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VOL. XVII. NO. 2.

JAN. 15, 1889.

PEACE ON EARTH & GOD-WILL TOWARD MEN



ST. W. (Piano) M. S.

CLEANING IN

BEE CULTURE

DEVOTED TO

BEES

& HOME INTERESTS.

MEDINA, OHIO

BY

A. ROOT



TERMS, ONE DOLLAR PER YEAR.

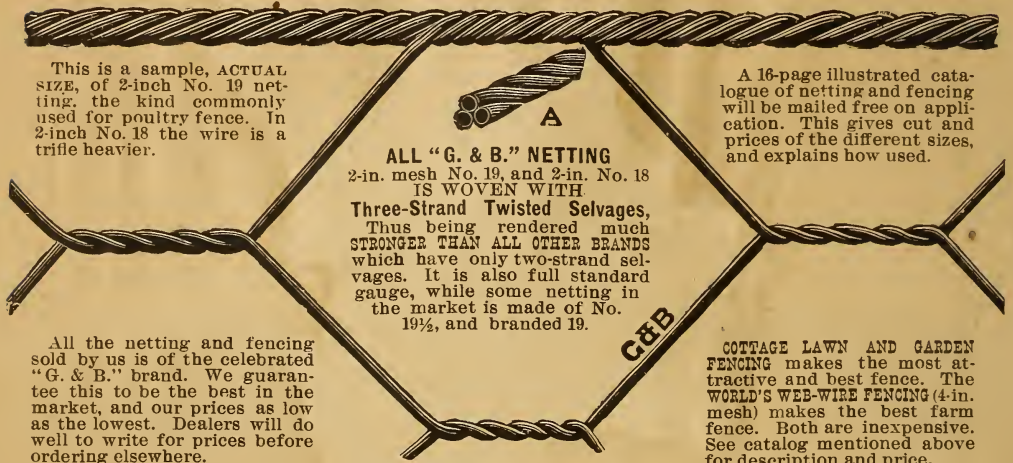
W. F. HARRIS, DUNELLEN, ILL.

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

CALVANIZED WIRE

Poultry Netting and Fencing.

The Best Quality on the Market, at Prices as Low as the Lowest.



This is a sample, ACTUAL SIZE, of 2-inch No. 19 netting, the kind commonly used for poultry fence. In 2-inch No. 18 the wire is a trifle heavier.

A 16-page illustrated catalogue of netting and fencing will be mailed free on application. This gives cut and prices of the different sizes, and explains how used.

ALL "G. & B." NETTING
2-in. mesh No. 19, and 2-in. No. 18
IS WOVEN WITH
Three-Strand Twisted Selvages,
Thus being rendered much
STRONGER THAN ALL OTHER BRANDS
which have only two-strand selvages. It is also full standard gauge, while some netting in the market is made of No. 19½, and branded 19.

All the netting and fencing sold by us is of the celebrated "G. & B." brand. We guarantee this to be the best in the market, and our prices as low as the lowest. Dealers will do well to write for prices before ordering elsewhere.

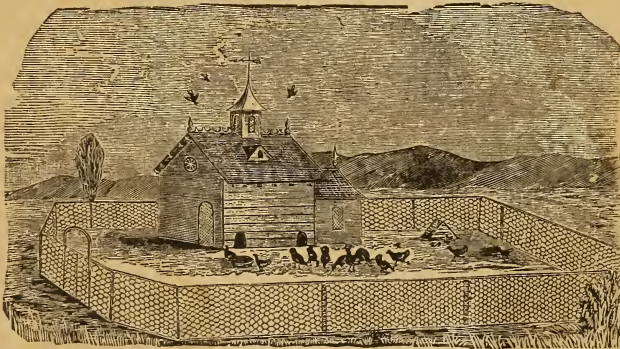
COTTAGE LAWN AND GARDEN FENCING makes the most attractive and best fence. The **WORLD'S WEB-WIRE FENCING** (4-in. mesh) makes the best farm fence. Both are inexpensive. See catalog mentioned above for description and price.

A FEW OF ITS MANY ADVANTAGES.

It is the cheapest, costing less than 75 cts. per rod for posts, staples, and all. It will last a lifetime, and never needs repairing, because it can't get out of order. Being galvanized after it is woven, it will never rust.

It is easily put up and taken down. Ernest has a roll fastened to light stakes, which he has taken down and set up again in a different location in 15 minutes, when the ground was soft. It can not be

if you choose. This will prevent small chickens from getting through, and makes the fence one foot higher. If you want to make division fences, so as to keep different breeds from the same yard, it is better to have a board at the bottom at least one foot wide, so the fowls can not be gossiping through the wire, and pecking at one another. You will notice that one roll makes a yard nearly 40 feet square, and this is plenty large enough for 20 or 30 fowls.



blown down, as the wind goes right through it. On this account you don't need very heavy posts where the fence is used for poultry only. It does not keep out the light and fresh air, so needful to poultry. It is neat and ornamental, and always looks well if properly put up. It is so invisible that fowls can not see the top, and will not fly over. You can see inside as well as if there were no fence at all.

HOW TO PUT IT UP.

About one pound of staples is needed for a roll of netting. The posts to hold it should not be more than 10 feet apart, and they should be set in the ground at least 2 ft. for a permanent fence. In putting it on the posts, draw the top selvage tight, and fasten securely with the staples, and afterward draw the bottom down and fasten that. You can put a board a foot wide along the bottom,

TABLE OF PRICES.

This netting is made with 2, 1¼, 1, and ¾ in. mesh, of different-sized wire, and from 6 inches to 6 feet wide, and is put up in bales 150 feet long. That most used for poultry fences is 2-inch mesh, No. 19 wire, 4 feet wide, 150 feet long. This makes 600 sq. feet in a bale.

Two years ago we sold 2-in. No. 19 netting, 4 ft. wide for \$6.00 per roll. Last year the price was \$5.00. This year we are down to \$4.50; 5-roll lots, \$4.20; 10-roll lots, \$4.00. For 20 or more rolls write for special prices. While the prices have been coming down the quality has been going up so that the G. & B. brand of netting is now the best made. See cut above. Note the following table of prices:

TWO-INCH MESH, NO. 19 WIRE, ANY WIDTH.

Less than a full bale, or any fraction of a bale, 1½¢ per sq. ft.
One bale, at 75 cents per 100 sq. ft., or \$4.50 per roll, 4 ft. wide.
If one bale is shipped from New York or Chicago add 25 cts. for cartage. More than one bale will be delivered free on board New York or Chicago.
5 to 10 bales, at 70 cts. per 100 sq. ft., or 4.20 per roll, 4 ft. wide.
10 to 20 " " 66½ " " " 4.00 " " " "

We ship from New York, Chicago, or from here, with other goods. If you order netting alone it will usually go for less freight charges from New York or Chicago, because rates can be obtained from those points when they can not from here. We keep in stock only the 2-in., No. 19 wire, 4 ft. wide, and all other widths, weights, etc., will have to go from one of the two other places mentioned.

Three-fourths-inch galvanized staples, for putting up the netting, 20 cts. per lb. It takes 1 lb. per roll.

A. I. ROOT, Medina, Ohio.

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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 5 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.
 15tfdb C. H. SMITH, Pittsfield, Mass.

WANTED.—To exchange apiarian supplies for printing to the amount of about \$25.00. 1tfdb
 Wm. H. BRIGHT, Mazeppa, Wabasha Co., Minn.

WANTED.—To exchange one muzzle-loading rifle, 3½ ft. barrel; half stock, 200 bore, as good as new, \$10.00; for extractor, fdn. mill, comb fdn., bees or nuclei in spring. G. W. MCGUIRE,
 2d Dark Ridge, Watauga Co., N. C.

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 a Barnes foot-power saw, combined circular and scroll, for a foundation-mill, 10-inch, A. I. Root's preferred. 2d
 MATHEW DODDS, Sauk Center, Stearns Co., Minn.

WANTED.—To exchange buzz-saw, foot-power, 4 saws, 8 to 16 inch; all good as new. Also a few P. R. Chicks, fine, warranted. C. E. HATCH,
 2d Kentland, Ind.

WANTED.—To exchange red cedar trees, for hives or bees. Write. M. SPRING,
 2d 607 Louisiana St., Richmond, Va.

BROTHER BEE-KEEPERS,

Order your supplies from a railroad center, and save freight. Goods sold as cheap as elsewhere. Send for price list free.
 2tfdb W. D. SOPER, Jackson, Mich. Box 1473.

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

FREE to all, A WHITE-GRAPE VINE. Send 10 cents for postage, etc.
 POINT BREEZE GRAPERIE, Reading, Pa.,

SEEDS Our sales in 1888 double those of 1887. Why? Because we sell only the Best, at Reasonable Prices.

SEED POTATOES, large stock, great variety. Small Fruit Plants and Trees. Catalogue Free.
 FRANK FORD & SONS, Ravenna, Ohio.

In responding to this advertisement mention GLEANINGS.

THE "REVIEW."

THE BEE-KEEPERS' REVIEW for Dec. has four extra pages—twenty in all. Upon the first page is a brief history of the "REVIEW," also an excellent

PORTRAIT OF ITS EDITOR

—one of those beautiful lvs reproductions. The special topic of this issue is: "Sections and their Adjustment on the Hives," and it is handled by such men as Jas. Heddon, Dr. C. C. Miller, R. L. Taylor, Oliver Foster, and Dr. G. L. Tinker. A copy of this issue will be cheerfully sent free to all who apply. Price of the "REVIEW" 50 cts. a year.

The Production of Comb Honey.

Although this neat little book contains only 45 pages, it furnishes as much practical, valuable information as is often found in a book of twice its size. It is "boiled down."

It begins with taking the bees from the cellar and goes over the ground briefly, clearly and concisely, until the honey is off the hives; touching upon the most important points; and especially does it teach when, where and how foundation can be used to the best advantage; when combs are preferable, and when it is more profitable to allow the bees to build their own combs. Price of the book, 25 cts.

SPECIAL OFFERS.

For 65 cts. we will send the REVIEW one year and "The Production of Comb Honey." For \$1.00 we will send all the numbers of the REVIEW for the past year (1888), the REVIEW for this year (1889) and the "Production of Comb Honey;" or, for the same amount (\$1.00), we will send the REVIEW for two years from Jan. 1st, 1889, and "The Production of Comb Honey." Stamps taken, either U. S. or Canadian. Address 1tfdb

W. Z. HUTCHINSON, Flint, Mich.

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. E. HUNT, BELL BRANCH, MICH.

In responding to this advertisement mention GLEANINGS.

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

NUMBER ONE OF THE

QUEEN - BREEDER'S JOURNAL

Is now ready. Send your name on a postal, and receive a free sample copy of this bright new journal. Only 50 cts. per year. Address the

Q. B. JOURNAL, Marlboro, Mass.

E. L. PRATT, publisher. 24d

We want to put an adv't in every bee-book and circular printed this coming season. Don't fail to write us, giving your price.

In responding to this advertisement mention GLEANINGS.

FOR SALE, BEFORE MARCH,

30 COLONIES ITALIAN AND HYBRID BEES.

Good condition—Simplicity hives—bargain given.
 1d P. H. HARRIS, Greenville, Illinois.

In responding to this advertisement mention GLEANINGS.

Cash for Beeswax!

Will pay 20c per lb. cash, or 23c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 27c per lb., or 30c for best selected wax.

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

A. I. ROOT, Medina, Ohio.

HONEY COLUMN.

CITY MARKETS.

CHICAGO.—*Honey.*—The new year opens up with a quiet trade generally. Honey sells in a single-case way. Prices are lower than in November on all grades, excepting, perhaps, choice white comb in small sections and cartons. This is not plentiful, and brings 17@18c. But there is so much graded "white" by the producer that does not meet the views of purchasers as to cause more or less dissatisfaction; and such prices as can be obtained are accepted for the "off" grades. Extracted remains about the same; demand light. *Beeswax*, 22.
Jan. 7. R. A. BURNETT,
161 South Water St., Chicago, Ill.

NEW YORK.—*Honey.*—We are forced to report a dull market. Stocks are light, but demand very limited, which we presume is due to the mild and unseasonable weather. We quote: Fancy white, 1-lb. sections, 14@15c; 2-lb., 12c; fair white, 1-lb., 12@13; 2-lb., 10@11c; buckwheat, 1-lb., 10@11; 2-lb., 9@10c; extracted, white, 7½@8; buckwheat, do., 6@6½. The latter is in fair demand, and we would advise bee-keepers who have any on hand to ship here.
Jan. 10. HILDRETH BROS. & SEGELKEN,
28 & 30 West Broadway, New York.

KANSAS CITY.—*Honey.*—Choice 1-lb. sections, 15@16; dark 1-lb., 12; 2-lb., 14; dark, 11. White extracted in 60-lb. cans, 8; amber, 7; in barrels and kegs, 5@8. Demand good, prices steady, and stock large. *Beeswax.*—None in market.
Jan. 4. HAMBLIN & BEARSS,
514 Walnut St., Kansas City, Mo.

CINCINNATI.—*Honey.* There is no change in the market. Demand slow, with a smaller supply than ever before at this season for the last 10 years. Extracted honey brings 5@8 on arrival. Comb honey, 12@16, in the jobbing way.
Beeswax.—Demand is good; it brings 20@22 for good to choice yellow on arrival.
Jan. 9. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

KANSAS CITY.—*Honey.*—Honey is moving more freely. We quote white 1-lb. comb, 16@17; fall, 1-lb. comb, 14@15. California, 1-lb. comb, 16@17; same, 2-lb., 12@15. Extracted, 7@8. *Beeswax*, 20.
Jan. 7. CLEMONS, CLOON & CO.,
Kansas City, Mo.

ALBANY.—*Honey.*—Market very slow, as usual after holidays. May do better a month later, but will depend on how much stock is left over.
Jan. 8. H. R. WRIGHT,
Albany, N. Y.

ST. LOUIS.—*Honey.*—Our market is well supplied with California in cans. Local shipments scarce; demand fair. We quote, barrels, 5½@6½. Cans, 7@7½. Comb, 14@16. *Beeswax*, 20.
Jan. 7. D. G. TUTT GROCER CO.,
St. Louis, Mo.

COLUMBUS.—*Honey.*—No change in our market. Sales very slow. No. 1 white clover, in 1-lb. sections, 17@18. Dark, 15@16.
Jan. 9. EARLE CLICKENGER,
Columbus, Ohio.

DETROIT.—*Honey.*—White comb, in one-pound sections, quoted at 16@18c; sales slow, but the supply is gradually decreasing. Extracted dull at 7@8. *Beeswax*, 22@23.
Jan. 7. M. H. HUNT,
Bell Branch, Mich.

No change in honey. BLAKE & RIPLEY,
Jan. 7. Boston, Mass.

FOR SALE.—A few cases of choice white comb honey in sections at 16c per lb., delivered at express or freight office here. Cases weigh 22 to 27 lbs.
A. FIDDES, Centralia, Marion Co., Ill.

FOR SALE.—800 lbs. or more of a good quality of white honey, in crates holding 12 sections, weighing about 11 lbs. to the crate. I will take 14 cts. per lb., f. o. b. here.
JOHN HANDEL,
Savanna, Carroll Co., Ill.

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

SPECIAL NOTICES.

PRICE OF CLOVER SEED ADVANCED.

Both alsike and peavine clovers have advanced in price recently, so that we can not furnish seed at the prices named in our catalogue. Prices for the present will be as follows: Alsike, 20 cts. per lb.; \$2.25 per peck; \$4.40 per ¼-bushel; \$8.50 per bushel. Peavine, or mammoth clover, 15 cts. per lb.; \$1.80 per peck; \$3.50 per ¼-bushel; \$6.50 per bushel.

JAPANESE BUCKWHEAT.

Any one who is not satisfied by this time of the great superiority of this new grain over the common, or, in fact, all other kinds, has only to read the reports in our agricultural journals. We have at present on hand, ready for the season's trade, between 300 and 400 bushels; and, judging from the prices at which it is offered in the various seed catalogues, compared with the prices we give, it would be nothing strange if every pound should be gone before time for sowing, and very likely we shall be compelled to advance prices as we have done for each season since it came out; therefore it behooves you to get your orders in early. Get your seed by freight, so as to save express charges, and then when you get your ground ready you will not have to telegraph for seed by express, and perhaps then be told that it is sold, and no more can be had. Compare the prices you find in the various seed catalogues with our own, which are: Bushel, \$2.00; half bushel, \$1.25; peck, 75 cts.; large, 10 cts. By mail, add 9 cts. extra for each pound. Remember, our prices also include bags.

A WATERBURY WATCH ESPECIALLY FOR LADIES AND MISSES.

We are just in receipt of the first lot of small-sized watches designed especially for school-teachers or little girls. I have often thought that, when the boys were getting so much enjoyment and real profit by having a watch that would keep time for a very small amount of money, it was a pity that their sisters could not have one just a little smaller, to help them to be prompt and energetic. Well, friends, we have got it. It is a perfect little daisy—only 1½ inches in diameter, stem-winding and stem-setting. In this latter respect the girls will have a big advantage over boys. It is also short-wind, and won't take all the time a girl or boy can spare before breakfast time to get his watch wound up. Then if our little friend should forget to wind it every morning, and let it run down, she can set it with the family clock by simply pushing in the winder which turns the hands, instead of winding the watch. When I was in the jewelry business, if I could have offered such a watch to school-teachers for \$10.00 I should have called it wonderfully reasonable. The price of this little watch is only \$4.00. Sent by mail, registered, post-paid, for 15 cts. extra. Now, then, my friend, if you have got a good little girl at your house to whom you wish to make a good and useful present, I do not know of any thing in the whole wide world that will hit the nail right squarely on the head like the miss'es Waterbury. When you order it, be sure to say "Letter L." Letter J is exactly like the one I have just described, only it has a second-hand, and is the size of the ordinary Waterbury—2¾ inches across, and is the same price, \$4.00.

CONVENTION NOTICE.

The Northeastern Ohio, Northwestern Pennsylvania, and Western New York Bee-keepers' Association will hold its tenth annual convention in City Hall, Franklin, Pa., Wednesday and Thursday, January 30th and 31st, 1889. Good hotel accommodations have been secured at \$1.00 per day. C. H. COOK, Sec'y., New Lyme, O.

PRICE LISTS RECEIVED.

