me, would be just the thing. Fixing your feed in one room, and filling just one feeder, is certainly an immense gain over going from one hive to another, especially when we have to go over 50 or 100 hives. I believe the saving in labor would pay, even if our neighbors' bees, or bees from the forests, do get a little of the syrup. I know bees will go so quickly from the hive to a warm room, that they are kept at work during quite cool weather; and, so far as I can see, few if any bees are lost.]

BUILDING UP WEAK COLONIES.

FASTENING FOUNDATION.

I have just been reading Mrs. Axtell's article, page 467. I can sympathize with her feelings about the weak colonies, as I have been over the same ground. Yes, I have heated the stones for them. But, Mrs. Axtell, it doesn't pay. It took me several years to find it out, but I believe I learned the lesson thoroughly. Dr. Miller good naturedly let me have my own way about them. I suspect he thought I would not be convinced in any other way. To be sure, you can build them up into strong colonies, but it is always at the expense of your strongest colonies, and the brood or bees given to the weak ones can be used to better advantage if given to colonies that are tolerably strong, but will bear a little more strengthening before the harvest.

If all your colonies, except these few weaklings, were so strong that your queens were being crowded for room to lay, and you felt obliged to take away brood to give the queen room, and had nowhere else to put it, then it might do to give to the weak ones brood with adhering bees. But we don't very often find our bees in that condition. If you want to increase your number, you can form a nucleus later in the season, and build up into a strong colony at much less expense; or, if you don't object to swarming, let them swarm.

You say, "I would not weaken strong colonies to build up weak ones." But, don't you weaken them just that much when you take brood and bees from them? also that you pay back again? Now, I should like to ask where you get your brood and bees to pay back. If you take from the weak to pay back, I should think that would retard their building up very fast; but I believe that is the most profitable way of building up, to take from the weak and give to the strong.

Again, you say, "I don't know that such tinkering with bees would pay for high-priced labor, but for us women-folks who need outdoor exercise, and something to keep us out of mischief, I know of no better employment." Now, Mrs. Axtell, I do not believe in that kind of doctrine. If it doesn't pay a man it doesn't pay a woman; and I know of no reason a woman can not do any thing with bees that a man can, except it be for his superior strength and ability to do heavier lifting.

About that foundation-fastening. Yes, you understand me correctly, friend E. R. I mean the heat to do all the work, using no foundation-fastener whatever. I think you must have had your foundation too soft in the first place, or else you must have heated it so slowly that it got soft enough to bag before the wire melted its way in. After reading your remarks, I thought I would see how much bagging there was in the work I had done. It so happened that there were seven hives full of frames of foundation in the shop, that the bees had never touched. So I went and looked at them, and

could find no bagging. Then I called Dr. Miller to look at them, and said, "I wish you would tell me how much bagging you find in those hives." He looked at quite a number, taking a frame here and a frame there out of the different hives, and then said, "No, there is no bagging. Lay one of those frames down so that the light can not shine through it, and I defy E. R. or any one else to say where the wire is unless it be wired side up. Neither is there any appearance in the foundation in any way that heat was ever applied to it. Moreover, you can tell E. R. that it is away ahead of any other kind of imbedding, and I wish he would stick to it till he gets it right."

I said, "I wonder what can be the trouble. It seems so very easy to do it just right."

"Yes," he replied, "it's very easy to do a thing when you know just how, but it's very easy to make some little mistake that throws every thing wrong." Then he put on a very wise look, and said, "You see the secret of it lies in this: The foundation heats very slowly and the wire very rapidly. You hold the foundation in intense heat for a little time, and it is not affected, while the wire held there the same time is almost red-hot. Now, the hot wire coming in direct contact with the wax, rapidly melts the wax just at the point of contact; and then the wire, just as quickly cooling, leaves no change in the form of the foundation, only the wire is imbedded."

I think he is right, for I hold the foundation close down in the gasoline, and then move it very rapidly. I think that's the secret of success. I wish you would try it again; but Dr. Miller says the fault may be in your "location." Marengo, Ill., June 10. EMMA WILSON.

[My good friend Emma, may I help our mutual friend Mrs. Axtell a little on her side of this argument about "it will not pay"? First, I wish to repeat what I have said several times—it *does* pay to save valuable queens, even if you damage a strong colony by so doing—that is, under some circumstances it does. Second, you say if it does not pay a *man* it does not pay a *woman*. Well, may be that ought to be so; but, unfortunately, it is not. There are thousands of women wanting work; and manufacturers tell me that almost any number of women can be found in every town or city, who will gladly work for fifty cents a day rather than not have any work at all—that is, where there are more than enough women in the household to do the work; and there are many more *women* who consider it a privilege to work for fifty cents a day than *men*. Again, there are both men and women who become fascinated with bee culture, and who would work with bees for fifty cents a day rather than to work at some other employment which would give them three or even *four* times that amount of money. When I was a merchant in town owning a few bees, almost every day (after having done a certain amount of indoor work) I longed for something to do with bees; and I can remember many days, after I had done every thing I could think of with my few colonies, I longed for something more to do, even if it did not pay very well. A great many times, when tired out with the duties of the store and office, some kind of work with bees was really a recreation and rest. We have a good many among our readers, who, I think, feel just this way, especially the younger ones in the business, and those owning a few colonies; and I think these people will make it pay to learn to rescue weak colonies—saving those by hot stones, taking them indoors nights when the weather is severely cold, in order that they may be kept alive until warm weather comes, and fruit-

blossoms are out. The man who has hundreds of colonies in out-apiaries, and who has got past keeping bees for the fun of the thing, may well say that it will not pay *him* to fuss in that way.] A. I. R.

BUILDING UP SMALL COLONIES IN SPRING.

I enjoyed very much reading how Mrs. Axtell builds up small colonies in spring with such loving care. A German woman told me that her grandfather in Germany kept bees, and that they were placed upon shelves, fastened to the sunny side of the house, and that, every night during cool weather and chilly days, they were brought into the house, where they were kept warm. Would it not be better to have small hives holding only two combs, to build up small colonies in spring, so they could be easily carried into a warm room during cool nights?

This locality, so far as I know, has never failed to produce a flow of honey from the river-bottoms, and bees go into winter quarters strong in young bees; and this may account in a great measure for the lack of many small colonies in early spring. Are the queens belonging to such small colonies of value? If so, why are the colonies so small? When I was a scholar in school I loved to solve difficult problems, and I yet enjoy doing what is difficult; and I should like to be able to accomplish this, to build up small colonies into large ones, without taking brood and bees from other colonies to do it.

MRS. L. HARRISON.
Peoria, Ill., June 10.

[I have stated before, Mrs. H., that queens from such small nuclei have proved to be equal to any; but all attempts to take care of a large number of very weak colonies, and bring them through the winter and spring, have, so far as I know, generally failed.]

HUMBUGS AND SWINDLES

A subscriber to GLEANINGS mails us the following:

PLEASE DONT Expose.

DEAR SIR,

It is with pleasure we send you this Circular, and we hope you will read it carefully, and decide to go to work at once.

We have a large lot of GREENBACKS for sale that can not be told from genuine, except by an expert. It will pass anywhere like a dandy except at Washington, D. C. It is as fine an imitation as human skill can produce the work. We have these goods in 5 s, 10 s, and 20 s, only. No less than \$5. worth sold except to persons not able to order that much at a time, then can send what they are able.

If you have no use for our goods please dont give us away. Make your orders large as possible, you will not regret it. Never mention money when you order. Say send medicine, large small or medium size bottles. We will understand it. Never send registered letter as I will not sign for it. Send Greenback, postal note, or by Express, or Check on New York. We will ship your goods by mail or express, as you wish. Please dont write unless you order, and say as little as possible then. Prices, \$40. for \$5. \$100. for \$10. 300.00 for 25.00. 700.00 for 50.00. 1000.00 for for 70.00, and so on.

Address,

W. J. NELSON,
Lemay, N. C.

Of course, it is an old, old swindle; but as there are some who do not seem to know about it, we give the contents of the circular verbatim, spelling and all. I hardly need say to those who are conversant with these matters, that people who send out these circulars never

deal in counterfeit money at all. All they get in the above transaction is clear gain; for, of course, any party so lacking in conscience as to send for counterfeit money would never make any complaint, nor undertake to expose them as frauds. Some very good people have said, "Let them go on with their scheme; serves them right." In one sense this may be true. But there may be young people and thoughtless people who are so lacking in conscience as to have a desire to get and pass counterfeit money, if they felt sure they could do it without detection. The time was when our nation suffered much from counterfeit money, but there is comparatively little of it of late years. Men who possess sufficient skill to make a successful imitation can usually make enough honestly, so there is little temptation for entering into a business that ends so quickly and so surely in the penitentiary. We hereby give notice to the postal authorities to stop delivering mails to the above address, if any mails have been delivered.

nature of a bee to fly a distance from its hive in search of honey; and my observation causes me to believe that a large apiary, many times, will whip out a small one.

Illinois. N. W. C. Mrs. L. HARRISON.

If Mr. N.'s statement is true, you are both right and wrong—legally right and morally wrong. You would do yourself a wrong with nothing to compensate you except knowing you had done your neighbor N. also an unkindness.

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

I see no reason why you should not share the honey harvest, though he is correct in his first assertion; and if he depends on his bees it would show a very kind heart for you to leave him the field. "It is more blessed to give than to receive." Happy the man that proves it.

Michigan. C. A. J. COOK.

Legally, right; but, candidly, get yourself just as near in the skin, thought, and position of N. as you possibly can, and tell us whether you would then think and feel as you do now. If not, then the doctrine of "do unto others as you would have them do unto you" will not be your doctrine should you move your bees to the village of P.

New York. C. G. M. DOOLITTLE.

If I were obliged to move into town, as you say, if I could leave the bees where they are I would do it if the distance were not too great, rather than put them on a locality already occupied to the extent you say it is in town. But as to the right of your taking bees there with you, you have as much right as he has. But if you both keep all the bees you have on the one locality, you will be overstocked and won't get much honey.

Wisconsin. S. W. E. FRANCE.

Legally you are entirely right; but for financial and moral reasons I would not take them there. Mr. N. does not want them in his field, because he knows it materially cuts down his pro-rata surplus yield. Now, while your 75 are cutting down the yield of his 120, what will his 120 be doing to your 75? Your interests are mutual. You may have a different opinion in regard to this, but my opinion coincides with Mr. N.'s.

Michigan. S. W. JAMES HEDDON.

You are right, my friend. You have a legal right to go and share the pasture with N.; and the next man has a right to share it with both of you. Nothing but self-interest seems to cut any figure in the matter. I know just how to sympathize with N. I have been in his place, and gently remonstrated with the man who was coming, and argued priority of location, etc., but he couldn't see it. He said it was a free country; air, water, sunshine, dew, and honey, are free. So many thought that way that I was obliged last spring to make an investment of about \$3000 and move my bees 30 miles or share a range with others with twice too many bees on it.

