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VOL. XVII. NO. 3.

FEB. 1, 1889.

PEACE ON EARTH & GOD WITH YOU AND MEN



GLEANINGS
IN

BEE CULTURE

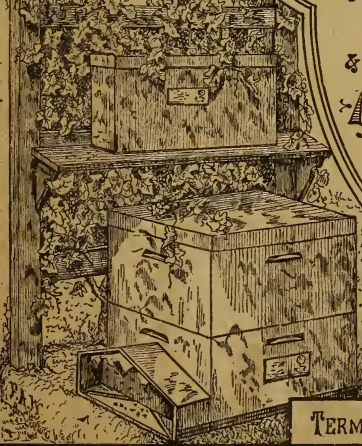
DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY

AL ROOT



TERMS, ONE DOLLAR PER YEAR.

BY FRANKLIN G. DUNLEAVY, DES.

ENTERED AT THE POSTOFFICE MEDINA, OHIO, AS SECOND-CLASS MATTER.

GLEANINGS IN BEE CULTURE.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

- On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions or more, 20 per cent; 24 insertions or more, 25 per cent.
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- On 192 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions or more, 40 per cent; 24 insertions or more, 50 per cent.

No additional discount for electrotype advertisements. A. I. ROOT.

CLUBBING LIST.

We will send GLEANINGS—

With the American Bee-Journal, W'y	(\$1.00)	\$1.75
With the Bee-keepers' Magazine,	(.50)	1.45
With the Canadian Bee Journal, W'y	(1.00)	1.75
With the Bee Hive,	(.30)	1.20
With the Bee-keepers' Review,	(.50)	1.40
With the British Bee-Journal,	(2.62)	3.25
With American Apiculturist,	(\$1.00)	1.70
With all of the above journals,		6.40

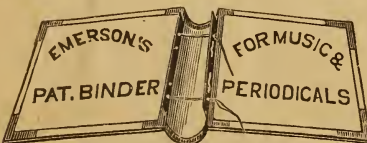
With American Agriculturist,	(\$1.50)	2.25
With American Garden,	(2.00)	2.60
With Prairie Farmer,	(1.50)	2.35
With Rural New-Yorker,	(2.00)	2.90
With Farm Journal,	(.50)	1.25
With Scientific American,	(3.00)	3.75
With Ohio Farmer,	(1.00)	1.90
With Popular Gardening,	(1.00)	1.85
With U. S. Official Postal Guide,	(1.50)	2.25
With Sunday-School Times, weekly,	(2.00)	2.25
With Drainage and Farm Journal,	(1.00)	1.75

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

FLAT - BOTTOM COMB FOUNDATION.

High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.
Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.
In responding to this advertisement mention GLEANINGS.



You can not look over the back No's of GLEANINGS, or any other periodical with satisfaction, unless they are in some kind of a binder. Who has not said—"Dear me, what a bother—I must have last month's journal and it is nowhere to be found?" Put each No. in the Emerson binder as soon as it comes, and you can sit down happy, any time you wish to find anything you may have previously seen, even though it were months ago.

Binders for GLEANINGS (will hold them for one year) gilt lettered, for 60 cts.; by mail, 12 cts. extra. Ten, \$5.00; 100, \$45.00. Table of prices of binders for any periodical, mailed on application. Send in your orders. A. I. ROOT, Medina, Ohio.

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

Untested Queens

FOR \$1.00 FROM JULY 1ST TILL NOV. 1ST.

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

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

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

- *A. I. Root, Medina, Ohio.
- *H. H. Brown, Light Street, Col. Co., Pa. 1t189
- *Paul L. Viallon, Bayou Goula, La. 1tfd89
- *S. F. Newman, Norwalk, Huron Co., O. 1tfd89
- *D. G. Edmiston, Adrian, Len. Co., Mich. 1tfd89
- *Jos. Byrne, Ward's Creek, East Baton Rouge 1tfd Par., La.
- *E. Burke, Vincennes, Knox Co., Ind. 5-3-89
- C. C. Vaughn, Columbia, Tenn. 2tfd88
- J. W. Winder, New Orleans, La. 7tfd88
- Wm. L. Ashe, Edwardsville, Mad. Co., Ill. 1tfd88
- J. M. Jenkins, Wetumpka, Ala. 9tfd

Hive Manufacturers.

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

- A. I. Root, Medina, Ohio.
- P. L. Viallon, Bayou Goula, Iberville Par., La 1tfd89
- C. W. Costellow, Waterboro, York Co., Me. 1tfd
- R. B. Leahy, Higginsville, Laf. Co., Mo. 2tfd88
- J. M. Jenkins, Wetumpka, Ala. 3tfd
- F. A. Snell, Milledgeville, Carroll Co., Ill. 4-5-89

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16-page Weekly—\$1.00 a year.

Sample Free. THOMAS G. NEWMAN & SON,
925 West Madison Street, Chicago, Ill.

BEE-KEEPER'S GUIDE.

Every farmer and bee-keeper should have it. 15th thousand just out; much enlarged, beautifully illustrated, and fully up to date. It is both practical and scientific. Price \$1.50. To dealers, \$1.00 by mail to any address. In 100 lots, 50% off by freight. 17-15d Address A. J. COOK, Agricultural College, Mich.

In responding to this advertisement mention GLEANINGS.

BROTHER BEE-KEEPERS,

Order your supplies from a railroad center, and save freight. Goods sold as cheap as elsewhere. Send for price list free. 2tfd W. D. SOPER, Jackson, Mich. Box 1473. In responding to this advertisement mention GLEANINGS.

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NUMBER TWO OF THE NEW
QUEEN - BREEDER'S JOURNAL
JUST OUT,

CONTAINS matter of great importance to all bee-keepers. It is neat, witty, brief, and to the point. Articles from the best writers. Send for a free sample. 50 cts. per year. Address

3d E. L. PRATT, Marlboro, Mass.

NEW TOMATOES

BIG BUCKEYE FIELD CORN. **GOLD COIN SWEET CORN.**

Our illustrated Annual of Tested SEEDS, BULBS, TOOLS, &c., mailed free to all seed buyers. Two Colored Plates. It tells all about

SEEDS & Gardening

The best Guide. Prices Low. Seeds Reliable.

Used by Thousands of Farmers and Gardeners and no complaints. Originators of Paragon, Acme, Perfection, Favorite, Beauty and other Tomatoes.

A. W. LIVINGSTON'S SONS,
P. O. Box 278, Columbus, O.

OUR HOBBY

In responding to this advertisement mention GLEANINGS.

STRAW-BLACK-GOOSE-RASP-DEW BERRIES

CURRENTS and GRAPES.

ADA Large, Late, Hardy, Prolific, Black RASPBERRY, Latest of all in Ripening.

FIRST-CLASS * PLANTS * AT * LOW * RATES.
THEO. F. LONGENECKER,
Correspondence Solicited. 3tfd Dayton, Ohio.

In responding to this advertisement mention GLEANINGS.

J. FORNCROOK & CO.,
MANUFACTURERS OF THE
"BOSS" ONE-PIECE SECTIONS,



Will furnish you, the coming season, ONE-PIECE SECTIONS as cheap as the cheapest.
WRITE FOR PRICES.
Watertown, Wis., Jan. 1, 1889. 1-11d
In responding to this advertisement mention GLEANINGS.

THE . BEST . HIVES
FOR THE LEAST MONEY.

BOTH SINGLE AND DOUBLE WALLED.
If you need any hives don't fail to send for my price list, as I make a specialty of hives, and think I have the best arranged hives on the market, at bottom prices. My hives take the Simplicity frame.
3tdb **J. A. ROE, Union City, Ind.**

LOOK OUT!

One of the best bee locations in the Fruit Belt of Michigan. Small fruit-farm (44 acres) to sell—Bees and "fixings" cheap. For particulars address
J. O. SHEARMAN,
New Richmond, - 3tfd - Michigan.
In responding to this advertisement mention GLEANINGS.

J. C. SAYLES,
HARTFORD, WIS.,

Manufactures Apian Supplies of Every Description. Catalogue Free to All.
3tfd Send Your Address.

FOR SALE.

Second-hand **SIMPLICITY HIVES** covered with from three to six coats of white lead; **BROOD FRAMES** filled with combs almost totally devoid of drone-cells; **BROOD FRAMES** with tin separators filled with sections and comb. Write for prices.

DR. S. W. MORRISON,
Oxford, Chester Co., Pa.
In responding to this advertisement mention GLEANINGS.

SAVE FREIGHT.

BUY YOUR SUPPLIES NEAR HOME AND SAVE FREIGHT.

We carry a complete line of Hives, Sections, Smokers, Honey Extractors, etc. Our motto, good goods and low prices. Sections in large quantities, only \$3.25 per M. Illustrated catalogue for your name on a postal card.

R. B. LEAHY & CO.,
3tfd Box 11. Higginsville, Mo.

SEEDS GIVEN AWAY. ©
Pk'g Mixed Flower Seeds (500 kinds), GUIDE, and 10ct. Certificate for Seeds, your choice, all for 2 stamps (4c). Flower lovers delighted. Tell all your friends.

C. W. PARK, Fannettsburg, Pa.



Come, Fellow Farmers!

It is the good things and the new things you want. Here is a Catalogue full of them! Do you want tested seed, raised from stock selected with extra care, grown from the best strains, got from the originators? I aim to have mine just such. Do you want new varieties that are really good, and not merely novelties? I aim to have mine such. Do you want seed that the dealer himself has faith enough in to warrant? I warrant mine, as see Catalogue. Do you want an exceptionally large collection to select from? Mine is such. Do you want them directly from the grower? I grow a large portion of mine—few seedsmen grow any! My Vegetable and Flower Seed Catalogue for 1889 **FREE to everybody.** **JAMES J. H. GREGORY, Marblehead, Mass.**

In responding to this advertisement mention GLEANINGS.

HONEY COLUMN.

CITY MARKETS.

MILWAUKEE.—*Honey.*—This market for honey is dull; very best sells slowly. Inferior qualities neglected. Choice white 1-lb. sections, 17@18; same, 2-lbs., 15@16; good dark, 1-lbs., 15@16; same 2-lbs., 14@15; fair, 1-lbs., 12@14. Damaged and broken, not wanted. Extracted, white, kegs and ½-bbbls., 8½@9; ditto, amber, 7½@8; white, in pails and tins, 9½@10; dark, bbbls. and half-bbbls., 5½@6½.

Beeswax, 22@23. A. V. BISHOP,
Jan. 10. Milwaukee, Wis.

ST. LOUIS.—*Honey.*—The movement in honey is very slow. Hard to realize satisfactory prices for the shipper or ourselves. Choice white clover, comb, sells freely at 14@15. But extracted in cans about 7½@8. In bbbls., 5@6½ as to quality.

Beeswax, 20. W. B. WESTCOTT & Co.,
Jan. 26. St. Louis, Mo.

CINCINNATI.—*Honey.*—Demand is slow for all kinds of honey, with a comparatively small supply on the market. Extracted honey brings 5@8 on arrival; comb honey, 12@16, in the jobbing way.

Beeswax.—There is a good demand, which brings 20@22 on arrival for good to choice yellow.

Beeswax, 20. CHAS. F. MUTH & SON,
Jan. 21. Cincinnati, Ohio.

NEW YORK.—*Honey.*—The extremely warm weather has brought business in honey to a standstill, and we quote nominally fancy white, 1-lb. comb, 14@15; 2-lbs., 12@12½. Fair white, 1-lb., 12@13; 2-lbs., 10@11. Buckwheat, 1-lb., 10½@11; 2-lbs., 10.

Extracted, basswood and clover, 8@8½. Buckwheat, 6@6½. We expect a good trade in buckwheat extracted, during next month.

Jan. 19. F. G. STROHMEYER & Co.,
New York City.

DETROIT.—*Honey.*—Best white in one-pound sections continues to be quoted at 16@18, with a little less in sight; market will be bare of comb honey before the new crop will find its way in.

Jan. 21. M. H. HUNT,
Bell Branch, Mich.

KANSAS CITY.—*Honey.*—We quote: 1-lb. comb, white, 16; fall, 14; California white, 16; 2-lb. California white, 14; 2-lb. extra Cal'a, 13. Extracted, Cal'a white, 8; Cal'a amber, 7. *Beeswax*, 20@22.

Jan. 22. CLEMONS, CLOON & Co.,
Kansas City, Mo.

ST. LOUIS.—*Honey.*—Market quiet, but firm. Comb, choice clover, 13@15; dark, 8@10; strained and extracted, in barrels, choice, 6@6½; cans 7@7½; dark, 5@5½. Cans, 6@6½. *Beeswax*, prime, 20.

Jan. 22. D. G. TUTT GRO. CO.,
St. Louis, Mo.

NEW YORK.—*Honey.*—Market quiet; fine goods very scarce; but as there is no demand for it, there will be no goods left over this year.

Jan. 19. THURBER, WHYLAND & Co.,
New York City.

COLUMBUS.—*Honey.*—Our market remains the same. White comb in 1-lb. sections, 16@18; no demand for larger sections. EARLE CLICKENGER,
Jan. 19. Columbus, Ohio.

ALBANY.—*Honey.*—Market slow and prices weakening some.

Jan. 26. H. R. WRIGHT,
Albany, New York.

BOSTON.—*Honey.*—No change in market prices.

Jan. 21. BLAKE & RIPLEY,
Boston, Mass.

FOR SALE.—One ton of white extracted honey, in kegs and barrels; also amber, or fall honey, of excellent quality, in same packages. Write for prices, stating amount desired. FRANK MCNAY,
Mauston, Juneau Co., Wis.

FOR SALE.—First-class extracted honey in 60-lb. tin cans. Having just been liquefied it will pour from cans easily. Will take 9 cts. per pound. Samples sent for 2-ct. stamp.
R. I. BARBER,
181 E. Washington St., Bloomington, Ill.

FOR SALE.—I have about 1500 lbs. of nice light honey, fresh from sealed combs, mostly clover and basswood, that I will sell in 175-lb. cans at 8 cts. per lb., or in lots to suit. Sample by mail free.

OLIVER FOSTER, Mt. Vernon, Linn Co., Iowa.

FOR SALE.—I have a quantity of extracted honey in 50-lb. kegs, which I will sell at the following prices: 8c for the white and 7c for the amber, f. o. b. The honey is first-class.
C. H. STORDOCK,
3 6db Durand, Ill.

Beautiful Laced Wyandottes.

Eggs for Hatching, \$1.00 for 13; \$2.00 for 30. Orders Booked Now.

3tfdb J. W. GRISWOLD, ROSE, WAYNE CO., N. Y.
In responding to this advertisement mention GLEANINGS.

S. D. McLEAN
Will sell bees by the pound, Colonies, Nuclei, and Queens, Cheap. Write for terms to
3-9d COLUMBIA, TENNESSEE.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column

POULTRY SUPPLIES. Ground Beef Scraps, fresh and pure at all times. Pure Ground Oyster Shells, Cracked Poultry Bone, Bone Meal, and everything else in this line, of the best quality and at lowest prices. We have large facilities for the manufacture of Poultry Supplies. Send for trade price list.
John Gardiner & Co., 21 N. 13th St., Philada, Pa.
In responding to this advertisement mention GLEANINGS.

HONEY, BEES, QUEENS, SUPPLIES.
Catalogue Free.
OLIVER FOSTER, MT. VERNON, IOWA. 3tfdb

CARNIOLAN QUEENS A SPECIALTY.

Largest and Purest Carniolan Apiary in America. Send for descriptive circular and price list. Address ANDREWS & LOCKHART,
3tfdb Patens Mills, Washington Co., N. Y.
In responding to this advertisement mention GLEANINGS.

4 and 5 PER CENT DISCOUNTS IN FEB. AND MARCH! On QUEENS, BEES, APIARIAN SUPPLIES, JAPANESE BUCKWHEAT, and SEED POTATOES (20 varieties). Send for catalogue giving full particulars.

3-6db CHAS. D. DUVALL,
Spencerville, Mont. Co., Md.
In responding to this advertisement mention GLEANINGS.

DEALERS in Apiarian Supplies, Small Fruit, and Poultry. Send me your circulars and price lists.
J. S. LA RUE,
3d Lewistown, Logan Co., Ohio.

LOOK HERE!

A complete hive for comb honey, \$1.30. No. 1 planer-sawed V-groove sections, \$2.75 per M., this month. Price list free.
J. M. KINZIE,
3tfdb Rochester, Oakland Co., Mich.
In responding to this advertisement mention GLEANINGS.

CORNS. A SURE CURE.
By Mail, Postpaid, for 15c.
(An agent wanted in every town)
Address T. G. ASHMEAD,
3d Williamson, Wayne Co., New York.

EARLY QUEENS!
Now ready at \$1.25 each; after April 1st, \$1.00.
J. P. CALDWELL,
3d San Marcos, Texas.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column.
3btfd



Vol. XVII.

FEBRUARY 1, 1889.

No. 3.

TERMS: \$1.00 PER ANNUM IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canadas. To all other countries of the Universal Postal Union, 18 cts. per year extra. To all countries NOT of the U. P. U., 42 cts. per year extra.

OUT-APIARIES.

SHALL I START ONE?

THIS question is likely to come up in the minds of not a few; and although each one must answer for himself, there are a good many side questions that may present themselves for reply before the main question is reached. On some of these I will try to throw some light, without going through the formality of stating the questions. If you decide that you will keep three or four hundred colonies of bees, it is a pretty clear case that you can not profitably keep them all in the home apiary. Just how many you can profitably keep there, is an exceedingly difficult thing to determine. Supposing that, by a series of careful experiments extending over fifty years, it has been pretty satisfactorily determined that 93 colonies is the largest number that can, on the average, be profitably kept in Mr. Smith's apiary, 20 miles distant, it by no means follows that the same series of experiments would reach the same conclusion on your ground. The same kind of flowers may not be on your ground; the soil may be different, or, if these be alike, the rainfall may differ; and supposing no difference can be detected in any of these, how are you going to measure the number of flowers to be found on the one, two, or three thousand acres that constitute the range of the bees in each apiary? Suppose you have a crop of 6000 lbs. from 80 colonies one year, and the next year from 100 colonies you get 5000 lbs., it does not certainly follow that 100 colonies overstock the ground; for in the last case there may be a bad year, and it is possible that the very next year may

be so much better that 100 colonies shall store 10,000 lbs. surplus. So you see it is a very difficult thing to decide what is the largest number you ought to keep, in order to the greatest profit. I wish I could give you some rule by which you might determine the matter, but I can not; and I am obliged to confess that, after a good many years of experience, all of it on the same ground, I am not able to say with any degree of confidence whether 75, 100, or 125 colonies will bring me the greatest profit. The best I can do is to say that, if your location is an average one, it is not likely you would better keep more than 75 or 100 colonies in one apiary. If any one should accuse me of presumption in attempting to speak so definitely, I am ready to bear the reproof very meekly, and confess that I know little about it. Close observation for a series of years may help you to a more reliable guess as to your own locality.

If you find that 50 or 75 colonies occupy the most of the time that you can spare from other business, it is hardly advisable for you to attempt a second apiary, for you will find that it will make a draft on your time in a different way from the home apiary. Often there is some little thing to be done which needs only a few minutes to do; but if you must go three or four miles to do it the case is quite different.

Suppose you find, or think you have found, that, after you have reached 75 colonies, the next 25 will do a good deal better in an out-apiary, you must still keep in mind that this 25 will entail more expense (I include time and labor, of course, in expense) in proportion than the first 75, and the probability is that you would better keep the 100 at

home if your total crop is greater than from the 75, even if the average yield per colony from the 100 be less than from the 75. In other words, it is well to crowd the bees at home a *little*, rather than to start a second apiary. Whether you need to keep some one watching for swarms, cuts some figure in the account. There may be cases, however, where the extra 25 would turn the balance in favor of an out-apiary. If it is your intention to continue to increase, and you have reached, or nearly reached the limit of the home apiary, and you expect to start an out-apiary next year, it may be better to start it this year. The practice this year on a smaller number will be of advantage to you. In the matter of hauling alone, you need experience—at least I did. Mishaps were quite too common with me at first; and if I had had a large number to haul, the matter might have been serious. Another reason for commencing this year, rather than next, is, that you have no certain tenure of territory; but if you commence an out-apiary this year you may be less likely to see some one else occupy the same ground next year.

C. C. MILLER.

Marengo, Ill.

Another thing that you can determine by starting out-apiaries is the value of localities. Some find the out-apiary better than the home apiary, and others not nearly so good; and I remember that, in some cases, there seemed to be a marked difference, without any explanation as to why it was so. This marked difference showed itself year after year. By trying 25 colonies at a time, or even a less number, you can decide what a locality is worth. If it is not as good as your home apiary, you can make a test in another direction. Sometimes an out-apiary will give stores when the bees at home are getting none at all. This is often the case where you can go in the direction of a swamp, river bottom, or something of that sort.

INCREASE, OTHERWISE THAN BY NATURAL SWARMING.

FRIEND DOOLITTLE TELLS US HOW TO MANAGE IT.