Price lists for 1889 have been received as follows:
D. Kauffman, Needy, Oregon. Bees and queens.
W. D. Soper, Jackson, Mich., an 18-page list of bee-supplies.
E. H. Cook, Andover, Ct. Club list to bee-keepers.
M. H. Hunt, Bell Branch, Mich. Bee-keepers' supplies.
We have just printed for S. H. Colwick, Norse, Texas, a four-page price list of bees and queens.
We have also just printed Paul L. Viallon's eleventh annual price list of bees, hives, etc. Bayou Goula, La.
We have now in press a catalogue of articles pertaining to the bee-business, for G. E. Hilton, Fremont, Mich.



Vol. XVII.

JANUARY 15, 1889.

No. 2.

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 30 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.

BEE-CAVES VS. HOUSE-CELLARS FOR WINTERING BEES.

SOME THOUGHTS ON QUERIES NO. 94, 95, AND 96.

CELLAR wintering of bees has come to be quite an absorbing thought in the minds of all apiculturists living north of latitude 40°, and, in my opinion, whoever lives in the year 2000 will see nearly if not all colonies of bees then existing north of this degree of latitude, wintered in an underground repository. If this is to be so, it is of some moment that the ideas which are now assuming form on this subject be turned into the right channel. Why I make the prophecy as above is, that, with each succeeding year, the timber land of our country is growing less and less; so that, when the year 2000 comes, very few if any of the forests which now exist here at the North will be allowed to stand. In these forests have been our protection from the extreme cold which now is beginning to be experienced in many localities where the timber is already becoming scarce. This timber is of a twofold protection against cold: First, it holds the water in the ground so that many springs exist which otherwise would not; and these springs, where they abound, modify the air to a much larger extent than many suppose; and, second, the force of the wind is broken, so that, when a warm day appears, the bees in a sunny nook out of the wind can get a nice flight, while those in an exposed situation can do no such thing. Thirty-five years ago there was scarcely a winter when bees could not fly as often as once in six weeks; and our mill on the stream which runs, or used to run, about 50 rods from where I live, was run by

water nearly every day in the year. Now we often have from four to five months in which the bees can not fly, and the mill is run nearly if not quite half of the time with steam, on account of lack of water. I used to leave two-thirds of my bees on their summer stands, putting the other third in the cellar; now I put two-thirds of them in the cellar, leaving the other third out, packing them for winter in the best possible manner; yet, with all of my care, the cellar seems to be winning favor with each succeeding year.

Now, aside from the causes given above, there is another reason why the cellar is gaining in favor. When I first began to winter bees in the cellar I used one under the house, while now I use one entirely away from any building; and this latter is so much superior to the former that it is winning my affections altogether. In what is it superior to the former? Chiefly in the temperature being entirely controlled without any interference of mine during the whole time that the bees are in their winter quarters. In answering query 94, Dr. Miller and Mrs. Harrison are favorable to a warm room overhead, presumably to keep the cellar warm; while in Query 95, both are compelled to lower the temperature by carrying in ice or otherwise. Now, this is just where a cellar under a superstructure fails. Just in so far as a warm room is of advantage in extreme cold weather, it is of positive disadvantage in a warm spell in winter. Who wants to be obliged to keep a fire in or over a cellar all winter, every time the mercury sinks to zero, or open all doors and windows which the cellar contains, carry in ice and what not, every time the mercury rises to 50° or 60° above zero? And even after we

have had all of this trouble, our pets are not nearly as well off as they would have been had the temperature kept evenly at 45°. Of course, where one has no other place in which to winter bees, he must do the best he can with what he has got; but the point which I object to is, the recommending of any thing which requires so much fussing and anxiety of thought, above something which requires nothing of the kind, and over one, which, after a thorough trial by even the most prejudiced, would be recommended as much superior to the old way.

At Query 94, Dadant & Son "hit the nail on the head" when they say there is no difference, if the temperature can be kept the same; and George Grimm certainly misses it where he says, "The matter of living-rooms above cuts no figure." For many years before I moved to where I now live, I wintered my bees in the cellar under the house we lived in; and during nearly every one of these winters there would come times when I had to build a fire in this cellar to keep it warm enough, or else open the doors at night, or carry in snow or ice, or both to keep it cool enough. Several times it kept so warm that there was no snow or ice to be had, and the outside air during the night was warmer than the air in the cellar; then I had such a state of affairs as friend A. I. Root has often feared he might have were he to try cellar wintering—a time which "tried men's souls;" or, in other words, a time when there was a general "roaring," such as Query No. 95 wants to know about. At such times Query 96 is very pertinent; for in a perfectly dark cellar is our only salvation. L. C. Root says, in answer to No. 95, "The room should be so arranged and managed as to avoid these causes of uneasiness." If I were back to where I should be obliged to winter bees in that cellar again, I would willingly give him \$500 to tell me how to so *arrange* and *manage* in such times as spoken of above; for candidly I do not know how to do it. Since I built the special repository which I now have, which was fully described and illustrated in GLEANINGS of last year, the temperature inside, while the bees were in it, has never been lower than 40° nor higher than 48, with the exception of the winter when I kept the temperature up with the oil-stove, which resulted in almost a total loss, as most of the readers of GLEANINGS will remember; and since I shut off all ventilation, which Prof. Cook and others think necessary, as their reply to these queries would denote, the temperature has not been lower than 43° or above 46°. A properly constructed underground cellar, with no building above it, is self-regulating, and of itself sufficient to carry bees safely through the winter, no matter how much the temperature may change outside; and, if I am correct in my opinion, it will be the chief way of wintering bees in the near future.

Borodino, N. Y., Jan. 1, 1889. G. M. DOOLITTLE.

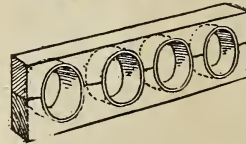
Friend Doolittle, I am very much obliged to you for having contrasted these two forms of wintering-repositories. As Captain Hetherington, P. H. Elwood, and others in their neighborhood, have made some careful and extensive outdoor arrangements for wintering bees, I should be glad to know if their decision corroborates this. If I had a sandy or gravelly side hill, I would start forthwith—yes, right in the month of January, to make such a cave as you speak of, for various purposes. I am a little surpris-

ed, however, that you maintain a temperature as low as from 43 to 46. The temperature of the Manitou cavern, away up on the top of the mountain, in the neighborhood of Pike's Peak, is 52°, winter and summer. I am going to have a lot to say about it before I get through with my Notes of Travel. Mammoth Cave, in Kentucky, is 56°. Perhaps you have told us the temperature of your cave in the summer time. If so, I have forgotten it. But I do not see how it can be below 50°, unless the outside temperature of the winters keeps it down. Can we have some reports from others who have caves and similar places? Would it do to shut up a cellar tight, in a damp clay soil?

GLASS SECTIONS.

SOMETHING FROM ONE OF THE FRIENDS ACROSS THE WATER.

DEAR MR. ROOT:—Will you kindly say if you noticed in an article in the *British Bee Journal* of the issue of Oct. 4, 1888, my remarks on glass sections. I shall be glad to hear what you and the Americans think of these. I might also say I have had some glass sections made from round honey-bottles. I took my glass-cutter and cut slices off the bottles, as shown in the accompanying sketch. It was difficult to cut



HOW TO MAKE GLASS SECTIONS.

the bottles, but I succeeded in making sufficient to try what I wanted. The black lines will show where the cutter was applied. I took two slices for each section, placed a small sheet of wax foundation between these slices, and, behold, the foundation was firmly fixed in a moment! Next each section was placed in a frame very similar to what was illustrated in GLEANINGS about six or eight weeks ago, and shown again herewith. I use Heddon's wide frames, and I had a frame made to hold four glass sections. These sections looked lovely. I had them beautifully sealed over—not a single "pop-hole" in any of them. The above block was made so that it could be pushed into one of Heddon's frames. Was it not curious, that a similar idea should occur about the same time to your correspondent Rambler and myself? He used strips of wood, or shavings, instead of glass rings. I think glass cells might be cheaply cast or manufactured, and they would look very attractive. I hope you will not say there is nothing like leather; wood sections are best because, etc. To clean the glass cells or rims, simply boil them—they may be used over and over again.

LANGSTROTH'S PICTURE.

Please do not tell Rev. Mr. Langstroth that I say the portrait on page 843 is one of a fine-looking man. I am sure America should be proud of the looks

only. I have seen very few finer-looking Englishmen. There is only one likeness that dwells in my mind, and that is Dr. Livingstone. Doubtless you will say Mr. Langstroth is too wise to be made vain.

T. BONNER CHAMBERS, F. L. S.

Tref Eglwys, Caersws.

Montgomeryshire, England, Nov. 20, 1888.

Friend B., we have noticed what you say about the glass sections; but unless it is for something fancy, or for a curiosity, we should pronounce them altogether too frail; and glass cut out of bottles, as you mention, is terribly dangerous stuff for almost anybody to handle. The objection to circular sections is the amount of waste space between the circles. If they are to be used, I think I should much prefer stiff paper or wood shavings.

THE APPLE-TREE BARK-LOUSE.

IT HAS MADE ITS WAY CLEAR TO TASMANIA.

LIKE GLEANINGS very much, especially the articles written by Prof. Cook. They are really instructive and interesting. I have his book, "Injurious Insects." We are sorely troubled in this part by the apple-tree bark-louse, *Mytilaspis conchiformis*. I have sprayed some of my trees three times with strong soapsuds, also with soft soap, and still I see some alive. It may be I am too early, and they still keep hatching out. Like yourself, I should like to know more than Prof. Cook tells us about this insect. It seems to be the female that becomes fixed to the bark. Can he tell us any thing about the male, and what is the latest and best method of destroying this pest?

W. P. CLENNETT.

Port Esperance, Tasmania, Nov. 19, 1888.

Prof. Cook replies to this as follows:

As Mr. Clennett writes from Tasmania, it seems that even scale insects which are poorly prepared by nature to make journeys have circumnavigated the earth. In this case, man has doubtless carried this pest to the other side of the globe. How fortunate if we could know of such terrible enemies, and not, through our ignorance, scatter them to blight the prospects of our antipodes! This louse is now known to science as *Mytilaspis pomorum*. When the female is fully mature—August in Michigan—she looks any thing but animate. She is then but a mere scale, somewhat the shape of an oyster-shell, but slim, usually curved, and a little darker than the bark of the tree or twig on which she rests, and to which she is attached. This scale is only about one-fifth of an inch long. Late in August, if we carefully raise this scale with the point of a knife-blade we shall see what appears to be a white dust. When this is magnified we note scores of white oblong eggs. These eggs hatch early the following June. The young newly hatched lice are oblong, yellow, very small, and active. Soon these insert their long slim beak, or sucking-tube, and settle down on the tender bark, not on the leaves, as does the young tulip and maple bark-louse. These minute active lice may be blown from one tree to another, or may crawl on to the feet of some bird, and be carried to another tree. This is the only time in the life of the insect when it can be scattered from tree to tree. The louse, when once fixed, grows rapidly, becomes scale-like by a secretion, and by August is mature, and lays its

eggs. When numerous they are very destructive. I have seen many fine apple-trees ruined by them. There are very few if any males. The males of bark or scale lice that have been discovered are two-winged. It seems likely that there are often no males in this species, and reproduction is agamic, as in case of drone-bees. We see now how these pests may be carried from one country to another. If we carry the trees containing the lice at any season, we also must carry the lice.

The best remedy is to rub the trunk and limbs of affected trees with soft soap, or, better, a mixture made as follows: Heat one quart of soft soap or one-fourth pound hard soap, with two gallons of water. When hot, thoroughly stir in one pint of crude carbolic acid. By use of a cloth, with sleeves rolled up, thoroughly rub the twigs and trunk. Do not wet the foliage any more than is absolutely necessary. This is to be done just as the lice hatch, which, in Michigan, is early in June. In Tasmania it would be at a very different season. By carefully raising the scales we may easily discover the exact time. It is just when the white eggs begin to go, and the minute yellow lice to come.

Agricultural College, Mich.

A. J. COOK.

APIARIAN EXHIBITS AT FAIRS.

HOW THEY MAY BE MADE TO PAY.

I WISH to add a few words to what has already been said in regard to making honey-exhibits at county fairs. In looking over the answers to Question No. 79 as to whether it pays or not, I find the greater part of them are in the negative. Now, I have been taking some stock in county fairs this fall, more for the purpose of advertising than for securing premiums, as only one out of four which I attended offered premiums in the apiarian line, except for the best 5 lbs. of honey in the comb, which was not much of an inducement for premiums. I am confident that it has paid well for the time and money spent. While on the fair-grounds I took orders enough for honey, at remunerative prices, to amply pay me for my time and expense, besides building up a home market for all that I shall have to sell this season, and perhaps another. I am confident that the demand will increase. My display of honey was not large, but it was very fine, and attracted more attention than any exhibit in the halls, consequently the officers of the association insisted that I should come back again, and promised to add an apiarian department to their premium lists if I would send them a form of what was needed. This reminds me of friend Poppleton's suggestion; i. e., that you publish in GLEANINGS some of the best lists in the apiarian department, suitable for county fairs, for the benefit of those interested.

We did not get any surplus honey in this locality until Spanish needle and heart's-ease, or, better known here as smartweed (and perhaps both), began to bloom, which was about the 20th of August. Then as soon as the honey began to come in pretty freely our bees took the swarming fever, and then swarm they would, queen-cells or not, in spite of all we could do, till about the 10th of September. The consequence, as you may surmise, was a light crop of honey, which was quite a disappointment, as it was the first and only good honey-flow we have had for two years. I had two swarms on the 8th of Sep-

tember, which I put on empty combs, and they very nearly filled their brood-chambers with honey, and have an abundance to keep them through the winter. I also had plenty of drones flying the 1st of November, and I think they would fly yet if it were warm enough, as I am confident that a part of my colonies have not killed their drones yet. Is not this very uncommon as late in the season as this?

WILLIAM HUTCHISON.

Benton, Ills., Nov. 29, 1888.

Friend H., we are glad of your report in regard to exhibits at fairs, as well as of your late comb honey. If the winter is as mild with you as it is with us now (Jan. 12), it will be nothing strange if the bees should keep the drones until spring.

MAKING GARDEN IN JANUARY.

HOW MUCH OF IT CAN WE DO PROFITABLY?

WELL, friends, the field of operations for winter gardening is broadening and enlarging year by year—not only in Florida and California and other favored localities, but right here in the North. The list of seeds and plants, so far as my knowledge extends, may be summed up as follows: Asparagus, early beets, early carrots, celery, cress, cucumbers to some extent, lettuce, onions (especially the Egyptian, or winter onion), parsley, radishes, rhubarb, and last, but by no means least, spinach. Asparagus requires considerable preparation beforehand. We must get good strong roots by growing them in the open ground, and then by the first of January, or earlier, put our sash over them right where they stand. Beets, spinach, onions, kale, and other like hardy plants, that will grow at a very low temperature, can be started from the seed in cold-frames or cold greenhouses. If your locality is sheltered, and you have straw mats and shutters to cover the sash, quite a growth may be made in January, without the use of fire heat at all. As handling sash, mats, and shutters is laborious work, I would by all means, as soon as I could afford it, have a cold greenhouse. With the usual apparatus for raising the sash, one man can raise and lower one whole side of a greenhouse 11x30 in three minutes, and without working hard either. During this present winter we have been using three machines, made by Hitchings & Co. These machines cost about \$10.00 each, and I never enjoyed any work more than I do raising and lowering the sash to control the temperature. I do not have to call in any boys to help me, and I can leave the sash at any angle I choose, and there is no danger from being blown down by the wind, even if we have a very high one, for each one of the sash is held rigidly by means of iron rods, just where I leave it until I come around and choose to move it.

Under these sashes, without any fire heat at all, spinach, beets, and radishes have come up and made a very fair growth, and that, too, during the very shortest days in the year. I am especially pleased with the behavior of spinach under glass. It is about as hardy as winter rye, and seems to

grow all the time, when the ground is not freezing, even outdoors. Our main crop of spinach was planted out in the open fields, in September; and although it has had, up to the present date, Jan. 10, no mulching at all, the great bushy clumps of foliage are almost perfect. Some of the larger leaves have been frosted a little. Whenever the ground is not frozen we just go out and cut the roots off below the surface of the ground, throwing the heads into a large basket. It is then washed, and the poorest outside leaves pulled off, and then it is ready to cook. Cook it about as you would green peas, and I think it is almost if not quite equal to asparagus. We are retailing it in our town at 10 cts. a pound, and it is now selling at a very satisfactory rate. You may ask why I take the trouble to put it under glass, if it flourishes so well outdoors. Well, we are usually able to have it in nice order outdoors from Jan. 1 to the middle of February. After that, the frequent freezing and thawing often spoils it. By having a fine crop under glass, you can get it at any time when you can't get the other, and we are sure of it clear along into March.

Kale is raised and cooked very much like spinach. You can use your plants right from the cold-frame where they are grown, or you can have large heads started in the summer time, to be out during winter, from the open ground.

The Early French forcing carrots will stand about as much cold as lettuce, therefore in our locality it must be raised under glass. It is sold in little bunches, and is used for flavoring soups.

Now is the time to plant seeds of celery for your first crop. We prefer the White Plume; but we are this year making a test of the Golden Self-blanching. A good many ask why we commence so very early. My reply is, because we want to have the first in the market. Celery in June will generally command a good price, and I have never found the plants too large to put out in the field. Last year we had one bed of transplanted plants that were not called for when the plants got to be a foot high, and perhaps as large as your wrist. I feared they were too large to stand transplanting, but concluded to try them. When the celery was dug and put away in November, these plants had produced the finest stalks we had in the field. They bore the transplanting, and started right out to grow, quicker than any of the small ones; and it has been the case so invariably that we expect this season to do quite a trade in extra-early and *extra-large* plants. It is true, there has been some trouble with White Plume celery running to seed, when started very early. Here is a letter right to the point:

Mr. Root.—In a seed and plant circular received from you, you speak of offering for sale celery-plants from seed sown in January. Now, suppose a person were to purchase a quantity of these plants, and they were all to run to seed. A friend had his early planting (consisting of about 7500 plants) go to seed for two years in succession, while that from seed sown in the middle of March

made a fine crop. The point is, Has a customer any security at all, that celery plants grown from seed sown as early as January, will not go to seed?

Kingston, Pa., Dec. 12, 1888. M. GARRAHAN.