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

Well, there! if this isn't a personal-liberty question! John B. Finch said personal liberty ends when that fellow's fist comes in contact with the end of his nose. Certainly, you have the right to place your 75 colonies right over the fence, next to Mr. N.; but, is it justice? Just reverse the case. How would you like to have N. move his 120 colonies of bees out into your field? I think it would be justice for both of you to look the field over, and then locate

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 188. *I have 75 colonies of bees. Other interests oblige me to move to the village of P., where Mr. N. has an apiary of 120 colonies. He says there is no more pasturage than will support his bees, and thinks I ought not to bring mine there. If I put my bees on my own lot, I think I have as good right there as he. Am I right or wrong?*

Legally you may be right; but morally you are wrong.
Vermont. N. W. A. E. MANUM.

You have legal right on your property, but it will be of no material benefit to you, and very detrimental to N.
Louisiana. E. C. P. L. VIALLO.

He has priority of location; and if you move near him you will only injure him without doing yourself any good.
Illinois. N. W. DADANT & SON.

An answer to this question may be found in the 12th verse of the 7th chapter of Matthew. If you don't read the Bible, just try it once.
Ohio. N. W. A. B. MASON.

You are perfectly right. I verily believe that there is room enough in your neighborhood for several more besides you, even if our good friend Dr. Miller says, "I don't know."
Ohio. S. W. C. F. MUTH.

You're right. There's no law against it; but as civilization advances, I think there will be; and if I were in your place I think I should be a little ahead of the age and do just as I would if the laws were all right.
Illinois. N. C. C. MILLER.

If the premises are correct, that there are already as many bees in the village as can be supported, then certainly you don't wish to keep any there, as you would be a loser. If the pasturage will support more, you can probably compromise the matter.
New York. C. P. H. ELWOOD.

You have not as good right as he has; he has the right of priority. I would not be afraid of your bees, if I had the larger apiary. It is the

your bees where they will not interfere with your neighbor. He has the prior right, and it should be respected.

New York. E.

RAMBLER.

If bare compliance with the laws is all you desire, you are right. If you have that new life that Jesus of Nazareth came into the world to bring, you will find it says, "I can not take advantage of the law to do my fellow-man a serious injury." Sit down and think over carefully all the circumstances of the case. Then put yourself right in Mr. N.'s place, and ask the question, "What would I wish and expect an honest man to do?" Then go and do that very thing. If you should talk the matter over with Mr. N. in a right spirit, very likely some joint arrangement could be made for running your bees as an out-apiary, which would be better for you as well as better for him, than trying to buck against his 120 colonies.

Ohio. N. W.

E. E. HASTY.

If you purchased the place for a home, including the keeping of bees on it, while your neighbor already had it fully occupied, it is doubtful about the propriety of your having done so; otherwise you need not consult him. I have lately changed the location of my bees, paying \$100 a year for the privilege of ground to set them on; but having over 400 hives, I think it too many for one location, and accordingly I purchased a location a few miles away to set a part of them on; but as there are three other small apiaries covering the same ground, perhaps 200 hives in all, I have set 25 hives on my new purchase, and am now querying in my mind whether to set more there or to take away what I have there, simply out of deference to the neighbors, although they have not specially objected.

California. S.

R. WILKIN.

Legally you are right; morally you are wrong. Yet it is not much worse than is done daily in other lines of business. Suppose A keeps the only grocery store in a town, and does it to the satisfaction of all, making a good living at it. B starts another store, and divides the trade. The public is not benefited. A is impoverished, and B makes only half a decent living. The right of B to do this is not usually questioned; but, is it right? Your action in moving into N.'s field is somewhat worse than that of B, because B would probably have some difficulty in finding an unoccupied grocery field, while you can probably find an unoccupied bee-range within five or six miles, and any number of them, without much trouble. When four-fifths of the honey secreted goes to waste for the want of bees to gather it, why rob another of his share by infringing on his territory?

Illinois. N. C.

J. A. GREEN.

[Why, boys, I actually feel proud of you. Yes, I feel glad to think we have a cabinet of advisers who can collectively compass a matter so thoroughly as you have done in the above. Every shade and phase—legal, financial, and moral—has been touched upon; and there is a good sound ring of "Whatsoever ye would that men should do unto you, do ye even so unto them" in every one of the answers, if I am correct. We have had experience in that very matter here. Several times, even after I assured those who brought bees into our neighborhood that they could not stand any chance with our 200 or 300 colonies, they felt, perhaps, as if I had some selfish motive in saying so, and concluded to try it. But, as Mrs. Harrison says, they all gave it up sooner or later; and now we have all the bees in the vicinity, unless it is a

few colonies belonging to some of our hands. We like to encourage our workmen to keep bees—just enough to know how the work on hives, etc., ought to be done. Well, I believe the general decision is, that bees five or ten miles away do very much better than where there are so many. I have met with a few men who persist in such a course as is mentioned in this query. But the man who would bring 75 colonies into the vicinity of 120, I should set down in my own mind as a bad man; and I should expect him to be bad in other ways whenever opportunity offered. This is the very sort of men, too, who are always having bad luck. Just look about you, and see if what I say is not true.]

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

POLLEN FROM ONE OF THE GRASSES.

The following notes, kindly handed me by Dr. W. J. Beal, are worthy of record in your valuable journal:

Yesterday bees were gathering pollen from the grass *Festuca ovina*, or sheep's fescue. Some years ago I saw bees in great numbers gathering pollen from *Festuca elatior*, and also from *Plantago lanceolata*. About two weeks ago they were gathering pollen abundantly from *Pinus Bankseana*. These plants all yield dry pollen, which is supposed to be distributed by the wind; that is, all are *Anemophilous*.

I can add to the above, that our bees are now gathering pollen very rapidly and abundantly from the Austrian pine (*P. Austriaca*). As the bees alight, a cloud of pollen rises from the plant. It takes a bee only a very short time to load up. I have never seen them gather pollen so rapidly from any thing else. A. J. COOK.

Ag'l College, Mich., June 3.

HONORING THE INVENTOR BY ATTACHING HIS NAME TO THE INVENTION.

I trust Dr. Miller will not take umbrage if I call his attention to a remark relating to name of comb frame, page 457. The Langstroth frame has never had any other name than the revered name of its inventor; and allow me to express the veneration I cherish by protesting against designating the greatest invention relating to bee-keeping by any other than the name of its inventor. I would not wish to be dogmatic in suggesting that bee-keepers adopt the rule of giving the name of the inventor in some way, in connection with the invention. In this day of small rewards, the most enduring tribute would not seem too much for a grateful fraternity to bestow. T. F. BINGHAM.

Abronia, Mich., June 10.

CELL-BUILDING IN THE HIVE; HOW THEY DO IT.

On page 165 of the A B C you give an account of cell-building. You have described the whole process of cell-building. Now, the bee carries the wax under its chin, so as to make it hot enough to stick, and he does not work it when first put on, because it is too hot. It takes a few seconds to cool off, owing to the temperature of the hive; then a bee bends the wax down, then another bends it back. The bending makes the wax thin, and lengthens it. The next wax is put on, and the bending process is repeated. Take a few pieces of wax, and bend them the same as the bees do, and you will see the reason one bee does not finish the work at once. The cell is made by bending the wax backward and forward. S. W. BARNARD.

Olathe, Kan., June 19.

A NUT FOR DOOLITTLE TO CRACK; DO THE
BEES THAT GATHER THE HONEY ALSO
PUT IT INTO THE CELLS?

Friend Doolittle says that the bees that gather the honey do not put it into the comb. I say they do, the same as the bees that gather the pollen. Friend D. just throw flour on the bees that come in with honey, then watch through the glass on the side of the hive, and you will change your mind. In sending in reports in regard to wintering bees, May 15th is soon enough; then we know how many colonies we have got safely out of the woods. I have 42 out of 61. I had the first new swarm May 26, and took off the first sections May 30. Bee-keepers, there is going to be a large crop of honey; and the first thing to do is to get sections and hives in time. FAYETTE LEE.
Cokato, Minn., June 1, 1891.

SHIPPING DRONES FROM THE SOUTH, FOR EARLY
QUEEN-REARING IN THE NORTH.

I do not know that the shipping of drones north in early April has ever been attempted with any degree of success. If not, friend Craycraft (did you see what that dyspeptic says in the *Canadian Bee Journal* about calling friends "friends"?) and myself have made a new departure in progressive bee culture. However, even if it has not been before undertaken, I have no idea a patent will be applied for; but friend C. deserves as much credit for his successful delivery of drones north in early spring, which has enabled me to rear queens much earlier than by any forcing method. The Adams Express Co. deserves "boycotting" for excessive and unreasonable rates on bees.

JNO. C. CAPEHART.

St. Albans, W. Va., May 6.

[Friend C., this matter of shipping drones has been tried at different times for years back. I believe, however, they do not ship very well; and when they get to their destination, so far as I am informed they do not seem to answer the purpose intended. If you and friend Craycraft have succeeded, let us know more about it.]

A GOOD TESTIMONIAL FOR THE PORTER BEE-
ESCAPE.

Please allow a few words in praise of the Porter bee-escape. We have tested it this season, and find it perfection. We use it on a board $\frac{1}{2}$ inch thick, with a $\frac{3}{8}$ -inch space on top. It cleared the bees from a super in five hours. We shall not try any other, as we find in the Porter all we want.

Will some one tell us how to prevent comb honey being infested by moths or worms?
Roxobel, N. S., June 15. BARNES BROS.

[As a rule, friends, there is but little trouble from moths or moth-worms where Italian bees are the rule and not the exception. Our textbooks on bee culture discuss the matter thoroughly in reference to fumigating with brimstone. I believe, however, that few bee-keepers find it necessary to do this since the Italians have so extensively taken the place of the blacks.]

THAT MISSING INDEX.

Mr. Root:—I want to growl just a little this one time. It will not be worth while to set apart a "Growler" on my account, for I do not promise to do any more after this one time. What troubles me now is, I can't find the index in GLEANINGS. May be it is a good thing to make people read it all through, but sometimes I want to refer to something in a hurry. I pick up GLEANINGS, make a rush for the index, but,

alas! it is not there. I then begin to leaf it over, because I have no time to read it all through just then, and perhaps do not find the passage readily which I wish to find; then, oh how I wish there were an index to every number of GLEANINGS! However, if no one else wants an index but me, I am willing to submit patiently. So, inclosed you will find one dollar, for which please send me GLEANINGS another year, index or no index.

Durango, Ia., June 5. JOS. M. WOODHOUSE.

[There, friend W., I for one am very glad to have you talk right out plain. I told the boys I knew it would not suit; but they said, "Well, let's try it and see how many people grumble." Now, if you had not "growled" you see they would have taken it for granted that nobody wanted the index particularly, except your old friend A. I. R.]

LARGE BLUE MOTH.

Mr. Root:—I send you a miller which is found around the fruit-trees a good deal toward night. What do you think they are about? What kind of mischief are they at? I. B. WHITON.

Ithaca, Mich., June 15.

[Prof. Cook replies:]

The large slim wasp-like moth, sent by I. B. Whiton, is *Otenucha virginica*. The larvae feed on grass, and the insects are never common enough to do serious harm or awaken alarm. The moth has an orange head, blue thorax, and black wings. It flies in the day time, often in the hot sunshine, though more generally later in the day. It is a handsome insect, and in size, form, and coloration, mimics our large blue wasps. This no doubt saves it from attack by birds. A. J. COOK.
Ag'l College, Mich.

QUEENS FROM DEAD COLONIES.