A SUBSCRIBER for GLEANINGS says he can not stay at home and care for the swarms which may issue from the 30 colonies of bees which he has, and wishes me to tell him how he can manage next season so as to increase his bees and still have them do good work in making comb honey. After trying nearly every plan of artificial increase which has ever been given, I am satisfied that none of them will give as good results as will natural swarming; but where one is situated as is the writer of the above, of course a substitute for the good old way will have to be resorted to. Knowing that there were times when increase other than natural swarming would be very desirable, I kept a record of all of my experiments while trying the various plans of making swarms, as given at different times to the public, and, according to my views, the two following come the nearest to nature's way of any now before the world. The first is a plan which was adopted by Elisha Gallup, and given to the world some twenty or more years ago, while the latter plan is one I made up out of different hints I picked up here and there. The Gallup plan I have practiced quite ex-

tensively for years, while the other I use almost altogether at the present time. All the particular difference there is in the two plans is that, with the latter, a new queen is given to the swarm, leaving the old one to continue to do duty in the old hive; while with the former the old queen goes with the swarm, the same as she does in natural swarming, thus leaving the bees to rear a queen of their own. By giving each part a laying queen, great gain is made; still the Gallup plan is a good one where one can not rear the queens before he makes the swarms, or feels too poor to buy them. None of the plans of artificial increase should be used till the hive is quite well filled with bees, and the bees themselves are preparing for swarming. When the proper time has arrived, go to any colony from which you wish to take a swarm, and, after having removed the cover and quilt or honey-board, drive the bees out of the way with a little smoke so that you can shave the capping off from some of the sealed honey at the tops of the frames, unless you think they have plenty of unsealed honey in the hive. Just previous to doing this, you should find the queen, and cage her on one of the combs with one of the wire-cloth cages which will push into the comb, as has been so often described. Having both of the above done, close the hive and beat on it with the fist, at the same time blowing smoke in at the entrance, just enough to frighten back the guards as they come out to drive off the intruder. Having the guards all turned back, give the hive several sharp blows, enough to cause the bees to thoroughly fill themselves with honey; and if more than one swarm is to be made, go to the next hive and prepare them in the same way, while the first are filling themselves; otherwise you will have to wait till the bees have their sacs full. When this is accomplished, set the cap of any hive on a wide board a little way off from the old hive (any box will do), and proceed to shake the bees off the frames till you think you have about three-fourths of them, shaking them in front of the cap or box on the wide board, into which they will run as fast as they are shaken off, if the same is raised up a bee-space on the side next where they are shaken. Lastly, take the frame having the queen on it, and, after uncaging her, shake her and the bees off this frame, letting them run in with the others. Now close the hive, when the returning bees from the field and what were left on the combs and about the hive will make the colony in about the same condition it would have been in had it cast a swarm. Next take the cover having the bees in it; carry it to the shade of some tree, and, after setting it down, lean it up against the tree with the open side out, exposed to the light. Leave them thus while you are making other swarms, or for about an hour, when they will conclude they are a separate colony, and will behave just like a natural swarm, having clustered in the box the same as a swarm does on a limb. Now hive them as you would a natural swarm, and they will work the same, or as nearly so as is possible to have bees do outside of natural swarming.

The next way, and the one which I prefer when I have laying queens to spare, is to proceed the same as above till you get ready to shake off the bees, when they are to be shaken into a box instead of in front of a cap. This box is to be made of a size to hold about half a bushel, the two sides of which are to be of wire cloth, one permanently

nailed on, and the other is to have the wire cloth nailed to four small strips, so that four small nails, one through the center of each strip, will hold it fast to the box, yet make it readily removable when we wish to get the bees out. In the top of the box is to be bored a hole of the right size to admit the small end of a large funnel, such as is used in putting up bees by the pound, and over this hole is to be fixed a slide so that it can be closed as soon as the bees are in. Having the box and funnel, proceed to shake the same amount of bees down through it into the box as you did in the former case; but instead of putting the queen with the bees in the box, uncage her and set the frame having her on back in the hive. In this case you leave the old colony in the same conditions in which they would have been had they cast a swarm, with the exception that they have the old queen with them, so as to keep up egg-laying all the while. Now carry your box of bees to your bee-cellar, or some other cool dark place, and leave them undisturbed for four hours, when you are to go and get a queen in a round wire-cloth cage, from one of your nuclei, or one which you have bought; and after getting where the box of bees is, jar the bees to the bottom of the box, by setting it on the floor suddenly, so that they will not be running out while you are putting in the queen, and immediately let your queen run through the hole into the box. Now close the hole and leave the bees till sunset or the next morning, when you will find them clustered and ready for hiving, the same as a natural swarm would be, having accepted the queen which you gave them, as their own mother. Hive as before, and the work is done.

In using this latter plan it is best to take the bees between the hours of 10 and 12 A. M. In writing this out it seems like a good deal of work; but where making many swarms, the work goes on rapidly, as the bees are filling themselves while you are working, so that there is no waiting. In this way swarms can be made about as fast as natural swarms could be cared for, while they work nearly as well after they are made.

Borodino, N. Y., Jan. 17, 1889. G. M. DOOLITTLE.

Friend D., if I may be permitted to make a suggestion I would tell a novice not to risk shaking the queen with the bees in front of the hive-cover. I have seen the queen a good many times, instead of dropping down to the bees, take wing; and when they are on the wing they do not always go in with the bees. Several times I have had them go back to the old hive, where I would find them on one of the combs. I would take the queen off and set her down among the moving bees, and be sure she crawled into the box, then there will be no danger of getting two queens together. I have also found bees from some colonies that would, a large part of them, return to the parent hive after they went out for pollen or honey. Your manner of manipulation, however, may prevent this largely; and perhaps if you have three-fourths of the bees with the old queen also, the ones that went back would not make any material difference. Lastly, I would by all means put a comb with unsealed brood, with an artificial colony of any sort. I have tried over and over again this comb of brood, and so have our boys, and we are so

fully satisfied that it helps to make the bees stay in a new hive, that I never omit it. Sometimes, where we find the bees have absconded, I ask the question, "Did you give them some unsealed brood?"

Almost invariably the reply is, "Why, I was too busy just then;" or, "I declare, I forgot it," or something of that sort.

JAPANESE BUCKWHEAT.

COMPARATIVE TESTS WITH THE COMMON BUCKWHEAT.

I SEE several reports of the Japanese buckwheat, but you have never yet, I believe, treated the readers of GLEANINGS with cakes made of Japanese buckwheat, so, now, let's have some of them. But before we can have the cakes we must produce the buckwheat, so I will report that first.

Last season I sowed it at three different times, as much for my bees as for the grain. The ground was an old worn-out piece of farm land that had been farmed to corn and wheat for many years, until it would not produce a crop of either, worth the cost of raising. I do not know the amount of land or the amount of seed I used, but probably about two acres of ground. The seed was not good, as some portion of it had been sprouted when harvested, and so did not grow when sown. It stood much too thin. It might easily have been as thick again on the ground. As for bee-pasture, it was a fair success. They worked on it pretty thickly. I did not, however, get any direct surplus honey, yet I could distinctly tell the buckwheat flavor in some of it. Well, I got about 50 bushels of nice grain, which I have refused one dollar per bushel for. I also had a fair chance to test it with the common kind.

A neighbor sowed 3 acres, on about the same grade of land, with the common seed. I wanted him to sow the Japanese but he thought he could not stand the pressure of four dollars a bushel for the seed. He harvested 26 bushels from the 3 acres. He has since said if he had sown my kind he would have got at least 75 bushels.

Now, here come the cakes. I took 3 bushels to the mill, and charged the miller to be particular to have the mill well cleaned, so there should be no mixture of any other flour or corn meal with my flour, that could possibly add to or detract from its bulk or quality, as I wanted to have a fair test of it. His report is, first, that it gave about five pounds more flour to the bushel than any other he had ever ground; and, second, that it made the whitest flour he ever saw, from buckwheat. And now I am having the very best cakes every morning that I ever had in my life. My cook says that I eat from 12 to 16 every morning. Be that as it may, my breakfast is a good one; and by the way, she puts away the Japanese buckwheat cakes, she had better keep still or I shall tell how many she eats.

I had a small plot of ground that I raked over and sowed the Japanese buckwheat on, as late as the 9th of September, thinking it might furnish a few blossoms for the bees; and when the frost killed it it was 18 inches high, and perfectly loaded with set grain, some of which began to ripen. If it could have had two weeks more time it would have given a pretty good crop of grain. A. A. FRADENBURG,

Port Washington, O., Jan. 21, 1889.



37 BUSHELS OF JAPANESE BUCKWHEAT FROM $\frac{1}{2}$ BUSHEL OF SEED.

I got one bushel of Japanese buckwheat of you last summer. I let a neighbor have half of it. I sowed the other half on one acre of land, and harvested 37 bushels of nice buckwheat. I am sure there would have been over 40 bushels if it had been well saved. Other buckwheat didn't yield half as much. I could not tell any difference in bees working on the two kinds. I sowed on the 26th of June. C. J. EVANS.
Jonesboro, Ind.

43 BUSHELS OF JAPANESE BUCKWHEAT IN TWO YEARS.

I started with $\frac{1}{4}$ lb. of Japanese buckwheat, which I got of you two years ago. From the $\frac{1}{4}$ lb. I harvested 47 lbs. I sowed the 47 lbs. on $\frac{2}{3}$ of an acre, and it yielded 43 bushels, or about 50 bushels per acre. PERLEY LANGWORTHY.

Riceville, Pa., Jan. 9, 1889.

In addition to the above, and what is said about this buckwheat in the last issue (pp. 58 and 63), we would refer you to pages 95 and 99 of this issue.

BEARS AND HONEY.

SETTING OUT FRUIT-TREES; MOVING BEES SHORT DISTANCES.

I HAVE just been reading with much interest A. I. Root's travels in California, and his visits with the bee-keepers. Oh how I should like just such a trip! But I should have to stay long enough to kill some of those bears and other wild animals. The idea of a man letting a bear come to an apiary of 11 colonies and eat them all up, and then letting the old fellow go away in peace is amusing. If it had been my case, I would have made him pay for the bees, if there was money value enough in his hide and meat and tallow to do it. But if there was no value in the old fellow, why, then I would have killed him to get even with him, and get him out of the way.

HOW TO SET OUT STRAIGHT ROWS.

On page 979, Dec. 15, Mr. Root speaks of seeing orange-trees that were set in such perfectly straight rows, and wants to know if some of the readers of GLEANINGS can tell how to do it. If the ground is not too hilly, or surface too rolling, get out as many small stakes as you propose to set trees. Make the stakes about one inch in size, preferably round, and in length about two feet. The next thing to do is to get those stakes stuck in straight rows. You can accomplish it very nearly by marking off the ground with a corn-marker, marking the ground both ways. Stick the stakes in the crossing at every third or fourth crossing, according to how close you want the trees. With a man to sight through the rows, and another man to move the stakes a trifle one way or the other, if they are not quite right, straighten the rows. It is a great deal easier to move a stake a little than to move a tree a little after it is set. Having straightened the rows, set the trees. First we want a setting-board, which can be made out of a piece of fencing, 6 inches wide and 8 feet long for small trees. Bore a $1\frac{1}{2}$ -inch hole exactly in the center of the board, both endwise and sidewise; then, say 3 inches from each end of the board, bore a $1\frac{1}{2}$ -inch hole. Saw out a strip crosswise, $1\frac{1}{2}$ inches wide, the center of the board, on one side, until it meets the auger-hole. Our board will now have a notch in the center and a hole in each end, like this:



We want two stakes, about a foot long, and small enough to go through the end holes of the board.

Lay the board on the ground and crowd it up till the stake is in the center notch, snug into the notch in the board. Let the stake be in the notch as far as it will go, then stick your two short stakes into the holes in the end of the board, and down into the ground firmly. Pull up the center stake and take away the board. Dig out the place for the tree to stand in, then put the board back again, so that the two small stakes are in the end holes of the boards as before. Place your tree in the center notch of the board, and fill in with dirt. Be sure that the tree stands straight. When the place is about filled up, the board can be taken away so that a nice job can be made. The tree will, of course, stand in exactly the same place that the stake did. We can now pull up our two small stakes, and go to another stake and set another tree in the same way.

MOVING BEES SHORT DISTANCES.

We often read in the bee-papers directions for moving a hive of bees in the apiary, something like this: Move the hive a foot or two a day, until it is in the exact place where it is wanted. Now, friends, I would not do any such thing. Some time when the bees are all in the hive I would just pick it up and put it where I wanted it, and done with it. We move bees more or less every spring, to equalize our yards; in that case we move them four or five miles or so. But last spring we wanted to move about half of one of our out-apiaries, to get them further from the public highway. There were, in quadruple hives, 69 colonies in 4 rows, running east and west. We wanted to move the east

half, and put them *west* of the west half, a distance of eight or ten rods. This apiary was 5 miles from home. To go out there and move those hives a foot or two a day, mixing them up among the other hives as we worked them along, would have made a big job, and no doubt would have resulted in nearly all of the young bees being left behind in the hives that we passed in moving. Well, we made all of the new stands at the west end of the apiary ready to set the hives on, and got every thing ready to move, and then went home. The next morning, May 18, it was very cloudy, and raining a little, and it promised to be a wet day. We put the wheelbarrow into the wagon, and started. As bees were not flying when we got there, we just set one of those big hives on to the wheelbarrow, and wheeled it to the stand where we wanted it, and there located it. We then went back and got another, and kept on until we had moved all we wanted to, about 35 colonies. Shortly after all were moved, the weather cleared up and the bees went to work; and before noon the moved bees were bringing in pollen. There were a few bees flying about the old stands, looking for home, for about two hours; after that, every thing was running as usual. As far as I could see, the moved bees did just as well as those not moved. Then what is the use of all this fussing, hitching along a little to-day and a little to-morrow?

E. FRANCE.

Platteville, Grant Co., Wis.

Friend F., your remarks in regard to setting trees, in connection with what is said on page 87, will doubtless enable any one to work rapidly and accurately. I think I should prefer to stretch a line, however, rather than to have so much sighting.—I am a little surprised at what you say about moving bees short distances. I am very well aware that some colonies stick to their old home, without any trouble; and at other times the loss of bees in spring time will so reduce the colony as to prove fatal to it. At one time I attempted to move a strong colony of Italians during the working season, from one part of our town to the other. Enough bees went back to their old stand to make a small-sized swarm. These were brought home on a comb, placed in a box, and shaken in front of the hive. They ran in like a natural swarm; but the next morning, nearly if not quite all of them returned to their old stand, laden with pollen and honey. This they kept doing until I got tired of carrying them home every night. Now, it is possible, but not very probable, that, had I left no comb or box for them to cluster in, they might have returned to their new location. At another time I purchased a box hive of a neighbor, moving it perhaps an eighth of a mile. This moving was done in the winter time. Within ten days or two weeks, however, we had a very warm day, and the bees flew profusely. Well, so many bees went back to their old stand that the owner told me there was a pretty fair swarm circling around where their hive used to stand. That night they scattered about on the trees and bushes, and were chilled to death. The next day, more of them went back; and the result was, the colony that cost me \$5.00 died for lack of bees to keep the brood warm. I

have seen this same thing happen so often, that I think novices should be very careful indeed about moving bees short distances. When they are moved so far that they do not meet familiar objects on their first flight, of course they will all go back to the hive. An old veteran like yourself, who keeps an eye on the movements of the bees, would probably not lose very many.

FALSE STATEMENTS IN REGARD TO THE HONEY BUSINESS OF OUR COUNTRY.

As a protection to our bee-keeping population, we propose in this department to publish the names of newspapers that persist in publishing false statements in regard to the purity of honey which we as bee-keepers put on the market.

FRIEND ROOT:—The inclosed clipping was taken from the *Lutheran Observer* of a recent date. If you find room in GLEANINGS, please insert it and give a reply to such damaging nonsense as that.

H. W. WALKER.

Somerset, Pa., Jan. 15, 1889.

Below is the clipping referred to:

SCIENTIFIC LEGERDEMAIN.

In these days of adulteration,

When all things are not what they seem,
And every thing is something else,

it is no more miraculous that olive oil should be squeezed out of a peanut than that Java coffee should be ground out of the chicory root, or that black pepper be only another name for pulverized cocoanut shells. Science is now making such rapid strides toward helping us in our gastronomic needs, that Nature herself must get out of the way or she will be run over. Even the poor honey-bee was accused, not of laziness, for that would have been too palpable an injustice, but of being too slow, and spending too much time over the clover-heads.

"I will remedy that," said Science.

And she did. Shutting up the bees, she knocked the head out of a barrel of glucose and told them to go to work and help themselves, which they did faithfully. Their long journeys to and from the flowering fields being done away with, they had nothing to interfere with their getting down to actual business. The scheme was a success, for the honey was piled into the combs in treble abundance and in one-third the usual time.

And yet Science wasn't satisfied.

Greeditly she put her wits to work.

"What's the use of going to the expense of buying bees? I can make the comb quicker and as well as they; and as for the honey—well, glucose is honey!"

And so the occupation of the honey-bee being gone, so far as it has any hand in what is known as the "honey of commerce," it now confines itself in a small way to home manufacture, samples of which, if the reader particularly wants, he must particularly search for.

The above has just commenced going the rounds of the press, and it really seems as if the religious press were worse than any other in taking up and scattering broadcast these false and slanderous statements. Friend W., as you will notice, says he took the clipping from the *Lutheran Observer*, and we notice that they give credit to *Table Talk*. Now, friends of the *Observer* and *Table Talk*, will you not correct the misstatements which I presume you have unwittingly made? For three years past we have been fighting down this falsehood. Many papers have recalled the statement, but it seems to be cropping out again. Surely you would not knowingly injure an honest class of people, if you knew it. More than two years ago I published a standing offer of

one thousand dollars to any one who would tell us where this spurious comb honey was manufactured. Every one has been obliged to give up—there is no such thing, and there never was. Will you not at least briefly correct the wrong you have done? Bee-keepers are as anxious to put down fraud and adulteration as are the cheese and butter makers; but they do not like to have their industry damaged by having the people prejudiced by false statements like the above.

THE GREAT NOVELTY OF 1889.

A LIMA BEAN THAT GROWS ON BUSHES, AND DOES NOT REQUIRE POLES.

ALTHOUGH I have never seen this new lima bean except in a dry state, yet I am so well satisfied of its excellence that I purchased 1000 25-cent packages. In regard to the origin, we extract the following from the February issue of the *American Agriculturist*:

The history of the new bush lima bean is rather interesting. As far as can be traced it originated in the mountains of Bedford County, Va., in a locality known as the "Peaks of Otter," in the garden of a humble colored man, who was bright enough to notice a single plant that formed a bush

delicious lima beans, and is at least two weeks earlier than any of the climbing limas, being fit for market about the middle of July, in York State, and from that on until frost. The only thing against it that I know of is its small size compared with the limas that grow on poles, the dry beans in the packets being about the size of those shown in the cut, *only after being soaked in water over night*. Perhaps, in a green state they are considerably larger. We are not permitted to sell them for less than 25 cents each packet; 5 for \$1.00, or 12 for \$2.00. A packet contains about 25 beans. We are permitted, however, to offer it as a premium as follows: We will send a packet to every present subscriber who will send us \$1.00 and the name of a new subscriber to GLEANINGS. If you are too busy to hunt up a subscriber, send us \$1.00 to extend your subscription for 1890. We append the following testimonials from Henderson's catalogue:

The Dwarf Lima bean was a surprise indeed. Who would ever have thought it possible to transform the climbing, rampant-growing Lima bean into a bush? But here it is before my eyes, a bush Lima, loaded with pods, and that so early in the season as to remove one of the principal objections—their late ripening—to growing Lima beans. This, combined with its independence from the troublesome and unsightly poles, must make this new vegetable wonder a welcome acquisition to every garden.—Dr. F. M. HEXAMER, Office "American Agriculturist," New York, Sept., 1888



Copyright, 1888, By Peter Henderson & Co.

among a patch of tall limas. He saved the seed from it, knowing nothing of its value except that he saw that for his own convenience it could be grown without poles. The second season he had quite a patch of it, and gave some to his neighbors, until it ultimately found its way into the hands of a seedsman, who purchased the entire stock. Had the colored citizen only known the prize he had struck, and increased the stock, one acre of this new lima bean would have given him money enough to purchase a good-sized Virginia farm.

You see, friends, it was a sport, just like my white Boston Market lettuce.

Henderson states in his new catalogue that it does not run at all, grows about 18 inches high, produces enormous crops of

The new Bush Lima bean is the greatest acquisition to the vegetable garden attained in this century. Growing exactly like the common String or Bush bean, its simple culture is identical. It will find a place in thousands of gardens where the old climbing bean is unknown, as not one cultivator in one hundred can go to the trouble and expense of the poles for the old Lima. In the Bush Lima we have not only a vegetable of the easiest culture, with a flavor equaling if not surpassing, the pole Lima, but above all a bean giving as heavy a crop, and beginning two weeks earlier.—PETER B. MEAD, Mamaroneck, Westchester Co., N. Y.

FROM THE LARGEST GROWERS OF BEANS IN THE WORLD. Your Bush Lima bean, which we have tested very thoroughly this season, is a most valuable variety. It is strictly a bush bean, growing from 15 to 18 inches high, with no tendency to climb; makes a wonderful profusion of pods, some single plants containing 100 good pods, and the majority averaging from 50 to 75 pods per plant, with ordinary field culture. The cooking qualities are unexcelled, if indeed they are equaled by the Pole Limas. We think this bean is destined to become the most popular variety in the entire list.—N. B. KEENEY & SON, LeRoy, N. Y.

FLOATING APIARIES IN EGYPT.

HOW THE BUSINESS WAS PROSECUTED OVER 100 YEARS AGO ON THE NILE.