Friend G., there is something about this business of going to seed that I do not quite understand. We have had some trouble in our own grounds, but not very much; but as extra-early plants are much more likely to run up to seed, we go over the field as soon as the plants begin to grow, and pull out every one that has started to send up a seed-stalk, as if it were a weed. The whole number of such in our early celery has never amounted to more than ten per cent. A few who have purchased plants of us have complained that the greater part of them ran up to seed. Last season we had one lot of Golden Dwarf celery of which a great part sent up seed-stalks in the plant-bed before it had been planted out at all. We burned up all the seed we had on hand, and pulled out all the plants that showed seed-stalks, and threw them away. As no more started to shoot up, we put the rest out in the field, and they gave us splendid celery. I wrote to the seed-grower who furnished us the seed, and he said the same lot of seed had given excellent results in the hands of others. From this and other similar reports I am inclined to think it is something in the treatment of the plants rather than the fault of the seed; but just what treatment makes celery send up seed-stalks, I can not tell.

If one were to *save his seed* from these plants that shoot up so prematurely, the seed would, without question, be worthless; but any seedsman who has any regard at all for his reputation would be careful that none of his seed come from this source. When I was visiting at Peter Henderson's two years ago, one of his neighbors told me they found the White Plume celery entirely worthless, because so much of it shot up to seed instead of making celery. He said his seed came from Peter Henderson. I think few if any of Henderson's other customers have experienced a like trouble.

Cress, or pepper-grass, can be sold in limited quantities along with lettuce and radishes, so as to pay a good price. It is also quite hardy.

Cucumbers and tomatoes can be raised in greenhouses, but it is something like strawberries, I opine. Few of us have a greenhouse that will give just the temperature and other conditions to make a success of it. Lettuce will do nicely in cold-frames, without heat, especially if you start in the last part of January or later. I suppose most of you will start your Grand Rapids lettuce during this month. The Grand Rapids and Boston Market lettuce are the only two kinds we have succeeded well with when grown under glass. One special quality of the Grand Rapids lettuce is its silvery whiteness; but this is better secured by the assistance of heat of some kind; for to have it white it must be grown rapidly. If you make a greenhouse 11x30 feet on the plan I have suggested, I would have a shed, with a permanent roof at one end. You will remember that our friend Eugene Davis, the

originator of the Grand Rapids lettuce, directs that the house be placed so as to run from the northwest to the southeast; then put your shed on the northwest end, and it will never shade the other part. Well, if you do not propose using fire heat, you can have some heaps of manure in this shed, for making hot-beds, and the fermenting manure will help keep up the temperature. By making your shed a little longer you can keep celery beautifully on the extreme north end. During warm weather, when there is no danger of frost, you can remove the straw that covers it; and by allowing it to grow slowly it will be fit for use clear into March. Opening and closing the ventilators of your cold greenhouses will give the celery the proper amount of air, and you are not likely to let the celery freeze if you watch your plants in the greenhouses. I presume a *hot-bed* would give finer Grand Rapids lettuce than you would get by any other means.

If you have any onions that trouble you by sprouting, plant them out close together in your cold greenhouse, and they will sell nicely for bunch onions in January and February. At this season of the year we get five cents for one-third of a pound of bunch onions; that is, we divide a pound into three bunches. A few clumps of parsley put into your greenhouse will give you small bunches for flavoring soups all winter long.

SUB-EARTH VENTILATORS.

DR. C. C. MILLER RECONSIDERS THE QUESTION AS DISCUSSED ON PAGE 26.

AT the close of the Question Box for Jan. 1, the editor remarks, "Surely our veterans can get very much nearer the truth than the average beginner, who proposes to winter bees in the cellar, can guess at it." I think that applies to Questions 97 and 99. The beginner would be a little bewildered over the answers to 98. Of the twelve who reply, only five say they have tried sub-ventilators, and four of these five think them advantageous, while the fifth thinks them useless. Two of the 12 have never tried them, and give no opinion as to their merits; indeed, I suppose three may be counted in this list, if Dadant & Son be counted there. Of the remaining four who do not claim any experience with them, one thinks them not worth their cost; one thinks all the ventilation needed can be had otherwise; one thinks them objectionable if other conditions be right; and one is quite certain they are worse than useless. The editors say, "We hardly know how to account for the difference in testimony in regard to the value of these ventilators, unless," etc. Good friends, there is more difference in opinions than in testimony; for, if I mistake not, Doolittle is the only one who gives any *testimony* against them. It is only fair, however, to say that Prof. Cook, if I mistake not, places no value on sub-ventilators as a means of ventilation, only as a cheap means of regulating temperature.

The beginner, however, who reads over the replies will be likely to get the impression that it is of no great importance to pay any attention to the matter of ventilation; and friend Hutchinson, in a late number of the *Review*, specially devoted to

ventilation, concluded that his contributors agreed in that view, although I did not suppose my own contribution could be counted on that side. If a beginner, however, were to ask me about it, I should say that, although many were successful who paid no attention to ventilation whatever, yet the fact remained that ventilation must be considered a matter of vital importance. Very few would dispute this in practice, even if they should in theory; for many of those who pay no attention to the ventilation of cellars are very particular as to the ventilation of hives in the cellar. It requires very little reasoning to show that it is useless to ventilate a *hive* if the *cellar* be not ventilated. The only question is, Does your cellar take care of its own ventilation without any effort on your part? I suspect there is great difference in this respect. A cellar whose walls are full of cracks, or which are made of porous material, may receive through such walls enough fresh air to need no care from its owner. Even in that case it is possible that a sub-ventilator might pay well by way of keeping up temperature. If, with no special care, the temperature keeps up to 40 or 45° in the cellar, and the air is at all times fresh and sweet—and there may be many such cellars—then I should hardly consider a sub-ventilator advisable. But suppose the thermometer outdoors has the sportive habit of coquetting around among the twenties and thirties below zero, making the air in the cellar go down to freezing, then, although the air may be *pure* enough it is not *warm* enough, and it may cost a good deal less to warm the air by having it come through a sub-ventilator than to warm it in any other way.

Cellaring bees is practiced only where it is cold, and probably there is no reason for it, other than the greater warmth in the cellar. Where the winters never send the mercury below the freezing-point, no one thinks of cellaring. Even where the thermometer sometimes goes 20 to 40° below what is considered the best temperature for the cellar, outdoor wintering is preferred. Now, why? The answer probably will be, that the bees in such a climate will have a chance to fly at times, if outdoors, and in the cellar the confinement will be longer; and, besides, the bees will get too warm, and be uneasy in the cellar if the temperature gets above 50°. Yes, but it doesn't do the bees any hurt, nor make them uneasy, to have the thermometer go up to 55 or 60° outdoors, even if it is in the night, and they can't fly, and we can even up the other part by carrying out the bees for a fly every time the bees outdoors have a fly. No, the warmest advocates of cellaring, and those who insist that no ventilation is needed, would, I think, insist that, in a mild climate, even if you give the bees the same fly, and never allow the cellar to become too warm, they will winter better out. Now, if there is any other reason than because the air is better outdoors, will some one please tell me what it is? The fact is, there is a density of ignorance regarding the value of fresh air for man, beast, and insect; and I advise each one to experiment a little for himself and see if *his* cellar is one of the kind that lets in enough air when every thing is tight shut.

C. C. MILLER.

Marengo, Ill., Jan., 1889.

Friend M., in G. M. Doolittle's article in this present issue you will notice that he discusses cellars versus bee-caves. Well, his

bee-cave has an advantage over most cellars in having from three to four feet of dry dirt over the most exposed portion. This dry dirt is covered with a roof, so it is always dry; and there is enough of it so that no frost ever gets through to the bee-cellar. Now, I am inclined to think that this dry dirt overhead affords all the ventilation needed, and it may be the very best ventilation, therefore no sub-earth ventilator is used. In ordinary cellars, however, and perhaps in many bee-caves, the frost would get through enough so that a sub-earth ventilator might be of very great use in keeping down the temperature, as you express it.

In regard to your last point, as to why bees are better off outdoors than they are in the cellar, I should answer, For the simple reason that anybody or any thing having life is better off outdoors than in a cellar; yes, better off outdoors than in a house. Remember what I said about the health of the negroes in the South. Outdoors we have the kind of ventilation that God made; but in a cellar or in a bee-house, we have such as man provides. For a few weeks back, I have been having a great deal of enjoyment in manipulating the immense ventilators of our new greenhouse. Whenever the thermometer is above 40° outdoors, the large ventilators are swung wide open by the aid of the proper machinery. The consequence is, that my plants have had almost as good ventilation as if they were entirely outdoors all the while, and at the same time they have been protected entirely from the frost, clear up to the present time, Jan. 10. The plants have now an excellent color, and they are hardy and robust, but they do not grow nearly as rapidly as if I kept them warmer. The quality of my plants in the spring will certainly be superior; but our lettuce grows so slowly that we shall not have any fit to cut before February. I presume that, if the ventilation of the cellar were just as good as it is outdoors, the bees would stay in their hives, and behave themselves just as well as they do outdoors; and I think I have wintered a hive or two in the cellar when they were just as quiet, and stayed in their hives just as well as those out of doors did; but when I had a large number in the cellar, especially when some of them were rousing strong colonies, they crawled out of their hives and smelled bad, and acted fearfully; in fact, the only way I could keep them in their hives was to make the cellar so cold as to freeze them back when they came out at the entrance; and a good many times they would come out, even with the temperature below 40°. They acted just as if they came out and died, solely to be contrary. I don't believe that I ever want any more bees in the cellar, here in our locality. By the way, Ernest has one colony of bees in a Heddon hive in his cellar, during this unusually warm winter. The Heddon hive is so shallow he did not like to risk it outdoors with the frost. Well, they are wintering nicely so far, and they behave themselves nicely, and as well as the bees do outdoors. Of course, he keeps the cellar dark.

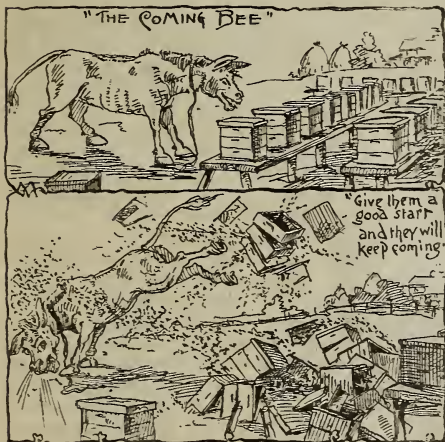
DOT GOMING BEE.

BY EUGENE SECOR.

I schpect you haf read of dot zhust goming bee
 Vhat dose Yankees haf got poorty kvick,—
 Dose bees vhat run ofer my schlow Zherman blacks,
 Und nefer kvits vork gause dier sick?
 I dinks, when I hears of dose schmart Yankee bees
 Dot zhust vone vill be all vat I need,
 Begause dem haf dongues like dot schmall honey-
 bird,
 Und suck up vone kvart mit a feed!

But Yankees, dem brag of dier goundree so pig,
 Und dier bolidics so awful much,—
 Of dier horses vhat run mit der lightning away,
 Und dier peautiful vimins, und such,—
 Dot I more dan twice believe ven dot bee *does* been
 gome
 He'll schpeak so ve Deitchers gan read;
 Und if him don't got to be all *ofer* plack,
 I dinks him vill *show* der *plack* seed.

But I laffs ven I reads of dot schmart goming bee,
 Ven I dinks of Hans Brinkerhoff's mule—
 (Hans vas mine neighpor zhust ofer der vay,
 Vere him lives mit der golden-like ruel).
 Vell, Hans him leadt outd dot donkey vone day,
 An der pump to gif him some dbrink,
 Ven up zhump vone pig in der mua mit der trough,
 Und outd skibbed dot mule in a vink.



Und schtraight mit der bee-line, und halter to boot,
 Dot donkey, he schtart for mine lot
 Vere a hundred bee-boxes schootod all in some rows:
 "Mebbe dems oats"—und mebbe so not—
 Ven all at vone dime him schtopped at vone box,
 Und schmelled a loudt schmell in dot hole
 Vere dose bees make dier honig und likewise wax—
 You den should hear dot schmile him schmole.

But dot olt king-bee vas daking vone schleep,
 Und vas mad ven dot racket him hear;
 He tought er prass pant had zhust broke out loose,
 Or some oder loudt noises vats kveer:
 So outd him send scouds to see vat vas up,
 Und den der grant zircus vas gome—
 Der more of dose bees vot go for dot mule,
 Der kvicker dot mule don't go home.

Ven tree or four hundert glimbed into dose ears,
 Dot donkey, him right apout face,
 Und lifted vone foot, und den lifted two,
 Like one horses vat wanted some race;
 But he don't gone pack to dot dear old home
 Vere Hans vas been calling so sweet,
 But he lifted dose boxes so handy und kvick,
 Und gave *dem* a good schtart—mit his feet.

But dot goming bee vas arrived all der dime,
 Und gloser dan vone broder schtik
 Aroundt dot donkey vot hadn't got learned
 To nefer kick against der pricks.
 Dot donkey, him luff on dot oder mout side,
 Ven him gets all him vants of dot fun;
 Him gry like vone *baby*, und rolls mit der grass,
 Und den him zhump up und home run.

Dot donkey, him sveltd outd like Zhumbo vas vide,
 Und I dinks Hans don't go to feed
 Him any more oats so long as him lifts
 To make him so fat as he need.
 Und I peleef dot Hans vill gome ofer und buy
 Dose bees vot is petter dan gorn
 To fat up dose mules, und make dem home schtay
 Gondended und tame mit der barn.

FIXING FOR HONEY-EXHIBITS AT FAIRS.

DR. MASON GIVES US SOME IMPORTANT SUGGESTIONS AND DIRECTIONS IN THE MATTER.

FRIEND ROOT:—I have received several inquiries, within the past few days, for suggestions in regard to exhibits of bees, honey, etc., at fairs, and plans for buildings for such exhibits; and as each one seems to be a reader of GLEANINGS, I thought it would be a good plan, for me at least, to reply through GLEANINGS, if "Barkis is willin'."

Only one, Mr. J. C. Graham, of Missouri, has inclosed a stamp for reply. I should very much dislike to be obliged to feel that bee-keepers are "stingy," but it has become quite a nuisance in my case. I am a busy, poor man, and don't care to give my time, furnish paper and envelopes, and pay postage, for the privilege (?) of answering correspondence that is of interest only to those who ask. "So, there now."

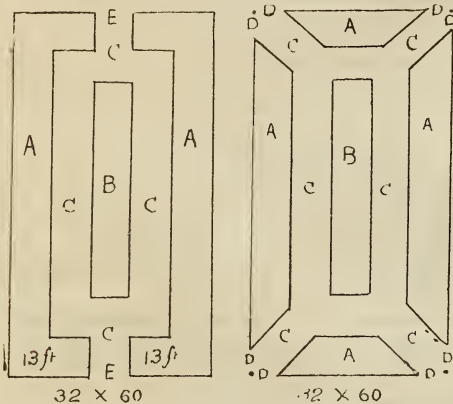
At some of the large fairs a separate building for the use of bee-keepers seems to be a necessity. At others, plenty of room can be had in buildings with other exhibits. In some localities where there are large fairs, there are not enough bee-keepers interested in a honey-exhibit to make a respectable display.

The size of a building will depend upon how large an exhibit is to be made. The bee-keepers' building at the Ohio Centennial last fall was 36 x 60, and was just right; but had the past season been a good one for honey, it would not have been one-fourth as large as needed. At our Tri-State Fair here at Toledo, the space usually occupied is equivalent to about 6x70 feet.

For a building, I should prefer one from 30 to 36 feet, wide and as long as would probably be needed. An exhibit of from 500 to 600 pounds of extracted honey in glass, with Muth's honey-jars and other small glass receptacles holding from half a pound to three pounds, can be made to occupy a space of 6 or 7 by 20 feet, if put on shelves, and

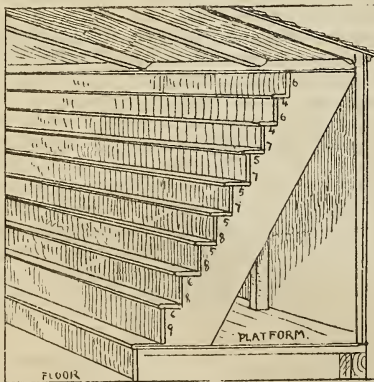
From 400 to 500 lbs. of comb honey in one-pound sections in crates would occupy the same space. More could be used to good advantage, and less could be made to do nicely, very much depending upon the taste of the one arranging the display. A building 60 feet long would accommodate only six such exhibits.

A building modeled after either of the following diagrams will be found quite convenient and satisfactory.



DIAGRAMS OF GROUND PLANS FOR AN EXHIBIT BUILDING.

In each diagram, A represents platforms 2 feet high and 7 feet wide, boarded up from the platforms to the ground or floor; B, platforms 6 feet wide and 1 foot high on which to exhibit extractors, hives, etc.; C, passageways 6 ft. wide; D, doors, 3½ to 4 ft. wide; E, double doors, each door 3 feet wide. All the doors are to be hung on the sides of the building, and open out. The doors at D are to be fastened to the posts, by hooks on the inside. One door is to be furnished with a lock, so as to be fastened from the outside if desired. Under the platforms A, should be several doors, so that boxes, etc., in which honey has been taken to the fair may be safely stored away out of sight.



ARRANGEMENT OF SHELVING FOR HONEY-EXHIBITS IN GLASS.

The sides of the building should be 8 or 9 feet high above the platforms. Eight feet will do nicely, but 9 feet will give room for a display of honey-plants, flags, etc., on the walls back of and above

the honey. Light should be admitted through large windows in the roof. For this size of building, 4 windows, about 5 feet wide and 6 feet long, would be about right. The windows should be so arranged that bees can escape at each end; for if there are any bees in the vicinity, many of them will be sure to get into the building. The platforms should be made very firm and solid, for honey is quite heavy, as every one knows.

At the Ohio centennial it was left for each exhibitor to arrange his exhibit to suit his own fancy, and every one put up shelving; but a portion of my exhibit was on a pyramid. If shelving is used for extracted honey, a very good way is to make some "risers," as shown in the engraving below.

Place the foot of the riser about 2 feet from the front edge of the platform, and have the first, or lower shelf, 18 inches* from the platform, and so on as shown. Board up under the lower shelf, but not under the others, unless preferred. When complete, cover all with strong white paper, or muslin. The top of the risers will be a foot (more or less) from the side of the building, and can be supported there by a piece of board.