When you have queens saved from colonies that die early in the spring, how do you keep them till you want to use them?

EDMUND J. PURCELL.

Clachan, Ont., June 3.

[Friend P., we can keep them sometimes for a few days, or may be two or three weeks, in a queen-cage, giving them fresh bees every four or five days, being careful, at the same time, that they are kept in an apartment that is always up to about 70 degrees. If you wish to keep them longer than that time, you will have to take a nucleus from some strong colony; and if your bees have the spring dwindling, you may lose the strong colony and the nucleus too.]

USING DRONE COMB IN THE UPPER STORY, FOR
EXTRACTING.

Would you advise the use of frames that have drone comb in the upper story for extracting, using queen-excluders? J. R. COLVILLE.
Coleman, Mo., May 25.

[Some years ago drone combs were used for this purpose; but I have not heard much about them of late years. Will some of our friends who work for extracted honey tell us about it?]

EARLY SWARMING IN ILLINOIS.

Bees were swarming in this vicinity two weeks ago. I hived a very large swarm yesterday, which gives me four colonies to begin with. The bees here have had a regular picnic all spring, the best in many years past. White clover is beginning to bloom. There are but few bees kept near my town, but the pasture is No. 1, generally. D. A. CADWALLADER.

Prairie du Rocher, Ill., May 11.

REPORT FROM ALABAMA.

We have an excellent honey-producing country here, but bee-keepers are many years behind the modern improvements. I don't think there is a single frame hive in the county, with the exception of what I have, and the bee-keepers come to my place and view them with wonder when I open up the hive and exhibit the combs and bees to them. I have only 16 colonies this season, as I was unacquainted with the honey resources of the country, and did not start until late. But my bees have gone clear beyond my expectations. They have the lower story all jammed full of honey and brood, and I put on supers several days ago. Next year, if the good Lord spares my life, I am going to be ready in time. There is plenty of white clover here, and hundreds of trees and flowers that yield honey. Just now they are working on honey-dew. I never saw the like of it before. I have seen honey-dew in Ohio, but nothing to compare with it here. Inclosed I send you some hickory leaves with it. It comes on hickory, chestnut, and poplar. It is well-flavored honey, not like the sickly stuff that we got in Ohio, which killed 50 colonies of bees for me in 1883.

F. H. FINCH.

Florence, Ala., May 31.

BEES ON SHARES.

What is customary, as a rule, in keeping bees on shares? What must the keeper furnish for half of the honey and half of the increase of bees? Must the keeper furnish supplies for the bees taken, and must he return the same number of colonies when he gives them up as he received—that is, must the keeper furnish, out of his share of increase of bees, to keep the hives full of what may perish, during winter, of the number taken? Who furnishes hives for increase of bees?

W. M. RUSH.

Courter, Ind., June 1.

[Friend R., the customary way has been explained several times in our back numbers; and once or twice it has been illustrated with pictures. Briefly, it is this: The bees are let out without any particular understanding on either side, unless it be, "Of course, we will both do what is fair and right in the matter." Before the year is up, however, there will be a big quarrel—sometimes a neighborhood quarrel; and if the arrangement is with old friends, they will probably never be friends again afterward. Jesting aside, there is not any rule that I know of for bees on shares, neither can I see how there can be a rule made that will take in all contingencies. If there is among our readers a man who is both bee-keeper and lawyer, and who thinks he can draw up a brief agreement for both parties to sign, and one that will be satisfactory on both sides, and not omit unexpected contingencies, we should be very glad indeed to have him try his hand at it. The trouble will be, the document will be so voluminous that, when the quarrel comes, it will transpire that one or both parties never read it through carefully.]

BEE-ESCAPES; THE REESE ONLY, A SUCCESS.

My bees have swarmed with a vim. Cutting out queen-cells and putting on sections early availed nothing; cutting the queen-cells and returning the swarm about sunset has worked well so far. Where this plan works with me I see but one objection—trouble of requeening after the season is over. By doubling my first swarms, and from a few strong colonies that did not take the fever, I have had the pleasure of further testing bee-escapes. I can't agree with friend Brown, page 459, June 1. Only

the Reese, or vertical, works with me. I made several the past winter to fit the top of the hive, having two vertical cones $2\frac{1}{2}$ inches by 3 in depth, with an opening of exit nearly $\frac{3}{8}$ of an inch. If too small they clog it, and you have a failure. I also want a space between the end of the cone and brood-frames of at least an inch. I don't want a bee standing on the top of the frames, not even when two or three deep, to be able to reach the mouth of the cone. I use no smoke, and put it on just at night, and take off as early as possible next morning. Cool nights give best results.

OLD PHOSPHATE-SACKS FOR SMOKER FUEL.

It is said, that necessity is the mother of invention. With me it has led to the discovery of a fuel for the smoker, far ahead of any thing else I ever tried. It is a well-worn phosphate-sack. Let me say to Dr. Miller, get the most worn one you can find. Have it perfectly dry; tear it into as narrow strips as possible, or haggle it thoroughly with a keen-pointed knife. With these fragments pack the smoker fairly well; pour on a few drops of coal oil to facilitate ignition; apply a match; now work the bellows until well caught. It is a little slow in getting caught; but, that accomplished, it will smolder for hours. It gives the best suppressed combustion of any thing I know of, punk not excepted.

Manum's device for hiving swarms is a real pleasure. There is a warm place in my heart for the man who brought it out. It will live after its inventor has ceased to be among men.

Guys, Md., June 9.

WM. S. ADAMS.

EIGHT-FRAME HIVES TOO LARGE.

Experience here shows that an eight-frame hive is too large when running for comb honey.

Andersonville, Ga., June 1. S. F. ENGLISH.

[Well, well, friend E. While everybody else is afraid that eight frames are hardly large enough for an average colony, you decide it is too large. What, then, shall we have—seven frames, or shall we come down to a six-frame hive? A six-frame hive would be very nice to carry into the cellar; and if one raised bees for sale, they would be very nice for another kind of "seller"—that is, providing the *buyer* did not object.]

CUTTING BEES OUT OF A TREE.

I bought a bee-tree for \$1.00. The bees went in at the ground. I cut it off just above the bees, and set a box hive on top of the stump, and smoked them up and chopped in and split off till I got all of the comb out. It had lots of young brood, and the largest swarm of bees I ever saw. We carried them home and put the comb into my new frames, and shook the bees out on a sheet. They went in as nice as a new swarm. I saw the queen as she went in.

Detroit, Ill., June 7.

WM. CASTEEL.

A SUNDAY-SCHOOL TENDERS ITS COLLECTION TO TOMMY STRINGER.

I carried the case of Tommy Stringer (the blind boy) to our Sunday-school, and asked for a collection to be taken children's day for him. It was readily granted, and has been taken. Inclosed find a money order for \$4.50.

Harmon, Ill., June 16. MRS. G. E. BALCH.

[My good friend Mrs. B., Uncle Amos takes the responsibility of tendering his earnest thanks to the dear children for their interest in friend Tommy. Perhaps our friend Helen Keller, if she is not tasked too greatly, will also send a message to that Sunday-school.]

ALUM AS A REMEDY FOR SNAKE-BITES.

Tell Prof. Cook that I am sorry to think that that so good a man as he should advise the use of liquor in a case of snake-bite, even though he does it under protest. One tablespoonful of alum for adults, taken internally, will cure any ordinary case, by which I mean a bite from an ordinary-sized snake. This is not hearsay, but actual experience on myself and others, with rattlesnake, copperhead, and moccasin bites. If Prof. C. wishes more particulars in regard to this I shall be happy to furnish them to him.

Kyle, Tex., June 22.

A. STON.

[We are with you in regard to the liquor part of your letter, friend S. But alum as a remedy for bites is something I never heard of. And, by the way, wouldn't a tablespoonful of alum be a dangerous dose? Will Prof. Cook please tell us what he thinks about it? Its astringent property, it seems likely, might prove somewhat of an antidote for the poison of a snake-bite, if the latter does not act too quickly. And then, again, confronts us this old fact, that possibly these snake-bites would not have proven fatal anyhow, and that the alum may not after all have had any thing to do with the recovery.]

BEES IN FINE CONDITION.

Our bees are in fine condition this spring. We had 35 colonies last fall. All wintered through excepting one. We have had four new swarms. All are strong, with a very fine prospect for a white-clover bloom. PETTIT BROS.

Cross Creek, Pa., June 8.

This is the best honey season we have had since I have been in the business.

Altoga, Ind., June 20.

ANDREW CROOK.

We have had to feed our bees more this spring than ever before. White clover is very scarce in this neighborhood. MRS. L. C. AXTELL.

Roseville, Ill., May 29.

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

THE AMERICAN PEARL ONION.

At present writing, June 25, these onions are, some of them, one foot in circumference. Just think of that, will you? We are getting a nickel for a bunch that weighs only 10 ounces, tops and all. For the larger ones this amounts to about a nickel for an onion; and yet these were all planted last September, and the cultivation since that time has amounted to almost nothing. The onion reminds me so much of the Bloomsdale Pearl, from Landreth, that I wrote him, asking if it were not possible for the Bloomsdale also to winter over in Ohio. Below is his answer:

Mr. Root:—Yours of the 15th came duly to hand. Most certainly the Bloomsdale Pearl onion-set, planted in the autumn, will stand the winter of Ohio. For the past 15 years we have been growing this variety on Bloomsdale Farm, Bucks Co., Pa., where they stand out every winter. We have had 50 acres standing out. The Bloomsdale Pearl and other varieties of sets are planted out three inches deep during the months of September, October, and November, and winter as hyacinths in any garden, making a strong root growth, and frequently quite strong tops.

In our publications we have recommended the Bloomsdale Pearl sets for the South, as, planted there in October, they make an almost uninterrupted growth, developing to four and five inches in diameter, and coming into market earlier than Bermuda, and consequently bring a high price. It is singular

that so little is known of the advantages of sowing onion-sets of any kind, in the autumn.

Bristol, Pa., June 18.

D. LANDRETH & SONS.

Now, why in the world have we all this time been so stupid? I have written to both Landreth and Johnson & Stokes for sets just as soon as any can be had, and will try to get enough to supply all demand.

Here is something about this same onion in the South:

Reading your experience with the American Pearl onion induces me to state that I have used the Bloomsdale Pearl here. Last week I took some to market that were from four to five inches across, and weighed from 1¼ to 1½ lbs. They sell at six cents a pound.

A. STON.

Kyle, Texas, June 22.

[We are glad to get your testimony, friend S. Six cents a pound for onions that can be grown for one cent a pound, if we could not get any more! Now, then, the question is, Can these onions be dried and cured so they will keep? Can you tell us any thing about it?]

NEW STRAWBERRIES FOR 1891.