THE following sketch we copy from the *Deutsche Illustrierte Bienen Zeitung* for November, page 44. The engraving also from the same source we reproduce. The article was written by Mr. T. Kellen, of Luxemburg. W. P. Root, our proof-reader, translates as follows:

Not long ago I discovered in the city library of this place, Luxemburg, a French work on bees, which for a century had been unremoved, leaves uncut, and was covered with venerable dust and finger-marks. In this work I found a very interesting notice in reference to portable apiaries of that period. The author of the above work, B. E. Manuel, procured some notes of a description of Egypt, and added a few concluding observations of Reaumer thereto. From this and other histories of travels, as well as from Maillet's Description of Egypt, published in 1740, it appears that, in the last century, there were a great many colonies of bees kept in the land of the Pharaohs, and that a very lively business was maintained therein, quite unlike what we have in our own country. Dr. Westhau reports, in a description of a travel through Egypt, in 1702, the following: "In many places I found apiculture greatly hindered, notwithstanding the inhabitants manifest much interest in it. In the season of bloom they move with their bees, now here and now there, in order to fill their hives with honey."

In the last century there was found, with all of the ignorance and wildness of the inhabitants, an occasional trace to remind one of the previous luxury of a keen and diligent generation, long past. One of the most noticeable evidences of their activity was the annual sending of their bees to remote districts, that they might secure pasturage, which occasionally failed them at their own stands.

As Upper Egypt is hotter than Lower Egypt, and the land there is freer from the inundations of the Nile, the honey-plants there develop at least six weeks earlier. The inhabitants were fully aware of this fact, and availed themselves of it for the benefit of their bees. In Lower and Middle Egypt they placed a certain number of colonies of bees, which were often kept in jugs and bowls, and often in cylinders or baskets made of burnt clay, or made out of wibes braided, and besmeared with Nile slime, made expressly for this purpose—forerunners of the portable bee-hives of Swabia. If the hives were required at the upper end of Egypt, they were transported thither, so the bees could visit the neighboring honey-plants and shrubs. When the crop in Upper Egypt was exhausted, they floated the skiffs a few miles down stream, and waited there as long as honey could be found in paying quantities.

At the beginning of the month of February they arrived at Lower Egypt, where they delivered the hives back to their owners. The latter then sold the entire product at wholesale in Cairo. The bee-

keepers from Upper Egypt, after they had disposed of their products in the region of the delta of the Nile, and had secured what honey they could there, returned again up stream to their homes. Unfortunately, hitherto history has furnished us no details in regard to portable apiaries in this land of early antiquity, which are authentic; nevertheless, it is easy to conjecture that that inventive people, as the valley of the Nile bears them witness, will convert it, as they did a century ago, into the business of portable apiculture. One may easily believe that Egypt first suggested the same business to Greece and other lands. The Roman agricultural writer, Columella, writes (*De Re Rustica*), Book IX., chapter 14, in replying to Celsus, that in Achaia the bees from Attica and Eubœa, on all the Cycladian islands to the island of Skiros, and from the various Sicilian coasts to Hybla, were cultivated for honey. This custom was, in all probability, introduced from Egypt at the time of Solon, for the civilization of Egypt is unquestionably much older than that of Greece. Before Solon arose as reformer in Athens he traveled through Egypt, and learned there how to make many im-



A FLOATING APIARY, AS THEY USED TO DO IT ON THE NILE.

provements which he afterward made useful to his native land.

But how stands bee culture now in Egypt? When even the fellahin and Copts conspire to drive out apiculture, no more will be read in modern histories of travels in Egypt in regard to movable apiaries; and no traveler will see any more the skiffs on the Nile, laden with hives. This is easy to be seen, when one reflects how downtrodden Egypt is under the foot of the Mohammedan.

I am sorry that the original manuscript did not give us more particulars. For instance, did that chap in the back of the boat have nothing to do but smoke his pipe? Were the bees fastened in the hives during the trip, or did they work along the shores and "catch up"? Will eight hives of bees, as shown in the cut, pay the expenses of the whole establishment, with two men to run it, letting one man smoke most of the time "to boot"? If the bees are of the *Egyptian* "denomination," I should think the house in the stern might come quite handy.

S. I. FREEBORN'S REPORT FOR 1888.

ALMOST 120 LBS. PER COLONY, AND AN INCREASE OF FROM 265 TO 349.

As requested, I hand you my report, also some items of our work and success for 1888.

I put in winter quarters, in the fall of 1887, 300 colonies—115 at the home yard, and 185 at Sextonville. They were wintered in two underground caves, or bee-cellars, 12x24, made with double doors, and covered with three feet of earth, with sub-earth ventilators at the bottom, and a boxed pipe running out at the top for upward ventilation. The one at home has a brick chimney, with a stove ready to fire up should circumstances require; but no fire was built when the bees were in, as it never went lower than 42°, and frequently reached 46° above. The hives were ventilated, mostly at the bottom, by raising them one inch in front of the bottom-board, except the lower tier, which was raised one inch all around.

They wintered fairly well. Most loss was from the death of queens or from starvation. I lost some by being deceived in the weight of the hives, there being a great amount of pollen capped over with the honey. There was so much that the hives were quite heavy after the bees and honey were all out. I commenced taking out bees Apr. 11th; finished Apr. 14th. The spring was very unfavorable, and we did more feeding than ever before, in one season. We fed inside of the hives while the weather was cool, to prevent starvation. Afterward we fed in the open air when warm enough to be safe to do so, to promote brood-rearing, and we kept it up far into June, until clover bloomed. So unfavorable was the spring that there were few if any more bees when clover bloomed than when first taken out of the cellar. From all causes, we lost, up to June 1st, 35 colonies, leaving us at home 100; at Sextonville, 165 colonies. Our outfit for the season was 265 colonies; 200 supers, or hives, of empty comb; 75 empty hives; 200 pounds of wax; 2 extractors; 10 200-pound barrels left over, and 50 more engaged, with two young men to help—one from Canada, with some experience, the other only one year from Norway, 18 years old, without experience, but very anxious to get some, and he *got it*, too, he thinks. These were my outfit to run for extracted honey for 1888. From the outlook I thought the above sufficient, especially as white clover was badly killed with us, and it was the off year for basswood. White clover amounted to but little in the way of surplus; but with the aid of sumac, lion's-heart, and other sources, bees were in fair condition for basswood harvest, which commenced about July 12th and lasted 16 days.

Our 165 colonies at Sextonville are near the timber, and were not moved during the season. The home lot had to fly about four miles to get to much basswood. We moved 35 into the timber, and intended to move the rest; but the roads were so exceedingly rough at the time, that we gave it up. Those that we moved did finely, gathering much faster than those at home, thus showing that, though bees will carry honey from four to six miles, they can gather it much faster nearer home.

During the 16 days of basswood harvest we realized how fully employed 265 colonies could keep three or four men when they fairly got on a rampage. They worked and swarmed with a vengeance; and had we used all of our surplus hives

and combs we could soon have had them filled with young swarms. I think about 1000 would have been their capacity if we had let them have their will in the matter; but by fooling them every way we could, we had only 353 at the end of the season.

Our surplus of basswood honey was 18,000 pounds. After basswood we moved the 35 that we moved to timber and 76 left at home, 18 miles, to work on mint or any thing else they pleased to get.

The moving of these bees proved to be the most disastrous of any of my experiences. The night the first lot was ready to go was the hottest night of the season; and for the first time in my experience, being unable to attend to it personally, I was obliged to see the boys start with 3 loads (35 swarms), without me. The result showed that I had good reason for apprehension, for they had the luck to kill 16 colonies. We moved the rest, and had 90 left out of the 106. They made about 7000 pounds of mint honey in the three weeks that it lasted. The mint proves to be a fine honey-producing plant; it stands drought like a salamander, and rain affects it but little. It seems to me that it might be the most promising plant to raise for honey of any thing in my knowledge, especially where the ground is sandy.

The Sextonville lot were about 5 miles from the Wisconsin River, but they carried considerable mint honey that distance. It was somewhat mixed with fall honey. We took from them 6000 pounds more, which makes our crop 31,000 pounds of extracted honey, and 600 lbs. of comb honey. With better preparation I could have done better, as I could have used with profit more foundation. I had about 60 hives of full drawn-out comb, but I could not stop extracting to prepare more. I am glad and thankful to get the crop that I did.

My profit comes from the sale of honey, as I sell no queens or supplies. To get this 31,600 pounds of honey cost a great amount of work with teams, men, and brains. I don't see how cripples or lazy folks could handle them if they did it the way we did. Our 349 colonies are in the cellars before mentioned; 130 at home, 219 at Sextonville; one queenless, and I sold 3 swarms. S. I. FREEBORN.

Ithaca, Wis., Dec. 20, 1888.

Friend F., the above is indeed refreshing. Ernest remarks that it sounds like old times instead of like a report for the season of 1888. Now, besides your yield of honey, you have given us some very important facts which need a little emphasis. One is, that it does pay to have bees as well as every thing else close to their work. The bees that had to fly about four miles did something, but not very much. The 35 colonies that were moved, at once gathered honey much faster than those left at home. I suppose the great secret of your success is the immense basswood forests you have written us about before. If you have a good season next year, if you will send me a telegram at its highest I will try to go up and report for the readers of GLEANINGS. In regard to the mint mentioned in the above letter, I will explain to our readers that friend F. has sent us a sample of the honey, and a package of the plants, with the accompanying letter:

We send you a sample of mint honey, or, as some call it, "bergamot," which to our taste is preferable to the famous white-sage honey of California.

One peculiarity of it is, that it will scarcely granulate. Having had it all winter in unsealed combs, without any visible granulation, we also consider it an excellent honey for winter stores. We also inclose a sample of the plant itself from which the honey was obtained. S. I. FREEBORN.

Ithaca, Wis., Dec. 19, 1888.

The honey sent us is so thick that it will hardly run when the dish containing it is turned over. As mentioned above, it shows no sign of granulation whatever, although it has been left out in the cold for a week or two. The quality is excellent, with the exception of a little flavor of fall flowers. In 1878, Mr. H. Stewart, of Orion, Wis., from the same county that Mr. Freeborn lives in, sent us a sample of the mint. Prof. Beal pronounced it *Monarda Bradburiana*. It is nearly related to the horsemint of Texas. The plant also grows in our own locality, and it is called around here balm, or wild bergamot. Perhaps it is better known under the name of wild bergamot than any other. Without question, it will pay beekeepers to look up patches of this wild bergamot, and locate hives near them during the proper season. I believe it is found along the low grounds of the Mississippi River, in many different places.

PACKING COMB HONEY FOR SHIPMENT.

SUGGESTIONS FROM WM. MUTH-RASMUSSEN.

WHERE wood is employed, I suppose that great accuracy can never be attained, on account of the unavoidable shrinking and swelling. Yet, the nearer we come to accuracy in getting out material, the less will the subsequent work be. This is particularly noticeable in packing comb honey. A slight variation from a fixed measure may seem a trifling matter in the width of a single section; but when 6 sections are placed side by side it makes quite a difference. I use packing-cases holding 48 sections, and without glass. This style suits my trade. I have had sections which were so wide that they would not go down into their place in the packing-case, and had to be whittled on the edge; yet their extra width was not sufficient to attract my attention when they were folded, but was only too apparent when it came to packing them for shipment. As a rule, however, there is a little room to spare in the packing-case, varying all the way from a hair's breadth to a quarter of an inch. To prevent the sections from moving, I crowd them all up against one side of the case, and then stuff a wad down between the opposite side and the section. This wad, a little shorter than the inside length of the case, is made by loosely folding a newspaper until it is thick enough to require considerable crowding to get it down into its place, and, being loosely folded, it will have elasticity sufficient to keep the sections steady. The projecting end folds over on top of the sections, and serves to withdraw the wad before the sections are lifted out of the case. I do not know of any other way of keying up the sections; but if other comb-honey producers have something different or superior for this purpose, I should be pleased to have them describe and illustrate their methods in GLEANINGS.

To get at something better, if possible, is my principal object in writing this.

WM. MUTH-RASMUSSEN.

Independence, Inyo Co., Cal., Jan. 7, 1889.

Friend M., it is true that a slight variation in measurement sometimes makes a great deal of trouble, and it behooves us all to have our sections and every thing else accurately made. Your wad made of folded newspaper is a tiptop idea; and until somebody else suggests something better or neater, I think we should do well to adopt it.

PREDACEOUS BUGS.

PROF. COOK DESCRIBES THE BUGS THAT MUST NOT BE STEPPED ON.

IN GLEANINGS of Nov. 15th, I described the wheel-bug, *Prionidus cristatus*. I now send an excellent figure of this interesting insect, which is a common one in our Southern States. The female of this wheel-bug (Fig. 1) lays in a group about seventy eggs. These are bottle-shaped, and

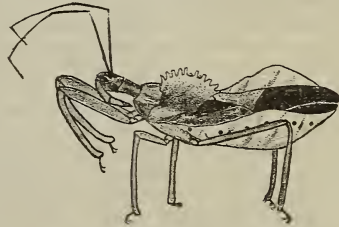
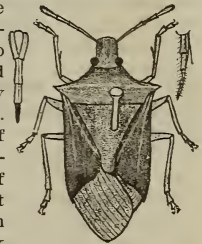


FIG. 1. PRIONIDUS CRISTATUS.

appear as would many bottles standing side by side. The young only, resemble the mature insect in form and habit. They are blood-red, and, like the adult, pierce and suck the life from scores of injurious species.

I wish now to call attention to another bug, the soldier-bug, *Podisus (Arma) Spinosus*, Fig. 2. This has a short sunken head, and so reminds us of our injurious species like the black squash-bug, the terrible chinch bug, and the destructive tarnished plant-bug which is sometimes so fatal to the strawberry and almost every year to many of our garden vegetables. Thus this soldier-bug, one of our valued friends, closely resembles in form several of our most dreaded pests. Yet the beak is stronger, while in the plant-destroyers the beak is slim, as will be seen by the FIG. 2. SOLDIER-BUG. figure, where the beak of the squash-bug is shown with that of the soldier-bug.



The spined soldier-bug is a gray lavender or brownish yellow in color. The specific name comes from the sharp spines on the side of the thorax. The figure is magnified twice, as is also the wheel-bug in Fig. 1.

In pinning all insects, except beetles and bugs, the pin is passed centrally through the thorax. In pinning bugs we always pin through the little triangle (Fig. 2), technically known as the scutellum, of the meso-thorax. In another article I will show how to pin beetles.

The spined soldier-bug is one of our most important predaceous insects. I have seen it dining on the grubs of our common potato-beetles, and its appetite is not easily satisfied; on the large fine tent caterpillars, and on several others of our most dreaded insect-pests. Thus in the future, when we elevate our noses in contemptuous derision of all bugs, let us bear in mind that some of them, notably the wheel-bug and spined soldier-bug, are our good friends, even fighting to rid us of our foes.

Agricultural College, Mich.

A. J. COOK.

CALIFORNIA.

ITS WONDERFUL CAPABILITIES, AND ESPECIALLY THE DIFFERENT RESULTS OBTAINED IN LOCALITIES BUT A SHORT DISTANCE FROM EACH OTHER.

FRIEND ROOT:—Your travels in California are quite pleasant reading; but, like all those who have not spent years here in various parts of the State, you generalize from particular instances much too freely. For instance, you say (p. 975), "A little neglect in irrigation, and your strawberries, corn, aye, and even orange-trees, are 'gone dead,'" and several other remarks of a like kind; yet at my place (near Santa Paula) I could have shown you tons of fine corn which never had one drop of water, from planting to husking—either rain or irrigation. My ranch is without water except what I catch in tanks and cisterns. I can show you dozens of thrifty oranges, lemons, pomelos, and other citrus trees that had half a pail of water each when set out, and no more, except the natural rainfall. We have tomatoes every day in the year, without irrigation. Fig-cuttings planted two years ago are now large bearing trees, a foot in circumference. I have now growing, since 1884, when I homesteaded my place, the following fruits: Apples, pears, olives, quinces, apricots, almonds, walnuts, figs, nectarines, plums, cherries, guavas, persimmons, and other Japanese fruits, oranges, lemons, loquates, pomegranates, pomelos, besides small fruits, grapes, and some rare kinds like *hovenia dulcis*, zapote blanca, etc., and all these are grown without irrigation, almost at the top of a mountain. The secret lies in thorough cultivation. Yet, as a *paying crop*, I should never think of planting strawberries, for example, though I could make them grow and bear some, almost any time of the year.

The truth is, one never knows what will do well on a piece of ground until he tries it. Nor can you be sure of varieties paying in untried localities. For example, take my nectarines. In 1884 I planted Hardwick, New White, and Boston nectarines. In 1887, the Hardwick bore 150 lbs. to the tree. The others bore not one. In 1888, the Hardwick bore 175 lbs. to the tree. The others bore a dozen pounds. My peach-trees varied from 425 lbs. to 20. My apricot-trees showed me that the Royal and Hems Kirk here bore almost ten times as much to the tree (about 200 lbs.) as the Moorpark and Peach apricot; yet 6 miles away the latter kinds are the choice varieties. One mile east of me apricots do little or nothing, while pears are a success. My pears are a failure. I planted 150 trees in 1884, and have got a dozen pears so far. So I might go on through the lists of fruits, but one more example

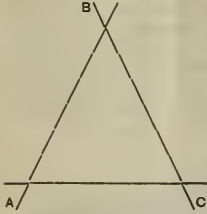
will suffice. In one part of my cañon, near the house, I have three English walnuts, not two years old, from the nut, all over 9 feet high, and one over 11 feet, an almost unparalleled growth. Not far away I have three others in like good soil, having had like care, and they are not three feet high. Why this difference? The former had more rain three or four times during the two winters. In fact, they had what was equal to double the rain of the others, owing to their situation at the foot of a hill. I have 12 acres in English walnuts, all growing very well indeed, yet I shall not know whether walnuts pay in my cañon for eight or ten years. I simply *guess* they will pay. Soil, rainfall, shelter, location, all have a wonderful influence.

Now about the chicken business, which looks so profitable here to you. True, we can raise lots of chickens every month in the year, and *vermin too*. My next neighbor, last year, with 19 hens, raised over 200 chicks with little care. But next month she may have 19 left. One friendly cat (lynx) reduced my stock by dozens in a few days. I wake at night and hear the chickens crying "badger!" and see three or four dead in the hen-house. A sportive coyote gobbles up a willful hen and her chicks from their nest—hid from my eyes. A fat squirrel runs for the egg when he hears a hen cackle, and finds the egg half way down a gopher-snake's neck. We have nearly as many hawks here as chickens, and—we generally have enough eggs to use, and we eat at least half as many chickens as the "varmints" get, so it pays us to keep chickens, though I believe bees pay better.

Now a few words about our California names, which are often very suggestive. The "Chollas" (pronounced Chó-yá) Valley was named from a kind of cactus. Spanish double *l* is pronounced like "y" by our Mexicans.* "Tia Juana," meaning "Aunt Jane," is really a corruption of an Indian name meaning "by the sea." Omitting the saints, more than half those odd names are really Indian, and more than half the Indian names have "water" as a part of the word. Now, why so many saints in California? The early Spaniards were very religious. They have one or more saints for every day in the year. They discovered San Diego on St. James' day, and San Dieguito on the day of the Lesser St. James. If they camped at San Luis Obispo on the day of St. Louis the Bishop, that was the name to give the place. Another day it was St. Luis Rey (the King); another, the day of the Queen of the Angels (Los Angeles); another, San José (St. Joseph). Both Indians and Spanish were extremely unimaginative in most of their namings. Valle de las Viejas (ve-a-has) sounds very poetical, but it is simply "the valley of the old woman;" that is, where an old woman lived. Arroyo Burro is the creek where some one lost his *donkey*. They get imaginative only when they get scared. Thus, friend Wilkin's bees are at the mouth of Sespe Creek, and the Sespe are devils which they thought lived in those oil-springs and spoiled the water. Further up is a "Devil's Potrero," or pasture-ground. I made California names a special study for some time, so if those who are reading up the State want to inquire about meanings or pronunciations I am "loaded up."

* The Spanish *ll* should be followed by *y*; hence "Chollas" should be pronounced "Chol-yas." In Spanish, *ch* is like *ch* in the English word *chair*.

Now about how to plant your orchard (query on page 980). Make an equilateral triangle of straight slats, whose sides equal the distance you want your trees. Suppose A B, A C, and B C, to be each 20 feet. Drive your pegs at each intersection, holding the triangle level. Then by moving it $\frac{1}{2}$ around you get one new stake, and so on throughout the orchard ground. That divides the



whole field into exact equilateral triangles staked out. Now you dig a hole and put your frame against two stakes, and put the tree in the third corner. It will thus come just where the stake was. In that way your trees are in line in every direction, as you can see by matching your equilateral triangles together on a stake, marking the corners with a dot. This is called the quincunx method, though erroneously, since they are not squares with a center tree, but rhombs. That does well where you have all one kind of trees, but walnuts should be 50 feet apart; oranges 30; almonds 25; prunes 20, while some plums, persimmons, etc., are as good 12 or 15 feet. With the variety I have, I am quite satisfied if they range two ways, so I can cross-cultivate. The other does look nice, but it hardly pays with mixed fruits. I was sorry the weather prevented my meeting you in Santa Paula.

C. M. DRAKE.

Springville, Ventura Co., Cal., Jan. 2, 1889.