If any of the exhibitors live so far from the exhibition grounds that it is inconvenient or impossible to go home each night, and they wish to curtail expenses, and have a good time, just take along a straw tick and some blankets; fill the "tick" with straw on the grounds, and make a good bed behind the shelving. If still more independence is desired, take along a good-sized box, filled with such things as will "minister to the wants of the inner man;" and if you are not happy it won't be my fault, for "I've been there," and know how it goes; for although I live but a mile from our Tri-State Fairgrounds I sometimes stay in the building over night with the exhibitors for the sake of the visit. As the time is near at hand when the premium lists are made up by the officers, or others in connection with the management of fairs, it is important that some bee-keeper in each locality see to it that the bee-keeping industry be not overlooked. Look well also to the matter of a judge, or judges. At every exhibition of bees, honey, etc., that I have attended, I should have been willing to have the exhibitors act as judges, and I believe there are not many competent judges who have not been good exhibitors; or perhaps it might better be put this way—not many good exhibitors who are not good judges.

Auburndale, Ohio.

A. B. MASON.

Now, look here, doctor. I don't want you to abuse our friends because they don't put in a stamp. Make your answers to all such queries and forward them to us, and we will credit you enough for your trouble to cover postage, and may be a little something more. We want the friends all to understand, however, that they are not to expect a reply—they must look for it through the bee-journals. Where a direct reply is wished for on some pressing matter, they should by all means inclose a stamp—or, better still, a stamped envelope. If the question is a brief one, inclose a postal card directed to yourself, and then say in your letter, "Please reply on the inclosed postal card." And I think it is an excellent idea,

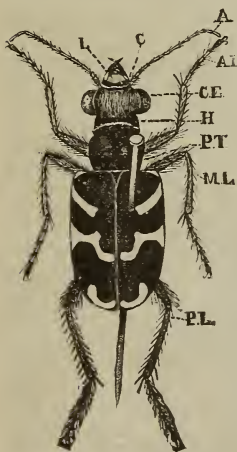
*The engraving at this point is not strictly correct. The first step should rise 18 instead of 9, as shown, and should retreat more from the edge of the platform.—[ED.]

for people who ask many questions, to have some postal cards printed, with their addresses on them. Even a busy man will seldom refuse to take a pencil and scratch some kind of an answer on a postal.—Your suggestions in regard to fixing for honey-exhibits at fairs are excellent, and I do not know of anybody in my whole circle of friends who is better prepared to make suggestions than yourself.—Your concluding remark is tiptop. It gives us a glimpse of the good time coming, when there will be no more quarreling about who ought to have the premiums, and calling hard names.—We should be very glad of some more suggestions in regard to arranging for honey-exhibits at fairs, with simple sketches to illustrate the plans.

THE TIGER BEETLES.

A CURIOUS LAW IN MIMICRY.

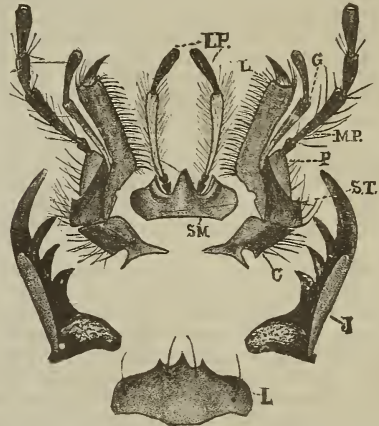
I AM receiving so many kind words regarding my articles in GLEANINGS on general entomology, that I feel very much pleased, and encouraged to go on. As we often say, the time seems ripe for just such articles. If I can do a little to incite people to observe and study nature in its wondrous insect forms, and especially to interest children in such study, I shall feel that I have done a good work. In this article I propose to kill three birds with one stone: I shall describe one of our most common and interesting families of predaceous insects, the tiger beetles. I shall, by means of excellent figures, make it plain just what a beetle is; so that no reader need ever again confuse them with bugs, which I have recently described in GLEANINGS, with admirable illustrations. I shall also present a picture of insect structure which must awaken the interest of all, and prove that the bee, wonderful as it is, does not monopolize structurally all the marvels of the insect-world.



TIGER BEETLE, MAGNIFIED TWICE.

The tiger beetles are those sprightly wide-awake forms resplendent with hues of drab, white, and green, that shine with a metallic luster, which are so often seen in the bright sunshine of midday, springing up before us as we walk in the path or meadow, pushing on to alight again a few feet in advance of us. The one here shown (Fig. 1) is our most common one, *Cecindela vulgaris*. It is a beautiful dark beetle, almost slate color, with a purple reflection, marked as shown, by graceful curves of rich cream. Below it shines with green and purple. Indeed, in grace of form, agility of movement, and beauty of coloration, it is hard to find any thing in nature more interesting than some of these tiger beetles. These beetles illustrate very strikingly the curious law of mimicry. Those that rest on the sand, eagerly wait-

ing for their prey, are drab, slate-colored, or purple, and thus by their color alone are concealed from their victims; as the weasel in his winter robes of white, or the arctic fox, is hid by the snow on which it treads. Others of these tiger beetles rest in the grass, and are brilliant green, so no eye can detect them till they dart away. This adaptation through color is exceedingly interesting, and far too common to be mere accident. The walking-sticks which I described recently are green when young, and rest on leaves. As they become mature they are gray or brown, and rest on twigs, and so in both cases are protected by their color. Nor does this law cease with the lower animals. The modest retiring girl is as surely protected by her neat and unpretentious apparel.



MOUTH PARTS OF TIGER BEETLE, MUCH MAGNIFIED (FIG. 2).

The grub of the tiger beetle lives in a hole in the ground. It has terrible jaws, and rests just at the surface, ready to dodge down at the beck of danger, or to seize its prey as some unwary insect strolls across its burrow. By very carefully approaching one of these holes we can get a good view of these terrors among insects. The least noise, and they drop down quite out of sight. If we then put a straw in the hole they soon push it out as they again crowd up to the mouth of their dens.

The beetles (Fig. 1) are also fierce and savage, and so the name "tiger beetles." They are well fitted to capture and tear in pieces even the largest insects. Let us take a peep into their mouths and see how well they are armed for their work.

We count that man the biggest who does the most and acts the best; hence to measure a man we place our mental tape-line on his brain and heart. These predaceous beetles are to conquer, kill, and eat. Their mouth parts are their weapons; their legs their armor. Like the ground-beetles, we see they have an armor—their long legs (Fig. 1), which deserves admiration. Their legs are also aided by powerful wings. Let us now examine their weapons. Though we may not look a gift horse in the mouth, it is all right to gratify any such curiosity in case of a dead tiger beetle.

I do not know that tiger beetles ever kiss, or speak guile; but I am sure that they have lips that might do both were "they made that way." We

admire lips of cherry red. The tiger beetle has one of finest white. The upper lip (Fig. 2, L) is called the labrum. Notice its white color, and the three points in front. Those points would hardly be the thing if kissing were in vogue among tiger beetles. I suppose this upper lip serves as does our own, to keep the food in the mouth.

We next note the terrible jaws (Fig. 2, J). There are two, sharp, and armed with cruel teeth, and moved with tremendous muscles. Observe that these, like the jaws of all insects, move sidewise. We call these the mandibles. These are to catch and crush their victims; and the tiger itself is not better armed for such work. Alack the day for the poor caterpillar, when it and these jaws attempt to occupy the same space at the same time! But this is not all: Our tiger beetle, like other insects, has a second pair of jaws—the maxillæ. These are more slender, but far more complex and nimble than are the mandibles. Just note how they are armed with points as sharp as needles. I imagine that, while the jaws hold the insect-victim, these second jaws play back and forth like a trip-hammer, piercing the body as by scores of sharp needles, and literally making hash of it. The base, or hinge joint, of this, C, is the cardo; next comes the stipes, S, and then the three lobes from within the locinia, L; the gاليا, G, and the maxillary palpus, M P. The piece at the base of the palpus, P, is the palpifer. But, why so many parts? May they not be the hands that do the stirring and turning in this wondrous hash-mill or sausage-cutter? But, why does not the food fall out while it is thus twisted and turned? Below is the under lip—the labium. This is just opposite the upper lip, but is thrown forward in the drawing so as to show. This labium has a base, sub-mentum, S M, and two jointed pieces, L P, the labial palpi. Note the three spines which, like sled-stakes, would tend to retain an overload. The labial palpi, like two fingers, may aid to retain the food or to move it about. Thus we see what a marvelous structure this mouth is. How different from that of a bug, which is only a sucking-tube! The beetle, then, is higher than the bug, as shown by its more complicated structure, just as the bee, the wasp, and the ant, are higher than both. We see that the form of the beetle is also peculiar, and not easy to mistake.

These exquisite drawings were made under my direction by one of my students, Mr. A. B. Cordly.
Agricultural College, Mich. A. J. COOK.

NOTES FROM THE SHARON APIARY, SYRIA.

FRIEND BALDENSPERGER TELLS US MORE ABOUT
THE ORANGE-BLOSSOM HONEY, AND SEVERAL
OTHER THINGS.

MR. ROOT:—I always read GLEANINGS with interest—of course, what is good and applicable for ourselves. I never followed the section question very closely, because in our place it is of no great avail. We never tried exporting sections, fearing the great danger of having every thing arrive in a muss after 10 days tossing about by the sailors, who are not good hands to handle such goods. No heed is taken of "This Side Up, with Care," etc., on tops of boxes. We therefore hold fast to the extractor, and extract as often and as much as possible. This year was nothing in the line of extracting. After a dry win-

ter, the orange-blossoms failed, almost; we then had a still drier summer, full of east winds, which dried up every suggestion of dampness, both in the ground and in the flowers. In Europe they all complained of rain, rain, rain, while we here must call it sun, sun, sun.

COLONIES TO THE SQUARE MILE.

Much has been said in GLEANINGS as to the number of hives per square mile. When I read the article of Mr. E. France, in Jan. 1st GLEANINGS, I was rather discouraged, for we had 68) hives on one spot, and our range is only the Jaffa gardens, containing very nearly 500,000 orange-trees, it is true; but then, such a number of hives located all on the same spot! I thought the bees might all visit the next gardens, and thus lose time. Now, this is a problem which some more experienced bee-keeper might answer: "Do bees of the same hive visit the same tree or the same row of trees? Do they fly in one direction?" I am inclined to think so. In 1882 I had a hive of bees which propolized the combs all over with a brown gummy propolis which they gathered from a peach-tree, not very far off; the other hives had none at all. But as to gathering honey, I can't tell of any experience, as it is always a difficult task to follow bees of one hive, unless you use the "strewing meal" system, which I never tried, except in a few cases of robbing. Do you think that bees of a hive, finding a party busily at work on a group of trees, will continue to hunt for some unexplored ones, and then keep going to that place, owning it by the right of having been the first to take possession?

Now, very likely we have not the best locality for bees, neither could we put our hives anywhere else, as only here orange-groves are to be found, and thus we could not distribute them as you would to different basswood ranges, but must keep them all here. We could divide the number of hives, and set each apiary in an opposite direction. The bees would not interfere; but, unfortunately, this year failed, so I can not find out, and must try again another year.

Going through the gardens in former years, we very seldom saw a bee here and there lost among the millions of white flowers, and we always take it as a good "omen" where we find very few bees, for then we conclude the secretion is abundant, and no reason for bees to overcrowd.

In the mountains, again, it is different. Agricultural progress restrains our fields of operation, as we depend on wild thyme, growing on uncultivated land; and as the nomadic Arabs living in the Judean wilderness advance, thyme goes back, and then the question arises, How many hives to a square mile in such a locality? for a place crowded with orange-trees certainly is far superior, and can support a greater number of colonies of bees than the same extent covered with thyme. When going over the fields I noticed great numbers of bees on the same shrub, and at once concluded that it was either a failure altogether, or too many hives were on the same spot. When I say "going over the fields," I ought to say scrambling up and down the rocks of the steep and barren-looking mountains of Judea. It is only lack of earth that has not turned all into cultivated terraces. Centuries have passed over these uncultivated slopes, and the heavy rains have carried all loose earth down the valleys. The increase of inhabitants at Jerusalem and Bethlehem has demanded a great deal of lime and wood. The

lime-kilns are a great destruction to the forests, if such they may be called. Although strict orders from Constantinople have forbidden the cutting-up of trees and roots, still the work of destruction is going on, and before long it will be difficult to find the traces of where once stood oaks, pines, carobs, or terebinth-trees. The shrubs also are disappearing; and if no stricter measures are taken by the actual government, it will be the task of the future conqueror of Palestine to restore it to what it might have looked like in the times of the kings of Israel, and then under the Romans; later, under the Crusaders; thus bee-keeping will suffer by the carelessness of the authorities as well as the communities that help the authorities in the line of completing the destruction.

PAINTING HIVES.

The subject of painting hives interested me. Our hives were painted, some red, others white, others blue; and placing the same colors in a row it had a good effect, and young queens easily found their way by marking the one they left. Surely bees see the color; for, taking away a hive, the bees coming home fly to the next hive having the same color as the one taken away, no matter if another hive of a different color be nearer the place where the removed hive stood. By migrating, the hives being placed beside and upon each other, and rubbed all the night through by the tossing movements of the camels, a good deal of paint is rubbed off, so that two seasons, or hardly three, is all our hives can bear. They must be repainted for outside comfort; and, besides, we are of the opinion the sun warps up unpainted hives. The light colors are the best, and bees feel more comfortable in them. The 10,000 hives on page 141, and 10,000 dogs, 142, that ended with the *tracks* of a dog only, I compared with our difficulties with the Turkish government—a land of “baksheesh” (gratification), where every thing can be done provided you “smear the hands,” as we put it. A few years ago the tax-gatherer, finding our “improved hives” got more honey than the clay pipes, pretended to tax our hives ten times the value of the native hive, and would hear no explanation whatever till the question was solved by the usual method, and only the tracks of his enormous demands were left. This year new difficulties arise. It seems as if the Turks were taking advantage of the continual war preparations in Europe to take us to task. Of course, when matters get too serious we are backed by our consul.

QUESTION NO. 39, MARCH 1.

Honey gets a better taste after some weeks. The orange and thyme flavors are more pronounced; but I am astonished that none of those eminent bee-keepers can tell us anything about the wax-moth, in trying to keep comb honey from one year to another. Does sulphuring the combs not injure the flavor? With us, no combs could be kept without occasionally sulphuring; or are you not troubled with this pest? I should want P. Benson's worm annihilator to keep them off (page 258). Egyptian bees have been known and handled by very few. Although they have a bad name, we can not strictly rely on such experiences, as no modern apiarist ever tried to raise good-natured ones, or, so to say, weed out the furious ones. Cyprians, claimed by Mr. F. Benton to be the best-natured bees, have received the greatest attention, notably by himself; still they have led Mr. Abbott, in the *British Bee Journal*, to say, “I had time only to put the quilt

on.” Now, all Eastern bees are very irritable and difficult to handle, at times; but are we not living in a time when people are trying to overcome all difficulties, and especially using our senses as to what method we had better resort to, to obtain the result we are aiming at? for since we don't keep a certain race of bees as a hobby, but as profit, why not wear gloves, if such be necessary, to provide against the unpleasant infliction of too many wounds, if the Oriental races be acknowledged as superior, both as honey-gatherers and as being more prolific? The man who was cornered, page 294, April 15, about having seen comb manufactured, reminded me of a German here who would call our nice granulated white orange honey “sugar syrup,” because he heard we fed the bees sugar at times, and concluded the grains of sugar were still visible in the syrup. We are glad at times to sell off our honey at a reasonable price, and have hardly any time and would have no sale for adulterated honey; besides, we have to explain over and over again to such unbelievers, and often to no apparent avail.

I am of the opinion that bees know the place exactly where the hive stands; for on a flat plat of ground, with no trees, and very often no grass or flowers, bees still take exactly the direction of their entrance-holes, and do just exactly as the bee in Dr. C. C. Miller's apiary does—“goes back and tries again, if its bearings were not right.” Our hives are placed differently, according to the plain or mountain. In the plain, the hexagonal system is adopted, the hives being about seven feet apart from each other (2 meters); if space enough, they are set at three meters, about 10 feet, again; and, as already remarked above, bees fly to the hive of the same color standing next to the hive taken away. I will not stand up to say bees can count, but they very likely put into their memory before leaving the apiary, especially when it is the first time, “Well, I dwell in second, third, or fourth hive, in the first diagonal white row.” Now, I hardly ever think a bee misses its house and street for its neighbor's. Moving the hives in June, I went to an olive-grove 10 miles from here, and there placed the hives round about the trees, working west before noon and east after noon, thus having shade almost all the time; and to work in the sun with the thermometer marking 95 and 122° F. is fearful, yet it must be done. I like to see a well-ordered apiary, rather than letting them stand about in every direction; but I think we can easily correct both, as two trees planted in the same line, and in the same soil, under the same care, will still grow up to look somewhat different; and to the bees' small eyes, no matter how tiny the difference may appear, they'll be sure to make it out and find their sure way.

BEE-STING REMEDIES.

Page 499 tells us about a bee-sting remedy. Oil always did good to wounds, as we read in the parable of the good Samaritan, who put oil on the wounds. It was very surely olive oil that was meant. Now, the greater part of bee-keepers find need of it; and, being stung, occasionally the poison gets inoculated into the whole system, making the body at least swell. Saliva is the surest remedy with me, and it is always carried about by everybody; but very likely it depends on whether the part stung is very fleshy or not; for then the swelling dissipates, whilst in a bony region the swelling is better seen. The pain differs according to time

of day, whether stormy, place where stung, and, particularly, the temper of the bee. Having had many hornets to kill this year, I was slightly stung by one on the arm near the pulse. It was very painful, and swollen. I thought I was swell-proof; but I had to apply some spirits of camphor to the wound. Will Professor Cook kindly tell us in what proportion the different formic-acid-possessing insects are to each other, and whether scorpions and myriapods have the same principle of poison. We often find them here under hives. The sting of a scorpion is very severe. By a sting I got in the thumb, the pain traveled all along the arm, and seemed to settle all round the shoulder and side of the breast where I got the sting; and on one occasion, I was bitten by a myriapod (forty feet) on the shoulder, through the woolen shirt. I suffered from both about three days.

PH. S. BALDENSPERGER.

Sharon Apiary, Jaffa, Syria, Nov. 7, 1888.