In the first place, we shall hold fast to our original four of last year. The Bubach and Jessie were both a good deal injured by frost, but gave us a tolerable crop after all. The Haverland has proved itself away ahead of any thing else in quantity of fruit; and reports come from all sides that it stands the frost better than almost any other. The Gandy was probably injured but little by frost, for it is so late. These are just now ripening when other strawberries are pretty much gone; and the sight of great, beautiful, handsome, fresh-looking fruit when all others are on the wane, is enough of itself to give them a place. I often feel disgusted, however, to see great rows of such tremendous foliage bearing so few berries comparatively. But I suppose we can not have every thing we want in one strawberry. In addition to the above four, we are going to offer plants of the Sterling also. It is a beautiful strong grower, with dark-colored foliage, and it seems to stand the frost quite well. The berries are handsome, but—oh my! how sour! They would make a fair substitute for lemons, and they are said to answer excellently for canning. We planted one row of them late in the fall, and I believe we did not lose a plant, and they have given us quite a little crop of berries. Now, the above five are the only kinds from which we shall have plants for sale; but we are going to increase our grounds by the following three: Edgar Queen, Parker Earl, and Shuster's Gem. The two first promise to yield almost equal to the Haverland; and the Edgar Queen gives not only a great quantity of berries, but they are of nice shape and color, and of good size. The berries have a flavor strikingly like a fine Red Astrakhan apple. Shuster's Gem was under disadvantage, because it did not have a spot of ground equal to the others. Lady Rusk and Saunders are awaiting further trial. A great many other kinds have qualities to recommend them; but so many others crowd them, we have decided to give prominence to only those mentioned above. We have secured much better prices for our berries this year—yes, and our early peas too—by being very careful not to let the pickers get ahead of the sales; that is, instead of having berries get old in the crates, we prefer to have them get old on the bushes, and give them to customers within half a day after picking them, if we can. If they can have them only two or three hours after picking, still better. We pick just enough at night for the wagon to start with in the morning. When the pickers commence in the morning they pick just about

what the wagon will need when it comes around at 9 o'clock. If they have an unusual demand, one of the two men who go with the wagon brings back notice.

EARLY PEAS.

With us the Alaska has been from a week to ten days ahead of the American Wonder. We had just two rows. These were sown in March by raking down the top of a ridge where celery was taken out in the fall. The weather was so cold and the ground was so wet, it seemed as if they would amount to almost nothing. We sowed them, however, putting the seed in quite thickly. The two rows both together were, probably, fifty rods long. As they made the most of their growth before any weeds were up, they had almost no cultivation at all. When the vines began to tip over we stretched poultry-netting a foot wide, so that the lower wire was perhaps six inches from the ground. As the peas went six inches above the upper wire, they stood about two feet from the ground. Well, from the two rows mentioned above we sold ten bushels of peas for \$25.00. Most of them were sold by the quart, because they were away ahead of the market, and, of course, brought a high price. The pickers were cautioned not to pick a pod unless it had good plump peas inside. Unless this is properly attended to, the average picker will, with the *Alaska* pea, cheat the purchaser by giving him pods with almost nothing in the shape of peas inside. If they are picked carefully and *conscientiously*, however, and you have the first on the market, you can sell a few at almost every house for from 7 to 10 cents a quart, giving them the peas, as I said before, within only a few hours after being picked. Twenty-five dollars from two rows is pretty good business. And that is not all: The vines will be ready to plow under July 1, and then you can put in cabbage, celery, early corn, or even Early Ohio potatoes, if you have the seed—or, in fact, almost any crop if your ground is up to the proper notch of fertility.

PARSNIP SEED THAT WON'T GROW.

The demand for the Guernsey parsnip this season was away beyond our anticipation, so we sold out toward the close of the planting time. The only way I could get any more seed was to send to Atlee Burpee, the originator; and as there was not time to test it ourselves before filling orders, quite a good deal was sent to customers. Out of the same bag, we planted for ourselves five rows 40 rods long. Well, on our ground *one seed* came up of the whole five rows. The ground was all right and the weather was all right. Carrots, beets, vegetable oysters, and all other seeds right in the same plot of ground, came up beautifully. It does seem as if the second lot of seed from Burpee *must* have been worthless. But in this business of seed-sowing I have learned to be slow in condemning. After waiting fully three weeks I sent to another seedsman for parsnip seed that he *knew* would grow. We have now waited ten days, but not a seed of *this* has started. As the ground has been soaked with water almost all the time, this may partially account for it. Now, you who have bought Guernsey parsnip seed out of this second lot are desired to report, and we will try to make the matter satisfactory. It is the only failure that I know of among our seeds, this season, and we are planting all the seeds we offer for sale, right along, day after day.

A NEW USE FOR THE "SOUTHERN QUEEN" TURNIP.

I write you for information; and if your time is not too fully occupied you can do me a favor,

and save, perhaps, a costly experiment. I am proposing to sow about 40 acres in turnips among the corn. Would it be best to sow before the cultivator (we use the Albion spring-tooth), or immediately after the last time the corn is cultivated? I find just what I have been wanting for years, in the "Southern Queen," or winter turnip. I have been experimenting with the "Cow-horns" as a fertilizer until you brought out the "Southern Queen." I had only a pound of seed from you, and the amount of winter pasture it furnished was a surprise to me, and I shall have quite a lot of seed, as I did not turn any of them under green. After the seed-stalks were taken off, the boys turned under a fine lot of partially sound turnips to help bring on a crop of melons and beans. I am not ready to put what I claim for turnips before the public until I am better supplied with positive information; but I believe a crop that can be made between seasons will furnish as much fertility as a crop of clover that takes a year to make.

Avon, Ind., June 11.

A. A. PARSONS.

[Friend P., I have not had sufficient experience to advise very much. I would, however, advise sowing the seed after the cultivator had been through the corn the last time; and if you can manage so as to get it in just before a shower of rain, I think you will find most of the seeds will come up promptly. Your idea of using this turnip as a fertilizer is no doubt of value. We have tried it to some extent, but it does not produce any such result as a crop of clover. In fact, I do not know of any other plant that equals clover for plowing under. Perhaps some of our readers can advise you in regard to your forty-acre experiment; but if I were you I should greatly prefer to try five or ten acres before going in so heavily.] A. I. R.

SELLING STRAWBERRIES, ETC.

GLEANINGS is at hand for June 15. Accept thanks for your kind remarks on my strawberries. Without doubt, there is a field open for the producer as well as the consumer to get nearer to each other, to the benefit of both. One thing is plain to me: A man may be a successful producer, and at the same time be a very poor salesman. Berries are largely grown in this vicinity. Thousands of bushels are shipped from here. I am satisfied that many berries are sold three to four times ere they arrive at the consumer's table. This means a low price for the producer and usually a high price for the consumer. I think the general unrest of the farmer is caused in some measure by the unbusiness-like way he disposes of his merchandise in the market. Let us try to improve in all directions.

R. STEHLE.

Marietta, O., June 20.

STRAWBERRIES, ROSES, AND PUMPKINS.

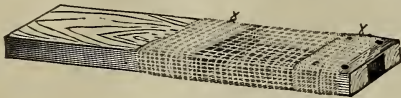
I am much interested in your gardening. Strawberries, roses, and pumpkins are my hobbies. I raised last year 36 squashes that weighed from 100 to 214 lbs.—average 165, besides tons of smaller ones. Hardy roses, grown in the open ground, can be sold by the million. One who loves bees, naturally loves roses.

CHAS. J. QUINBY.

White Plains, N. Y., June 9.

[Friend Q., you had better invite Dr. Miller to come and see you when your roses are in bloom. Here at the Home of the Honey-bees we manage to have pumpkin pie once a week the year round. So you see our tastes run a good deal parallel.]

entire lot, and two were feeble. Heretofore we have introduced all our queens on the Peet plan; but having had so much success by the candy method I thought I would risk them. I selected Dr. Miller's introducing-cage as best for the purpose; and lest you have forgotten it,



C. C. MILLER'S INTRODUCING-CAGE.

I here reproduce the engraving, which we gave a few months ago. I tried some in the Morrison introducing-cage, and the two feeble ones on the Peet plan. About 30 of the queens were put into the Miller cages; and every one of the queens, so far as I know, was introduced successfully, the bees eating out the candy and liberating the queen; and not only that, the queens were given to colonies that had just been made queenless—that is, we did the foolhardy thing (foolhardy in the opinion of some) of taking out one queen and introducing another at the same operation. About ten others were put into Morrison cages. These did not work very satisfactorily, although we lost no queens. It took the bees so long to gnaw through the candy to get at the queen that we finally had to release them on the third day, and then go through the nuisance of "unballing" a few of the queens. Does this not prove that the operation of releasing queens is liable to start the bees to balling her as soon as she is let out? I have noticed it a good many times before, and Neighbor H. says he has also. The great secret of the Peet, or candy, method of introducing is, that the queen is released very quietly, without any disturbance. Did you ever notice that, sometimes, when handling a colony—that is, tearing it all to pieces, as it were—the bees will often ball their queen? The poor little chaps know that something is wrong, and so they lay it to the queen; and in making known their appreciation of the fact, they are quite apt to ball her. A colony that has been queenless is more apt to cut up this caper than one that has had brood reared in the hive continuously for several weeks.

INTRODUCING WITH TOBACCO.

I omitted to say, that, as a further precaution, I went around toward evening to all the colonies that had an imported queen, and blew tobacco smoke in at the entrance—enough to give them all one scent. As all the queens were successfully introduced except the two that were so feeble*, I do not know how much effect the tobacco had. But this I do know: Last year we received an importation of some fifty queens. Half of the number were given to Neighbor H., and half we retained in our own yard. They were all, or nearly all, caged by the candy method. We lost 25 per cent of those we introduced, while Neighbor H. lost none. In comparing notes we found that he had smoked his the night before thoroughly with tobacco smoke, while we did not observe this precaution. You know how we stand on the tobacco question in regard to its use by the genus *homo*. But a good many bad things (or things which are usually used in a bad way) have certain legitimate uses. There is nothing else that gives such a strong, clinging odor as does tobacco.

I have said, that all the queens were success-

*These two queens were caged in Peet cages, on the candy plan—that is, they were immediately given access to cells of sealed honey; but they were too far gone to introduce.

fully introduced with the exception of those noted; but here were five or six, even after they had started to laying, that died, for some reason that we could not discover, unless it was that the long journey was too severe.

MYSELF AND MY NEIGHBORS.

Be sober, be vigilant; for your adversary the Devil, as a roaring lion, walketh about, seeking whom he may devour.—I. PETER 5: 8.

What do I know about sin and Satan? If I commence to talk to you about bees or gardening, you would probably listen, for you would know that I talk from personal experience. Not only my daily work, but my daily sympathies and thoughts are full of these things. Now, dear friends, I do know *something* of bees, and of gardening and of strawberries; but, oh dear me! with pain and anguish I am obliged to confess that I know a *thousand times more* about sin and Satan; yes, and I know, too, from personal experience—actual conflict—and, I was going to say, from *actual contact*; for I feel every *hour* of my *life*, and in every *fiber* of my *being*, that I am *scared* and *crippled* by sin. Somebody has said that there is only one thing that God hates, and that is sin. Why should God hate sin? In the first place, sin is *deceptive*. Satan is a *hypocrite* and a *liar*. We have the words of Jesus for it: "He is a liar and the father of lies." Sin *blinds* us. It spoils our ordinary good sense. It dims our perception. It makes us *crazy* when indulged in. Satan persuades us that the best friends we have on earth are enemies. He also, persuades us that our worst *enemy*—yes, the very worst enemy we have in the *whole wide universe*—is our best friend. When a drinking man attempts to reform, Satan's very best chance of success is in persuading him that his old cronies are the *best* friends he has—yes, a better friend than his own poor patient wife and suffering children; and if he listens to Satan he will make him *believe* it again and again. The greatest trouble with us is, that we fail to *recognize* Satan. When some good friend tells us that this thing that is spoiling our lives is the work of Satan, we say, "Oh, no! Why, it is just exactly the other way."