Friend D., I am exceedingly obliged to you, and your letter makes me feel sorry that I didn't take time to make you a visit. When I take that next trip, you may be sure I shall take in your ranch. I am aware that there are a few localities in California where things do not die, even if irrigation is neglected. I believe I spoke of the corn-fields near Santa Paula; but I supposed the corn was planted before the spring rains were entirely over. In riding along, I was continually asking questions about what kind of trees would live without irrigation, and what would not. Perhaps I have forgotten by this time; but I believe that apricots and walnut-trees in most localities require no irrigation at all, after they are well started. I believe I mentioned that the eucalyptus grows almost anywhere, no matter whether it is wet or dry, if it once gets a little start. The point you make, that "no one knows what will do well on a piece of ground until he tries it," is true with us here in Ohio; but it is more especially true in California. The difference in the changes from mountain to valley, from sand to "dobe," from one exposure to another, near the seacoast or remote from it, and ever so many other things taken all together, makes the matter of gardening and fruit-raising quite complicated. I believe if I were you I would try one tree of a kind, then gradually increase the number of those that do well; and the same sort of reasoning here will apply to good advantage. The objection with fruit and nut bearing trees is, that it takes so much time; but while the years are passing, we can do it oftentimes as well as not to do it; and if we never live to see the result worked out, our children probably will, and be benefited by

it.—Friend D., with all the advantages you have for the chicken-business, I would make a vermin-proof fence for the fowls, and then I would fight the vermin with traps, poison, clubs, dogs, and cats; and, in fact, our successful men here have to do a good deal of this kind of work.—The matter of California names is one of great interest to me, but it may not be profitable to devote too much space to it.—Great numbers of devices have been sent in to us for planting trees in regular order; but I think your triangle about fills the bill. It is the very thing we used in shaping our hexagonal apiary here at the Home of the Honey-Bees; but for locating the different apiaries, we had an immense triangle. Instead of planting the grapevines in corners, as you have it, we bored a hole through both pieces of board that formed the triangle, and then put in an iron stake. If your iron stake has a ring in it at the top, large enough to slip your hand in, the opening in the ring being made about like the bow in a common door-key, you can force stakes into the ground, and pull them out much more easily. I think I would stretch a line to one side of the orchard, in commencing; then with the aid of the triangle and the iron stakes we can, providing it is on level ground, make the trees come straight, to a dot. The device illustrated in another column will help to get the trees planted exactly where they should stand. I noticed in California many orange-orchards laid out on this plan. Then the harrow was passed through in three different directions, leaving only a little triangular spot around each tree to be fined up with a steel garden-rake. I think I never saw ground worked so handsomely as were many of the California orange-orchards. I fairly ached to get out of the buggy and get hold of a rake, and help do the finishing-up around the trees. Most of the ground was of a kind that does not easily pack, as our ground packs when the horses walk over it. We, however, are often troubled by being obliged to work the ground when it is a little too wet. Where irrigation is practiced, of course this never happens.

NOTES FROM THE KEYSTONE BEE-FARM.

PEDDLING HONEY, ETC.

I MUST tell a little of my experience in peddling honey. I took a load to Wilkes-Barre, just before Christmas. I first offered it to the commission merchants. I found they were well supplied, and were selling basswood honey in one-pound sections at 13½ cents by the case. I next called on the leading grocer, Wm. M. Miller. He wanted honey, and I had a first-class article, but he thought it was too cold a day for me to get 16 cents, which was my price. I then concluded to peddle out my load. I supplied nearly all the hotels and some private families. I am acquainted with nearly all the court-house officials and lawyers, and made many good sales among them. I called on my old comrade, Major G. R. Lennard, with whom I served four years during the war. I sold him some fine clover honey at 18 cts., but he

was inquisitive to know whether it was not the *new process* honey, as it was so nice. He said that undoubtedly much of the comb honey on the markets was machine-made. I gave him the address of A. I. Root, and told him that he had a standing offer of \$1000 for a sample of artificial comb honey.

THE LANGSTROTH VERSUS THE AMERICAN FOR WINTERING.

O. O. Poppleton, in the *Dec. Review*, says that it was never claimed that bees would winter better on a shallow than a deep frame. Our bees are on American and Langstroth frames, in chaff hives. We winter on seven frames, and last spring it was a noticeable fact that those on American frames (28 in number) were nearly out of stores, and some had to be fed, while those on the L. frames had clustered in the fall on the ends of the frames next to the entrance, and on May 1st had reached only the middle of the frames, and had nearly half of their stores still on hand.

THE SIMPSON HONEY-PLANT.

The Simpson honey-plant (figwort) is quite plentiful in this section. Last season I cultivated some plants for our bees; but during the whole season not a bee touched it, showing conclusively that location has much to do with the honey-producing qualities of plants.

Our winter thus far has been a favorable one for the bees. Our coldest weather, 10° F., was on Dec. 22, and since that time it has been beautiful Indian summer, the bees flying almost daily.

S. W. TAYLOR.

Harveyville, Luzerne Co., Pa., Jan. 7, 1889.

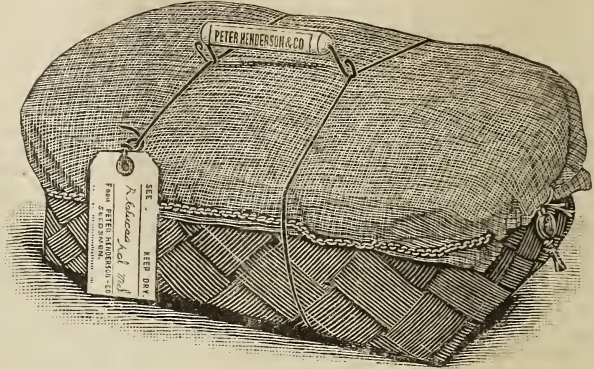
THE SEED CATALOGUES OF THE PRESENT AGE, ETC.

ALSO SOMETHING ABOUT ECONOMIZING EXPRESS CHARGES.

IT is indeed a treat to any one who loves gardening, to look over the beautiful catalogues that are now sent out yearly in the months of January and February. It gives one a glimpse of the progress that is being made, and also of the immense business done in just this little matter of requisites for the garden. When visiting Matthew Crawford last fall, while he was busy with a customer I began to look curiously at some little plats of various kinds of vegetables. They were well cared for; and the wonderful crops in these little patches excited my curiosity. When I asked for an explanation, friend C. spoke something like this:

"Mr. Root, when I get a bright new catalogue that evidently cost the seed-grower quite a little sum of money *apiece*, I have always had a sort of feeling that he deserved at least a little encouragement from every one who received it; therefore I mail a little order for onion seeds to our friend Maule; buy some new wax beans of Burpee; a few packets of Henderson, and so on; and if I get the seeds, of course I must give them a little plat of ground. These great red onions that you are admiring here were

the product of Maule's strain of Wonderful Red; these great white ones are Burpee's Silver King, and so on. I have no particular use for them, growing strawberries mainly, as I do; but it gives me a feeling of pleasure, just as it does you, in this: That these new things are really what they are represented to be, and that they are certainly superior to the common kind we have been selling."



THE NEW SYSTEM OF PACKING.

Now, the above may not have been exactly friend C.'s words, but they are the sum and substance of them, and I do think that every one of you who receives one of these beautiful illustrated catalogues, with their colored plates, ought to send the proprietor at least a small order for seeds, by way of encouragement. If you pay 10 or 25 cts. for the catalogue, you need not make an order unless you choose; but where it is sent you free, I think you can pick out at least a few simple things that will be worth all they cost you, and at the same time prove an encouragement to the one who expends so much money in getting up the catalogue.

But I started out to talk about a new cheap packing for sending seeds, plants, etc., by express. We found it figured in Henderson's new catalogue of the present year. The cut explains it.

You will notice, friends, that it is simply a common market basket, without a handle. Over the top is a piece of oil cloth, hemmed around the edge so as to permit running in a sort of puckering-string, to draw it up securely under the topmost hoop of the basket; and for additional safety, two stout cords are put around the whole, to which is hooked a handle to carry it by. The whole apparatus weighs only a pound, and it will carry a lot of seeds, plants, bulbs, or any thing else, just as safely as a great heavy box that weighs 10 or 15 pounds; and who has not paid a big lot of express charges on a heavy box when the box was not needed at all? Why, hundreds of our patrons send us beeswax in great heavy boxes, when a light cloth bag would answer every purpose in the world. Now, I do not think beeswax should ever be sent by express at all. It may be, however, where you are short of money, and have the wax, and want some foundation by express, you decide to do it; but if so, do not, I beg of you, put it in a box.

Tie it in a stout bag, and we do not care how much it gets pounded up before it reaches us. It is not an uncommon thing for us to receive wax by express when all of the wax would hardly pay the express charges. For some years back we have been much in the habit of using baskets similar to the above, for shipping things by express; and this present season we are going to do it still more. Half-peck baskets we frequently use for sending things by mail. A basket will really stand more banging around than a box; and a great many times it will preserve the contents from injury just as well as or better than a box. The moral to all this is, that, when you have any thing to send by express, be careful not to have the package weigh a single pound more than is absolutely necessary for the safety of the goods.

BEE-KEEPING FOR WOMEN.

BEVELED-EDGE HIVES; TAKING OFF HONEY, ETC.

I HAVE about come to the conclusion that all this moaning and groaning about bee-hives being heavy to lift, and about bee-keeping being too hard work for women, is unnecessary and uncalled for. If all the women who keep bees will manage as Mrs. L. Harrison has always managed, and as I intend to manage from this time forth, they will not find bee-keeping such very hard work.

The next day after I came home from Peoria I went to work to prepare the bees for winter. Last spring I had nine colonies. Now I have twelve. I had seven swarms to come out. Four of them went to the woods, leaving the queen under a goblet on a plate. Two of the four swarmed, and, before I could do any thing, they went back into the hive. The next time, they came out and went off without settling at all. The other two hovered around the barberry bushes awhile, began to cluster, then flew away. I did not want any swarms. I thought there would be no honey, and that they would have to starve. I had a good many old combs and I put them all on the hives, three deep in some places. It was the easiest way to keep the moth out, and I thought now was the time to prove whether giving plenty of room would prevent swarming. I am now convinced that nothing will prevent swarming. If bees want to swarm, they will swarm. It does not depend on a honey-flow. Some of those colonies had not three days' rations ahead. It does not depend on any thing—they just swarm.

Well, they went on in a hand-to-mouth way till toward the last of July; then the rains came, and the oats rotted in the field—three hundred dollars' worth. We never thrashed a straw. (This is the price that I am obliged to pay for my 300 lbs. of honey. Let me see: that makes my honey worth about a dollar a pound, does it not?) The smartweed began to bloom, and the bees began to roar. They filled all those old combs, and the honey-boxes; and when I went out there to take that honey off, I found I could not budge it. I had a chisel and a hatchet, and I pounded and pried here and there, but could not move it an inch. You see, all that time while there was no honey to gather, the bees had put in their spare moments plastering those hives together with propolis. I worked till I

was hot and tired, then I thought, "What is the use to be a married woman, if I have to work just like a widow?" and so I went to where Mr. Chaddock



"I POUNDED AND PRIED."

was unloading apples and carrying them into the cellar, and told him that I must have help. He



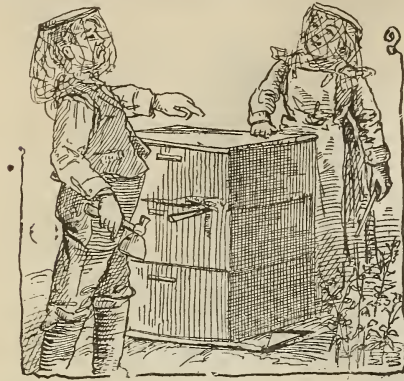
"MUST HAVE HELP."

donned a bee-hat, and worked the chisel and hatchet while I stood by and worked the smoker and



"HE WORKED THE HATCHET AND I GAVE ADVICE." gave advice. After he had worked awhile at one, and torn off a side, he began giving his opinion of a man that would invent such a bee-hive as that.

But I stopped him, by telling him that that was the bee-hive that Mr. Root invented on purpose for ladies, invalids, and preachers to keep bees in, because it was so light and handy.



GIVING HIS OPINION.

Well, he pried all that honey loose; took it off and carried it into the house. After he had finished I asked him how much honey he thought he had carried in. He answered instantly. "A thousand pounds."

"Oh, no!" I said; "tell in earnest, so I can write it down."

"Well," said he, "put it four hundred. I know there is that much."

As most of the combs were old ones, I shall say three hundred pounds of honey.

This letter is long enough; but I want to tell how to get bees out of honey-boxes—how to keep moths out of old combs, and something about division-boards, etc. I will end this as I began, by saying that bee-keeping is not very hard work, and every woman might as well keep bees as not.

Vermont, Ill.

MAHALA B. CHADDOCK.

Mrs. Chaddock, you are very graphic, but your illustrations bear rather hard on the Simplicity hive. Please say to your good husband, Mr. C., that the Simplicity hive was never intended to be used in the way you describe; that is, we do not intend to have the propolis get into that beveled joint, as it must have done in your case, to make it stick together. When I decided to tier up the hives in order to get the whole product of the season, in stories three or four high, so as to extract all at once, I took particular pains not to let the propolis run down across the bevel, where the hives come together, when placing them one on top of the other; but when the bees put so much along the crack that it was likely to get in the joint, I scraped it out with a putty-knife. In some cases I rubbed tallow along the upper edge. This entirely obviates all the difficulty you experienced. When I find hives where the propolis has been allowed to get down the joints so as to glue them fast, I always choose a day to separate them when the hives or the weather is so warm that the propolis will be in a soft state. If this propolis is allowed to accumulate, and get into the joints, it will make every operation with a bee-hive dauby and disagreeable.

WINTERING BEES.

BEE DIARRHEA THE ONE GREAT CAUSE OF OUR WINTER LOSSES; FRIEND HEDDON EXPLAINS.

YES, friend Root, I can answer for myself, and shall be pleased to do so. I rather like the style of our crisp friend Hamilton (see page 9, Jan. 1st). I will say, for the benefit of Mr.

Hamilton and your readers (if what I have to say will benefit them), that, by a belief in the pollen theory, and manipulation accordingly, I mean I can winter any colony of bees with greater certainty of success, and keep that identical colony (not the identical bees, however) in existence longer than any one can keep a horse or a cow. At our late State convention at Jackson, an overwhelming majority of the members present, and, in fact, I think every one of the older and larger bee-keepers, believed the pollen theory to be correct. I am aware that bees will winter very well in a hive containing much bee-bread, provided they do not eat it, and I know some of the conditions which cause them to eat it or let it alone, but I do not know all of them, but am learning more each year. A low temperature is the greatest of all causes of consumption of bee-bread in confinement. Of course, if it is not in the hive they can not eat it; but, at the same time, the bees can be damaged by too low a temperature, and killed outright by it if it is allowed to go low enough and long enough. Any one who will take a colony of bees, and see to it that they have no pollen in their bodies at the time, and can not get any after the time, and who will take away all their combs and feed them properly prepared sugar syrup in dry, clean combs, and who likewise will place them in a repository, keep the temperature between 45 and 50 degrees, can leave them so six months or more—I do not know how much more; and when he takes them out the bees will be as bright, slim, and healthy, apparently, as when they went in. They will not void a speck of any thing on their first flight.

But now I imagine I hear friend Hamilton ask how my bees have wintered in the past few winters, and why some of them died with bee diarrhea. I will tell him. If honey were worth a cent a pound, and bees about forty cents a colony, would it not be better to take lots of chances and let them die if they will, rather than to go to the trouble of feeding them a cash article, taking from them an article in place of it which has a very slow and uncertain sale indeed? I trust you see the point. Even at the present price of bees and honey, if the best methods of wintering are used I prefer to take my chances rather than extracting honey from the combs and feeding back sugar syrup, or, rather, exchanging combs so as to get rid of all pollen. You know it is a job demanding much labor, and endangering robbing. It is a disagreeable time to work among bees; but with my new hive, however, I can do the work without being annoyed with robbers, and in less than one-fourth the time and one-eighth the labor; and the consequence is, we have almost perfect success with the new hive. We take a little risk; but we could quite readily, and with little increased labor and no increased expense, fix things perfectly safe and sure for wintering. Without occupying valuable space, you will see just how this can be readily accomplished,

providing the pollen theory is correct, as myself and others well know it to be. Hoping I have shed some light which will be received by Bro. Hamilton, I will leave further notes for future articles.

JAMES HEDDON.

Dowagiac, Mich., Jan. 10, 1889.

Friend H., I am not so sure about the pollen, but I am sure that there is a great deal of sound sense in your concluding paragraph. Even if we could save a colony of bees by removing the pollen, or, if you choose, by taking them into the greenhouse and giving them a fly in the middle of the winter, so long as bees can be purchased in the spring as cheaply as they are now offered it would be cheaper to take the chances, as you say. Of course, every prudent bee-keeper will see that his bees have enough to keep them from starving. But while it is by no means certain that the honey they have is going to prove disastrous, I would not throw it out and give them sugar syrup instead. Neither would I fuss to get all the pollen out of their hive, when it is by no means certain that they will not winter very well just as they are.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

SECTIONS BULGING; HIVES BY FOOT POWER VERSUS FACTORY-MADE HIVES.

WILL putting on a whole crate, or from seven to eight wide frames, prevent bulging? or is the only expedient separators?

Which is cheaper—to buy my hives, paying \$1.20 for chaff in flat, 75 cts. for Sim plicity, or to buy a Barnes foot-power?

Penrose, Ill., Jan. 3, 1889.

B. F. HOOVER.

Putting on a whole crate of empty sections without separators will discourage, although it will not prevent the bees from bulging the combs. When separators are not used, bulging is caused principally by taking out the completed sections and putting empty ones in their places. The bees are then inclined to bulge those partially filled into the spaces occupied by the empty sections. Separators are the only sure expedient; and while you can dispense with them, most bee-keepers prefer to use them.

It is a little hard to answer your second question, as so much depends upon freight rates, the price you would have to pay for lumber in your locality, and the requisite skill you may have. Generally speaking it is cheaper to buy the hives, if your freight rates are reasonable. The principal expense in a hive is the lumber. The cost of making has been reduced to such a low point it would be a very difficult matter indeed for an inexperienced person with a foot-power buzz-saw, even if his time were not worth much, to make any thing. Where one persists in using odd-sized hives, a Barnes saw, without doubt, would save money. In regard to a foot-power buzz-saw, let us say that it takes lots of hard work; and if one is not used to manual labor he will find himself considerably the worse for wear after running one of these

machines. If you are a good mechanic, and can buy surfaced lumber for less than 3 cts. per square foot if your freight rates are high, and if, too, you are used to manual labor, it would pay you, probably, to buy a Barnes saw and make your hives, providing you have odd spells which you can not devote profitably otherwise. Where hive-making is made a specialty, certain fixed gauges are employed; hence, accuracy and nicety of work is almost the inevitable result.

NAPOLEON, AND HIS MORAL CHARACTER.

I can not allow your remarks, p. 854, regarding Napoleon, to pass unnoticed. The sentiments attributed to him did not influence his life; and if we look at his actions, where can a greater monster be found? I was born, and lived in the earlier part of my life, in the part of England where it was supposed, if he paid us a hostile visit, he would land, and opposite to which he had actually prepared a flat-bottomed flotilla for the purpose of crossing. As to his cruelty, I will give but three instances. First, his directions on the birth of his child, that, if it was necessary to sacrifice either, it was to be the mother. Second, when his sick had become so numerous in Egypt as to become troublesome, his direction to the doctors to poison them. Third, in his retreat from Moscow, after crossing a bridge himself, directing it to be destroyed, regardless of the consequences to his followers. For the sake of my country, I have always regretted that he did not fall into the hands of the Russians. I can not doubt that they would have made short work with him. It was no doubt wrong; but on standing on his grave in the island of St. Helena I felt some satisfaction in knowing the enemy of Europe was under my feet.

W. P. TAYLOR.

Fitzroy Harbor, Ont., Can., Dec. 21, 1888.

Friend T., I am much obliged to you for the facts you give us. I did not intend to convey the idea that Napoleon was himself any thing remotely approaching a follower of Christ; but I am pleased to know that he recognized the true character and mission of Christ Jesus. The Bible tells us that even "the devils believe, and tremble;" but I fear that Napoleon believed without trembling, from the report you give of him.

REPORT OF THE SEASON; THE VALUE OF UNFINISHED SECTIONS.

The past season was here a poor one. My winter losses were heavy, saving only 34 out of 85 colonies in the fall, and 8 of the 34 were very weak. I increased to 53, and took only 650 pounds of honey—550 of extracted, and 100 comb. The latter was secured in trying an experiment to know whether

IT PAYS TO SAVE UNFINISHED SECTIONS OF COMBS.

I selected *three* colonies of as equal strength and condition as my judgment dictated, and placed on one hive sections of empty combs in crates left over from the previous year. On another hive I placed sections filled with foundation in crates. On the last hive I placed sections with foundation starters only, also in crates, adopting the tiering-up plan. Now for the result: From the hive with the unfinished sections, I took 56 sections weighing 63 pounds, and took the first premium at our county fair, on case of 12 best-filled sections of honey

(with three competitors). From the hive with sections filled with foundation I took 24 pounds, a part of which were poorly filled. From the hive with starters only, I took 13 lbs. I used the $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{8}$ section. A season with a good flow of nectar, the result might have been different.

Thanks for the biographies of our leading bee-keepers. ELIAS COLE.

Ashley, O., Jan. 10, 1889.

Friend C., your report is very valuable, but I am sorry to say that you omitted in your experiments one of the most valuable, or, perhaps I might say, *vital* points. No one claims, I believe, that the bees will fill a case sooner when *entirely* supplied with new sections containing foundation. Every crate of this kind should have one or two sections, with comb partly built out, to induce the bees to make a starting. Now, had you prepared the case in this way, my opinion is that it would have given more honey than the one where the crate was made up entirely of partly finished sections from the previous year. Will somebody else please give us reports in regard to this matter, especially tests made as I have stated it?

MATING OF THE QUEEN AND DRONE ON THE WING,
AS SEEN BY AN EYE-WITNESS.