Friend B., we are much obliged for your very full report. It seems a little singular that you should get honey from orange-blossoms in Jaffa, while in California they furnish little honey or none at all. Very likely the peculiar circumstances of the country have much to do with it. I am inclined to agree with you, that the bees from one hive do, as a rule, work on some particular tree, or in some particular locality; but I am not satisfied as to just how they manage to follow or keep track of the inmates of their own hive. Under such circumstances as you mention, it probably is well to keep 500 or more hives in one location. I have changed my mind considerably since I saw the large apiaries of California, and heard of the large yields; but I still think there are few localities outside of California where apiaries of more than 100 hives can be kept profitably in one place. The mountain thyme that you mention is probably a good deal like the mountain sage of California.—As you state it, there seems to be a positive advantage in painting hives different colors. Any kind of dark color, however, is objectionable in our locality, because it absorbs the rays of the sun, and becomes so much hotter than a hive painted white.—Surely you can get relief from the unreasonable taxation you mention, can you not? Our proof-reader suggests that it is only the same thing over that happened in the time recorded in the Scriptures. When Christ came on earth he found just such extortion in the collection of taxes as you mention; and, dear friend, is it not true now as it was then, that there is no permanent complete remedy except the spreading of the gospel in the hearts of men?—The oriental races of bees are not acknowledged with us to be superior as honey-gatherers. They are, however, acknowledged to be more prolific. Are we to understand that you get honey from olives also? In California I saw vast orchards of olives.—It seems, friend B., you still have faith that spirits of camphor helped the hornet-stings. It is so natural to go for the camphor-bottle, that a great many of us, perhaps through the force of habit, feel better when we see the bottle in some friendly hand, accompanied by friendly words of sympathy, and the refreshing and

perhaps reviving aromatic smell of the camphor.—So you were actually bitten by a thousand-legged worm, were you? It is true, you mention that it had only *forty* legs instead of a thousand; but the fact that you suffered from its bite several days rather upsets some of Prof. Cook's statements. Will the professor please explain?

THE SEASON OF 1888.

SELLING HONEY; SOMETHING ABOUT COMMISSION MEN.

AS I'll have to tell it any way, I may just as well say right now that the failure of our honey crops in the two last seasons has taken about the last bit of enthusiasm out of me. The season of 1887 was poor, but 1888 was a total failure, so far as getting surplus honey goes. I have 100 colonies, all in good shape to date.

They have been having good flights for the last three days. Their winter stores consist almost entirely of honey that is as black as ink. I am satisfied that, should they be confined to their hives for a period of six weeks or two months by cold weather, there will not be a bee left to tell the story.

After two weeks of bad weather during this month, there came a warm day when the bees flew out, and the hives were spotted with dark excrement, worse than I have ever seen after a long winter's confinement. It might be urged that this poor honey should have been taken away, and, instead, sugar syrup given. As an excuse for this palpable negligence, I will say that here our main reliance for honey is clover, and this has been almost annihilated by the summer drouths of this and last season, which made the prospects for a year or more ahead unfavorable. In our judgment, we should not be justified in going to much trouble and expense to save the bees. If a few days occur through the winter, offering opportunities for cleansing flights, our bees will come out all right; but if they all die I shall not feel so badly after all, as I console myself with the fact that I can purchase honey from the commission dealers for about the same money that it costs to produce it in our locality.

Why can we buy honey from commission houses for less money than it can be had of the producer? This question I put for the sole purpose of opening the eyes of bee-keepers of a certain class. For the first time, this fall I have handled a good deal of honey on commission. You see, I am getting somewhat into the commission harness; and this being the case you will bear with me if I say some plain things about dealers. Although I had not a pound of honey this year, I have been selling more this season than ever before, a greater part of it being purchased from dealers, and some I have handled on commission. At the beginning of the season for selling honey I wrote to perhaps one hundred bee-keepers for prices of honey; but as their prices seemed too high, I began to look to dealers in honey to supply me, which was done at very satisfactory prices.

"How can this be?" you ask. I will tell you just how this is done. It is one thing to produce honey; but to sell to the advantage of the producer is another and quite a different thing. Now, it is surprising how many successful honey-producers we

have; but how few who can dispose of their crop to the best advantage! Those who produce good crops, and fail to sell in their own markets, or have no home demand, ship to city markets, and employ dealers to handle their honey. Once out of their hands, they are at the mercy (?) of their commission dealer, and this explains why I can buy honey from dealers for less money than I am asked by the producer. Do you hear?

I have bought tons of honey this season from commission men, at low prices, and have made more money handling it than I would have made had my own bees produced a good crop. Hence you will see that it is not in my own interest that I write as I do about this matter.

I nearly double my money on the honey which some of you bee-keepers produce, and that, too, after commissions, cost of packages, freights, and numerous other expenses have been taken out—out of your pockets. How do I succeed in selling such quantities of honey at such good prices, you ask?

Looking at the manuscript for the above, I am reminded that I have even now exceeded the limit of space the editor will feel like according me; but I will say, if it is the desire of GLEANINGS that I shall write another article in the near future, on the subject, "How to sell honey," I flatter myself that my successful career "along this line," as Doolittle would say, would be beneficial to many who sell honey at a price incommensurable with the cost of production.

J. A. BUCHANAN.

Holliday's Cove, W. Va., Dec. 27, 1888.

Friend B., you have struck on a very important point, and we shall be very glad indeed to have you continue the subject. If I understand you, however, the reason why you are enabled to get honey at these low prices is because of the shiftless way in which many send their honey to commission men. Now, we are not in the commission business; but a good many bee-keepers do send us honey, and beeswax also, without telling us how much they sent; and, in fact, a good many times I do not believe they knew themselves. Sometimes they send it in, and do not say anything at all. Most of the time we have stray boxes of wax waiting until somebody writes about them. Well, my advice would be this: Don't any of you send any honey at all to a commission man, nor to anybody else, without first writing to him, and asking him to tell you, as soon as he can, about what he thinks it would bring, giving a description of it. Better still, send him a fair sample of the lot, and let him tell you about what it will probably realize. Then when the honey is sent, tell him exactly how low he can go, and give positive directions not to sell cheaper. If he finds that he can not sell it at the price you put on it, he will advise you and you can decide to come down a little if you choose. If he writes back to you that the honey was received in bad condition—broken and leaking—if the quantity is considerable, and you are not too far away, it will pay you to go and take care of it. Fix it up, and peddle out the smashed honey yourself. You will probably make better wages at it than you can at anything else. By so doing you will have a better opinion of commis-

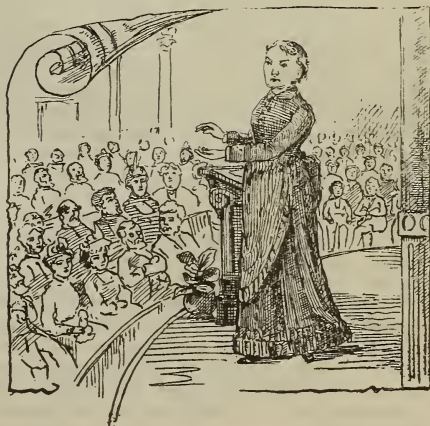
sion men generally, and I am inclined to think they will have a better opinion of us as bee-keepers.

THIRD LETTER ABOUT MRS. LUCINDA HARRISON.

HER HOME LIFE, ETC.

I STARTED out to write these letters about Mrs. L. Harrison, because every bee-keeper knows her and would like to hear about her; but in reading them over, it seems that I have been writing all the time about Mrs. Chaddock, and that Mrs. Harrison comes in only *incidentally*. There are too many big *T's* in them.

I think all the bee-keepers' wives who read Mrs. Harrison's letters wonder if she is a good house-keeper, and sews on buttons and things, just like other folks. Well, she is, and she does. She has a small house, and it is as clean as a new pin, and is *always just so*. She hires a woman to come once a week and sweep her house all over. She gets rusk (a kind of light biscuit with a faint trace of sugar in them) at the bakery; she hires her washing done; and, of course, she has no milk to care for, nor churning to do, as farmers' wives have. She hires most of her sewing done, and her house-cleaning—in the spring and fall. She puts in her time cooking, washing dishes, writing for the press, working with the bees, running the lawn-mower, going to Sunday-school conventions, old-settlers' meetings and bee-conventions, and she is the most jolly woman that I ever met. Some people have *qualms of conscience*. Mrs. Harrison has none; and her cheerfulness and light-heartedness are contagious. I want to hold her up as a beautiful example for *all wives* to follow.

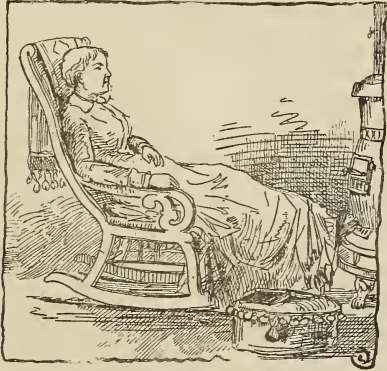


MRS. HARRISON AT A SUNDAY-SCHOOL CONVENTION.

When her husband came home the first night I was there, she ran to meet him. She had not seen him for a week; then she introduced me. Mrs. Harrison does not scold—not a bit—but just laughs. If the stove smokes, she laughs; if her husband gets in a hurry for the breakfast, she laughs. All the things that most women are put out about, she only laughs at; and if there is any one thing that impressed me more than another in Mrs. Harrison's daily walk and conversation, it was her *great cheer-*

fulness. It is easy enough for well people to be cheerful; but when a woman is not well, it must require some effort to be cheerful. After this, whenever I get the blues so badly that I think I am going to die, I shall leave, and go and stay two weeks with Mrs. Harrison. She has a motherly sort of way of talking to me that does me good. She is a splendid cook, and all her knickknacks taste good. She broils her beefsteak, and it is juicy and sweet. She cooks apple sauce to perfection; and her tea and coffee are unexcelled. She uses a bright-red table-cloth and fringed napkins.

Her bees are in the dooryard—some of them close up against the house (when I was there; I suppose they are in the cellar now), and the hives are close together—not more than four inches apart, I think, and are painted some indifferent color.



"SHE PLANS HER WORK BEFOREHAND."

Mrs. H. has a large dooryard, filled partly with fruit-trees and grapevines; the grass is kept short all the time, with the lawn-mower, and they have walks to go everywhere. Mrs. H. is a great manager. She plans all her work beforehand, and thus saves time and strength. Her home is plainly furnished—about like the well-to-do farmers who live about here, and they have no fancy dishes on their table. They have several farms out of town, and the money comes rolling in; but what are they going to do with it? I can not imagine. I know what I'd do with a part of it, if I were in Mrs. Harrison's place. I'd have a good big house built, and have it warmed with steam, with a bath-room where folks could swim, etc.

Well, well! Mrs. Harrison is a beautiful character; and the very next novel I write I shall put her in. I think I shall have her figure in the "Cheerful Mother-in-law," because mothers-in-law have been slandered, and called cross and hateful, from time immemorial.

MAHALA B. CHADDOCK.

Vermont, Ill.

My good friend, we are exceedingly obliged to you for this home glimpse of Mrs. Harrison. Some of us might be afraid to have you pay us a visit, if you are going to write us up in that fashion. I am afraid we should not enable you to make so good a record. In regard to building a good big house, take Mrs. Root's advice, and—don't! We manage a good deal as Mrs. Harrison does, about sweeping and washing; but we have decided that a larger house than one needs, is a misfortune. Mrs. Root even now longs occasionally for our old *little* home, or

for one like it, such as Ernest and Maud have across the street. Fathers-in-law and mothers-in-law are excellent things to have, just a little way off—say across the street. A house large enough to have several families under one roof is good in theory, like tenement bee-hives; but I believe that most of those who were so enthusiastic about tenement hives have come back in favor of each colony in a hive by itself. "Every tub on its own bottom," you know.

BEES AND NEIGHBORS.

NOT BEE-LEGISLATION, BUT EXCLUSIVE RIGHT OF TERRITORY BY PURCHASE.

THE only fair and just way for a man to get the monopoly of the bee-business in any locality is for him to pay each farmer or lot-holder within the flight of his bees a certain sum yearly, not to keep any bees on his property. If a law could be had, selling rights to any one person to keep bees in a given locality, then only the rich or well-established apiarist could secure the rights. The poor widow or cripple or broken-down professional man would not dare to keep bees within a certain limit, because the Honorable Mr. Moneybags had bought the local right for a few paltry dollars. Lazarus could not keep bees within three or four miles of Dives' residence. The poor widow could not earn a mite for the Lord's treasury by keeping bees, because some Pharisee had bought the township-right.

Any law giving one person advantage over another is wrong. According to the plan at the beginning of this article, the widow wishing to keep bees need not sell her right, and the law would not take away her right. Any person should have the right to keep a few bees, or as many bees as he chooses, provided his bees do not harm his neighbors or passers-by, and are not a nuisance.

Just here I should like to say, no man has a right to keep bees in a town if his bees *really* annoy his neighbors. By annoy, I do not mean make nervous people fidgety. No one has a right to keep chickens to scratch his neighbor's garden; neither has he a right to keep bees where they will sting his neighbor's children. Bees are bees, and bees will sting. Whenever my bees become a nuisance I will move them out of town. Our neighbors have rights as well as ourselves.

The same principle applies to foul brood. That disease should not be treated with anything except the furnace. It should be burned, destroyed, root and branch, upon its first appearance. We owe this to our neighbors as well as to ourselves. "Do unto others as you would have them do unto you." You would not like to have a neighbor tolerating and treating foul brood within the flight of your bees.

Last spring I selected two colonies, about equal in queens, strength, and in good condition. Over one I used a slatted honey-board and a T super. Over the other I used half-depth wide frames, with no honey-board. The one under the T super swarmed out without touching the sections. The one under the half-depth wide frames stored me fifty or sixty sections of surplus comb honey. The honey-boards seem to remove the surplus boxes too far from the brood-nest in a poor season, when honey is scarce and comes in slowly. I think the

bee-space between half-depth wide frames should be $\frac{3}{4}$, the same as the sections, thus leaving no little line along the edge, to be propolized.

Once this summer my bees started booming on something. I could smell the honey ten feet or more from the hive. I supposed it was red clover. Upon investigation I found no bees on the red clover, but found the common burdock in bloom, crowded, roaring with bees.

I fixed my bees for winter November 3, and wore my overcoat while doing so. I believe they have had only one day's good fly since then.

PHILO S. DILWORTH.
Pittsburg, Pa., Dec. 19, 1888.

Friend D., your point is a good one. Go to your neighbors all round about you, if you are located in the country, and get them to sign a paper, agreeing not to keep bees under a certain number of years. If they have no notion of keeping bees any way, the greater part of them will be glad to assist you by signing the paper, without pay. Those who keep bees already, and especially if they are not doing much with them, will perhaps sell out reasonably, and, for a small sum per year, give you the sole privilege. You could easily make a canvass of your vicinity—say covering the land within two miles of you in each direction, to see what it will cost you. If too expensive, don't go into it; but I think that many of the friends could easily in this way secure the right to keep bees, without any unpleasantness or unfriendliness. Where real estate is transferred to a party, I suppose a paper could be drawn up, making the same regulation hold, even after the transfer. If your bees boomed on *burdock*, it seems to me it is something of a reflection on the farmers in your locality.

BEEES AND CANNING-FACTORIES.

A BEE-KEEPER OBLIGED TO GO OUT OF THE BUSINESS.

I RECEIVED the last number of GLEANINGS a few days ago, and I am sorry to say that this must be really the last number I shall get of my most favorite journal, as I shall be out of the bee-keeping business by next spring, and, of course, shall have no further use for a bee-paper. The business of keeping bees, at least around here, is (to use a common expression) about played out. The last two seasons were very poor indeed. Last summer I got absolutely nothing from my 80 swarms; and when there is a good season (as we had two years ago) I have to sell the very best of white comb honey in pound boxes for 10 cts. a pound. That is for less than I can afford to raise it. But in spite of these discouraging prospects I should have kept on, hoping for better times in future, if I had been left undisturbed by outsiders, and if a certain institution that has sprung up in my neighborhood had been built somewhere else. The institution I have reference to is a factory for canning fruit, that was built last spring, a few rods from my home, and that turned out to be the ruin of my bees. As soon as business was started up (canning pine-apples in June), my bees went there in perfect swarms, to be drowned in sugar syrups, or to be killed in some way; and in a little while my best colonies were so depopulated as to

be perfectly useless. To prevent my bees from getting into the building by putting wire cloth before doors and windows was not possible, as part of the rear of the main building, where they unload fruit, is all open, and I had to try the next best thing I knew of; viz., to shut them up in their hives. I hurriedly made frames, covered them with wire cloth, put those on top of the brood-frames, shut the entrance-holes with wire cloth, allowed the bees to fly about an hour before sunset, and shut them up again late in the evening; but in spite of all this trouble I could not save them, for great quantities of them worried themselves to death in the hives, and it proved just about as disastrous to them as to allow them to go and meet their fate in the factory. Although the proprietors of the factory behaved to me like gentlemen, at least this last season, there is no way of telling how they might act if this nuisance should keep on; and it was indeed a great nuisance to them, as I saw myself.

Aside from having my bees ruined every summer, I run the risk of being involved in a lawsuit by and by; and as the canning-factory, to judge from the large and substantial buildings erected for the purpose, seems to be a permanent affair, there is only one way left to me—give up keeping bees in the future. I know I shall feel dreadfully lonely without the dear little creatures; but I have to submit to it.

CHAS. KLIMITZ.

Batavia, Genesee Co., N. Y., Dec. 21, 1888.

Why, good friend K., why should you abandon bees, because your locality seems to be just now a bad place for them? Dozens of the friends in California, have been in the same predicament; but instead of abandoning the bees they simply moved them to a locality where they did not annoy anybody else, and usually they have succeeded in getting a place where enough more honey can be secured to cover all the expense of having an apiary away from home. During the honey season, where the yield is good you can arrange to have a sort of summer residence with your bees. Then you will be right in fashion. You can shut up the house during the hot weather; and instead of going to the seaside, or to some popular resort, you can go and live with your bees and get good pay. I would much rather move the bees to some other locality than to try fastening them up in their hives. I am inclined to think the latter course will always turn out about as it has with you.

SECURING COMB HONEY.

MILLER VERSUS DOOLITTLE ON THE MATTER.