Something like two years ago, in the middle of winter it became desirable for us to do some disagreeable work out in the mud in the streets. Three or four sturdy German men who were out of work volunteered to do it. I was out with them, directing them, so as to save a wasting of strength, uselessly, as much as possible, and also because I like to become acquainted with these German laborers. Why, there are three or four of them on our grounds for whom I have more reverence and respect, I do believe, than for many of my friends who always wear nice clothes, and hardly ever step into the mud enough to mar the polish of their soft fine boots. Now, please do not think that I mean any fling at well-dressed people or people of means. I love them; but I love, also, the sturdy laboring classes. I presume it will not be out of place to say that I rather *prefer* to be among the latter. When I find a great strong man who could toss me over a high board fence, and not half try either, I like him—I mean, of course, a good-natured strong man; and when this big fellow combines gentleness, kindness, and a good pure life, with his enormous strength, I just like to work by his side; and I rather think he likes me too. Well, on this wintry day, when I wanted somebody who could stand it to work out in the rain, and dig in the mud, I became

acquainted with one of these German friends. The expression, "one of God's nobility," comes into my mind, and I am going to use it. Before long one of my foremen said, "That's a mighty good man, and I think we had better try to hang on to him." I smiled, for it was just what I had been thinking. Yes, there were two or three of them who carved out for themselves permanent situations before night that first day, and they are with us yet, and I should really like it if they could work with me as long as they live. One of them can not yet talk English very well, and sometimes he does the wrong thing in consequence; but I often tell my wife something like this: "Look here, Sue; whenever you see me vexed with Mr. —, you just remind me of what I am saying now. He has, in times past, pitched into difficult work with such enthusiasm and energy that he has got a goodly balance on the other side to his credit, and I want you to remind me of it."

Well, not many months ago one of these very men came to me with a troubled countenance, and finally informed me that he must leave my service. I stood in open-mouthed astonishment when he went on to say that he had so much trouble with his wife that he thought it best for him to go away and never come near her any more.

"Why, my good friend, you have a nice little home all paid for, and, what is of a hundred times more moment, some little children who belong to you and your wife jointly. God gave them, and no power on earth can make them other than yours. Are you going crazy?"

"Yes, Mr. Root, I know about the children, and that is the saddest part of it;" and the tears came into his eyes as he spoke; but he insisted that the best thing he could do was to leave wife, children, and all, and go away off for himself. In vain did I try to tell him that, although he and his wife might both have been to blame, the main point before us was, that *Satan* had made an entrance into his household, and had succeeded in poisoning him against his wife, and his wife against him. He would not admit that it was *Satan's* work, however. Like Adam of old, he insisted that it was "the woman." She was so disagreeable he could not live with her. I told him he should consider the whole matter a good deal the same as if the *smallpox* or *measles* had got into the family. But he said he had tried to be peaceable and kind, until he could stand it no longer. I exhorted and implored. My friend, did you ever try to make peace, and drive out *Satan* when he had got once well entrenched? If you have, you know what a task it is. When I found I could do absolutely *nothing* with him, I told him that I was going to talk with his wife; but, alas! she could talk only German, and I only English; and he was determined to take the first train out of Medina. I made up my mind he was crazy. Well, he *was* crazy; so are *you*—so am *I*, when *sin* and *Satan* get us in their power. I remembered the Endeavor Society. One energetic member is a woman who speaks both English and German—a special friend of mine. I went for her, and she actually walked a mile and a half on a hot day, leaving her household cares. But she succeeded no better than I did. The wife said, "Let him go if he wants to." Now, this man professed to be a Christian; but I believe he had not united with the church. He told me his little girl said her little prayer every night before she went to bed; and yet he even contemplated leaving her *for ever* to the care of strangers, and the cold hard world, because he said he wanted "peace," and could not find it at home. He not only *contemplated* so doing, but he left his work, put on his best clothes, took a little satchel, and

boarded the train. Am I not right when I say that *Satan* makes people *crazy*? That evening was the regular meeting of the Endeavor Society. I told them what was on my mind, and several prayers were offered in behalf of our poor friend. I remember that I prayed very earnestly that God would touch the heart of this deluded brother, and bring him back like the prodigal son. I prayed that God would take him in hand, and do that which I had found *myself* utterly *unable* and *incompetent* to do. I *thought* I prayed in faith; but yet when our friend came back in just 24 hours, I was *astonished*. I asked God to *send* him back; but while I was asking I am afraid I had no faith at all that he *would* come back. He seemed so determined that I fear that I had got an idea that even God could not handle him. He told me afterward, that, just about the hour when his little girl said her prayer before going to bed, he got to thinking of her and of the little prayer, and he could stand it no longer. Now, don't you see that this was about the hour when our little band of Christians was praying for him at the Endeavor meeting? After breakfast Sabbath morning, I thanked God in my prayer before the family, for the return of our friend, and asked him what next he had for me to do. Even while I was speaking, came the thought, "Go down and see the reunited family." We have our breakfast rather earlier than some people on Sunday morning, so I arose from my knees and walked down to the little home. Every thing was as neat and handsome around it as could be—a nice well-kept garden; trees, fruits, and flowers, and a hen with thirteen new chickens right near the front door. Of course, I met with cordial treatment. His little girl said her prayer to me in German, and the smiling mother asked papa to bring the prayer-book. I sang for them a few pieces from the Gospel Hymns, and then they stood up and sang one or two of their German hymns. Of course, I could not understand a word, but I found my stalwart friend could sing, as well as handle a pick and shovel. Why, we had a beautiful little service that Sunday morning, and I visited (?) quite a little with the pleasant-faced woman who could not talk a word of English. Could it be possible that this was the one whom her husband said he could not live with because she was *so hard to please*? Now, this is *Satan's regular legitimate* work. May be I can help you a little by telling you how the whole thing started. It all commenced by finding fault with each other. The woman not only did the housework, but worked in the garden and out on a few acres of ground belonging to their place; but either she did not do things right, or something else, and the father complained. Then she complained of the father, and *Satan* laughed in his sleeve as he saw the matter progress from bad to worse. Look over the daily papers, note the crime and suicide, and you will see the breaking-up of families starts in just this way; and it is possible, dear brother and sister, that, when your eye meets these pages, you may remember some experience of *your own* in something like this very line. Perhaps you were wise enough to say, before things got to a very bad pass, "Get thee behind me, *Satan*."

I have given you an instance in the above of the way in which *Satan* persuades one that his best friend is an *enemy*. Let me now take the other side, and show you how *Satan* may delude you into the belief that the worst enemy is your *friend*. You may recall what I said about the sad case of friend Mason, of the *Advance*, and of his going away with his lodger's wife. You have read this poor woman's plaintive letter that came away over the mountains from

California. Satan doubtless persuaded her that this man, who was the legal husband of another woman, was a *friend* of hers. She had had trouble with her own husband. This, of course, was Satan's work. It was a sort of foundation-stone for a structure that Satan was going to build. When he got the foundation in good shape then he began to persuade her that this very man was a *friend*. Why, it makes one shiver to think how Satan will craze the brain and delude his victim. Think of considering one a *friend* who would break up a household, and sever the most solemn and sacred ties! and yet such things are going on every day. Our daily papers tell the sad stories. At such times Satan comes as an *angel of light*. (See II. Cor. 11:14.) He persuades his victims that God sent him as a messenger of *peace*. He frequently puts on a sanctimonious air, and leads one to believe that his mission on earth is to relieve *suffering* and *distress*. In *awful* hypocrisy he even attempts to offer consolation and "rest to the weary." Perhaps by and by the victim sees the sham and the cheat, and recognizes how he has been trapped. But by this time the fetters are strong. They act not only like intoxicating drink, but, as I have sometimes imagined, they craze the brain like opium. The poor victim, under this sort of infatuation, thinks he can never again be happy unless he is near the idol which Satan has set up. And let me tell you, my friend, that Satan builds idols out of *exceedingly commonplace clay*. He will take the most commonplace individual on the face of the earth; then he will clothe this person with a halo of light. He will drape him (or *her*) with fantastic rainbow colors; and when he gets his victim where he is willing to *sell* himself, *body* and *soul*, for the privilege of *following* this ignis fatuus, his work is done. The man leaves his lawful wife, leaves the bright happy home, leaves loving children, who have learned to prattle his name in love, and goes off with—I almost shudder to say it—goes away with *another man's wife*, wrecking *two* households. By and by the scales fall from the eyes of both of them. They awake to the fact that this man or woman is no better and not much different from the ones they left. *No better*, did I say? Why, bless you, this is a great blunder of mine. Is the woman who runs off with some other woman's husband to be *compared* with the one who stayed at home, and was *loyal* and *true* to her *husband* and her *children* and her *God*? God forbid that such a thought could enter any one's mind. And yet these things happen here and there with startling frequency. It is the old, old story—*entrapped by Satan*. Now, I have been holding up a few notes of warning. I have suggested only *two* ways in which Satan breaks up households; but he has a *thousand* ways at his command. Some poor soul may say, "Well, brother Root, suppose we admit all you say. Suppose we say we knew beforehand what the outcome would probably be. Is there any hope for the sinner?" Oh! to be sure there is, my friend, and this is the happiest part of my talk to-day. There is a remedy, quick, swift, and sure. "Behold the Lamb of God that taketh away the sin of the world." "There is none other name under heaven given among men whereby we must be saved." No one was *ever* lost until he deserted his Savior and turned his back on him; and one who already feels himself to be lost has nothing to do but to turn about, like the prodigal son, and come home. What a word is *home*! It should always include the thought of going back to God. "God bless our home" is a favorite motto. While God reigns, and while the Savior is recognized daily, Satan is banished. But nothing but the name of Christ Jesus can protect us from Satan's wiles.



If a man abide not in me, he is cast forth as a branch, and is withered.—JOHN 15: 6.

EIGHT pages extra again this issue.

OUR Shane yard is booming with honey, while the bees at home have scarcely begun to whiten the edges of the cells. This is another evidence of what an out-yard may do when the home yard is doing comparatively nothing in honey.

WE have abandoned the pound cage for shipping bees by express, simply because a large percentage had to be replaced. We now use, instead, a nucleus box, and ship on combs of honey or brood. Sent in this way they always go through in good order.

SOME of the new bee-journals that started at the beginning of this year have either ceased publication already or else they are behind in their issues. What is the matter with them? Some of them will have to die or there will not be a chance for a new crop next January, as usual.

THE one-cent-postage Benton cage was first introduced by C. W. Costellow, of Waterboro, Me., instead of by W. J. Ellison, of Catchall, S. C. We are glad to make the correction. Mr. Costellow has been quite a pioneer in the queen-cage business, as the old back volumes of GLEANINGS show.

WE have just learned that Capt. J. E. Hetherington, with his several thousand colonies, is using a good many reversible Van Deusen-Hetherington frames. This is news to us, as we supposed he had exclusively the Quinby closed-end frames. Those Van Deusen frames are fixed frames, and have besides several good features.