I have your A B C book before me, open at page 72—"Mating of the Queens and Drones." On June 21, 1888, I saw this mating take place. The queen issued from the hive, took two circles, and came within five feet of my face, and was there met by a drone. They seemed to face each other, clinging by their fore legs, their bodies being perpendicular, and in this shape flew from my sight. It happened so unexpectedly that I hardly knew what was going on before it was too late to follow them. I could have easily kept up with them. I have described this because your book says they have not been seen, only as they were whirling about each other. I saw these fasten; and as they did so they turned and came together, square up and down; and as they flew away their bodies inclined about like this /, and each bee was using its wings. I now would ask you bee-men of experience if you would call this a mating. Have any had the opportunity of seeing the same?

Myrtle, Pa., Jan. 2, 1889.

E. A. PRATT.

Friend P., we have had accounts already, similar to yours, but I believe that, in most cases, they speak of insects whirling one about another, which you do not mention. The point yet undecided, if I am correct, is, to witness the whole operation until the queen releases herself and leaves the drone to drop to the ground dead, or, if both fall to the ground, the separation of the queen and going back to the hive. The meeting has been described at least several times, much as you describe it; and by standing at the hive, the queen has been seen to come home with the usual appendage attached to her, so that we know pretty nearly all about it. It is quite likely that they do not behave, at all times and under all circumstances, exactly in the same way. At the time when so many were experimenting, with the view of being able to bring about this meeting by artificial means, the subject assumed the shape of a good deal of practi-

cal interest; but since the matter of artificial fertilization has been mostly dropped as impracticable, by universal consent, there is also less inquiry in regard to it.

DR. MILLER'S BEE-ESCAPE; TAKING OFF FALL
HONEY.

As soon as we read of Dr. Miller's miniature tents we made three; but we did not find their use necessary for fall. One morning when we found the bees all out of the supers and down on the brood-combs we took off the supers. Altogether there were four of us—two to open and take off supers, one to carry in the supers, and one to put on a quilt and the hive-cover. We ran through them so quickly that we needed no smoke, and we had the hive covered before they woke up. In that way we went through the whole apiary very quickly.

Roseville, Ill.

MRS. L. C. AXTELL.

Mrs. A., you do not explain enough. Do you mean that the cool frosty weather drove the bees down out of the supers, and that you took advantage of this state of affairs, and got the honey off without any need of driving the bees out of the sections? I have sometimes succeeded in doing this; but the snapping of the supers when they come off will ordinarily start the bees out unless we work very rapidly. As the engraving came in the issue for Sept. 15, it was probably October before you got to taking the honey off.

OUT FOR A FLY; SOME STATEMENTS REVIEWED.

I am out for a fly, and intend alighting wherever I can get any thing to pick at. I think Dr. Mason deserves the first "dab." About a year ago he promised he would keep a paternal eye on the bee-journals and bring up sharply all and sundry who deviated from the true line. Either bee-literature has been exceedingly straight from then till now, or he has gone woefully back on his promise. I have not noticed a single instance in which he has brought the erring to task in the meantime. He can hardly plead that every thing which has appeared since can be brought to the plummet and prove truly laid. Surely the doctor's promises are not like pie-crusts—made to be broken?

I should like to gently tickle the ear of Mr. Doolittle with a feather from my wing, if it would correct his mistaken notion of the honey-producing qualities of the hard maple. He says: "We are told nearly every year of bees getting honey from hard maple.*** I have come to the conclusion there was a mistake somewhere." Without doubt the mistake lies with Mr. Doolittle and those who think with him; for a very considerable quantity of honey was gotten from this source in this section during the early part of this season. A neighbor of mine took several hundred pounds of hard-maple honey. Of the source from which it was gathered, there can be no doubt. I suppose nothing short of proof will convince the gentleman of this fact. Fortunately, I am in a position to supply the proof by sending you a sample of the honey, which you may, if you please, transmit to your doubting correspondent. If the *soft* maple flourished to any extent here, it might be said it was from it the honey was gathered; but it does not.

I think I had better now alight on the shoulder of Dr. C. C. Miller, as I see him and his companion bearing toward the cellar-door a well-stored hive,

suspended in his new hive-sling. The doctor is a public-spirited man. He does not hide his light under a bushel, but freely bestows upon his brethren the products of an ingenious mind. "Virtue is its own rewarder," so is generosity. If the doctor were less generous in imparting to others the fruits of his own researches he would not have the gratification of seeing himself in a wood-cut simply because he has discovered that a rope is a good thing to carry hives to the cellar. I refrain from picking at the rope, out of consideration for the safety of the doctor's toes.

R. MCKNIGHT.

Owen Sound, Ont., Can.

NEW ZEALAND, AND THE EARLY SEASON; THE SWARMING-NOTE.

The swarming season commenced in this locality at least three weeks earlier than usual, and the bees were doing well; but for the last two weeks the weather has been terrible—raining, hailing, and blowing a gale every day, and as cold as we have had it through the winter. There is plenty of white clover now, and if the weather holds good I think honey will be plentiful. I grew a good piece of figwort in my orchard, also mignonette, and the bees do well on them every year. On account of late frosts, and the difficulty in getting the seed to grow, the spider plant does not do well every season. I am starting an apiary about five miles from home. It is in a splendid locality, and I hope to get a good yield from them this season.

Masterton, N. Z., Nov. 25, 1888. THOMAS DIXON.

RAISING THE TEMPERATURE IN CELLARS.

In reading your questions and answers in GLEANINGS of Jan. 1st, in regard to ventilation of cellars, a thought struck me that probably would benefit some of the many readers of GLEANINGS. The use of a lamp or a lantern would dispense with the use of stoves in bee-cellars. If you place a lantern in a comparatively closed cellar, free from drafts, you will be surprised to see how rapidly you will gain one or two degrees of temperature; and if you have a room in your house which is subject to dampness, try placing a burning lamp in it in the morning. By bedtime you will have a room fit for anyone to sleep in. If any of these suggestions are of any value to the readers, it is returning a kindness, for I am very thankful for the many I have received. The biographical sketches of prominent bee-men was quite a Christmas present. I am reading the editor's Notes by the Way, with delight.

PERRY FOCHT.

Uniopolis, O., Jan. 4, 1889.

KEEPING DOWN THE TEMPERATURE IN A WINTER REPOSITORY; IS LIGHT DELETERIOUS OR NOT?

I constructed a small house last fall to winter my bees in. The house is 8½ by 12 inside; the walls contain one foot of sawdust. I placed 42 colonies in it. It proves to be too warm, and the only way I can keep the temperature down is by leaving the door open a little. By so doing I can keep it at 40° about all the time. Now, I wish your opinion as to how much harm will result from the light while the temperature is kept at that point.

Browntown, Wis., Jan. 14, 1889. H. LATHROP.

Friend L., light is generally considered to be deleterious to the best welfare of colonies in winter repositories, though a very little may do no harm. In your case the question hinges on how much light is admitted into the repository by opening the door a "lit-

tle." You are better able to answer that question for yourself. If, after examination of the colonies, they appear to be doing nicely, and are clean and sweet, then the admission of a little light by opening a door a trifle would do no harm. We would refer you to the Dec. 15th issue of GLEANINGS, in the Question-Box department, for particulars in regard to light in cellars or other repositories.

In addition to what Ernest has written above, permit me to say I do not think it will do any harm in a bee-house or cellar, so long as you keep the temperature down to 40°: but in our locality it would be impossible to do this. This 23d day of January, the thermometer is up nearly to 60, although the day is cloudy. When this temperature continues for a couple of days or more, we have found it very difficult and even impossible to keep bees quiet in a winter repository, even when kept in darkness.

TURKEY BUZZARDS, CUT-WORMS, AND BEE-VEILS.

I do so appreciate the photographs of Professor Cook and father Langstroth, that the price of GLEANINGS would in no way be sufficient to purchase them. By the way, we have a professor A. J. Cook, of Alabama, and one of the best men I ever knew; and I am bound to think he must be a relative of your A. J. Cook.

You don't know how much I enjoy your description of your journey to California. I was really amused at your scare-crows. What queer notions a Yankee has of things at the South!

In the 15th of June GLEANINGS, page 481, D. W. C. Mathews asks for a preventive of cut-worms. Tell him that, in the spring of the year, when he first commences to break up his ground to sow for a small garden, say ¼ of an acre, a peck of common salt spread evenly over the surface of the ground, and plowed in, is good. For an acre, one bushel of salt is the proportion. If this is done soon enough it will prevent the cut-worms from breeding, and consequently you will not be bothered that year. If you keep it up every spring you will finally forget there ever was any such pest, and you will also get rid of the little ground-flea. I know these things from experience.

Can I not change metal-cornered frames to reversible by getting some of your wire attachments?

Can you make me a bee-hat with rim of galvanized wire? My bee-hat is so pleasant to the head I will wear it all the time; and when it gets wet from a shower it rusts through the cloth. I also want a longer veil, with one-half silk brussels net and the other grenadine at least six inches longer. I am a very tall man, with a long neck. I am six feet five inches. My neighbors say I am just such a looking man as E. France. J. T. McCracken.

Rowell, Ala.

Friend M., it may not be profitable to use salt in the quantity you mention, on our corn ground, unless, indeed, the salt would have some other beneficial effect in keeping away the cut-worms; but in market-gardening it would no doubt be worth all it costs, and more too, where cut-worms are as troublesome as they are at times. Some recent reports in the agricultural papers seem to indicate that strong doses of common salt on some soils have a very marked

and decided benefit; but on other soils the salt seems to do no good whatever. We should be glad to have Prof. Cook tell us if he has heard of salt as a remedy.—To be sure, you can cut off the arms of your metal corners, and put on reversing wires. In fact, they were devised specially for this very purpose; or they are to be used on any hanging frame after cutting off the projection on which the frame hangs.—We can easily make a bee-hat with a rim of galvanized wire, but we hardly think the advantage of sufficient importance to warrant the extra expense. As the cloth will become sweat-soiled in a season's use there would in reality be no advantage.

A GOOD QUESTION; PUMPING WATER IN THE CELLAR TO KEEP THE BEES QUIET.

Does pumping fresh water occasionally in cellars keep bees quiet? Last winter I had some small carp in a barrel. I pumped a barrel of fresh water every week in the cellar, and the bees kept quiet. When I took the fish out I stopped pumping, and then the bees got restless. I then commenced pumping water in again, and they kept more quiet. Now, who can answer? Did the water purify the air, or did I only think so? My cellar is cemented on the bottom, and has tile to let the water out, and gas-pipe laid from the pump, so there is no carrying of water.

My bees did tolerably well through the fall. It was quite late when I got time to extract my honey, so that I had to put a stove in my honey-house to warm the combs before I commenced working with the bees. I shut the entrance *just so one or two* bees could pass out at a time at all the hives. Then I took all the honey away from the bees and set it in hives in the honey-house. I extracted it, and hung the combs in empty hives in the apiary, for the bees to clean up. There was only one hive that they commenced to rob at which I had neglected to close the entrance. The combs were all cleaned up nicely.

I got 1300 lbs. of honey from my bees this fall, all extracted. White clover yielded just enough to keep the bees going till the fall flow.

GEORGE J. KLEIN.

Conrad Grove, Ia., Dec. 14, 1888.

Friend K., if your cellar is remarkably dry, it may be that the moisture supplied to the atmosphere by pumping the water had the effect of keeping the bees quiet. A spring or running stream through the cellar has been many times considered a decided advantage.

BASSWOOD PLANK; DISCOLORATION OF, AND WHY.

Have you had any experience in drying basswood plank for sections, in a dry-kiln? If so, does the drying process color the basswood? How many thousand sections does one of your section-sawyers saw per day, and what wages do you pay them? I am paying 40 cents per thousand for sawing them, and think it is too much. J. M. KENZIE.

Rochester, Mich., Jan. 7, 1889.

Friend K., we have dried a great many thousand feet of basswood lumber in a dry-kiln heated by steam, and we have never experienced any trouble from discoloration as a result of such drying. Stained basswood lumber is generally caused by the timber being cut in the summer time; or even

if cut in the winter it will color if piled carelessly. Basswood timber should be cut in the winter, and, when piled up properly, will cut nice white basswood plank. Our sawyers cut about 500 sections per hour—that is, they rip the bolts into strips. We pay from \$1.25 to \$1.50 per day; and if you can get them cut for 40 cts. per thousand, and not have a good many spoiled by hurrying, you are getting the work done pretty reasonable.

A RETURNING QUEEN.

In hiving a swarm the past summer, the bees kept clustering on the hive, but would not stay in. After considerable search I found the queen under the projecting cover. I caught her as carefully as I could with my hand, removed the cover, put her on the frames, but in shutting the cover carefully she escaped. It looked as if a small hummingbird darted away, apparently back to the old hive. I hastened there, but could not see her enter, so I concluded to put the bees back. In doing so I detected the queen again on the top of the cover, surrounded by bees. I succeeded in putting her in the new hive, when the bees soon followed. It was something new to me, a queen leaving her bees and returning to the new hive, rods away from the old one. F. J. M. OTTO.

Sandusky, O.

Friend O., it is true that a queen on the wing looks something like a small hummingbird, and especially to an enthusiastic novice whose eyes are apt to magnify every thing pertaining to a queen. But for all that, I am inclined to think that your queen did not go back to the parent hive at all. Never try putting a queen into the top of a hive, especially where you have to put the cover on the hive afterward. Put her down at the entrance, as she will be much more likely to go in. If you can start some of the bees to traveling in before you set her down, she will be almost sure to run in with them.

THE LAST ECLIPSE, AND WHAT EFFECT IT HAD ON BEES IN SAN JACINTO, CAL.

I suppose you all know that there was an eclipse of the sun the first of January; but I don't think you know what effect it had on *bees* in its path—at least not all of you. The day was a pleasant one here, it being clear and warm until the eclipse came over the sun, when the mercury went down from about 75 to 45 degrees; and the "manzanita" being in full bloom, my bees were bringing in honey and pollen by the wholesale; but the sudden change chilled thousands of the poor little laborers so that they were not able to get to their homes. Many dropped within a few inches of their hives and perished there, loaded with honey and pollen. I believe it would be a good plan for every bee-man to be ready for the next eclipse of the sun, and close all his hives early in the morning of such day, and, by so doing, save thousands of very valuable creatures from so sudden and unexpected an end of existence when life to them is so sweet.

San Jacinto, Cal., Jan. 7, 1889.

D. W. ROWSE.

Friend R., I think you exaggerate the damage done by the eclipse. From what I remember of the way the sun goes down in California, I can readily imagine how dark and chilly it became in a short time; but, if

I am not very much mistaken, the bees scattered around on the ground and trees would, a great part of them, revive the next day under the influence of the sunshine, and go back home to their hives. I have often seen pollen-laden bees go out so late as to be obliged to roost on fences or side-walks over night; but these same bees, when the sun strikes them in the morning, rub their eyes and stretch their legs and wings, and finally go home, none the worse for camping out, unless it be the tooth-ache, rheumatism, or something of that sort, later on.

TREATING FOUL BROOD; REASONS FOR FAILURE.

Some time last winter I wrote to you about the trouble I had with foul brood in my bees. I followed your kind advice as regards treatment, and not only put them in clean new hives, foundation, etc., but moved them three miles in the country to my present place. I found the treatment cured the Italian stocks, but not the hybrids. Some of these were brushed off their combs of brood on to foundation, and given clean hives three times. I had no cellar to starve them in, and found it a trouble to get them to take medicated syrup, the season being well advanced, and some honey being gathered. So I expect to see the enemy again next season. I requeened the hybrid stocks the last time they were brushed off, and, having no brood to feed, they filled up for winter on buckwheat honey. I think it's the nervous nature of the hybrids when they are disturbed, causing them to gorge themselves to the utmost with the infected honey, that makes it difficult to cure them; however, I hope to see the last of the trouble next season, and hope to have a better crop.

E. ROBINSON.

Glendale, Westminster, Ont., Jan. 3, 1889.

Friend R., we can assign no cause for failure in our method of curing foul brood in your case, unless it be that you did not *compel* the bees to convert the honey they might have in their sacs into comb. Every drop of affected honey must be gotten out of their honey-sacs, either by starvation or by building comb, otherwise the treatment will be a failure. If there had been considerable natural stores, it would have been well to close the hive at night, after putting the bees in a clean hive, and kept closed for a couple of days. We had no trouble at all in curing when we starved the bees or caused them to build comb. If you had starved your hybrids, or made them build considerable comb, all would have been well.

TO TAKE PROPOLIS OFF A PAINTED FLOOR.

Take an old whisk or brush broom and a cup of boiling water, and hold the cup of water in one hand and pour on spots, and with the whisk broom scrub the spots. If only a little is on the floor, I use an old teaspoon to scrape it up, as a knife (unless very dull) is apt to scrape off the paint, and sometimes roughen up the wood, if pine. In our honey-house, which has a hard-wood floor, unpainted, I use the scraper that I scrape the bottoms of hives, first wetting the floor with cold water, if it is not convenient to have boiling water.

Roseville, Ill., Jan. 1, 1889. MRS. L. C. AXTELL.

REPORTS ENCOURAGING.

FROM 90 TO 140, AND 6000 LBS. OF HONEY.

MY report for last year is as follows: From 90 to 140, and about 6000 lbs. of honey—4000 lbs. comb, and 2000 lbs. of extracted. I moved my bees in April over 200 miles, and got them through all safe. It was a very hard spring on bees. I had about 80 fair colonies, and 10 of them were nuclei. These were used for rearing queens. White clover was fair, and the bees built up in good condition for the basswood-honey flow, which was good for about two weeks. My bees are all in the cellar, except two which are packed on their summer stands. I have 138 full colonies in the cellar, and 7 nuclei. The cellar is 11x13, and about 7 feet high. The bees all have a good woolen blanket on top of the frames, and a 6-inch entrance to the hive. The temperature has been from 45 to 50° all winter. The bees seem to be doing well. We are having a big snowstorm to-day, and I expect it will be cold now. White clover looks very well now. I am looking for a good honey crop this year.

N. STAININGER.

Tipton, Iowa, Jan. 9, 1889.

OVER 700 LBS. FROM ONE COLONY AND ITS INCREASE.

I extracted over 700 lbs. of well-ripened honey from one colony and its increase, and they had abundant to winter on. Who can come up to it?

Orion, Wis., Jan. 10, 1889.

F. L. SNYDER.

1100 POUNDS FROM 13 COLONIES.

I commenced the season with 15 hives of bees. I used two swarms for raising queens. With the other 13 I got 1100 well-filled one-pound sections, and increased to 52. They are in the cellar, and wintering well so far. My honey is all sold by peddling. I liked selling it, first rate.

JOHN RAGAN.

Waukon, Iowa, Jan. 10, 1889.

FROM 19 TO 40, AND 2000 LBS. OF HONEY.

I commenced the season with 19 colonies of bees (very weak), and increased to 40; took off about 2000 lbs. of honey. About all wafers sold at 10 cts. per lb. for extracted, and 15 for comb. I have no trouble to sell my honey. Where I sell one year I can always sell the next. My bees are all in good shape to winter. So far we have had a very open winter.

Bucklin, Mo., Jan. 9, 1889.

J. W. SWITZER.

FROM 80 TO 100, AND 4200 LBS. OF HONEY.

I commenced the season with 80 colonies, mostly strong. I had 20 natural swarms, making a total of 100. They were all very strong when I put them into winter quarters, with plenty of honey for winter stores. Surplus honey taken from them this season in 1-lb. sections, 600 pounds; extracted, 3600 pounds. How will that do for such a poor season as we have passed through?

HONEY FROM BUCKWHEAT.

I had a fair yield from buckwheat. I got 1300 pounds of surplus. I had one colony standing on scales, and it gained 25 lbs. in four days, and 11 lbs. in one day.

I had $\frac{3}{4}$ of an acre of Japanese buckwheat. It yielded well, both grain and honey. There was other buckwheat in the neighborhood. So you see if the weather is favorable it will yield honey with

us. Even if it is not very good, it is honey this year. It is worth ten dollars a hundred more than we can get for clover or basswood other years. From one peck of Japanese buckwheat I thrashed 18 bushels of good clean seed. D. ANGUISH.
Brantford, Ont., Jan. 11, 1889.

FROM 20 FAIR TO 42 STRONG, AND 2500 LBS. OF HONEY.

I produced 2500 pounds of honey this season from 20 hives in the spring, mostly weak. I closed the season with 42 strong colonies. I had single stands that made me 225 pounds of comb honey in pound sections. Considering the season, I thought my yield was worthy of a report. H. LATHROP.
Browntown, Wis., Jan. 9, 1889.

I use enamel all the year round, whenever supers are not on. I am not positive it is the best thing; but it seems to me that a contracted chamber, tight on the top and all sides, gives them power to ventilate by the entrance, when they wish to do so, better than when their covering is porous.

E. E. HASTY.

That depends upon the hive somewhat. It doesn't make so much difference if you have a board over it. If you depend upon these alone by upward ventilation, then neither is warm enough. I think I would as soon have a board well glued down as any thing. Our hives are so constructed that we have to use something else, so use a burlap quilt filled with cotton. P. H. ELWOOD.

Enamel cloth with woolen carpet over it. But I don't use that, and I like mine well—a single thickness of muslin (sheeting) well glued by the bees, and over it a quilt made of sheeting with several thicknesses of newspaper in it. Perhaps it would be just as well to have a single thickness of sheeting and another hive fitting closely over it.