AS I am very much interested in the discussion now going on between friends Doolittle and Miller, I thought I would put in a word in favor of them both. The subject they are discussing is not exhausted, by any means, but is, in fact, one of the most interesting that has occupied the pages of GLEANINGS for a long time. As to the real point at issue between two old and experienced bee-keepers like Miller and Doolittle, there will not be much left to quarrel about, I think, when they fully understand each other's positions. There is so much to be taken into consideration, that neither the tiering-up plan nor Mr.

D.'s side and top storing plan will succeed under *all* conditions. Now, whatever works satisfactorily in a country where the honey-flow comes at an unnatural time of the year, as it does in Cuba, when the bee-keeper has got to work every way he can think of to get his bees in condition to take advantage of the early flow, *that* way is the best. Then comes in Mr. Doolittle's plan; i. e., have your bees when the honey-flow comes. But will the tiering-up plan work in the case of a long honey-flow? No, for you will not get the best results in that way, for too much time is wasted in capping the honey; too much heat is wasted by adding more room. Now, there is where friend Doolittle is right, according to my experience—keep the bees compact and warm; for never, in my experience of five years in Cuba, did I find that I had my bees too warm. We always had them snugly tucked up under enamel cloths, and in tight hives. How far you can carry the expansive plan of managing bees for surplus, is a point that can be decided by circumstances only. Just what those circumstances are at all times, I would rather some one else would tell than I. My experience with colonies in managing them for extracted honey is to keep them warm; give no more room than they can occupy, and have *nothing* between the brood and store combs; nothing to hinder the free passage of heat from the brood-chamber to the surplus department, *right directly over the brood*. But in case a colony is not strong enough to occupy two stories, very good results can be secured by confining them to the brood-chamber, and working them on the side-storing plan.

What Mr. Doolittle says about the dry-goods box, I can hardly agree with; that is, if we take a dollar-and-cents view of it. Let friend Doolittle, next spring, take 1 lb. of bees and put them in a dry-goods box; then put the same amount of bees in a hive with a division-board all tucked up warm, and report results in the fall. I contend that more honey can be secured by keeping the bees crowded and warm than by giving them lots of room and compelling them to store what they can in old dilapidated hives. Now, how many bee-keepers do you think judge correctly of the proper condition of their bees when they open a hive? I fear too many think their bees need more room when they are in just the right condition to do the best work. A friend said to me last summer, "Aren't you afraid your bees will swarm?" I said, "No. If they want to swarm, I let them do as they like, but seldom more than once, and that does very little if any harm." As I said at the beginning, I want to see this subject properly discussed: "The giving of more room when the bees do not need it."

San Diego, Cal., Dec. 13, 1888. A. W. OSBURN.

THE CORRUGATED HIVE-COVERS.

FRIEND REESE REVIEWS THE MATTER.

I WAS so thoroughly imbued with the idea that I had hit on the best water-proof hive-cover, and only positive relief from swelling from bee-stings, that your comments on page 766 were more than a surprise to me—especially when you object to the weight of the corrugated iron. Let us review the matter a little, and see if there is not more merit than you have discovered. One square foot of standard corrugated iron, painted,

weighs $\frac{7}{16}$ of a pound, or a little less than $\frac{3}{8}$ of one pound. A piece 18 inches wide and 24 inches long, which would cover a Simplicity hive nicely, projecting over each side about one inch, and far enough over the front to protect the entrance from much rain, snow, or hot sun, would weigh just $\frac{3}{16}$ pounds, and cost just 12 cents, all painted and ready for use. Now, when you take into consideration the fact that no other cover is really needed, it is not so expensive or heavy after all. I put the sheet of corrugated iron right down on the enamel cloth that covers the sections or frames, and lay any old boards on top as a protection from the hot sun, and to keep the iron in place. When winter comes (we will take it for granted we use Simplicity hives), just set an empty brood-chamber over each colony. Over the frames put a piece of old carpet or a felt or straw mat; on this, in turn, put four to six inches of planer shavings or sawdust, or a chaff cushion, and over the whole the corrugated iron cover. This will admit sufficient circulation, and we may rest easy so far as protection is concerned. For a chaff hive which must be kept dry, well, you can see how it is yourself. If you will turn to page 15 of Dr. Miller's "A Year Among the Bees," you will see his "tolerably light cover" weighs $5\frac{1}{4}$ pounds, and costs from 20 to 25 cents. How does the comparison strike you?

I now prefer the $\frac{3}{8}$ -inch corrugations, and send you herewith a sample with the maker's name. It would be quite a job for the majority of people who keep bees, to fit tin to their old leaky covers, tack it on and paint it.

The bee-sting remedy, you will please understand, is simply to make a slight cut, merely passing through the skin, just where the bee-sting entered, and allowing the alkali to come in direct contact with the poison, causing neutralization at once, and the swelling does not take place. The incision made with the knife can scarcely be noticed a few hours after, and is not painful, as the flesh is not "dug into" as you term it. In a recent number of one of our bee-journals some one suggests the use of the hypodermic syringe to inject an alkali into the venomous parts, which is certainly a capital idea if we could have it at hand, as convenient as our pocket-knife, the little expensive syringe. My two little boys, four and five years of age, invariably come to me when they get stung, to get the soda water put into the stung place on their bare feet, etc.; and when I am not at home when they are stung, they always swell, and regret my absence.

J. S. REESE.

Winchester, Ky., Nov. 9, 1888.

Many thanks, friend R., for the sample of your corrugated iron. It will no doubt answer splendidly; but in our locality it would be blown off by the winds, and they would get smashed and battered up, so we should be obliged absolutely to hitch them fast to something. Another thing: If anybody should sit down on a hive, or even if one hive were rested on top of another, they would be pressed out of all shape. I do not believe I should like them nailed fast to a wooden cover. In that case the tin we already use would be cheaper, and I think rather preferable, because it is smooth on top.—Cutting into the flesh with a knife, in order to get the alkali in contact with the poison, may be a positive remedy. I am

afraid, however, that I should conclude, if I tried it, that I could not see any very great difference.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

WINTERING A HIVE ON A SUMMER STAND WITHOUT A BOTTOM.

WHILE I was at the convention at Albany last winter, a gentleman, I do not remember his name (he was on the platform at the left of the president), said that his hired man had a hive of bees in a box hive, standing on four posts three feet high, with no bottom in the hive, and it stood outdoors all winter, and the thermometer had been below zero several times during the winter, and that the hive of bees came out better in the spring than his own bees that he had put in his cellar, as he supposed, in the best possible shape. He was asked by some one in the convention if the hive was high enough so it did not get snowed under, to protect it from the wind. He said it was about three feet from the ground, and did not get covered with snow, but that the whole bottom of the hive was open all winter. Now, my theory is that there was no condensation, as the temperature outside and inside of the hive was nearly alike, except, perhaps, in the cluster of the bees a little warmer. I also think that there was no circulation or current of air, but instead there was a penetration of fresh air, or, in other words, the air formed an equilibrium of temperature by penetration of the free and open bottom of the hive; and when there was a change in the temperature outside, there was a corresponding change inside also. As I am only a novice in bee-keeping, I will not make any suggestions.

West Troy, N. Y.

A. E. CLUTE.

Friend C., I can not recall to mind now the name of the gentleman you mention, but perhaps some of the other members present can do so. Through the back volumes of our bee-journals we have had a good many reports such as you give; but instead of having the whole bottom of the hive open, I think the effect would be still better if they had an opening from four to six inches square. To prevent mice from getting in at this opening, it had better be covered with wire cloth; and when we get down to it, a good-sized entrance properly protected with the cloth, in such a position that it is not likely to be closed up with snow or ice, pretty nearly fills the bill. In fact, I have always favored the idea of having the bees enter the hives from under the bottom. A Simplicity hive, pushed forward on its bottom, gives us just exactly this kind of entrance. Now, after having fastened the hive so it can not slip forward on the bottom-board, tip it up as illustrated on page 25 of our last issue, and you have an opening that lets all the dead bees fall out, and gives every advantage of a hive without a bottom. If you put wire cloth over this large entrance, however, to keep out the mice, the dead bees can not fall out as they would otherwise. Some years ago the matter was pretty strongly talked up, of

having hives as tight above as they could possibly be made, and no bottom-board at all, during the winter time.

SIZE OF SECTIONS, AGAIN; M. A. KELLEY RENEWS THE MATTER WITH DR. MILLER.

Please allow me to thank Dr. Miller for his able reply concerning the "size of sections;" also to answer his question, "Why does the $4\frac{1}{4} \times 4\frac{1}{4}$ section seem to you too small?" Simply, sir, because, in ordinary seasons, it will not hold one pound. I tried to make this plain, as a careful reading of my letter will show. To call it a 1-lb. section is a misnomer, and to sell it as such is something worse. True, as you remark, no size will give uniform weight; but the variation should embrace 1 lb. between its extremes. But how is it with the so-called 1-lb. sections? With me they average from 13 to 15 oz. only. Taking 2 oz., then, as an average variation, it should be from 15 to 17 oz., thus giving some chance to strike a general average of one pound. In giving your experience with various widths, you stop short with 8 to the foot. Tell us how much your 7 to the foot and 6 to the foot or $1\frac{1}{2}$ sections weigh. Did you ever have a single super of the sections in question in which they would average 17 ounces each? Have you not had hundreds of supers of the same size of sections in which they would average not more than 15 oz. each? Doubtless your own experience will indicate the truth of my assertion, that the $4\frac{1}{4} \times 4\frac{1}{4}$ is too small. This may seem to be, but it is not, a small matter. Giving good weight maintains a good reputation, which is no small matter.

Milton, W. Va., Dec. 31, 1888.

M. A. KELLEY.

Friend K., you seem to overlook the fact that the Simplicity sections are made now of a good many different widths. I believe I put the first Simplicity sections on the market that were ever heard of. They were arranged so that eight would fill a Langstroth frame, and, as originally made, they were plump two inches. Now, without separators, and as I first used them, they average more than a pound. The same sections with separators average a trifle less than a pound; but as it is entirely out of the question—at least, so far as I know—to produce sections weighing even very nearly a pound, we always sell them by weight; and if we sell them by weight we are just about as badly off to have them run *over* as to have them run *under*. To be very exact, perhaps we should not call them "one-pound sections." Giving good weight maintains a good reputation, no doubt; but I do not believe it advisable to give very much *more* than a pound. Honey is sold by weight the world over, so far as I know. In California they sell apples and potatoes and coal, and almost every thing else, by weight; and I think it would be well if we should follow their example in many things.

IS HONEY VINEGAR AS GOOD FOR PICKLING AS CIDER VINEGAR?

Reading the articles in regard to honey vinegar in November and December GLEANINGS moves me to make some inquiry of the feminine portion of GLEANINGS' readers concerning it. I will first state that we have for a number of years made

considerable vinegar from waste honey, to which we added some fruit juices, as currants, grapes, etc. In making jelly I put cold water upon the pulp left after squeezing out what juice I want for the jelly; and after straining it, put it into the vinegar-barrel, together with the skimmings from the jelly. This gives a beautiful color and flavor to the vinegar, which can not be surpassed for table use; but I find that, while I can make very nice sweet fruit-pickles by using the usual amount of sugar, I can not make good vegetable pickles, even by the use of sugar. The pickles are delicious when first made, but soon the vinegar turns white, and, if neglected, a heavy coat of mold will be found on the top. I have never experienced this difficulty when cider vinegar was used, and I desire to know whether others have found the same difference between vinegar made from honey and that made from cider.

EMILY E. WEST.

Flint, Mich., Dec. 14, 1888.

My good friend, we have had considerable experience in the use of different kinds of vinegar for pickles. Yes, *sad* experience. Now, while cider vinegar will perhaps keep pickles longer than vinegar made of honey, or water sweetened with the residue from making maple sugar, etc., our experience is, that no kind of vinegar, except a high quality of white-wine vinegar, is suitable for keeping pickles any length of time. Cider vinegar does very well where the pickles are used up before warm weather comes in the spring; and *very strong* cider vinegar may keep them through the summer; but with white-wine vinegar, that costs something like 30 cts. a gallon, we can keep pickles year after year. Perhaps cider vinegar may be so treated and so concentrated as to keep pickles safely through several months of summer weather. It may be, also, that honey vinegar that is *very strong and sharp* might answer.

JAPANESE BUCKWHEAT NOT AS GOOD A YIELDER OF HONEY.

Japanese buckwheat yields three times as much as the silverhull, and it is two weeks earlier; but the bees do not work on it so well as they might if they had nothing else. I do not want to raise it for the bees.

WHITWOOD FOR HIVES.

I think that whitewood makes the best hive and the best frames. The bees like whitewood the best of any kind.

My bees have done well this summer. They have made 1700 lbs. of honey. THOMAS OBERHITNER.

Deshler, O., Dec. 3, 1888.

CAGING SURPLUS QUEENS DURING WINTER, OVER STRONG COLONIES.

Can I get a book on bee culture, from which I can learn how to save queens sure, during the winter months? I mean queens for which I have no use in the fall. If so, have the kindness to give the name of the book and the price. J. GLANZMANN.

Altus, Ark.

We might refer you to our A B C of Bee Culture; but neither that nor any other book that we know of would give you any *sure* method by which you could preserve queens alive when separated from the cluster, either by caging or otherwise. We have caged queens over a strong colony of bees

where there was already a reigning queen, perhaps one or two months during the winter. We never had any yet that survived until they could be made use of in the spring. A month or six weeks is as long as we could keep them after confining them in the manner explained.

HONEY FROM APPLE-TREES; 54 LBS. IN SEVEN DAYS, BY ONE COLONY.

Mr. Doolittle, in his review of your A B C book, says that apple is a great yielder of honey, and my experience during the past season has convinced me that he is right. I joined your A B C class of bee-keepers in May, 1887. I then bought three colonies of bees for \$18.50. I increased them to 6, and got 330 lbs. of comb honey. I wintered them without loss, by packing in chaff, 10 to 12 inches on each side of the hive, and about 18 on top. I opened them April 1st, and found that brood-rearing was well under way, but I thought they had too much honey (about 30 lbs. per colony), so I extracted the outside frames and placed them in the center of the brood-nest. I then covered them very warm, and fed the honey back to them slowly. They increased very rapidly, and I think those hives contained as many bees May 15th as they have at any time since. I had one colony which stored 54 lbs. of apple honey in seven days; another one filled 24 sections in four days, and then swarmed and made a good start in their new hive before apple-bloom was gone. I did not have a colony which stored less than 10 lbs. of apple honey in the sections. Sections of empty comb, when filled with apple honey, were sealed almost as soon as filled; and I doubt if even you could distinguish them from newly built combs. There was but little clover, and they worked only three days on basswood. I got 300 lbs. of comb honey, and increased my 6 colonies to 17. When September came my colonies were light, and the brood-nests were nearly empty. I fed them 300 lbs. of sugar, so I did not make very much; but I am not at all discouraged. I have gone into the business to *stay*, and I shall stay whether I succeed or not.

If you can read this, you will do well. I wrote it while lying in bed with a broken leg.

Gilead, Mich.

D. E. WEAGE.

Friend W., I have long been aware that apple-trees often produce enormous quantities of honey. There are several obstacles in the way, however, of getting such a yield as you mention. One is, the bees are seldom strong enough to take advantage of it. Quite a few times, when we happened to have powerful colonies during apple-bloom, we have had quite good yields. I feel sure, however, we can, if we choose, have at least a few rousing colonies during apple-bloom. The other trouble is, and perhaps the worst of all, that the weather is oftentimes very unfavorable for gathering honey from apple. In fact, I have known bad weather almost through the entire apple-bloom period. Then there are seasons when apple-trees do not blossom very much, and also when a profuse bloom gives little or no honey. I think it is well, however, to prepare ourselves as well as we can, especially when we are in a locality where apple-trees are plentiful. If we could find a spot protected by tall forest-trees, or, better

still, ranges of hills, something like the mountains of California, we should stand a much better chance of securing apple-bloom honey; and in locating an apiary I think I would consider well the matter of apple-bloom.

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 100.—*a. What is the lowest temperature, Fahrenheit, that you usually experience in winter in your locality? b. How many days is the mercury below zero, Fahr.?*

a. From 18 to 30°. b. From 20 to 40.

G. M. DOOLITTLE.

a. 20 to 30 below zero. b. I do not know.

GEO. GRIMM.

a. 20 to 25; b. probably 40 days. DADANT & SON.

a. 20° below zero. b. Not over 25 on an average, I think.

JAMES A. GREEN.

Usually about 15° below, occasionally 20° below. b. From eight to ten; some winters more, some less.

P. H. ELWOOD.

a. Usually about 16 below zero. b. 10 to 20. Occasionally a winter when the mercury does not go below zero.

H. R. BOARDMAN.

15 to 18 below zero, ordinarily, but the past four winters have been severe, the mercury going as low as 23 and 30 below. b. I have kept no record.

MRS. L. HARRISON.

We have had the mercury 24° below zero during several winters, and five or six years ago the mercury was in the twenties below zero for almost two weeks.

CHAS. F. MUTH.

a. In 1872 and 1885, the coldest was 15° below zero; 1873 and 1884, 14° below; 1875, '79, '86, 12° below; 1880, '83, and '87, 10°; in 1874, '77, '78, '80, and '81, 2° below. b. Usually but one day, very seldom more than two or three.

DR. A. B. MASON.

In this locality, 42 north latitude, we consider 15 below zero as extremely cold, although we have had 30 once or twice. We frequently get through the winter with nothing more than zero, or 5 and 6 below.

JAMES HEDDON.

The lowest is about 18° above 0. As a general rule we don't have more than 20 freezing days in a winter, although I find that our winters are more sensitive than in the North, on account of the continual changes from warm to cold. I have seen the four seasons in 24 hours, and that nearly every winter.

P. L. VIALON.

Seldom more than 16° below zero, and seldom more than two or three days at a time. My answers to the general questions are in the main from experiences gained in Central New York, where the mercury often falls to 30 below zero for a week or more at a time, at intervals during four months or more.

L. C. ROOT.

a. In my old locality in Northern Iowa, the thermometer usually goes as low as 33° to 37° sometimes during each winter. b. I can not answer this

question accurately; but one winter the thermometer was as low and lower than zero every day during the entire month of January. I think that my locality was as cold as that of any other contributor to your Query Department, and we made chaff-hive wintering as much a success as did others with their cellars.