MILK-SNAKES are becoming rather frequent at our out-yard. They are exceedingly fond of bees, and there are some big fat ones in our yard. Neighbor H. says a pair of them used up a whole colony of his once, and he has actually seen them gobble up the workers at the entrance. Who has a method of trapping or killing these "varmints."

LATERAL MOVEMENT IN FRAMES.

SOME seem to have the notion that fixed distances entirely destroy the function of lateral movement. Nothing can be further from the truth, if he uses the open-side, or, better, a hive a little wider, with a movable follower. By removing the follower, the hanging partly closed end Hoffman frames can be slid along, and leave plenty of room to remove any particular frame. Lateral movement is obtained in its perfection with Hoffman frames.

RAMBLER'S VISIT TO THE HOME OF THE HONEY-BEES.

WE have just had a very pleasant call from Rambler, now on a long ramble to California, all of which GLEANINGS readers will have the benefit. He seems to be in excellent health and spirits. Dr. Merchant's remedy works like a charm. See particulars on page 550. It is not often that we sit up late talking with beekeepers; but with Rambler the time flew away

so fast that, the two nights he spent with us, we talked till midnight and after, and then wanted to converse longer. Why is it that a couple of bee-keepers like to talk so long? Rambler had that mysterious and ever-present camera with him. Don't know whether he used it or not. We'll see.

THE Report of the 22d Annual Convention of the New York State Bee-keepers' Association, held at Albany last January, in pamphlet form is before us. Price 25 cts. It can be had of the Secretary, G. H. Knickerbocker, Pine Plains, N. Y.

WHEN you receive queens, be careful not to lay them on a shelf where ants can get at them. A customer just writes that the queen he received was a nice one, and he was well pleased with her. He laid the cage containing her and the attendants upon a shelf temporarily; and when he went to get her she was covered with small ants, dead. This has happened more than once, and hence this caution.

By request of W. I. Buchanan, Chief of the Department of Agriculture for the World's Columbian Exposition, the editor of the *American Bee Journal* has prepared a list of all the apicultural societies in the United States, and published them, with the name and address of the secretary. There are 111 in all in the list. As there are so many, there may be some errors, and the editor requests that corrections be made at once, so that he may be able to present a full representation before the directors of the World's Fair.

OUR thanks are due to Mr. W. Z. Hutchinson, editor of the *Review*, and the stenographer who is taking down these words, for the kind things said in a well-written biographical sketch that appeared in the last *Review*, relative to E. R. R. It was a complete surprise to him. If we have said any thing of a complimentary nature in reference to Mr. Hutchinson's new book on the next page, it was said solely on the merits of the work, not because we desired to reciprocate. Our conclusions as to the excellent character of the new book were already formed before the *Review* with the sketch came to hand.

THERE has been some complaint because our index has been left out for several months. The idea of omitting it was that we might, at the end of the year, be prepared to make a more complete index of the whole volume. When it is made up just before going to press, justice can not be done it; and we thought that we would try the experiment of leaving it out without saying any thing about it. Well, as some have complained, we renew it again in this issue. One or two, for some unaccountable reason, seemed to take the omission as an insult or injury. We hope this explanation will satisfy all.

THE MICHAEL STRAWBERRY.

IN my strawberry report I neglected to mention the Michael's Early. It is a splendid grower, and we could furnish any quantity of plants with very little trouble; but I very much fear that, like all the other *extra*-early strawberries, it is not a good bearer. As the frost killed most of the bloom in consequence of being so early, we have decided to give it a trial another season. We have also tested Lovett's Early; but as these were put out late last fall, we can not say much about them. The fruit is of good size, and I am inclined to think it will give us

more berries than Michael's Early. We shall have to wait another season before we can say any thing definite. We have a great quantity of plants of Michael's Early to spare; but at present I prefer not to offer them for sale unless it is to somebody who has already grown them, and who feels satisfied they will produce fruit in abundance during a favorable season. A. I. R.

THE BEST METHOD OF FASTENING FOUNDATION IN SECTIONS.

THE Hayes foundation-fastener, and the Arthur C. Miller machine, on the same principle, are far ahead of any pressure methods of putting starters into sections. The scheme of having a heated plate or a heated tongue held for a moment in contact with the edge of the starter, and said plate then drawing back suddenly, leaving the melted edge of the starter to stick on the section, is vastly ahead of any other method; and it seems hard to understand how any one can come to any other conclusion after having tried it faithfully. When we visited Dr. Miller a few months ago, we saw an Arthur C. Miller foundation-fastener hanging up on the rafters of the honey-house, unused. "Why, doctor, why haven't you tried it?" we asked. "Never had the patience to get it down and fuss with it. The Clark fastener is good enough." Doctor, you want to pull that fastener down and try it; and if you don't reverse your judgment, it will surprise E. R. R.

FIVE-BANDED VERSUS THREE-BANDED BEES.

W. J. ELLISON, in the *Bee-keepers' Review*, says, "I have several colonies of five-banded bees; and if they do not do better another season, they will have to take the next seat lower. . . . They surpass every thing in beauty; and the question now is, Shall we raise these queens because they please our customers, even though we feel that we have their superiors in three-banded bees?" In a letter just received from Mr. Ellison he reiterates in substance the above, and then adds: "I have three-banded Italians that can outstrip the five-banded bees altogether in honey-gathering. Some of them are also very irritable, and unpleasant to handle, and the crosses are not as easily discovered. A colony of hybrids from five-banded stock may be called three-banded pure." Our yellow bees were the first to die off, and some of them have been very irritable, and we attribute it to the fact that they were bred from Cyprian or Syrian bees. Let customers who want beautiful bees have them, but let them be acquainted with all their qualities. While we believe it is possible to breed both for utility and beauty in one bee, the *tendency* in such breeding is to single out color, and let every thing else go. Breed for energetic workers, and you have a quality in bees that is valuable—that is, a money-maker. If we can add beauty at the same time, then we are so much ahead. Mr. Doolittle thinks we can do this.

THE CANDY-MAKER AND THE BEES; A VICTORY FOR THE UNION.

THE BEE-KEEPERS' UNION has scored another victory. At Easton, Pa., a certain candy-maker (as we learn from the *American Bee Journal*) took measures to have the council prohibit bees within the corporation. Before this body took any action, however, C. G. Beitel, a bee-keeper of that place, requested a hearing. He used the argument of Judge Williams in the Arkadelphia case, and then showed the committee that his bees were within one thousand yards of the city limits. As the city is only two miles across, moving them only a thousand yards would make no practical difference; and,

besides, he explained that there are bees just outside the city limits, all around the city, and prohibiting them from the corporation would not help the matter at all, because bees will fly from one to three miles. One bee-keeper offered, at his own expense, to put screens in front of the windows and doors of the candy-factory; but the proprietor would not be appeased in that way; and the result is now, that a committee of the council saw the foolishness of trying to prohibit bees in the corporation; and when the council took a vote, they struck it out of the ordinance entirely.

Mr. Beitel makes a strong point; viz., in small corporations it is entirely useless to prohibit bees *inside* of the town limits, because those just *outside* of the limits can come in and do practically as much damage. Putting them outside of the limits does not help the matter. An ordinance that would prohibit bees from being *kept* within the corporation must also prohibit the *bees themselves* from flying into the city or town. As bees can fly from one to three miles, the utter foolishness of such a measure is apparent to even those who are not bee-keepers. The only practical way is to screen the windows, and put on a few bee-escapes, so that the few that do accidentally get in while the doors are open can escape.

ADVANCED BEE CULTURE: HUTCHINSON'S NEW BOOK.

As soon as it was announced that Mr. Hutchinson was to write a new book, I waited with no little degree of expectancy for its appearance. Accordingly, on the evening following the day of its arrival I sat down to read it; nor did I lay it aside until I had read almost every word of it. The book is well named. It is not only *Advanced Bee Culture*, but I think it is a little in *advance* of the times. From the nature of the subject, it does not go into details ordinarily sought after by beginners; but to a professional or old bee-keeper it is suggestive of a good many new kinks. Like its predecessor it is nicely bound in appropriate cover; but is larger, and contains 87 double-column pages the size of those of the *Review*.

It discusses its subjects somewhat in the order of the seasons of the year. For instance, the first subject considers the "Care of Bees in Winter;" the next, "Securing Workers for the Harvest;" and so on until we get to "Sections and Their Adjustment on the Hives," and finally ends up with "Mistakes in Bee-keeping."

Like the *A B C of Bee Culture* it gives, in a condensed form, matter that has appeared from time to time in the bee-journal of which the author is editor. This lifts both works beyond the vale of personal observation and personal prejudices.

On page 15, under the subject of "Bee-hives and their Characteristics," the author says: "The times have not seemed to take kindly to inversion. Like many new things it was extravagantly praised; but it is far from being valueless." I agree with our author exactly; but I would add, with fixed frames inversion or reversing is feasible and practicable; but with loose frames, or, as Mr. Hutchinson calls them, "open-end frames," it is not practicable. That is, I mean the expense required to make loose frames invertible would more than offset the advantage gained.

In the chapter on "Bee-hives and their Characteristics," Heddon's new divisible-brood-chamber hive is given the preference; after that the Dovetailed hive with loose frames is given the choice. Mr. Hutchinson enumerates a number of good features in the divisible-brood-chamber hive—among them the shake-out function, and the readiness with which

queens can be found thereby. I believe it can be done, but I have not been successful with it in our Heddon, neither has Mr. J. H. Martin, who, by the way, is an admirer (and was formerly a possessor of 100) of these hives. Said Mr. Martin, "This is one of the things claimed by Mr. Heddon that I can not make work."

In the same chapter on hives, Mr. Hutchinson, in speaking of fixed frames, says: "Closed-end frames are having quite a boom just now. Contrary to the belief of those who have never tried them, they can be handled *more rapidly* than the open-end frames."

On the subject of honey-boards, he thinks the slatted style will still be retained, in spite of the fact that thick and wide top-bars will probably rid the hives of the nuisance of burr-combs. The slatted honey-board has gone out of sale in our establishment almost entirely; and as it only keeps burr-combs from the sections, and still leaves them on the brood-frames, I could not be induced to use it after experiencing the great comfort of using wide and thick top-bars this and last summer.

Under "Sections, and their Adjustment on the Hive," Mr. Hutchinson prefers the old-style Heddon case for a non-separator arrangement, and the T super for those who prefer separators, or are obliged to use them.

Under "Varieties of Bees" he decides in favor of the Italians for extracting, and hybrids for comb honey. Of Carniolans he says: "I do not find the Carniolans any more gentle than the Italians; and they do run about on the combs in a reckless manner." A little further on he thinks they are worthy of a trial, but would want to test them three or four years before coming to a decision.

Mr. Hutchinson is at home on the subject of introducing queens. He, like myself, prefers the candy method, and corroborates what I have said in another column on the advantage of letting the bees release the queen quietly themselves, without any disturbance resulting from opening the hives.