C. C. MILLER.

It makes no difference. A board cover I have found just as good as any thing. You were straining at a gnat and swallowing a camel. Bee diarrhea is what sweeps away our stock, and you can not prevent it in the least by the use of woolen ingrain carpets, muslin, linen, duck, enamel cloth, or burlap. If there is no nitrogen in the food they are to consume during confinement, then you will be all right with any of these covers or none of them. JAMES HEDDON.

I prefer enameled cloth. I want the top of my hives as closely sealed and as nearly air-tight as possible. Many of my hives have board covers, and I like to have the bees seal them down tight as long as possible before winter.

I am more firmly persuaded than ever, that, with proper protection, no upward ventilation whatever should be permitted. I have wintered bees in tin cans (as near as I could conveniently get to the glass bottles we talked of a couple of years ago), with good results and no loss. JAMES A. GREEN.

I am glad to see, friends, a disposition to decide that it does not matter so very much what the covering is, providing all the circumstances are as they should be. Now, an enamel cloth waxed down tight will do very well, providing you have a chaff cushion, or its equivalent, on the top of the enamel cloth. If you have simply an upper story over it, so the frost can get in and reduce the temperature of the upper side of the enamel cloth, it will act exactly like a pane of glass on your windows in the winter time; namely, the under side will be covered with dampness, or may be a thick coating of frost; whereas, were the frost kept away by means of a good chaff cushion on the upper side there would not even be any dampness on the side toward the bees. Put a chaff cushion or pillow tight against one of the panes on your window, on a cold frosty night, and you can see it for yourself. There will be no frost on the outer side, while all the rest of the panes will have a thick coating of ice. The other condition is, as has been mentioned, that there be venti-

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper, and marked, "For Our Question-Box."

QUESTION 103.—*What do you consider to be the best covering for frames in winter, regardless of a few cents' difference in expense—woolen ingrain carpet, muslin, linen, duck, enamel cloth, or burlap?*

Woolen or straw, most assuredly.

CHAS. F. MUTH.

The cover of the hive—nothing more.

H. R. BOARDMAN.

I do not think it makes much difference, if the bees are properly prepared for winter.

A. J. COOK.

We use a straw mat; but of all you mention, we would use woolen carpet.

DADANT & SON.

The enamel cloth is what I use, because I find the bees eat it less than any other material.

P. L. VIALLO.

I use burlap, the same as is on in summer. I leave it as the bees fix it in summer. I would use enamel cloth if I had it.

DR. A. B. MASON.

Light woolen first; burlap second; muslin third. I have no use for linen, duck, or enamel cloth, for a winter covering.

MRS. L. HARRISON.

First I use a sheet of duck or common factory cloth over the frames, then over this I use a cushion from 3 to 4 inches thick, made of factory cloth filled with dry basswood sawdust.

G. M. DOOLITTLE.

I use neither, but leave on the honey-board. This gives the bees about $\frac{3}{8}$ inch space over the frames; and the honey-board, being slid forward about $\frac{1}{4}$ inch, gives all the upward ventilation I want them to have.

GEO. GRIMM.

I suppose this question refers to covering for open-top frames; and if so, I can not answer it. I consider a good chaff cushion the best covering I know of for any kind of frames, not only during winter but summer as well.

O. O. POPPLETON.

For indoor wintering I prefer enamel cloth with any kind of a mat over it. For outdoors I would use enamel cloth with a heavy cloth or mat over; and over and around all, four to six inches of loose packing of leaves, chaff, cut hay, or straw.

L. C. ROOT.

lation enough below, either through a hole made in the bottom of the hive, or by having a good-sized entrance. If the entrance gets clogged, or is small, a sheet of burlap over the bees might save them, when they would die with the enamel cloth.

QUESTION 104.—*How and in what way can a bee-keeper best employ his leisure hours in the winter months, to advantage?*

Prepare for next season's work. GEO. GRIMM.

Making hives, selling honey, and reading.

DADANT & SON.

Making preparations for the next season, and writing for the bee-journals. H. R. BOARDMAN.

Feeding his chickens, tending the baby, and making himself generally useful. MRS. L. HARRISON.

There are many ways to do good during the winter months, too numerous to mention.

CHAS. F. MUTH.

This can hardly be answered. He can arrange for the coming season; can market his honey at retail, often at a good paying remuneration. It depends much on his tastes and adaptability. A. J. COOK.

Reading and studying the theory of his business, and doing such apiary work as can be done at that time of year. He can read other good literature, get acquainted with his family, and have a good time generally, besides.

JAMES HEDDON.

In doing all such work as can be done at this season, to be in readiness for the busy season with the bees. Don't wait till you need hives, boxes frames, etc., before preparing them. Some time should also be given to reading and study.

L. C. ROOT.

Work at the trade he had before he was a bee-keeper; teach school; chop cord wood—no, I guess you mean as a bee-keeper. Read, read, think, plan, subscribe for more bee-journals, get more bee-books, attend conventions, visit other bee-keepers (if he thinks it won't bore them), get ready his hives, sections, and other things he'll need for the coming season.

C. C. MILLER.

If he has not made bee-keeping pay during the last five years, he had better spend his time in looking up some other business to take its place or add to it. I say this because I think we can not for the next five years look for any thing better. Supplies can be got ready for another season. If these are all ready, and he can not think of any thing that needs doing, he can—hibernate!

P. H. ELWOOD.

In getting every thing he may need ready for the busy season—that is, taking for granted that they are in other business, which the majority are. For my part I give part of these leisure hours to field sport, as I find that I enjoy better appetite and health when I take a hunt every week during the winter. A few hours in the field, with good birds and a good gun is not only a pleasure but a fine tonic.

P. L. VIALLO.

Circumstances surrounding each individual bee-keeper vary so much that each one will have to answer this question for himself. Of course, he will have no leisure time until all work in preparation for next season's operations in the apiary, that can be done in the winter, is done. Some occupy their

time in study, some in teaching school, some in chopping wood, and other work for wages. This is an important question to all persons whose trades can not be followed during the winter, and each one will have to do that work which is the nearest him that he is fitted to do.

O. O. POPPLETON.

I can recommend my own way, without much fear that any one will name a better way. Spend the spare hours, both winter and summer, in spreading the knowledge of the truth as it is in Jesus Christ. Still, many brethren would vote my way one of the worst that could be invented, and pronounce all who hold the faith as I hold it, to be mere vermin, beneath notice.

E. E. HASTY.

If employment outside of bee-keeping is meant, each must decide for himself according to circumstances, and his own opportunities and capabilities. There are two ways in which a bee-keeper may very profitably employ his winter months. The first is in preparing every thing needed in the apiary, ready for immediate use the next summer. The second is in putting his product in the best possible condition for market, and then disposing of it to the best possible advantage. A little effort in this direction will bring very large returns. Many bee-keepers do not get nearly as much for their honey as they might.

JAMES A. GREEN.

First, in serving God and doing our part in preparing for that future state of existence upon which we must all soon enter. Need I say that a large part of this work is in making yourself lovable by being always cheerful, and doing good to those about you for Christ's sake, thus allowing the light that is in you to shine out before the world for the Master's honor and glory? Get away from self, and enter heartily into that which shall make the world better, and advance the cause of our God and his kingdom. Second, post yourself intellectually regarding our beloved pursuit, bee-keeping, by reading what you can on the subject. Third, get every thing ready for the busy season of the next year, so as to be prepared for the large yield of honey which is coming.

G. M. DOOLITTLE.

A bee-keeper should have no leisure hours; that is, hours in which he has nothing to do. Hours in which we do nothing but rest, both mentally and physically, are sometimes the most profitably spent. If the welfare of the spiritual part has not been provided for, I know of nothing in which the bee-keeper could better employ his leisure or any other hours than in making such provision for it as is desirable for present and eternal enjoyment.

'Tis religion that can give
Sweetest pleasure while we live;
'Tis religion must supply
Solid comfort when we die.

Another profitable way is to become better acquainted with one's neighbors. Oh, dear! I give it up; I can't answer that question. It is too "big" for the Question-Box. I never saw the time in which I didn't have or couldn't find something to do. I wish the hours were twice as long, then perhaps I could come nearer doing all that I should like to do. Now, don't let any one pitch into me for a discussion on the subject of religion, unless he incloses stamps for reply, and to pay for time, paper, and envelopes. There, Ernest, that looks pretty long for the Question-Box. Cut it to suit you, or leave it out entirely.

DR. A. B. MASON.

I think, friends, that very much depends upon one's circumstances. A bee-keeper who is in debt, and who is constantly pressed by his debtors, ought to work hard at something all winter long, and I think he will find as much enjoyment in this way as in almost any of the things that have been mentioned. If he is comfortably off, he certainly ought to devote a good share of his time toward helping and encouraging those who always need help and encouragement round about him. I am very much pleased to see how many there are among our number who urge the importance of following Christ's last commission which he laid upon us—"Go ye into all the world and preach the gospel to every creature." This does not necessarily mean that we should go to foreign lands as missionaries, nor that we should feel that we are called upon to climb up into a pulpit. "Whether ye eat, or whether ye drink, do it all to the glory of God." When it comes to having real fun, I think every bee-keeper should have a greenhouse, so he can be happy in watching for sunshine, and in seeing things grow.

QUESTION 105.—*What do you do when you find a colony affected with dysentery in the cellar, and it is too early or too cold to give them a cleansing flight by removing them temporarily from the cellar?*

I do nothing.

GEO. GRIMM.

We let them go.

P. H. ELWOOD.

I generally let them alone, except to make the cellar warmer.

C. C. MILLER.

Nothing can be done, and we would not even look, for it does them harm to be disturbed.

DADANT & SON.

I place a wet cloth over the brood-frames, or throw a handful of salt into the entrance, or both.

CHAS. F. MUTH.

I do not winter in cellar much. I should do whatever I could to make them more quiet; and, beyond that, let them alone as much as possible.

E. E. HASTY.

I just let them alone and lose them. In nine cases out of ten, the more you tinker and fuss with them, the quicker they will die and the more you will lose.

JAMES HEDDON.

I mean to prevent this. I have cured them by giving them a flight in a warm room. This is best done by putting them in a large box and covering with netting.

A. J. COOK.

I have not had a colony affected with diarrhea in the cellar in years; and if I were to have, I would simply let them alone; for, as far as my experience goes, fussing with this never does any good.

G. M. DOOLITTLE.

I would let such colonies alone. The disturbance will injure others more than it will help those affected. If such a stock were at the bottom of the room it might be a benefit to raise it to the top, where it would be warmer.

L. C. ROOT.

I let them alone. If the bees are all right, and have suitable stores when put into the cellar, and the cellar is properly ventilated, and kept at the right temperature, say 38 or 40°, there will be no dysentery.

MRS. L. HARRISON.

I put them in a room of the bee-house in which is a stove, and warm them up to nearly 100° for several hours at a time, keeping the room perfectly dark, giving the hive free ventilation at top and bottom, and repeat the dose at intervals of several days if necessary.

H. R. BOARDMAN.

I let it alone, for none of my colonies are so badly affected as to need attention. I aim to have each colony provided with proper food in the fall, and then kept at the right temperature in the winter, and I have no trouble in wintering. Pollen, or bread, is not a proper winter food for bees; and because "Rambler" saw the "pollen theory" "go up in a balloon" is no evidence that the theory is not correct.

DR. A. B. MASON.

This is a subject that was discussed largely in the bee-papers just before GLEANINGS was born; and while I never experimented in giving cellar-wintered bees a cleansing flight, I have done so largely with bees that were being wintered out of doors. I did this by letting them fly on top of the hives in a shallow box covered with glass, the rays of the sun through the glass giving heat enough for the purpose when the outside air would be freezing. These experiments led to my learning the value of chaff as a winter protector for bees, and the use of the solar wax-extractor; but I am not satisfied that it was of material benefit to diseased bees. This experiment can be easily tried with cellar-wintered bees by removing them temporarily to a light warm room and putting on them a box some 5 or 6 inches deep, covered with glass, after opening the top of the hive so the bees can come up freely on top of the frames. While I have little faith in the practical value of such an experiment, it will cost but very little to try it, and may be of greater value than I think for.

O. O. POPPLETON.

Our older readers will remember that, about the time GLEANINGS was "born," as friend Poppleton expresses it, I had a greenhouse, or, rather, a large cold-frame, built on purpose to cure bees that had the dysentery. Well, it worked tiptop, providing we had warm sunny days, so the bees could be put outdoors not very long after they were cured (?) by the treatment in the greenhouse. If we didn't have days when they could be set out, and given a good fly under the blue vault of heaven, they had a kind of fashion of relapsing, and ultimately "going dead" in spite of the cure. They were not exactly like the Irishman's bird, that he shot as plainly as could be, but wouldn't die because it was so contrary; for after they had been doctored and cured, as plainly as could be, they *died*, just to be contrary. May be, if I had pushed my investigations further I might have triumphed over the difficulties; but, if I remember correctly, just about the time of these experiments, our good friend P. H. Elwood wrote to me, that even if they could be cured by the greenhouse treatment, it cost more than to buy some good healthy bees of somebody who had them, in the spring. At the low prices at which bees have been offered for some time back, it does not pay to fuss very much with weak and sickly colonies, providing one has some other occupation that pays him fair wages.

NOTES AND QUERIES.

We solicit for this department short items and questions of a practical nature; but all QUESTIONS, if accompanied by other matter, must be put upon a SEPARATE slip of paper with name and address.

A GOOD REPORT FROM ONE OF THE FRIENDS IN CALIFORNIA.

IT would do you good to see my bees tumbling in with pollen to-day. The tomato-vines that you saw on my fence are maturing fruit every day, and the hills of corn you saw are now in silk.

We have had more rain, and the prospect for a honey crop is good. I have not been able to decide whether I will go to the mountains this spring or not.

W. J. MORRISON.

Long Beach, Cal., Jan. 7, 1889.

I raised 32 bushels of Japanese buckwheat from $\frac{1}{2}$ bushel I got of you.

J. V. HURLESS.

Archer, O., Jan. 14, 1889.

PAINT FOR HIVES.

I have used lead oil, but I find a paint made by Lonoman & Martinez, of New York, wears best. Some of my hives have been painted five years with that paint, and are still in good condition.

Sara Sota, Fla., Jan. 8, 1889.

S. C. CORWIN.

DRONES IN WINTER.

Can you tell me how it is that I have drones in one of my hives at this time of year, Jan. 8? I never saw it before.

SETH TOMPKINS.

Tarrytown, N. Y.

[Friend T., the presence of the drones you mention is probably due to the mild weather. If such weather should continue they may be found in the hive throughout the winter. You will probably find considerable worker brood in the hives.]

AN EIGHT OR TEN FRAME HIVE FOR COMB HONEY.

Were you working for comb honey, and did not care to practice contracting the brood-chamber, would you prefer an eight or ten frame hive, of S. size?

A. B. BAIRD.

Belle Vernon, Pa., Jan. 7, 1889.

[Friend B., as your question states it I should prefer an 8-frame hive. Usually they would not require contraction with dummies.]

HIVES WITH DEAD-AIR CHAMBERS.

In having a dead-air chamber in a hive, would you have it between the packing and the outside wall, or would you have it between the packing and the bees?

H. F. GRESSMAN.

[You don't need a dead-air chamber if you have packing around the bees. It is used only when no packing of any kind is made use of. A chaff hive without chaff between the walls would be a dead-air-chamber hive; but if you insist that you want, in your locality, the dead air and packing both, it seems to us it would be immaterial whether the air-space were between the outside wall and the chaff, or the chaff and the inside wall.]

REPORT FROM OUR FRIEND DR. LAY.

We have had a very prosperous year in every thing except honey, and that a fair crop. Bees are in good condition, and all honey-plants are up and well advanced. We have had a wet season. We are yet enjoying garden vegetables. You were within 18 miles of our home when you were at Schulenburg, on your trip to California. I am sorry you could not stop with us. We are happy to note that GLEANINGS is improving all the while. It is read by us with much pleasure.

J. E. LAY.

Hallettsville, Tex., Dec. 28, 1888.

TEXAS AND THE HORSEMINT.

Our main honey-plant here is horsemint, and I am fearful it will be scarce this year. It has been a warm wet winter so far, and there is a great deal of horsemint up and green, which will be killed if there comes a freeze, and I am afraid it will leave but little seed for spring. There is now blowing the coldest "norther" that has been felt this winter.

W. A. CARTMELL.

Crowley, Tex., Jan. 8, 1889.

PROSPECT FOR THE HONEY CROP IN TEXAS FOR 1889 NEVER BETTER.

The prospect for a big honey crop was never better in this part than at present. We have had a warm wet winter, and the horsemint is making its appearance in all of the waste places, and in many places even the wheat and oats on the cultivated lands. Yes, and the buds on the elm are swelled and bursted, and will be in bloom in a few days, and then our little Italian pets will be in their glory.

Cross Timbers, Texas, Jan. 14, 1889. L. B. SMITH.

SWARMING OUT IN JANUARY.

On Christmas day one colony of my bees rushed out and clustered on a tree. They stayed three or four minutes, separated, and went into three different hives. They were all right, but had to fight their way into the third hive. They swarmed out, probably because they had a sickly-looking queen, damp hive, and very little stores left behind. About 12 bees remained with the queen.

Wetheredville, Md., Jan. 9, 1889. J. A. HEIDLER.

[Friend H., I believe you are correct in your reasoning. Where bees get damp, they often swarm out in the way you mention. The dampness is usually caused because the cluster of bees is too small to produce sufficient heat to dry out the combs and bees.]

HONEY FROM HARD MAPLES.

Having noticed in GLEANINGS that there is a difference of opinion as to whether or not bees store honey from hard maple, I wish to state that last spring, before there was any other source of honey, I could have extracted more than 1000 lbs. of maple, or sugar-tree honey, but did not take much on account of its oily flavor. I have a 3-lb. can of pure honey from that source yet, and can send it to you if you would like to have it.

Clarksburg, Ind., Jan. 8, 1889. H. F. SHANNON.

[Friend S., I do not quite understand what you mean by the term "oily flavor." If you mean something like what we call "buddy," applied to the last sugar or molasses of the season, then I think I understand you. You may send us a sample of the honey by mail, in the little wooden block we mail you for the purpose.]

IN STRAIGHT ROWS.

Mr. Axtell says if trees are planted in perfect squares, or in straight rows two ways—that is, perfect rows east and west, and perfect rows north and south, then the diagonal rows will be perfectly straight and there will also be an infinity of them, provided the orchard be large enough. For proof of the above, you would only need to see one of our large cornfields when six inches high, that was planted perfectly with a check-rower.

Roseville, Ill.

MRS. L. C. AXTELL.

[I know a check-rower will do it, my friend, if the operator is very careful to start on a line when he commences at each end; but the orange-trees in California were set so very exact that it made me think they had some new process for doing it rapidly and quickly. You will notice that the subject has been taken up by two other writers in this issue.]

TOBACCO COLUMN.

CONDITIONS UNDER WHICH WE GIVE SMOKERS TO PERSONS WHO STOP USING TOBACCO.

First, the candidate must be one of those who have given up tobacco in consequence of what he has seen and read in this department. Second, he promises to pay for the smoker should he ever resume the use of tobacco in any form, after receiving the smoker. Third, he must be a subscriber to GLEANINGS. Any subscriber may, however, have smokers sent to neighbors or personal acquaintances whom he has labored with on the matter of tobacco-using, providing he give us his pledge that, if the one who receives the smoker ever uses tobacco again, he (the subscriber) will pay for the smoker. The one who receives the smoker in this case need not be a subscriber to GLEANINGS, though we greatly prefer that he be one, because we think he would be strengthened by reading the testimonials from time to time in regard to this matter. The full name and address of every one who makes the promise must be furnished for publication.

WE extract the following from the *Independent* of Jan. 10, hoping it may carry conviction to the heart of some tobacco-using brother:

"A great majority of men go far beyond what may be called the temperate use of tobacco, and evidences of injury are easily found. It is only necessary to have some record of what the general health was previous to the taking-up of the habit, and to have observation cover a long enough time. The history of tobacco in the island of New Zealand furnishes a quite suggestive illustration for our purpose, and one on a large scale. When Europeans first visited New Zealand they found in the native Maoris the most finely developed and powerful men of any of the tribes inhabiting the islands of the Pacific. Since the introduction of tobacco, for which the Maoris developed a passionate liking, they have from this cause alone, it is said, become decimated in numbers, and at the same time reduced in stature and in physical well-being so as to be an altogether inferior type of men."

Mrs. Leeka has quit smoking, and she helps me with the bees. Please send her a smoker. If she takes to the weed again, I will pay for it.

THOS. W. LEEKA.

Losantville, Ind., June 15, 1888.

My husband has quit the use of tobacco in every form, after using it since he was a boy. He says if you send me a smoker, and he ever uses tobacco again he will pay you your price for the smoker.

Iantha, Mo., Aug. 3, 1888. E. C. HARPER.

I thank you most heartily for the *smoker* for my son, and freely promise to pay for the same, if there should be any falling back into evil habits. But I think that will never be, for my son has experienced religion.

MRS. J. E. BUTTOLPH.

Frasa, Tex., Nov. 2, 1888.

GOING BAIL FOR A NEIGHBOR.

A neighbor of mine has quit the use of tobacco through reading GLEANINGS, and my influence, and wished me to write for a smoker. He will pay for it if he ever uses tobacco again, and I am ready to pay for it if he don't. He has just commenced bee-keeping and has the A B C book.

Berlin, Wis. E. C. EAGLESFIELD.

TEN CENTS A DAY FOR TOBACCO, FOR TEN YEARS.

I quit using tobacco in every form, Nov. 5, 1880, after chewing an average of 10 cents' worth (?) a day for ten years. I shall stay quit, and I don't ask anybody to give me any thing for quitting or staying quit. The pleasure of doing without tobacco is far greater than the doing with it was to me.