O. O. POPPLETON.

My location is Ohio, near the Michigan line. My own weather-records cover eight winters, and show as follows:

Winter of 1880,	'1	lowest,	-16°;	below zero	14 days.
" " 1881,	'2	"	-5°;	" "	None.
" " 1882,	'3	"	-14°;	" "	11 days.
" " 1883,	'4	"	-29°;	" "	11 "
" " 1884,	'5	"	-26°;	" "	31 "
" " 1885,	'6	"	-10°;	" "	9 "
" " 1886,	'7	"	-17°;	" "	8 "
" " 1887,	'8	"	-10°;	" "	7 "

E. E. HASTY.

Dr. Miller gives us below some figures from the Illinois State Weather Service, the observer, Mr. J. W. James, being a neighbor of his.

The average of the lowest temperatures of the past 27 winters is 21° below zero. The lowest I have recorded here is 31° below zero, Jan. 5, 1884. The average number of days below zero, in 28 winters past, is 17. Greatest number, 38, winter of '84, '85; least number, 3, winter of '77, '78.

I have been meteorological observer here since Oct., 1860; meteorological observer to Smithsonian Institution, May, 1869, to Dec., 1873; voluntary observer of Signal Service, U. S. A., Jan., 1874, on; observer Illinois State Weather Service, 1877, on.

The above includes the three winter months, December, January, and February, only.

JOHN W. JAMES.

Dr. Miller adds :

From the above, I suppose the answer is—a. 21°, b. 17. This certainly is warmer than ordinary thermometers make (I've seen it down to 37°), but it ought to be correct.

C. C. MILLER.

My impression is, that Question b was not understood by all who answer. For instance, friend Hasty says there were seven days last winter when the thermometer was below zero. Now, I think he means there were seven days when the thermometer was below zero for perhaps half an hour or more. Others have evidently counted the number of days when the thermometer remained below zero for fully 24 hours; and in our locality that seldom occurs during any winter. A self-registering thermometer hangs on our porch, and the register stands now where the mercury left it last winter—just a trifle below zero. For a short time, mostly during the night, the mercury was down about zero, but I think not more than about seven times during the winter. During this present winter we have yet had no temperature lower than eight above, and that only once. Now, where these lower temperatures are of only transient duration—say an hour or two—bees or any thing else seldom suffers very much; but where we have a continuous week of weather below zero, especially if accompanied by high winds, then look out for your bees, cellars, greenhouses, cold-frames, etc. We are very much obliged indeed to friend Hasty for his accurate record. We notice that, in the winter of 1881 and '82, the lowest temperature was

five above. Friend Hasty's record would, I think, answer very well for Medina. At the present time both radishes and celery are growing in the open ground that have as yet received no injury. They are, however, protected by buildings. Now, this latter point is a very important one. In California, people have hunted up localities protected by mountains, and in some cases they are nothing more than moderate hills, and these hills furnish sufficient protection for raising all kinds of tropical plants and vegetables. In Salt Lake City we had very pleasant weather—no frost; but when the train brought us to a notch in the mountains where the northeast wind swept through, the ground was frozen wherever the wind struck; and on the northeast side of the mountains we found the ground frozen hard, and covered with snow. Are we making sufficient use of the hills we have, for protection in a similar way, for our bees and gardens?

QUESTION 101.—*What method of wintering prevails in your locality—that is, outdoor or cellar wintering?*

Both.	DADANT & SON.
Cellar.	P. H. ELWOOD.
Cellar.	A. J. COOK.
Cellar.	C. C. MILLER.
Cellar.	DR. A. B. MASON.
Outdoor.	MRS. L. HARRISON.
Outdoor, generally.	CHAS. F. MUTH.
Outdoor, generally.	L. C. ROOT.
Cellar wintering exclusively.	GEO. GRIMM.

Outdoor wintering is almost universal here.

JAMES A. GREEN.

The prevailing method is indoor, especially among the most advanced bee-keepers.

H. R. BOARDMAN.

Outdoor, as it is seldom that the bees are three consecutive days without flying. P. L. VIALLON.

About half in cellar and half on summer stands, most apiarists using both methods during the same winter.

G. M. DOOLITTLE.

Both are commonly practiced here. During our severest winter those did best who wintered indoor; and during mild winters it was just the other way.

JAMES HEDDON.

The few old-style bee-keepers still winter outdoors mostly. Those who are up to the times, most of them, winter in cellars, I believe. As for myself, I winter mostly out of doors.

E. E. HASTY.

In my immediate locality in Iowa, chaff-hive wintering was mostly practiced, and was most successful; but a short distance away, in localities where the soil was of a different nature from what it was where I lived, cellar wintering was in most use.

O. O. POPPLETON.

I hope you will excuse me, friends, for saying, as I read over the above answers, I can not help thinking that those who answer are perhaps unconsciously prejudiced a little in favor either of cellar or outdoor, as the case may be. Friend Hasty says that, in his locality, which is about the same as ours, a few old-style bee-keepers winter out of

doors mostly; then he adds, with characteristic frankness, "Of whom I am which." Now, it is not at all unlikely that I too am prejudiced. I do not believe that, in our locality, nor in friend Hasty's either, it is profitable for the average bee-keeper to undertake to winter in the cellar. Friend Heddon gives a wise suggestion in regard to his locality. Then to get at the truth of the matter, the question arises, Which occurs oftener—mild winters or severe ones? Friend Poppleton succeeded with chaff hives, just as we do; and his report of the severity of the winters in Iowa is perhaps as bad as any who have answered. His remarks in regard to the soil refer, I presume, to its adaptability for constructing wholesome cellars. A cellar in a sandy or gravelly soil, especially if it is in a side-hill, is certainly much better than a cellar in level, wet clay soil.

QUESTION 102.—*What is your average consumption of stores per colony, as nearly as you can estimate (if you can not give exact figures), from October to May? State whether this average is for cellar or outdoor.*

25 to 30 lbs. for indoor wintering.

H. R. BOARDMAN.

For outdoor wintering, about 18 lbs.

JAMES A. GREEN.

15 to 25 lbs. I winter outdoors always.

CHAS. F. MUTH.

About 15 lbs., indoors; 25 lbs. outdoors.

L. C. ROOT.

40 pounds for out of doors; 30 pounds for cellar.

DADANT & SON.

I think about 15 to 20 pounds; cellar wintering.

GEO. GRIMM.

Between 6 and 11 pounds. I winter in the cellar.

DR. A. B. MASON.

About 10 pounds for the cellar, and 14 for those wintered outdoors.

G. M. DOOLITTLE.

18 to 20 lbs. out of doors; cellar, 9 to 10 lbs. This is estimated. I can not give exact figures.

MRS. L. HARRISON.

I judge from 12 to 14 pounds. I have never weighed. This is for cellar, and about two months outdoors.

P. H. ELWOOD.

From October 1st to April 10th, not more than 7 pounds in cellar; about twice that amount outdoors, packed or in chaff hives.

A. J. COOK.

Outdoor wintering. I think I will put it at 12 pounds, with the remark that it would take a good deal more pains in weighing, etc., that I have given to the matter, to give the figures very much scientific value.

E. E. HASTY.

For cellar, perhaps 20 lbs. The only actual figures I have are of four colonies, weighed October 21, 1881, and April 17, 1882; the losses in weight being respectively 13%, 19%, 21½, and 25½, or an average of 20 lbs. This, of course, included dead bees as well as stores.

C. C. MILLER.

In this State (Louisiana) we have to give the average from November to March. It takes fully 25 pounds to bring a colony to the 15th of March. The consumption doesn't seem to be much until about February 1; but after that it is very rapid, which is no doubt due to the rapid breeding.

P. L. VIALLON.

I can not say exactly; but I should judge about 20 pounds. Of course, much of this was used outside of wintering proper. I wintered in chaff hives, out of doors.

O. O. POPPLETON.

I can not give you an average of the stores consumed from Oct. 31 to May 1. It requires about twice the honey to carry bees through from Oct. 31 to April 1 outdoors that it would in the cellar. During the months of April they will be outdoors in either case, usually. I think perhaps the average is 10 pounds indoors and 20 outdoors, between October 31 and April 1.

JAMES HEDDON.

There, friends, I am very glad this question has come up in the shape it has, that you may see how much we differ, or, I am tempted to say, how loose some of us are in our estimates. H. R. Boardman says from 20 to 25 pounds, and he is one of the best bee-men there are in the lot. I wish he had told us whether he just guessed at it or whether he had been in the habit of weighing. Dadant & Son are worse yet—30 pounds to the cellar, and 40 outdoors. With that great big Quinby frame of theirs, there must be such rousing colonies that it takes double, or even more, than some of the rest of us report. Now, in contrast with the above, Dr. Mason says from 6 to 11 pounds. Doctor, stand up and tell us what you mean by such a statement as that. You remind us of the man who brought home two stoves. When his wife asked what he meant, he said the agent warranted that kind of a stove to save half of the fuel; therefore with commendable good sense and forethought he bought two stoves, that he might be enabled to save the *whole* of it. If you can winter good colonies of bees on from 6 to 11 pounds of stores, we had better ship our bees to you, and get you to winter them for us; that is, where it takes from 30 to 40 pounds. My experience would agree pretty nearly with Doolittle's, only I should add, some rousing big colonies might need 20 pounds, and I do not know but we have had a very few in our experience that used up 25 pounds; and I also want to add, they used it profitably, for the 25 pounds of stores enabled them to send out tremendous swarms very early; or when we practiced extracting they gave enormous crops of honey, while moderate ones did nothing to speak of. Prof. Cook has also wintered bees on only 7 pounds of stores. Come to think of it, I have done even better than that. I have seen a weak colony consume only a very small amount of stores during winter; then when spring came, as they just managed to pull through, they got down to a mere handful, and did not consume any stores to speak of until honey commenced coming. Under the circumstances it cost little or nothing to winter them; but the profit during the summer from them was also little or nothing, for it took the whole season for them to build up in decent shape for winter. There, friends, you have my explanation of these reports, so widely different. Is it not a pretty good one? Another question arises—Which is the more profitable, colonies that require from 20 to 25 pounds to carry them through, or those that will get along on from 5 to 10 pounds?



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: Sheer Off, Silver Keys, The Giant-Killer; or, The Roby Family, Rescued from Egypt, Pilgrim's Progress, and Ten Nights in a Bar-Room. We have also Our Homes, Part I, and Our Homes, Part II. Besides the above books, you may have a photograph of our old house apiary, and a photograph of our own apiary, both taken a great many years ago. In the former is a picture of Novice, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

HOW many of our young folks can draw pictures? Hold up your hands. Why, almost all of you can. But, how many can draw *real* nice ones? Let's see the hands again. Is that all? There are only just a few hands. Well, that will be enough. We want some of you who "know how" to draw, to illustrate your letters. If your papa has gotten up some new "fixin'" for the apiary that he thinks is real nice, suppose you make as good a picture as you can, and then describe it in your own words. If the tool or device shall be of value to bee-keepers at large, then we will engrave it; and how nice it will be to see your little letter with a picture beside it, that you made yourself! Remember, your drawing must represent something useful, if you expect to see it reproduced in these columns. During the last few days the juvenile letters have been coming in at a good rate, for which we extend our thanks. They are exceptionally good ones too. Some of them we give herewith; the rest will have to wait over till next time, for want of space.

BEEES; FOOT-POWER BUZZ-SAWS.

Pa has bees, and I help take care of them. In the spring of 1887 we started in with 33, and increased to 48, eight of which we sold at \$6.00 each. Forty are now on their summer stands. We use the American hive, and like it the best. We use foundation for starters in the sections. We live by a big cranberry patch, and it is a good place for bees. We have a foot-power saw, so we can supply our customers as they come in.

CLAUD M. BURNETT, age 14.

New Vernon, Pa., Dec. 24, 1888.

UNCLE JOSEPH'S BEES.

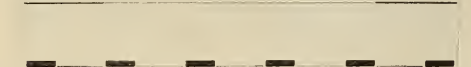
My uncle has taken a good many pounds of honey. He winters his bees in chaff hives packed with autumn leaves, outdoors. I got a large story-book, and lots of candy and nuts, for Christmas. I have but one brother, named Bertie. He is 12 years old. I am 10. My aunt Mary does not like the bees, because they get in her hair and sting her, and they get after Uncle Joseph too. My grand

father sits on the stoop and kills all that come near him. They all like honey, but I don't.

Cornwall-on-Hudson, N. Y. MABEL BRIGGS.

PAPA'S PACKING-BOX FOR WINTERING COLONIES.

My papa has nine colonies of bees. He packed them November 5th. He made a rough box of lumber, the front of which looked like this:

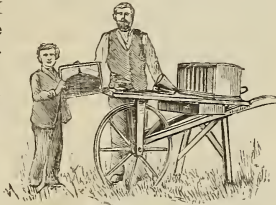


It was notched out at the lower board, opposite each colony, the full width of entrance of the Jones hive, which he uses. He puts a little board over the entrance so as to keep the packing from falling down so as not to interfere with the bees coming out. He weighed each hive, and put the weight on a little board inside on each colony. He says it is to know how much honey they eat during the winter. He put a super box on each, filled it full of chaff, and then he filled up the rest with sawdust.

Papa likes GLEANINGS very much. He may omit reading other things, but he never misses GLEANINGS. He lends it all around to every one, I think. I am just 11 years old, and this is my first attempt to write for the public to see. MINNIE COULTER. Oil City, Ont., Dec. 24.

PAPA'S HIVE-CART, AND FOR WHAT IT IS USED.

My papa has a device for hiving swarms, and for other work about the apiary. It is shown in the photograph which I send you. You see that it is a table upon a wheel, with legs like a wheelbarrow. The wheel is large and strong. When he wishes to hive a swarm of bees, or do any other work about the apiary he puts his hive or other fixtures upon it, and wheels it wherever he wishes to work. There is a drawer beneath the table, where he keeps his necessary tools. In the photograph you can see a hive on the table. Papa has 200 colonies in that kind of hive. You can also see my father and my younger brother. I was at my uncle's helping him with his bees when the photograph, was taken.



A HIVE-CART.

JESSE A. ALDRICH, age 12. Morristown, Minn., Dec. 6, 1888.

Your papa's hive-cart, we are sure, will work real nicely. The large wheel will cause the cart itself to run very smoothly. You know a large wheel will "walk" right over uneven places on the ground, just like a man, while a small wheel will go "bumpity-bump." But is not the platform of the cart pretty high up from the ground to be handy?

A COLONY WHICH HAS FOR 20 YEARS MADE ITS ABODE BETWEEN THE CLAPBOARDS AND PLASTERING OF A HOUSE.

I will tell you of a swarm of bees that went into a house near here 20 years ago, and is there still. It is a large farmhouse, old-fashioned. The posts, or studding' are 10 inches wide and 4 feet apart. The plastering and clapboards are 10 inches apart. There is a knot-hole on the south side of the house, as large as a silver dollar. Twenty years ago a strong swarm of bees came and took possession of

the space between the clapboards and plastering. They did not swarm for four years, and at the end of that time they cast a large swarm very early; and ever since then, every spring, they swarm from three to four times. In the summer they cover nearly 10 feet square, and in winter they huddle together opposite the parlor stove; and by striking on the wall they answer every time. This year they cast four swarms. The man lost all his bees every year but this one. Two years ago they saw honey dripping out of the lower row of clapboards, and fixed a trough and caught over 100 lbs. It was so hot it broke loose, the man says. Father has offered to take them out for him, but he says he would not disturb them for any thing, as he has prospered in the last 20 years. FRANK W. REED, age 8. Millford, Wis., Dec. 10, 1888.

Why, friend Frank, you have told us a very interesting fact indeed. Usually such large swarms in a dwelling will not swarm—at least, not very often. Ten feet square and ten inches thick is a large colony indeed. No wonder they would respond in winter, even though they were less than half this size.

A PIG STORY, AND A GOOD ONE TOO.

Mr. Root:—I saw your notice in GLEANINGS, Dec. 15, and thought, as there was little or nothing to be said about bees, as they are all in the cellar, I would write a letter about something else. Last July, father and Edgar, my big brother, gave us a little pig to raise. He was the runt (you know there is always a runt), and he could not get enough to eat with the others. We started to feed him milk with a spoon, five times a day. He soon learned to come when we went to the barnyard and called, "Come, Johnny, Johnny." We weighed him every week for a while on the honey-scales, afterward whenever we had time. He learned to drink without the spoon in a few weeks, and then we began to give him ground rye, wet with warm milk; and as he grew bigger, we wet it with water. After a while he was able to fight his way among the rest, without any help, and get his share. Then when the rest got big enough to eat from the trough he could not reach, so we had him stand on a stool and then eat. He is now able to eat with the others, and can reach into the trough as well as the next one. When we first took him to raise he weighed 4 pounds. Now he weighs over 80.

We have a thoroughbred Durham calf, about two or three weeks old, and father agreed to give us that for the pig. Father is to have the calves and butter and milk, if our calf lives to be a cow. He is not one of those men who would claim the money after the calf is sold. It is our calf, and will be our cow. ALBERT HALLETT. Galena, Ill., Dec. 28, 1888.

Yes, Albert, we are glad you told us about the pig. Perhaps it will induce other papas to give their children something which is *all their own*. It is worth something to a boy to learn to take care of property; not only to take care of it, but to increase its value. The early habits thus acquired will be worth something. But it is cruel, after the boy has worked hard, for the father to sell his pig, calf, or whatever it be, and then pocket the proceeds. There are a few papas who do this, but your father evidently is not one.

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.

MILD WEATHER, AND BROOD-REARING.

OWING to the very mild weather for the past four weeks, queens have begun laying. The mild weather has caused a hundred per cent more stores to be consumed the past month than usual, and I therefore predict loss of bees from starvation this winter to be far in excess of the average. S. W. MORRISON, M. D.
Oxford, Pa., Jan. 8, 1889.

40 QUARTS OF JAPANESE BUCKWHEAT. FROM 10 OUNCES.

On the 21st day of July I sowed 10 oz. of Japanese buckwheat on a piece of ground one rod wide and six rods long. I harvested forty quarts of fine well-filled wheat. How is that for a yield?

LaGrange, O., Dec. 27, 1888. V. E. FREEMAN.

25 BUSHELS OF JAPANESE BUCKWHEAT FROM 22 POUNDS.

The 22 pounds of Japanese buckwheat I bought of you last spring, yielded me 25 bushels of nice clean wheat, after losing some on the ground. Bees did well on it. They are now in good condition for winter. G. A. WILLIS.
Enfield, Ill., Dec. 23, 1888.