Under "Shade for Bees" our author does not recommend evergreens, grapevines, and the like, but prefers an easily adjustable shade in the form of a shade-board, because shade is not needed in the spring and fall, nor in the morning and evening; and he adds: "For the comfort of the apiarist it is well to have a few scattering trees in the apiary; but let their branches be trimmed to such a height that they will not be knocking off his hat nor gouging his eyes." This savors strongly of experience of one who has "been there." I have had my hat crammed down over my ears, *a la* Miller, my veil torn, and occasionally a punch in the face, from a naughty twig that stuck out in the way. I might add further, that I experienced much the same inconvenience with grapevines, barring the cramming of the hat over the head.

In "The Use and Abuse of Foundation," Mr. Hutchinson covers the ground fairly and candidly; but I think he retracts some from the position he formerly occupied in his little book, "The Production of Comb Honey." But an editor who never retracts is one who should be avoided.

Under the subject of "Queen-rearing" Mr. Hutchinson is surely at home; and I know that the plans advocated there will work.

I have mentioned only a few of the subjects contained in the book, and only a thought or two from those. This book will very nicely supplement the work designed for beginners; and every apiarist who has more than a beginner's knowledge of the subject should certainly have the book. Price by mail, 50 cents postpaid. It can be had at this office.

E. R. R.

Queens! Queens! Queens!

If you want bees that will beat any thing you ever saw in every respect, try our strain of Italians. Warranted queens, each, 80c; six, \$4.00; doz., \$7.50. Safe arrival guaranteed. 13-14-15d

ORDER NOW, PAY UPON ARRIVAL.

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

In responding to this advertisement mention GLEANINGS.

Syracuse, New York,

IS A DEPOT FOR THE EAST FOR ALL OF A. I. ROOT'S APIARIAN SUPPLIES.

FOUNDATION is Our Own Make.

Don't buy foundation of us, for it would please you.

F. A. SALISBURY.

Our foundation is for sale by H. Alley, Wenham, Mass., and Model B. Hive Co., W. Philadelphia, Pa. In writing to advertisers please mention this paper. 4tfdb

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, 5tfdb
Sprout Brook, Montgomery Co., N. Y.

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 queen warranted in every respect. Price 75 cents each.

JAMES WOOD,

11tfdb
NO. PRESCOTT, MASS.
Please mention this paper.

ITALIAN 100 QUEENS.

Untested Queens, 61 cts. each. \$6.00 per dozen. Now ready to mail. 9tfdb

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

In responding to this advertisement mention GLEANINGS.

EGGS! Brown Leghorn, White Leghorn, \$1.25. Black Minorca, Plymouth Rock, Pekin Duck, \$1.50. Light Brahma, Langshan, Game, \$2 per 13 eggs. Strictly pure-bred. Ship safely anywhere. Illustrated circular free. **GEER BROS.,** 1tfdb St. Marys, Mo.

In responding to this advertisement mention GLEANINGS.

J. W. Taylor's Fine Italian * * *
*** * * and Albino Queens for Sale.**

Cheap tested Italian, \$1.50 each. Tested Albinos, \$1.50 each. Testee golden Italian, \$2.00 each. Untested queens, 75 cts. each; \$8.00 per doz. I guarantee safe arrival by mail. 9tfdb

J. W. TAYLOR, Ozan, Ark.

Please mention this paper.

LITHOGRAPH LABELS

In 12 Colors, at \$2.00 per 1000.

The 12 colors are all on each label. They are oblong in shape, measuring 2 1/4 x 2 3/4. They are about the nicest labels we ever saw for glass tumblers, pails, and small packages of honey. We will mail a sample, inclosed in our label catalogue, free on application, and will furnish them postpaid at the following prices: 5 cts. for 10; 35 cts. for 100; \$1.20 for 500; \$2.00 for 1000. A. I. ROOT, Medina, O

5-BANDED GOLDEN ITALIANS.

Beauties! The best workers we ever saw. Work on red clover. Very gentle. Drones 1 to 1/2 yellow. Won 1st Premium at Ill. State Fair in 1890. Nearly 300 booked for 1891. Warranted Queens, May, \$1.25, 6 for \$6.00; after June 1st \$1.00, 6 for \$5.00. Special discount for large orders as to dealers. Satisfaction guaranteed. No foul brood. Good reference given.

1tfdb **S. F. & I. TREGO, Swedona Ill.**

In responding to this advertisement mention GLEANINGS.

DISCOUNTS on all SUPPLIES!

All best improvements combined in hives, supers, etc. Special sizes made to order. Send for price list to OLIVER FOSTER, Mt. Vernon, Linn Co., Ia. 12tfdb Please mention this paper

HONEY A NEW DISCOVERY. EXTRACTOR.

Differing from all others ever yet made for the purpose. 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.

ITALIAN QUEENS.

Progeny large, and good honey-gatherers. Prices low. Send for price list. **C. M. HICKS,** 9-11-13d Fairview, Wash. Co., Md.

In responding to this advertisement mention GLEANINGS.

VANDERVORT COMB-FOUNDATION MILLS.

Send for samples and reduced price list.

1tfdb **JNO. VANDERVORT, Laceyville, Pa.**
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 beehives, 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. 23tfdb



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 AND SON,
PUBLISHERS

246 East Madison St., - CHICAGO, ILL.

FIVE-BANDED BEES.

If you want queens that will produce the **handsomest** and **gentlest** bees on earth, bees that you can handle without smoke and get less stings than you will from the three-banded, or leather-colored bees, with smoke—if you want bees that are good workers, if you want bees that combine all these good qualities, then buy one of the queens that produce the **Golden Five-banded Bees**. My queen and bees took **first premium** at the Detroit Exposition last fall. I can fill orders promptly, for **Golden Five-Banded** untested queens, for \$1.00 each; 6 for \$5.00; or 12 for \$9.00. I have a few of the tested Alley queens, that I will sell for \$2.00 each. Make money orders payable at Flint, Mich. 11tfdb

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

LEATHER-COLORED

PRICE LIST FREE ON APPLICATION.

A. E. MANUM, - - BRISTOL, VT.

ITALIAN QUEENS.

Please mention this paper. 7-14db

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.

HONEY QUEENS.

Bred from two of A. I. Root's selected queens, now as follows: Warranted (mated to Italian drones), \$1; 6 for \$5.00; tested (young) \$1.75; select. \$3 to 5. All this season's rearing.

FIVE-BANDED ITALIANS

at above prices. Sample bees of either, 5 cts. Safe arrival guaranteed. 12tfdb
JACOB T. TIMPE, Grand Ledge, Mich.
Please mention this paper.

Established 1878.

SMITH & SMITH,

Wholesale and Retail Manufacturers of

BEE-KEEPERS' SUPPLIES.

KENTON, OHIO.

Price List Free. 4tfdb Mention Gleanings.

CARNIOLAN QUEENS

FROM IMPORTED MOTHERS.

SEND FOR PRICE LIST.

11-14db **M. W. STRICKLER,** YORK, PA.
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,
New London, Wis. 21-12db

In responding to this advertisement mention GLEANINGS.

IT'S OUT NOW

"ADVANCED BEE-CULTURE," a book of 88 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.

ITALIAN QUEENS

FROM THE FINEST STOCK.

1 Untested Queen	\$.75.
3 " Queens	2.00.
1 Tested Queen	1.50.
3 " Queens	4.00.
2-frame Nuclei, with any queen,	\$1.50 each extra.	13-14d

Safe arrival and satisfaction guaranteed.
W. J. ELLISON, Catchall, Sumter Co., S. C.

ELLISON'S

AND BEES.

In responding to this advertisement mention GLEANINGS.

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,
Bleachers, Refiners, and Importers of Beeswax,

5-16db **Syracuse, N. Y.**
In responding to this advertisement mention GLEANINGS.

75 CENTS EACH FOR UNTESTED QUEENS FROM IMPORTED OR FIVE-BANDED GOLDEN MOTHER.

IMPORTED ITALIAN QUEENS.
W. C. FRAZIER, ATLANTIC, IOWA.

7-17db 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,
11tfdb **Bell Branch, Mich.**

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.,

Rock Falls, Illinois.

6tfdb In responding to this advertisement mention GLEANINGS.

KIND WORDS FROM OUR CUSTOMERS.

GLEANINGS AS AN ADVERTISING MEDIUM.

Our ad. in GLEANINGS gives better returns than any other at present. We are CROWDED, and still they come. S. F. & I. TREGO.
Swedona, Ill.

The two untested queens were received in good order. Thanks I shall continue to patronize you, as I need. I shall also recommend you to the Alliance. N. G. WARNER.
Dysart, May 9.

We received your postal of the 2d, stating that you had sent the queen. We received her on the 4th, and are well pleased with her—no trouble in introducing. THOMAS MEYERS.
Carsonville, Mich., June 11.

Mr. Root:—Inclosed is bill, and one dollar; 75 cts. of it is the balance on bill, and 25 cts. for a pair of scissors which we were sure did not come, and you were kind enough to send us another pair. Afterward we found them in the shop. They had been put in with the packing-paper. M. P. RAYBURN.
London, Ohio, June 10.

I am well pleased with the queen. I sent for her May 23, at noon, and got her the morning of the 27th. I did not expect her so soon. That is the best that has been done for me on queens yet. Sometimes I have had to wait for months, but I never was disappointed in the Roots yet, and I have dealt with them for years. G. M. WAGGONER.
Carlisle, Pa., May 27.

THE NUCLEI THAT WE SEND OUT.

Order 54-8 arrived at our express office on the 6th. We had the nucleus in a Dovetailed hive by 11 A. M. next day, and they were busy bringing in pollen in one hour. The queen is a nice one, and the bees are little beauties. I am well pleased with them. E. C. CHILSON.
Vermillion, Kan., June 16.

OUR DOVETAILED HIVE.

I think your mode of packing is as near perfect as well can be; and as to the Dovetailed hives, I don't want any thing better. I have showed them to several of my bee-keeping friends, and they all agree with me that they are just as near perfect as can be. I guess you will hear from me again, even if freight charges are rather high. L. B. SMITH.
Lometa, Texas, March 21.

REPORT FROM ALABAMA.

Friend Root:—GLEANINGS has grown wonderfully since I last saw a copy of it, and I am satisfied your business has grown still greater. GLEANINGS is almost a small library of itself on many very useful things. I can not but look back when you had a little place of business up on Main St., and a little apiary down by your house, and I also think how hard you have worked, how many sleepless nights and anxious days you have spent in building up such a tremendous business in the interest of the many bee-keepers scattered over the entire civilized world where bees are cared for. F. H. FINCH.
Florence, Ala., May 31.

Mr. Ernest R. Root:—I wish to thank you for the many ideas advanced in GLEANINGS. I made a section-press next morning after receiving the last number, and A. Hayes' foundation-fastener in the afternoon. I broke off the end of an old cross-cut saw for a steel plate; a string connected with the top of the plate runs over the top of the lamp and down the front of the implement, to a treadle on the floor. A small brass spring draws the plate back when not in use. This is just contrary to Mr. Hayes' description, yet it answers all purposes. The section is placed on the guide-block, then a slight pressure on the treadle causes the plate to glide over the bottom of the section; and the instant the foot is removed, the spring withdraws it, and the foundation is slid down upon the section, and fastened. It took me just three hours to make it. Here are two implements that are of great value to me, and yet they did not cost a cent, except about eight hours' work. I trust this will help encourage you in your plans of furthering the interests of your valuable journal. Lebanon, O., May 27. JOHN Q. MULFORD.