J. A. GEETING.

Washington, Ind., 1888.

A MINISTER AGREES TO QUIT THE USE OF TOBACCO.

Rev. Giles M. Johnston, a young minister of the gospel, agrees to quit the use of tobacco; and if you will send him a smoker, I agree to pay for the same should he ever commence the use of it again.

G. C. HUGHES.

Pipestem, W. Va.

A BROKEN PLEDGE, BUT PAYS FOR THE SMOKER.

Please find 70 cts. to pay for a smoker that I sent for in 1887, for J. D. Stringer, who had quit using tobacco. He finally let the disease take hold of him again. He says the thirst is too great for him to resist. Please accept our thanks for your liberal effort to put down such a filthy, sinful habit.

J. H. MORRAN.

Dripping Springs, Tex., Sept. 28, 1888.

A GOOD REASON FOR STOPPING THE USE OF TOBACCO.

I have been in the filthy habit of using tobacco for two years; but by reading your Tobacco Column, and by taking advices from friends, I have concluded never to use such vile stuff again. Recently a young lady friend told me if I would not quit using tobacco she would not speak to me any more. How is that for tobacco? I am now 20 years old, and have been using it since I was 18. I never used it in any other way than smoking. I think your Tobacco Column is good. I should think it would turn a good many hearts from using tobacco. If you think I deserve a smoker, please send it; and if I ever in my life use tobacco again I will pay for two smokers.

A. A. RIEFF.

Mankato, Minn., Nov. 7, 1888.

WHY I STOPPED THE USE OF TOBACCO.

I did not quit tobacco by what I read in GLEANINGS, but I was a subscriber for GLEANINGS in 1885, and it might have had its influence. I quit tobacco in order to get a *clean heart*. I could not puff tobacco smoke in God's face, and ask him to bless me. I could not use tobacco to the glory of God, nor come to him with a clean mouth, and I could not enter into the holy of holies with my clothes saturated with the fumes of hell. I could not shoot God with the devil's best gun (tobacco), and claim to be on the Lord's side. I could not say, "God has taken me out of the depths of sin, but can't save me from tobacco." Jesus came to save his people from their sins. If I knew it would kill me to give up tobacco I would give it up, and go sweeping through the gates into the city of God. There will be no tobacco there.

EMSLEY L. FAULKNER.

Pentwater, Mich.

TWO YEARS AFTER HAVING QUIT THE USE OF TOBACCO.

Just two years ago to-day I quit the use of tobacco, after using it nearly thirty years. You may place the credit to friend Terry. His letter in GLEANINGS caused me to burn my stock of "Navy," and promise my dear wife never to use tobacco in any form again. I've do doubt you have a great many new subscribers that have never read his letter. Why not publish it again? Don't send me a smoker. You have never made enough of them to hire me to quit tobacco. Any married man who will "chaw" after reading friend Terry's article, and then promise to quit for a smoker, would, of course, swap his wife for one.

C. S. DOUBLEDAY.

Hamilton, Tex., Dec. 28, 1888.

OUR HOMES.

How amiable are thy tabernacles, O Lord of hosts! My soul longeth, yea, even fainteth for the courts of the Lord; my heart and my flesh crieth out for the living God.—Ps. 84:1, 2.

ANOTHER joyous and peaceful Sabbath (Dec. 9) is past. One of the happiest memories of my visit to California will be the pleasant meetings with Christian people. Saturday afternoon I found I had accepted all invitations except one, and my friends informed me the address was left by a young man who came on a bicycle, and who was quite deaf. He lived at Long Beach. I wanted to get off on my homeward trip, and I found two trains left at about the same time—one for Long Beach and the other for San Francisco. Which should it be? As I stood before the ticket-office I prayed for guidance. In a moment I decided. I found my friend building a new house, and not very well fixed to keep company over Sunday, and so I decided to go to the hotel; but he soon told me, with some hesitation, that, if I could put up with his quarters, it would save expense, and that I should be quite welcome. His "quarters" were a barn close by his new house, his wife being with friends until the new house should be finished. Now, it is a very common thing here to live in barns, and some of them very scanty ones at that; and I quite enjoyed the idea, especially as it seemed to promise an opportunity for me to discover what message it was the Master's wish I should deliver to this afflicted brother. After our supper at a restaurant, we sought our lodging-place. As it is remote from any house, I could talk as loud as I pleased, without being overheard. Deaf people often get very lonesome—did you know it? I was soon rejoiced to find my companion a sincere and devoted Christian, but he had met some perplexities, or, perhaps, conflicting advice, that he longed to submit to the author of "Our Homes," for he has taken and read GLEANINGS since it was a 25-cent quarterly. One of his troubles was that he had never been baptized, except in infancy, and somebody had told him such baptism was "no good." They had even loaned him a book to read, and he had compared the texts with the Bible, and they all "squared" exactly. I assured him there were multitudes of books that proved their teachings in this very way, and advised him to let the baptism rest right where it was, but to bestow his care and pains toward "doing justly, loving mercy, and walking humbly before God."

"But, Mr. Root, there isn't a word in the Bible about infant baptism."

"Neither is there a word about Sunday-schools, yet you and I are going to the very first one in the morning we can find."

He had actually been thinking of uniting with another church, just because his devoted and faithful parents had baptized him when he was too small to know anything about it. His pastor did, it is true, consent to another baptism, but rather advised as I did, to let it remain as it was, and turn his

attention to things that were doing real harm.

"But, Mr. Root, one minister advises one way and another different. How can both be right?"

I told him it would be perfectly right for each one to follow the advice of his own pastor, in such matters.

"But, Mr. Root, I believe in taking the Bible exactly as it reads, without regard to any minister's advice;" but as he had his well-read Bible open on the top of his tool-chest, he pretty soon found a passage where it described an army "as the sands of the seashore," in numbers, and he was compelled to admit it was not to be taken literally, *as it read*.

"Well, Mr. Root, I think one ought to even black his shoes on Saturday night, to avoid working on Sunday."

"All right; that is a good and safe practical religion; bring your brush, and we will put it into practice at once."

"But, you don't need to black yours, according to your teaching, for you may not feel about it as I do."

"But I do think as you do to-night, any way; but if we get the blacking off in chasing after the horse in the morning, I should brush them up again, rather than to go to church with untidy shoes."

After we got to bed he questioned me as an eager child would; and when I got too sleepy to answer loud enough, he jokingly suggested I needn't be afraid of waking up the "people up stairs." At this I talked so loud a lot of geese the other side of the boards to the barn set up a cackle, and then we had a big laugh.

The joke about the upstairs was because the principal occupants were the stars of heaven.

"Mr. Root," said he, "were you ever tempted, when all alone by yourself?"

I told him that some of the hardest battles I had ever fought were in this very line, and his question took hold of me instantly.

"Well," he resumed, "did you ever try, at such times, singing a hymn?"

I told him I had never thought of it; but when he asked me if I would not sing one verse of some familiar hymn of my own, I felt it a privilege. Of course, I should have to sing quite loud to make him hear. It could not disturb anything but the geese, and I had just had such a hearty laugh at the cackling that I was in very good trim to sing with energy. I sang, as well as I could,

"Guide me, O thou great Jehovah!"

At the close I asked him to sing something that had helped him when tempted; whereupon my poor deaf brother sang one of the most touching hymns I ever heard in my life. He commenced with a somewhat timid voice, but finally the beautiful sentiments seemed to give him inspiration; and I did not wonder at its close that such a hymn had power to banish evil spirits and evil suggestions. If he will write out the words I will at some future time give it to the readers of GLEANINGS.

When I was half asleep again, he pulled me by the shoulder, and suggested, "You forgot to wind your Waterbury."

"No, I didn't; I wind it *mornings*."

He replied with great gravity, "Do you feel sure it is right to do *so much work* (?) on Sunday?"

He gives a tenth of all his earnings to the Lord; but a while ago he was tempted to use some of "the Lord's money" to speculate in real estate, at the time of the "boom," but the real estate went down and the money was lost, and a good deal more with it; so he mortgaged some property to get the money to pay up (that is, the Lord's tenth) by giving the money thus obtained to benevolent and missionary work. Dare any of us say he went to *too great extremes* in this?

In the afternoon my friend suggested that we sit on the seats on the bluff, and read the Sunday-school papers we had received at school. As I looked a little demur, he suggested that it was no worse than to sit in the parlor of our boarding-place. I assented. On the way it occurred to me I should like to write a word or two to my wife, as we sat viewing the ocean; and as I looked up I saw paper and envelopes in a little booth on the sidewalk. Without a thought I extended a dime for the tablet in which I am now writing. Almost before the transaction was done, however, he stepped up and promptly and faithfully rebuked both of us, "Mr. Root, you are encouraging these people in *Sunday traffic*, and at the same time patronizing a tobacco-stand."

A pretty predicament for the editor of GLEANINGS, especially after all he has written about doing business on Sunday, and the use of tobacco—yes, and a spiritual adviser besides, whom *God had sent*.

I thanked him, and told him he was right. We sat on the bench on the cliff, but we did not look at the ocean much, and I didn't write my letter. We both began to feel we were not exactly where Christians ought to be, for many others were along the cliff and down on the roads. I had suggested visiting the jail, but they don't have any, for they never have had a saloon, and never expect to have one. May the good Lord direct two of his children this Sabbath afternoon. The prayer was answered very soon. A man came up rather out of breath, and inquired for A. I. Root. I at once jumped to the conclusion that he was the operator, and had a telegram for me, because something had happened at home. I started up.

"I am A. I. Root; what is wrong?"

"Nothing, only I have had a long hunt for you. I think I have been after you since about the time you saw those turkey buzzards 'nailed' up on the trees to dry."

At this there was a big laugh all around, and then he explained that their little girl came home from Sunday-school, declaring "A. I. Root" had been there. He assured her she must be mistaken; but she stoutly declared that the minister said, "Brother A. I. Root, of Medina, O.," would make the opening prayer, whereupon he set out to hunt him. He traced him to dinner, then to the Congregational Sunday-school, then off toward the ocean, and he thought probably he had gone off "hunting greenhouses" or something of the sort. How did he know

any thing about *me*? Why, he had taken GLEANINGS, even away back in Louisiana, and A. I. Root was a household word, even among the children. Would I not make his house my home while I stayed? How about visiting on Sunday? This new friend was a Baptist, the other brother a Methodist, and myself a Congregationalist. Surely we *three* ought to be able to decide how best to keep the Sabbath day holy under the circumstances. We accepted the Baptist brother's invitation, and, what do you think? It was close by the barn where we had stayed the night before. These two brothers were side by side in a far-off land, and yet both took and prized GLEANINGS, but might not have known it for weeks had I not made them acquainted. And it seems that almost every Sunday since I have been in California some *child* has spread the news of my whereabouts. I tell you, friends, it pays, in more ways than one, to be promptly on hand at both prayer-meeting and Sunday-school, no matter how old you are. Sabbath evening they had a wonderful temperance meeting, with all the pastors of Long Beach on the platform, and all the people (as a matter of course) filling the seats of a pretty good-sized tabernacle. I did not suppose so large an audience could be found, if every man, woman, and child attended; and I did not suppose the three pastors (although I had formed a very high opinion of them) *could* give us three such mighty temperance sermons.

I have praised California so much, perhaps I should touch lightly on its evils. Well, the Methodist pastor, in speaking on social purity, said that in Los Angeles alone there were four hundred—not men, but blots on creation—who made a business of enticing boys, *and girls too*, into houses of *ill-fame*. I hope this may be a mistake. I have been a good deal in the city of Los Angeles, and they seem to be a busy, God-fearing people.

Friend Morrison's good wife welcomed us to their home as warmly as did her kind husband; and even if we did visit some on Sunday, I believe the Savior looked down on us lovingly.

"O Mr. Root!" commenced our hostess, with her charming Southern accent; "there is one woman in this town I do wish you could know. She is rich, but she has so much of the grace of God that riches can not harm her. She has not only builded the Congregational church, but pays the minister almost herself." The speaker is a *Methodist*, and her husband a *Baptist*; but I believe this spirit is characteristic of Long Beach.

"Who is the beautiful lady that superintends the Congregational Sunday-school?" said I.

"Why, Mr. Root, you have seen her already."

I wondered, when I saw her giving directions, toward the close of the school, to see one with such a sweet, pure, childlike face, in a place of so much responsibility. She is the child of a Congregational minister; but her husband has been prospered, and has now immense wealth; but he evidently has as much faith in her as the rest of the peo-

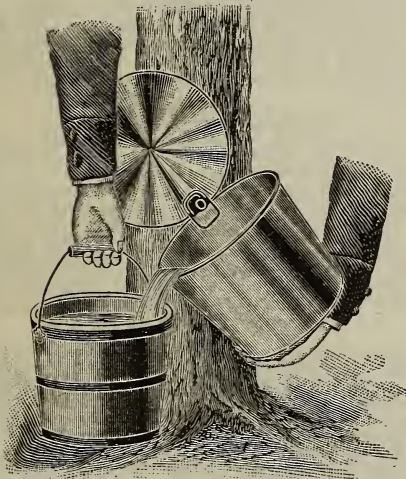
ple there, for they too give very largely to all praiseworthy purposes.

Thus ended my fourth Sabbath in California, and also my 49th birthday, for it was the 9th of December.

MAPLE SUGAR AND SYRUP MAKING.

RECENT IMPROVEMENTS IN THE IMPLEMENTS.

Of course, bee-keepers can not all engage in the maple sugar and syrup industry, for they do not all have the maple-trees; and some that do, do not have the winter's frost; but almost all of them have a tooth for the products, therefore most of us are interested, either directly or indirectly, in the matter. The cut below shows a new cover, just brought out by the Record Manufacturing Co. Much sap is lost during windy days, by the wind; besides this, dirt, sticks, leaves, and insects, are blown into the sap, and certainly this does not improve the quality of the product. When the weather is warm and sunny, during a flow of sap, bees are also drowned by the thousands in open buckets. This cover obviates all these troubles.

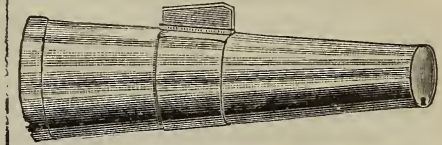


NEW TIN BUCKET, WITH TIN COVER ATTACHED FOR MAPLE-SUGAR MAKING.

These covers also, to a large extent, prevent freezing; for if the chilling wind is kept from striking the surface of the sap, it will be less liable to freeze, so as to injure the buckets, or so as to interfere with the handling of the sap. Last, but not least, rain and snow are kept out. It seems a little singular, but it has been abundantly proven, that the addition of rain water always makes the product darker colored. It is the gilt-edged syrup that commands the big price, like gilt-edged butter and honey. The latest improvement in the way of spouts or spiles, is the one shown next.

This differs from the one we illustrated some years ago, only by having the small end closed entirely by a cap. Through this cap a small orifice is made. This prevents the air from getting up into the bore in the tree, and oxidizing, or souring, the sap

when the run is small, the little orifice being closed air-tight by a minute globule of sap. Price 90c per 100, \$8.00 per 1000.



THE RECORD MANUFACTURING COMPANY'S SAPSPILE.

The present price of the covers shown above is 7 cts. each, for less than 100. In complete packages of 100, just as they come from the factory, \$6.00. A sample can be sent by mail, at an additional expense of 10 cts. Prices of pails, IX tin, per 100, 10 qt., \$17.00; 12 qt., \$18.00; I C tin, \$15 and \$16, respectively.

This cover has a cap, or hood, that covers the spout entirely; and at the same time the whole arrangement is, by an ingenious device, attached to any pail in an instant. The attachment is such that the cover is hinged so that it will open as shown in the cut.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, OHIO.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, FEB. 1, 1889.

I will delight myself in thy statutes: I will not forget thy word.—Ps. 119: 16.

THE QUINBY SMOKER IMPROVED.

W. E. CLARK, of Oriskany, N. Y., has sent us one of the latest Quinby, or L. C. Root smokers. The improvement consists in having the nozzle hinged by a suitable light malleable casting so that the operation of replenishing can be greatly facilitated. One of our objections to the hot-blast smokers has been the loose nozzles, and the bother of removing and putting them on when they are "all-fired hot." A hinged nozzle can be removed and replaced by a light tap of the fingers. For further information, write the address as above.

OUT-APIARIES.

WITH this number we publish the first one of a series of articles on the subject as above, from the pen of one who has had a large experience—Dr. C. C. Miller. They will be continued through a number of issues. While they are designed primarily to instruct those who have little or no practical knowledge of the subject, and who, perhaps, seek such information, they doubtless will contain considerable value for those who have already had some practical experience along this line. If you are not a subscriber, enroll your name at once. This is an important theme, and you can not afford to lose the benefit of these articles.

We have at this date, 8390 subscribers.

NEW ADVERTISEMENTS.

An unexpected crowd of new advertisements has obliged us to go to press, omitting much valuable matter that should have appeared in this issue. In our next we shall give you an extra eight pages.

LENDING GLEANINGS.

I THINK I have heard publishers find fault because some people borrow the paper and do not subscribe; but I rather like the idea of lending papers. Of course, there may be such a thing as carrying it too far, like borrowing the paper regularly each issue. But to encourage the friends in being neighborly with their copies of GLEANINGS, we shall be glad to have you lend them—that is, after you have read them; and whenever one is lost or soiled, just send us word and we will send you a nice clean one free of charge. We can do this just as well as not, because we almost always have surplus copies that get old, and have to be sold for paper-rags, or about the same. In fact, we have got tons of them stacked away in an old out-building now. Therefore, "Do good and lend, hoping for nothing again." I got the above suggestion from our friend Minnie Coulter, on page 62, last issue.

ALFALFA AND CUCUMBER HONEY.

C. C. MILLER, while in Pueblo, Col., purchased a sample of alfalfa honey of that region. On his arrival home at Marengo, Ill., he sent us this honey, together with a sample of cucumber honey. The flavor of the alfalfa is fully equal to clover, which it resembles closely. It is seldom that we take more than a good taste of honey sent as a sample; but after A. I. R. had tasted, E. R. R. and J. T. C. followed suit. With an expression of "That's good," we kept on scooping it up with our knife-blades until—well, there is just a little left for you to try. The fact that this plant yields from three to four crops of hay in a season, that it will grow in most Northern localities, together with the fact that it yields a superb honey, are no small recommendations in its favor. The flavor of the cucumber could hardly be called first-class, but on the whole it is better than the majority of the second-rate honeys. The taste reminds one a little of cucumber itself, and this becomes more evident a few moments after tasting.

LANGSTROTH ON THE HONEY-BEE, REVISED BY DADANT.

The new book is finally on our table. It contains 521 pages, while Langstroth's old edition has only 387; and after turning over the leaves for perhaps half an hour (it came just as we were ready to go to press) I should say it gives the fullest and most comprehensive view of bee culture, up to the present day, of anything in print. The book is full from beginning to end of the finest engravings that ever graced any book on bee culture, or any other industry, for that matter. It is not devoted to any particular hive nor system of management, as is our own A B C book, but it mentions all the principal hives and methods in use, and at the same time friend Dadant indicates plainly his preference. I was very glad indeed to find, at the close of the chapter on "Hives," several pages devoted to "the hive we prefer;" and then he gives his reasons for his preference. Everybody is given full credit, so far as I can discover, for their own ideas and for their own inventions, and the book gives one an ex-

ceedingly pleasant idea of the friendly relations in which bee-keepers stand, the one to the other. There is not a word of discussion in it anywhere, that I know of, as to *who* invented this, that, and the other, or to whom credit belongs; and if our friends *have* here and there made a mistake or two in giving credit, I hope no one will be critical enough to take it up. We can send the book by mail, postpaid, for \$2.00; by freight or express with other goods, \$1.85. We have a few of Langstroth's old edition, which we will close out at 50 cts. less than the above, to those who may want one.

SPECIAL NOTICES.

WAX RENDERED BY THE SOLAR WAX-EXTRACTOR.

At the present time our regular advertised price for wax is 20 cts.; 25 cts. in trade. Now, for wax rendered by the solar wax-extractor—clean yellow wax with no impurities on the bottom of the cakes, we will pay 5 cts. more than the above prices. We think it is no more than fair and just, in consideration of the great superiority of sun rendered wax.

A NEW TEN-INCH FOUNDATION MILL FOR SALE.

This mill is one of our latest make, and has just reached its destination. Our customer finds that it requires more wax to dip from than he was prepared for, and now has changed his mind, and concluded to buy his foundation. The mill has never been taken out of the box. If any one in the West is contemplating buying one it will be considerable saving in freight to take this. The outfit, at catalogue prices, would be worth \$23; but we will sell it for \$22.00.

DARK-COLORED FOUNDATION.

Some time ago we advertised foundation, made of dark-colored wax, for 3 cts. less per lb.; but as the demand was constantly greater than the supply, we took the notice out. During the past year, however, we have saved up perhaps a ton, too dark in color to send out as regular foundation; but in my opinion it is exactly as good, in every respect, for brood-combs; but as it does not look quite so nice, we will furnish it, while the supply lasts, for 3 cts. per lb. less than the regular price. Perhaps it will be well to order soon if you want it.

FREIGHTS TO CALIFORNIA.

We find on investigation, that the rates of freight from here to California, on sections and bee-hive material in the flat, differ widely whether you take a carload or less than a carload. The rate from here to San Diego, Los Angeles, or Bakersfield, on a carload, is \$1.25 per 100; while if less than a carload is taken, \$2.90 is charged. In view of this fact, it will be greatly to your advantage if you all could club together in sending your orders, in regard to making up a carload, even if part of the load would have to be reshipped after it got there. Remember, this rate applies to fourth-class freight, under which head comes section boxes, and bee-hive material in the flat which can be called "box stuff." Material coming under a higher classification requires a higher rate.