ITALIAN 75 CTS. EACH. QUEENS, LARGE, YELLOW, AND 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.
13-14-15d Please mention this paper.

A Bee-Hive Free

From all objections. For description and prices see our circular. One-piece V-groove sections, per M., \$3; 3000, \$8.50; 5000, \$13.75. Brood frames, L. size, \$1.00 per 100. Hunt's foundation, Bingham smokers, Abbott honey-knives, Hill's smokers and feeders, 10,000 Parker foundation fasteners on hand. Send for price list. W. D. SOPER & CO.,
118-120 Washington St., Jackson, Mich.

19-17d Please mention this paper.

Job Lot of Wire Netting.

CUT PIECES AT A LOWER PRICE THAN FULL ROLLS.

Having bought from the factory, at our own price, five or six hundred remnants, as listed below, we are able to give you the choice of a great variety of pieces at the price of a full roll or lower. Full rolls of netting are 150 ft. long, and when they are cut we have to charge nearly double the full-roll rate, because it is so much trouble to unroll, measure, and cut, and run the risk of having a lot of remnants on hand. No doubt it is in this way that the following remnants have accumulated. It costs a good deal to get all this in shape so we can easily pick out from the lot the piece you want. But to move it off quickly, we put the price down so you can all have a chance at it. Remember, first come, first served. In ordering, therefore, name a second or third choice, or say that we may send the nearest we can if the piece selected is gone. On 5 pieces deduct 5 per cent, on 10 pieces 10 per cent. These remnants are shipped only from here. If any of you want to secure some, and don't want them shipped till later, when you will order something else, so as to save freight, pick out the pieces you want, send remittance with the order, with request to lay by till called for, and we will mark them as belonging to you. We prefer to ship them right out, however.

LIST OF POULTRY-NETTING REMNANTS.

Width in in's.	Size of Mesh.	No. of Wire.	Cis. p'r Sq. Ft.	Length of each piece. Multiply by the width in feet to get the number of square feet in each piece. Then multiply by the price per foot for the price per piece.
2	2	20	27.	
7 1/2	2	19	125, 103, 100, 94, 88, 73, 48.	
7 1/2	2	18	61, 53, 48, 35, 22, 22.	
36	2	17	13	23 15.
36	2	16	14	3: 18 in. wide, 40; 24 in. wide, 94, 88
7 1/2	2	16	13	60, 58, 56; 30 in. wide, 46, 24; 48 in. wide, 48.
18	2	15	2	87, 30; 12 in. wide, 100.
24	2	15	2	100, 90, 69, 52, 33, 13, 12.
36	2	15	2	17, 13, 7, 7, 6, 5; 60 in. wide, 21, 20.
42	2	15	2	121, 23, 3; 72 in. wide, 36, 33, 9.
48	2	15	2	72, 49, 48, 45, 38, 37, 30, 29, 26, 14.
30	1 1/2	19	1	33, 36 in. wide, 47, 47.
42	1 1/2	19	1	85, 59; 60 in., 56; 72 in., 64, 63, 10.
18	1 1/2	18	1 1/2	40, 14; 54 in., 12; 60 in., 34
30	1 1/2	16	2 1/2	79; 36 in., 14; 42 in., 34; 48 in., 92.
36	1 1/2	20	1 1/2	22.
36	1 1/2	19	1 1/2	48, 12, 10; 24 in., 42; 30 in., 75; 48 in., 78.
36	1 1/2	18	2	15, 10; 30 in., 6; 42 in., 80; 48 in., 22; 72 in., 8.
48	1	20	1 1/2	53; 72 in., 51; 30 in., 36; 9 in., 40.
24	1	19	2	26; 9 in., 24; 42 in., 50, 34; 48 in., 100, 40, 25; 60 in., 26; 18 in., 50.
32	1	18	2 1/2	85, 32; 24 in., 23; 30 in., 69, 51.
36	1	18	2 1/2	37; 48 in., 30; 60 in., 59.
9	3/8	20	2 1/2	7; 36 in., 75, 55.
24	3	16	1	19; 36 in., 86; 42 in., 14.
36	3	15	1 1/2	63; 48 in., 60.
48	3	14	1 1/2	45; 72 in., 100, 70.
14	4	14	3	166, 52, 35, 23.
22	4	14	4	107, 68, 35, 17, 15.
30	4	14	4 1/2	52, 47, 36, 33, 30, 29, 19, 18, 13, 9.
34	4	14	4 1/2	43, 37, 34, 25, 24, 23, 18.
42	4	14	5	68, 62, 62, 23, 22, 15, 12, 12, 8, 6.
46	4	14	5 1/2	82, 50, 44, 11, 5.
18	8	13	2	68 ft.; 36 in., 200 ft. at 4c; 45 in., 247 ft. at 5c.

Four and eight inch fencing. Price in fourth column is the price per foot in length.

A. I. ROOT, Medina, O.

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, 80c each; 3 for \$2.00. Strong 3-frame nucleus, with warranted queen, \$2.50. 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

Wire Cloth.

For door and window screens, tacking over hives and nuclei for shipping, making bee and queen cages, and a variety of purposes. We have the following list of green and black wire cloth which is not exactly first class, but is practically as good for the purposes mentioned, and at prices **MUCH BELOW** the ordinary price. You can no doubt select from this list a piece to suit your needs. Price in full pieces, 1 1/4 cts. per square foot. When we have to cut it, 2 cts. In case the piece you order may have been taken by some one else before your order comes, please say whether we shall send the nearest in size, or cut one the size ordered at 2 cts. per ft., or give a second or third choice.

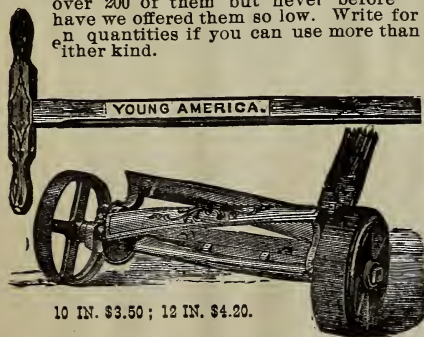
No. of Rolls, and Color.	Width, in's.	Length, Ft.	Sq. Feet.	Price of a Full Roll.	Pieces less than 100 ft. long. These figures are the number of square feet in each piece. Multiply by 1 1/4 cents for the price of piece.
10 green	8	100	67	\$1.17	65, 64, 63, 63, 63, 62, 33
25 green	12	100	100	1.75	
3 green	24	100	240	3.50	140 8, green; 200 black.
35 green	25	100	217	3.50	This is below reg. pr. of 1 1/4 c.
14 green	28	100	233	4.08	224, 224, green.
15 green	30	100	250	4.37	
5 green	32	100	267	4.67	
11 green	36	100	360	5.25	
6 black	38	100	317	5.54	269, black; price \$4.70
5 green	38	100	317	5.54	
3 black	40	100	333	5.83	
7 black	42	100	350	6.12	
15 green	30	100	250	4.37	

A. I. ROOT, Medina, Ohio.

YOUNG AMERICA

LAWN MOWER.

The cheapest machine offered anywhere. Many prefer them to one with two drive wheels because they run so easily, and are so light. They are just right for running among the hives. For the ladies who appreciate outdoor exercise you could have nothing better than a 10-inch Young America lawn-mower to keep the grass down on the lawn. We have sold over 200 of them but never before have we offered them so low. Write for prices in quantities if you can use more than one of either kind.



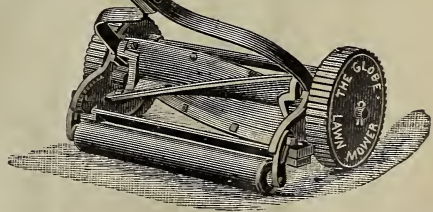
10 IN. \$3.50; 12 IN. \$4.20.

THE GLOBE LAWN-MOWER.

Guaranteed a First-Class Machine. The Globe lawn-mower shown in cut combines all the best features, and is a first-class mower in every respect. Having only three knives it will cut longer grass than those having four. The axle of the drive-wheel does not project, so that you can run close to the hive. It has two drive-wheels and roller, and the driving gears are simply perfect. The prices are very much lower than on any other first-class mower.

TABLE OF PRICES:

	LIST PRICE	OUR PRICE
10 in. Globe....	(\$13.00)...	\$4.55
12 " "	(15.00)....	5.25
14 " "	(17.00)....	5.85
16 " "	(19.00)....	6.65
18 " "	(21.00)....	7.35



A. I. ROOT, Medina, Ohio.

ITALIANS

9tfdb Box 77.

Tested queen, \$1.25; Untested, 80c. Nuclei, brood, and bees by the lb. Send for price list. **MRS. A. M. KNEELAND,** Mulberry Grove, Bond Co., Ill.

Please mention this paper.

JOHN NEBEL & SON, HIGH HILL, MO.
9tfdb
logue tree.
kinds of Bee-keepers' Supplies in stock. Catalogue
bargain.
Hives, Sections, Foundation, and all
tested, 70 cts.; 3 for \$2.00; 12 for \$7.00. Nuclei at a
work on red clover. Tested, \$1.10; 3 for \$3.00; un-
Golden Italian queens, bred for business; bees
For the Next 30 Days.

**And get New Stock into your Apiaries
TAKE TIME TO ORDER,**

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; 5 black at 20 cts. each. Most are clipped and young. **CHARLES H. THIES,** Steelville, Randolph Co., Ill.

About 75 misdated queens, all from pure mothers. Price 40 cts. each; \$3 per dozen. **W. V. MOREHOUSE,** Lafayette, Tippecanoe Co., Ind.

Five misdated Italian queens at 35 cts. each. **CHAS. MCCLAVE,** New London, Huron Co., O.

Seven black and hybrid queens at 25c each. No choice. Three misdated Italian queens, reared from imported mother, 50c each, or \$1.25 for the 3. **W. L. MALOON,** West Bowdoin, Sagadahoc Co., Me.

I will sell, during July and August, to all who will send cages prepared for reception of queens, hybrids, 25 cts.; tested, 50 cts. Tested are two years old, and in good condition. **C. C. KIRKMAN,** Redalia, Pitt Co., N. C.

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.

On Their Own Merits.

I am making a specialty of breeding **Golden 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. DUVALL,
Spencerville, Mont'y Co., Md.

9tfdb

Please mention this paper

Bee-keepers, Look Here!

Leininger Bros. are going to rear 1000 Queens this year from one of G. M. Doolittle's best queens; and if you want bees for

Business & Beauty Combined,

try one of their queens. In June, \$1.00; tested, \$1.70; select, \$2.50. The very best, \$4.50. Descriptive circular free. 10tfdb

LEININGER BROS., FT. JENNINGS, OHIO.

In responding to this advertisement mention GLEANINGS.



CHEAP ENOUGH.

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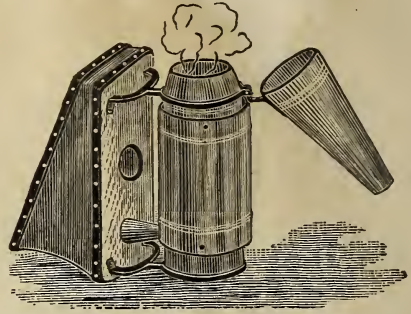
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