ALSIKE CLOVER AWAY UP.

One of the largest dealers in seeds in the city of New York has just written us that the very best he can do on prime alsike at present is \$8.50 per bushel; and as this is the very price that we have been advertising it at retail of late, it leaves us in a rather bad predicament; but I rather enjoy it, after all. Do you know why? It is because bee-keepers who have alsike to dispose of are going to get a good price for it; and every bee-keeper ought to have some alsike clover seed to sell; in fact, raising alsike, buckwheat, rape, and seeds, that produce both grain and honey, should be a part of every bee-keeper's business. Now, then, those of you who have alsike to spare will please tell how much you have, and what you will take for it. Of course, we can not pay \$8.50, and furnish bags, and sell it out at retail for \$8.50. Another thing, most of the alsike we sell has to go through that new-fangled fanning-mill that goes by steam power, to make it

No. 1 seed. However, if you will mail us a sample of what you have, we can tell you what it will be worth to us.

CONVENTION NOTICE.

The Northeastern Michigan Bee-keepers' Association will hold its annual convention Feb. 6, 1889, at the Dayton Hotel, in Flint. Meeting will be called to order at 10 A.M.
W. Z. H. THINSON, Sec'y.

PRICE LISTS RECEIVED.

We have received from Wm. H. Bright, Mazeppa, Minn., his catalogue of bee-keepers' supplies.

J. W. K. Shaw & Co., Loreauville, La., have just sent us their price list of Italian queens.

We have just printed for Andrews & Lockhart, Pattens Mills, N. Y., a catalogue of their specialty, Carniolan queens.

J. M. Kinzie, Rochester, Mich., sends out a list of general supplies for the apiary.

The Rank and File

As well as the leaders in bee-keeping are well pleased with the **BEE-KEEPERS' REVIEW**. Read what some of them say:

The **REVIEW** is like *Lippincott's Magazine*. It is a digest of the best articles to be found in the best British and American magazines. The **REVIEW** is the cream; the kernel without the shuck.

Atlanta, Ga. JNO. BARFORD.

Enclosed please find 50 cts. for the **REVIEW** for 1889. Although only a novice, I like to read something beyond me, instead of so many "hints to beginners," as are found in some of the journals.

Westboro, Mass. A. L. PHIPPS.

Allow me to congratulate you on the very superior character of your paper. It fills an important place never before occupied; and, in my estimation, no one interested in any pursuit can afford to be without it.

Kansas City, Mo. E. M. HAYHURST.

The **REVIEW** comes the nearest to filling the bill of any thing I have seen. If you can bring each succeeding volume up to the standard of the first one, your fortune is made.

Cochecton Center, N. Y. C. J. SACKETT.

If your comb honey is as bright, clean, and fresh, in proportion to your experience, as is your excellent little journal, I think white will become it as well as "the sweet young girl."

Mt. Vernon, Iowa. OLIVER FOSTER.

Viewed in the lights and shadows of nigh twenty years of bee-keeping, no twelve numbers of any bee-journal have contained the amount of valuable information that you have crowded into the first volume of the **REVIEW**.

Dowagiac, Mich. JAMES HEDDON.

There was no need for the **REVIEW**, but you have made a need for it. I should be a sincere mourner at its death.

Marengo, Ill. DR. C. C. MILLER.

Reader, send for a sample copy of the **REVIEW**, and judge of it yourself. Price of the **REVIEW**, 50 cents a year.

The **REVIEW** and "The Production of Comb Honey" for 65 cts. For \$1.00 the **REVIEW** will be sent two years, and "The Production of Comb Honey" thrown in. Back numbers of the **REVIEW** can be furnished. Stamps taken, either U. S. or Canadian.

10tfdb W. Z. HUTCHINSON,

Flint, Mich.

FOR SALE.—Six Light Brahma pullets, one cockerel, \$10; P. Rock and Langshan cockerels, \$1.50 to \$2.00; pullets, \$1.00. Thorougbred. Satisfaction given.
MRS. C. E. HATCH,
3d Kentland, Newton Co., Ind.

B. J. MILLER & CO.,
NAPPANEE, - ELKHART CO., - IND.,
MANUFACTURERS OF

BEE-HIVES AND SUPPLIES.

Sections, T-tin cases, shipping-crates, metal corners, etc. Five per cent discount on supplies in Jan. and Feb. Price list free. Send for one. 1tfdb

In responding to this advertisement mention GLEANINGS.

FOR SALE!

I am obliged to dispose of my farm so as to be nearer to my business. On this account I am also obliged to sell out my bees. I have 56 colonies in prime condition in the cellar. My surplus arrangement, I think, can not be beat. Every thing I have connected with the business is in the best possible shape for practical purposes that long experience could suggest. The following is a nearly complete list of what I have to dispose of: 56 colonies bees, mostly pure Italians, in 8-frame Langstroth hives; 88 hives filled with comb or wired foundation; 143 hives complete with frames, honey-boards, and covers; 53 section racks, with 18 sections each, filled with comb; 224 section racks, with 18 sections each, filled with foundation; 89 section racks, with 18 sections each, empty; 31 section racks, without sections; 15 shipping cases; one Given foundation press for full Langstroth frame; 50 feeders; 2 bellows smokers; 20 lbs. foundation; one extractor; and a lot of other paraphernalia, such as shipping-screens, wire for frames, wire screenhouse, saws, mandrel and stand, top hive, stands, cover rings for tiering up, etc. etc., which are usually necessary to a complete outfit in the business. The total cost of the whole is not far from \$1500.00; I will sell the whole lot for about one-half of that. I will not sell in part, but only by the lot, and I would like to have any would-be purchaser come and see for himself before he bargains. Certainly, a much better opportunity will not present itself to one with limited means to start in the business.

GEORGE GRIMM,

Jefferson, Jefferson Co., Wis.

In responding to this advertisement mention GLEANINGS.

ITALIAN BEES AND QUEENS EARLY.

15th	Imported Ital. queen (1888 Imp.).....	\$5 50
	Tested " " " " " " " " " " " "	2 25
	Untested " " " " " " " " " " " "	2 75
1	1 Sim. frame Nucleus, 1/2 lb. bees.....	1 25
1	" " " " " " " " " " " "	1 75
2	" " " " " " " " " " " "	2 00
2	" " " " " " " " " " " "	2 80

Ten per cent discount to all who send orders so early as to reach me 20 days before they wish their orders filled. Make money orders payable at Clifton. S. H. COLWICK, Norse, Bosque Co., Tex. 3-8db

In responding to this advertisement mention GLEANINGS.

EARLY QUEENS. I will send young queens by return mail from this date, Jan. 25, 1889.
MRS. A. A. NEEDHAM, Sorrento, Lake Co., Fla.

FOR Ohio IMPROVED CHESTER PIGS, or the Finest BROWN LEGHORN FOWLS for breeding purposes, write to
FILLMORE DECKER,
1tfdb New Florence, Westm'd Co., Pa.

DADANT'S FOUNDATION FACTORY, WHOLESALE and RETAIL.
See advertisement in another column. 3tfdb

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-cent stamp for "Practical Hints to Bee-Keepers." (Mention Gleanings.) 1tfdb

Costs less than 2 cents per week.

THE CANADIAN BEE JOURNAL.

THE FIRST DOLLAR WEEKLY IN THE WORLD.
THE D. A. JONES CO., PUBLISHERS, BEETON, ONTARIO, CAN.

D. A. Jones is its editor, and this fact is a guarantee of its worth. It is thoroughly practical and contains weekly excellent articles from leading bee-keepers in the United States and Canada. Fifty-two numbers make a volume of 1040 pages. American currency and stamps at par. Samples free.

Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 6 lines, and you must say you want your ad in this department, or we will not be responsible for any error. 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.

WANTED.—To exchange for extracted honey, a 10 h. p. horizontal engine, worth \$200. I will give somebody a rare bargain. Speak quick.
15tdfb C. H. SMITH, Pittsfield, Mass.

WANTED.—To exchange one of Livingston's farm feed, or grist mills, for hand or power, as good as new, for Barnes foot-power saw.
2-3-4d H. L. FISHER, Milford, Kos. Co., Ind.

WANTED.—To exchange 250 colonies of bees, for horses, mules, wagons, buggies, and 4 h. p. engine, or any thing useful on a plantation.
2tdf ANTHONY OPP, Helena, Phillips Co., Ark.

WANTED.—To exchange a Barnes foot-power saw, combined circular and scroll, for a foundation-mill, 10-inch, A. I. Root's preferred.
3d MATHEW DODDS, Sauk Center, Stearns Co., Minn.

WANTED.—To exchange buzz-saw for power (not foot-power), 4 saws, 8 to 16 inch, all good as new. Also a few P. R. chicks, fine, warranted.
3d C. E. HATCH, Kentland, Newton Co., Ind.

WANTED.—To exchange bees in Simplicity hives, or History of Civilization, in four volumes, cost \$14.00, for B-flat clarinet.
3d PHIL FISHER, Hannibal, Monroe Co., O.

WANTED.—To exchange pure Brown Leghorn eggs and cockerels (Todd strain) for any thing useful. Write first.
3tdfb A. F. BRIGHT, Mazeppa, Wabasha Co., Minn.

WANTED.—To exchange Turner raspberry-plant, for improved poultry eggs or bee-supplies, or fine pig.
3-4d G. F. TYLER, Honey Grove, Fannin Co., Tex.

WANTED.—To exchange about 200 hives, to hold 4 L. frames, for queen-rearing, well painted, nearly new, for any thing useful. I will give any one a bargain.
3d C. D. DUVAL, Spencerville, Mont. Co., Md.

WANTED.—To exchange bee-supplies for a few thousand strawberry plants—Crescent and Sharpless.
3-14db W. E. CLARK, Oriskany, Oneida Co., N. Y.

WANTED.—To exchange volumes of the *American Bee Journal* and *GLEANINGS* for Japanese buckwheat, alsike, or mammoth red clover, or something else.
3d J. W. BARLOW, Burlington, Des Moines Co., Iowa.

WANTED.—Situation with some supply-dealer, apiarist, or honey-merchant, by a single man of 27, eleven years' experience; best of references. Distance no objection. Address
3d A. B. C., Groesbeck, Ohio.

WANTED.—To exchange a new 8x12 self-inking Monumental press, with a lot of type, cases, etc.; one 240-egg self-regulating incubator; one Monarch brooder, for 200 chicks; one brooder for 100 chicks, for 2 or 3 H. P. boiler and engine, section machine, cigar-box planer, honey, alsike clover seed, or offers.
3-4d J. T. FLETCHER, Clarion, Clarion Co., Pa.

WANTED.—To exchange a lot of Turner and Crimson Beauty raspberry-plants for other nursery stock, Italian queens, sections, eggs for hatching, etc. Write first.
3-4d E. R. MILLER, Garden City, Cass Co., Mo.

WANTED.—A good bee-man for an opening, Christian man preferred.
3d C. J. JOST, Banning, San Ber. Co., Cal.

WANTED.—To exchange Italian bees for timber or a "Springfield roadster."
3tdfv L. HEINE, Bellmore, Queens Co., N. Y.

WANTED.—To sell or exchange, Italian bees and queens, and supplies. Address
OTTO KLEINOW, No. 150 Military Ave., Detroit, Mich.

WANTED.—You to send for my new price list of Imported and American Italian queens. Can ship as early as the earliest.
3tdfb R. H. CAMPBELL, Madison, Morgan Co., Ga.

WANTED.—To exchange one well-drill, good as new, made in Aurora, Ill., cost \$450; will value at \$200, and exchange for bees or any kind of bee-supplies. This is a rare bargain. Address
3-4d S. RAY HOLBERT, Watson, Marion Co., W. Va.

WANTED.—As many Italian or hybrid bees as I can get for \$100, delivered here between May 1st and 10th. Who will give me the best bargain?
3d N. E. DOANE, Breckenridge, Gratiot Co., Mich.

WANTED.—To exchange 160 acres of fine land near Watertown, Dakota, for property in some good location for bee-keeping, or would take stock if not too far from here, or an apiary, in part payment, or offers.
3-4d J. L. COLE, Carlton Center, Barry Co., Mich.

SEND FOR HEDDON'S CIRCULARS.

Address
JAMES HEDDON
DOWAGIAC, MICH. 3-4d

In responding to this advertisement mention GLEANINGS.

NEARLY THIRTY TONS —OF— DADANT'S FOUNDATION SOLD IN 1887.

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; B. J. Miller & Co., Nappanee, Ind.; E. S. Armstrong, Jerseyville, Ill.; E. Kretzmer, Coburg, Iowa; P. L. Viallon, Bayou Goula, La.; M. J. Dickason, Hiawatha, Kansas; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; D. A. Fuller, Cherry Valley, Ill.; J. B. Mason & Sons, Mechanic Falls, Maine; G. L. Tinker, New Philadelphia, O.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1409 15th St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; J. A. Roberts, Edgar, Neb.; E. L. Gould & Co., Brantford, Ontario, Canada; J. N. Heater, Columbus, Neb., and numerous other dealers.

Write for free samples, and price list of bee supplies. We guarantee every inch of our foundation equal to sample in every respect. Every one who buys it is pleased with it.

CHAS. DADANT & SON,
3btdf **Hamilton, Hancock Co., Illinois.**

FOR THE SEASON OF 1889.

Headquarters in the South.

ELEVENTH ANNUAL CATALOGUE NOW READY.

The only steam-factory erected in the South, exclusively for the manufacture of Bee-Keepers' Supplies.

ITALIAN QUEENS.

Tested, ready in March. Untested, by April 1st. Contracts taken with dealers for the delivery of a certain number of queens per week, at special figures.

FOUR-FRAME NUCLEUS,

with pure Italian queen, containing 3 pounds of bees when secured—in April and May, \$4.00; after, 25 cts. less. Safe arrival and satisfaction guaranteed on all queens and nuclei.

For more particulars, send for Eleventh Annual Catalogue.

P. L. VIALLOIN,

Bayou Coula, Iberville Parish, La.

In responding to this advertisement mention GLEANINGS.

HEADQUARTERS IN THE WEST

FOR THE MANUFACTURE AND SALE OF

Bee-Keepers' Supplies.

CHAFF AND SIMPLICITY HIVES FURNISHED AT A GREAT REDUCTION IN PRICE.

A full line of supplies always on hand. Also Italian queens and bees at a very low price. Send for large illustrated price list. 1-23d

A. F. Stauffer, Sterling, Ill.

In responding to this advertisement mention GLEANINGS.

IMPORTED QUEENS.

In May and June, each \$2 00
In July and August, each 1 80
In September and October, each 1 40

Money must be sent in advance. No guarantee on shipments by mail. Queens sent by express (8 at least), which die in transit, will be replaced if returned in a letter.

1-11d CHAS. BIANCONCINI, Bologna, Italy.
In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL.
See advertisement in another column.

Maple Sugar and The Sugar-Bush

THIS IS A NEW BOOK BY

PROF. A. J. COOK,

AUTHOR OF THE

BEE-KEEPER'S GUIDE, INJURIOUS INSECTS OF MICHIGAN, ETC.

The name of the author is enough of itself to recommend any book to almost any people; but this one on Maple Sugar is written in Prof. Cook's happiest style. It is

PROFUSELY ILLUSTRATED.

And all the difficult points in regard to making the very best quality of Maple Syrup and Maple Sugar are very fully explained. All recent inventions in apparatus, and methods of making this delicious product of the farm, are fully described.

PRICE: 35 Cts.; by Mail, 38 Cts.

A. I. ROOT, Medina, O.

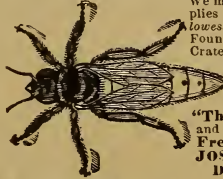
SEND NOW

for my 1889 price list of supplies, 4-piece poplar and basswood sections at \$3.50 to \$3.00 per M. Poplar sections for the new Heddon hive a specialty. Price lists out Feb. 1st. H. P. LANGDON, 1-5d East Constable, Frank. Co., N. Y.

In responding to this advertisement mention GLEANINGS.

Western BEE-KEEPERS' Supply Factory.

We manufacture Bee-Keepers' supplies of all kinds, best quality at lowest prices. Hives, Sections, Foundation, Extractors, Smokers, Grates, Yells, Feeders, Clover Seeds, Buckwheat, 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. Address: **JOSEPH NYSEWANDER, DES MOINES, IOWA**



In responding to this advertisement mention GLEANINGS.

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 double 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. 23tfd

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

JNO. VANDERVORT, Laceyville, Pa.
In responding to this advertisement mention GLEANINGS.

SECTIONS and FOUNDATION CHEAPER THAN EVER.

Sections Only \$3. Dealers write for special prices. Free samples and price list. 1-12db (Near Detroit.) M. H. HUNT, BELL BRANCH, MICH.

In responding to this advertisement mention GLEANINGS.

ON 30 DAYS' TRIAL.

THIS NEW ELASTIC TRUSS

Has a Pad different from all others, is cup shape, with Self-adjusting Ball in center, adapts itself to all positions of the body, while the ball in the cup presses back the intestines just as a person does with the finger. With light pressure the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail Circulars free. **EGGLESTON TRUSS CO., Chicago, Ill.**

In responding to this advertisement mention GLEANINGS.

SOUTHERN HEADQUARTERS

FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address

J. P. H. BROWN, Augusta, Ga.

In responding to this advertisement mention GLEANINGS.

GLEANINGS IN BEE CULTURE.

DISCOUNTS

Will be allowed as usual during the Fall and Winter Months.

PRICES QUOTED ON APPLICATION.

SUPERIOR WORKMANSHIP AND MATERIAL.

SHALL BE PLEASED TO MAKE ESTIMATES ON ANY LIST OF GOODS WANTED. CORRESPONDENCE SOLICITED.

A full line of BEE-KEEPERS' SUPPLIES manufactured by

W. T. FALCONER, - - - Jamestown, N. Y.

In responding to this advertisement mention GLEANINGS.

FOUNDATION.

We manufacture the best foundation, and after it is drawn out by the bees it is perfectly white. Made from selected wax. All orders filled promptly (in the season) or money returned by next mail.

Address for prices, etc.,
1tfdb

F. A. SALISBURY, Syracuse, N. Y.

In responding to this advertisement mention GLEANINGS.

NEW YORK.

FOREIGN ORDERS SOLICITED.

NEW JERSEY.

EASTERN * DEPOT

(Bees.) —FOR— (Queens.)

EVERYTHING USED BY BEE-KEEPERS.

EXCLUSIVE MANUFACTURER OF THE

STANLEY AUTOMATIC HONEY-EXTRACTOR.

Dadant's Foundation, Wholesale and Retail.

WHITE POPLAR OR BASSWOOD SECTIONS.

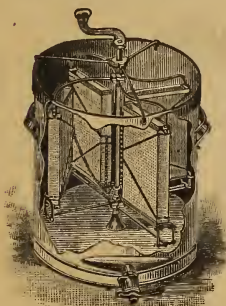
One-Piece, Dovetail, or to nail. Any Quantity, any Size.

COMPLETE MACHINERY—FINEST WORK.

Send for Handsome Illustrated Catalogue, Free.

E. R. NEWCOMB, Pleasant Valley, Dutchess Co., N. Y.

In responding to this advertisement mention GLEANINGS.



MASS.

3-fdb



CONN.

BEE SUPPLIES.

Wholesale and Retail.

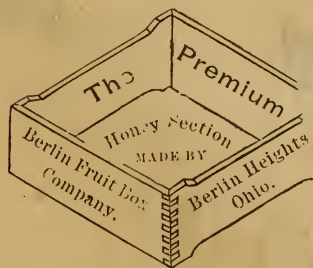
Illustrated catalogue FREE to all.

We have the largest steam-power shops in the West, exclusively used to make EVERYTHING needed in the Apiary, of practical construction and at the LOWEST PRICES. Italian bees, queens, 12 styles of Hives; Sections, Honey-Extractors, Bee-Smokers, Feeders, Comb Foundation, and everything used by bee-keepers, always on hand.

Address 3-11d

E. BRETCHMER, COBURG, MONTGOMERY CO., IOWA.

In responding to this advertisement mention GLEANINGS.



The value of a one-piece section depends on its folding without breaking. Our process of manufacture secures that end. Our catalogue explains how it is done. Our one-piece sections are perfect in

all respects, and No. 2 are not imperfect enough to impair their utility. We also make the nicest of **WOOD SEPARATORS** — keep **DADANT'S FOUNDATION**, and furnish three kinds of **BERLIN PACKAGES**.

Address, as in cut, for catalogue and special prices. (Mention Gleanings). 1-12db

BEE-HIVES, SECTIONS, ETC.

WE make the best bee-hives, shipping-crates, sections, etc., in the world, and sell them cheapest. We are offering our choicest white one-piece 4x4 sections, in lots of 500, at \$3.50 per 1000.

Parties wanting 3,000 or more, write for special prices. No. 2 sections, \$2.00 per 1000. Catalogues free, but sent only when ordered. 1tfdb

C. B. LEWIS & CO., Watertown, Wis.

In responding to this advertisement mention GLEANINGS.

APIARIAN SUPPLIES CHEAP.

BASSWOOD V-GROOVE SECTIONS, \$2.75 to \$3.75

PER M. SHIPPING-CASES VERY LOW.

SEND FOR PRICES.

GOODSELL & WOODWORTH MFG. CO.,

3tfdb

ROCK FALLS, ILLINOIS.

In responding to this advertisement mention GLEANINGS.