500 COLONIES IN WINTER.

I only wish you could have been at Syracuse at the convention, or that I could have been in California with you. I go into winter with over 500 colonies. We are having a severe winter.

W. L. COGGSHALL.

West Groton, N. Y., Dec. 24, 1888.

[Friend C., I should have been glad to be with you; but I should have been still gladder to have you and all the other friends of the East with me during my visit in California. As the latter could not be, I am doing the best I can to tell you what I saw there.]

COMBS OF POLLEN; ARE THEY GOOD FOR ANY THING?

My neighbor's bees robbed one of my hives; and when I found it out, the honey was all gone, and the bees also. The frames seem to be nearly full of the pollen. Are they good for anything to use next season, or had I better melt them up?

Westboro, Mass., Dec. 20, 1888. FRANK SIBLEY.

[They will be good to give to another colony in the spring during brood-rearing.]

THE WOOD AND ZINC COMBINED QUEEN-EXCLUDING HONEY-BOARDS.

1. In using the above, is it necessary that the wood strip be just over the top-bar of the brood-frames?

2. Should there be a bee-space between the top-bars and the queen-excluding honey-board?

3. Should there be a bee-space between the queen-excluder and the super, or should the super sit right on the excluder, without any bee-space?

TO MAKE DUMMIES.

Will it do to make a frame, wide enough to fill the space of two brood-frames, out of some light timber, and fill the inside of the dummy or frame with fine chaff, or would thinner ones be better?

Muncie, Ind.

ELIAS W. HITCHINS.

[1. The slats should cover the spaces *between* the frames. 2. There should be a bee-space between the frames and honey-board, and there should also be a bee-space between the super and the honey-board. You can make a dummy in the manner you describe. A less thickness will not be desirable.]

REPORTS ENCOURAGING.

STARTING IN BEE CULTURE.

ABOUT one year ago I accidentally got one of your journals, and became somewhat interested. I bought a colony in March, in the American hive. This cast two strong swarms, both of which I still have, though the first swarm absconded after I had it nicely in the hive for three hours. I followed the vagrant for a fourth of a mile, when it again clustered in the very top of a huge white-oak tree, 100 feet from the ground. After several hours of perilous work I again hived it. This was my "first born," and almost "damped" my ardor in bee culture. Later on, however, I purchased one of your A B C books and a smoker, through Mr. P. C. Clinger of this place; and in my own estimation I am improving. Milton, Pa., Dec. 24, P. F. RANGLER.

700 LBS. FROM 11 SWARMS.

My bees did very well this year. I took 700 lbs., comb, from 11 swarms, spring count, and increased to 18 swarms. WM. C. HERR.

Pike's Peak, Mich., Dec. 27, 1888.

A RUNAWAY SWARM, AND 80 LBS. OF HONEY.

I had a swarm of bees come to me on the 10th day of September. I hived them on foundation, and they made 80 pounds of honey. They told me they would do no good. A. McDOWELL.

Gaynor City, Mo.

FROM 6 TO 22, AND 325 LBS. OF HONEY.

From 6 stands of bees, spring count, we increased to 22 and obtained about 325 pounds of honey in 1-lb. sections, worth 13 cts. per pound.

Enfield, Ill., Dec. 23, 1888. G. A. WILLIS.

300 LBS. OF HONEY FROM 5 COLONIES.

I had six colonies but no swarms, and secured about 300 lbs. of honey from five colonies, the sixth making no surplus. All are in good condition for winter. E. F. BAKER.

Swanton, Neb.

PROSPECTS GOOD.

Spring count was 20 stands, all in good trim except 4. Pounds of extracted honey, 150; sold at 12½ cts. Pounds of comb honey, 450; sold at 20 cts. Total 600 lbs. I had no increase, and united to 18 in the fall, all in good condition for winter, on summer stands. We had a very poor season, as the white clover secreted no honey. Prospects are good for another year. WM. O. HEIVLY.

Raymore, Mo., Dec. 31, 1888.

FROM 3 TO 20, AND 50 LBS. OF HONEY.

I commenced the season with 3 strong swarms, 2 of which were Italians, and the rest hybrids. I had 13 natural swarms, and took up 4 swarms from the woods, and transferred them to hives, with good success. I now have 20 swarms in prime condition. I did not expect to get much honey, for I worked for increase; however, I got about 50 lbs., and am satisfied with results thus far.

Brinfield, Mass., Dec. 25, 1888.

F. E. BROWN.

MYSELF AND MY NEIGHBORS.

NOTES OF TRAVEL.

He becometh poor that dealeth with a slack hand; but the hand of the diligent maketh rich.—PR. 10: 4.

BEFORE going further I want to digress a little to tell you a short story. Twenty-five or thirty years ago a young man started in Chicago, selling illustrated cards with texts, and, if I am correctly informèd, a few other notions and novelties. I am told that he first started out with a half-bushel market-basket. The basket was his own property, and paid for; but the things it contained were mostly sold on commission. This boy was David C. Cook. Printed matter for Sunday-school work seems to have been his hobby. I believe he was also quite an enthusiastic worker in the Sunday-schools. In a little time he had amassed capital enough not only to buy his stock outright, but he got a little printing press, which he used in a room of his own. Before anybody knew it, almost, he was printing his own cards, and some little Sunday-school papers besides. If any of our readers can furnish me a copy of some of those earlier publications, I should consider it a favor. By and by he began to furnish lesson-helps for the Sunday-schools all over the land; and then came out the five-cent edition of books that had previously been sold for \$1.25 or more. GLEANINGS has always been instrumental in pushing the sale of these books. Many thousands of T. S. Arthur's Ten Nights in a Bar-room have been sold at only *three cents* each. David C. Cook published them so we bought them for about $2\frac{1}{2}$ cents each. When his business became so large that he employèd half a dozen great printing-presses, the whole business world began to pick and find fault with his cheap editions. Stories were started that he was financially embarrassed, and that he was about to make a failure. The first I knew of it was in seeing friend Cook's vigorous clips at his persecutors, through the Sunday-school helps. It seemed as though he had forgotten the little text that had appeared so prominently on the Sunday-school cards he used to peddle—"Blessed are ye when men shall persecute you and revile you for my sake." I wrote him a kindly letter in regard to the matter, and remonstrated against placing before the children of our Sunday-schools the statement of how he had been wronged. He wrote me a very kind letter by way of reply, thanking me, and he gave me his promise that nothing of the kind should again get into his publications. I had forgotten all about the matter until the day I was riding with my friend "Tommy Irontale" up the Piru Valley, on the way to friend Reasoner's. My companion, however, had so much to say in regard to a certain Mr. Cook, who owned the valley for ten miles or more, that I asked him what Cook he meant.

"Why, Mr. Root, you have certainly heard of David C. Cook, who published the Sunday-school literature?"

"Why, to be sure I know David C. Cook, the Sunday school man. But he lives in

Chicago, and has a tremendous big business. Is this Cook any relation of his?"

"Why, bless your heart, this is David C. Cook himself, who owns this ranch. He paid \$60,000 for 12,000 acres of land, and this is his town and store and meeting-house, and there is where he lives. He has been here all summer. If you would like to see him, we will stop long enough to have a little chat with him, if he is not too busy."

We found on inquiry that Mr. Cook had gone back to Chicago to see to business, but that he was expected on the evening train. But the foreman at the office kindly gave us all the information he could. Forty-three teams were plowing, harrowing, and cultivating, the day we were there, in his different fruit-orchards. Four hundred acres were being planted to oranges; six hundred more to figs, olives, raisin-grapes, guavas, lemons, peaches, pears, apples, etc. Roads were being made, flumes and aqueducts and irrigating canals were being constructed along the mountain-sides and through the valleys, and a great enterprise was under way. Mrs. Reasoner, where we stopped for dinner, informèd us that Mr. Cook himself personally superintended their Sunday-school every Sabbath, at the pretty little church, when he was on the ranch. She said she had been told he now pays taxes on *six millions of dollars*. When I suggested that the Piru ranch would be entirely temperance, the foreman smiled as he told me that no inducement could persuade Mr. Cook to even *plant* such grapes as are used for making wine. When he sells lots to his people, as of course he intended to do, a deed is made out like the following, which was, in fact, taken from a blank deed furnished me by the foreman:

It is provided and covenanted, as a covenant running with the land, that if at any time said second party, his heirs, assigns, or successor in interest, shall, with the knowledge and consent of the owner of said premises, use, or cause to be used, or shall allow or authorize in any manner, directly or indirectly, said premises, or any part thereof, to be used for the purpose of vending intoxicating liquors for drinking purposes, whether said vending shall be directly or under some evasive guise, thereupon the title hereby granted shall revert to and be vested in

The best legal talent has decided that the provision in the deed is valid; and that, upon its violation, the land reverts to the original owner.

I picked up one of his letter-heads from the desk. On it was a map of the ranch, and the following:

THE PIRU RANCHO.—The "Piru" Rancho, or Rancho "Temescal," with adjacent purchases, embraces 13,743 acres of land in a body, situated partly in Ventura and partly in Los Angeles counties, California. The lower end of the ranch is crossed by the Southern Pacific R. R. being two and one-half miles from Camulos station and postoffice, and midway between Los Angeles and Santa Barbara. It is a mountain-valley ranch, containing about 1800 acres of valley land, the rest plowable hill land, with a rich soil one hundred to one thousand feet deep, and steep grazing mountain land. The Piru River runs through four and one-half miles of the ranch, furnishing ample water for irrigating valley lands. It was formerly a part of the "Camulos Mission" Rancho, the home of "Ramona," celebrated for its fine olives and oranges, and has, owing to location, a climate suited to the most delicate trees and plants, making it especially adapted for fine fruit-growing, to which the present owner in-

tends to devote it. The air is extremely dry, clear, and free from fog, frosts, or extremes of heat and cold. Its medicinal springs, similar to those of Newgate, England, are already attracting some attention. The ranch is situated in the oil-belt, seven miles from the largest oil-well in the State, and one-half mile from where wells are now being sunk, and has oil and "brear" on the surface in various places. Owing to mountain ranges, all travel from the north for a large section passes through the ranch, and the town site of Piru City is located on a pretty piece of ground at the railroad crossing.

I inquired of Mrs. Reasoner about his looks and actions. She says he is never happy unless he is directing some new enterprise; that it seems impossible for him to sit still a minute. In the Sunday-school he is a most vehement and energetic worker, although she said that some Sundays he looked as if he were ready to drop, evidently from overwork. If these words should ever meet the eye of friend Cook I would remind him that even the most enduring frame may be taxed beyond its limit. While he may thank God for the wonderful endurance and business energy and capacity with which he has been endowed, he should remember, "What shall it profit a man if he shall gain the whole world and lose his own soul?" It rejoiced my heart to see how the promise has been verified in his case:

Godliness is profitable for all things; having the promise of the life that now is, and of that which is to come.—I. TIM. 4:8.

SKUNKS AND BEES.

There is quite a little difficulty here from these pests. At Mr. Marple's apiary we happened to pass a hive where the bees came out so furiously it attracted attention, when Mr. Reasoner examined the entrance, and at once declared skunks had been troubling them. The ground was dug up around the entrance, and marks of their claws were plainly visible. Friend R. directed the owner to put some strychnine in some comb honey and place it at night near the entrance, to be removed next morning if not taken. He said he had in this way killed more than a dozen. Friend J. J. Cole, at Tropic, where I am at present, says he has been also annoyed, and he poisons them in much the same way. At friend Marple's apiary we found perhaps a dozen hives where skunks had dug around the entrance. Friend Cole thinks they scratch the hive so as to cause the bees to come out, and then kill them by mashing them in the dirt before they eat them.

On account of the late poor seasons, bees are offered at comparatively low prices. An apiary near San Diego was offered us at \$1.25 per colony. There were something over 100 colonies, but they were in a poor sort of hive. Here at Tropic over 100 colonies, in very good two-story hives, are offered at \$2.00 per colony. In both cases the owner wanted to give up the business.

Dec. 6.—The sun rises upon me this morning at the home of W. W. Bliss, Duarte. Friend Bliss is not at home, but I found that his mother knows me well through GLEANINGS; and as she is deeply interested in poultry, incubators, etc., we passed a very agreeable evening. I am glad I love all rural industries and interests that take the

attention of the inmates of Our Homes, and Our Neighbors. All about me here are extensive orange-groves. Right near where I sit writing is a great wagon full of crocheted poles, long and short, to prop the limbs of the orange-trees, to keep them from breaking off. The soil here is almost clear pulverized granite, washed down from the mountains. It is so soft, even before plowing, that the foot sinks into it when you walk. It cultivates most beautifully, and, when worked and watered several years, it seems like soft sand. Every thing grows in it most wonderfully. Corn that has been dropped grows right up, even in December; but I am told the nights are too cold for corn to do *well* now; but many plant it for fodder, even in winter. Squashes, or California pumpkins, grow all over the country, in the greatest abundance, without any irrigation at all, and often without any cultivation. Day before yesterday I saw, on a protected southern slope, great strong plants just out of the ground. They are always seen in waste places the year round, for the very best place to keep them is right where they grow, so that the new crop and those a year old are often found in the same field. I am now right in the narrow fruit-belt I have before spoken of, that runs along at the foot of the mountain. An orange-orchard, with the trees loaded so the limbs are touching the ground, is one of the most beautiful sights, and right here there are miles of such. An irrigating stream, with its pure clear mountain water, running over a bed of gravel, composed of fragments of gray granite, is also to me a most exhilarating sight. The roads here at Duarte are broad, well traveled, and made beautifully smooth with these same granite pebbles.

2 o'clock.—To Huber.—Papa has just visited what is called in California a "chicken ranch." Two young men have got some land and put up little coops, or chicken-houses, all over it. They have three incubators, or machines to hatch chickens, at work; and day before yesterday one of the machines hatched out 200. When the sun goes behind a cloud they just peep, peep, peep, for they haven't any mamma to keep them warm; but when it comes out again, and shines through the little windows, then the chickens all crowd into the sunshine, and are just as happy as can be. At night they all go into a brooder that is warmed by a big lamp. Just beyond these very small ones are some chicks two weeks old; and further on some older still, and so on. The largest ones, that have got their tails grown out, run out in the field where they please. Then they have ducks and turkeys too, and the ducks have nice clear ponds to swim in: and a lot of pretty springs in the hillside furnish clear water for the ducks, turkeys, and chickens. The real little ones are fed about every hour on bread and milk. At noon the boys had prepared a very nice dinner for us; and just before we sat down to dinner, one of the boys bowed his head and asked a blessing. I tell you, papa felt real glad to see them do that, for he knew then they were Christian boys who loved God and were trying hard to do right. Their

flock of grown-up Pekin ducks, with their yellow bills and snow-white feathers, are, as they swim about in their beautiful pond, about the prettiest I ever saw in my life.

Dec. 7.—Once more I am seated out in the morning sun, writing. I am on the edge of a granite rock, almost on the summit of a great mountain. After I got off the train over a week ago, where the lady asked me if I had visited Riverside, the following letter was handed me:

Mr. Root:—If you can make it convenient to visit Riverside (and you will miss a great deal if you don't—of course you *must* see Riverside, if you will drop me a line I will meet you with a team and show you around. I am not proud of my apiary, but I can show you some things that you will be pleased to see. I can take you up on one of those "real live mountains." As I live nearly on the top of one, you can have a chance to climb to your heart's content, or you can go horseback after we get as far as we can go by wagon. I will esteem it a special favor to have you call upon me, and I think we should both be benefited. I can show you the home of the orange, etc. I can show you bees in hives, in houses, in barns, and in the rocks, where you can go and get out honey, and bees without let or hindrance, and I will go and help you. I can show you orange-orchards that net the owners one thousand dollars a year profit, per acre. I have some land that brought me in at the rate of *ten thousand dollars* a year per acre. It was in orange-plants. Come and see me. J. W. KEENEY.

Riverside, Cal., Nov. 26, 1888.

Well, here I am. Right in plain sight in the valley below are seven different towns, or villages: Riverside, East Riverside, Colton, San Bernardino, Ontario, South Riverside, and Pomona. We have been out having a ramble over the mountains. Friend Keeney's hobby is finding springs of water among the mountains. He always thanks God for *whatever* he finds, and of course he finds a *great many* of "God's gifts." He has found nearly a dozen different springs already, and therefore pure spring water flows in pipes almost all over the 160 acres of mountain-top he has taken up. It is up in the mountain-top where nobody else would go, that he made \$1000 raising orange-trees on one-tenth of an acre. His six-year-old prattler, Vernon, when asked if he liked to live up on the mountain, replied, "Yes, I like to live *anywhere*." Dear friend, can you say as much as this little child of the mountains? The other little prattler, that is watching me while I write, is named Mignon, and she is only four years old, and these two have a little nursery of orange-trees, *all their own*, to water and care for.

I not only climbed the mountain, but I sat on the peak, even though said peak was granite, and so sharp I feared it would punch a hole in my trousers. If it did, I proposed to present the rent to my wife as a souvenir of the occasion. Two things contributed to make my seat comfortable in spite of its angular point. First, I was very tired, and panting for breath; second, the view was wonderful. Friend Keeney's house, where I am now writing, seemed but very little higher than the valley; but as I now turn and look back at the peak where I

sat, it seems only a very little higher, as the height of mountains is so deceptive to the eye. The buggy is now waiting for me, and we must go. By the way, perhaps you think it funny the good people out here have nothing to do but to hitch up and drive *me* around, and wait on me. Well, I have thought so too, a great many times, and I am going to try to pay them back if I can.

A CALIFORNIA BEE-CAVE.

Half way down the mountain, friend K. handed the lines to his wife, hopped out of the buggy, told me to come on, and, oh my! didn't he dodge about among the rocks and bushes, along the mountain-side? If some old bear should take a notion to catch *him*, he would roll over *sure*, for that is what I almost did, several times. Pretty soon he came to a bee-cave in the rocks, and showed me where they had been getting pieces of honey out as they wanted it, for years. Yes, and the neighbors did the same; but the bees always fixed it up very patiently, and put in more. Well, he smoked them a little, and we too took out a great slice to eat with our lunch when dinner time came. A week ago he took 80 lbs. of honey from one of these clefts in the rocks, and he is going to save the bees besides. There are great quantities of bees and honey in the rocks, much of it inaccessible without expensive blasting. One man, near Los Angeles, lost his life by falling while trying to get the honey from a bee-cave. It was in a bad place to get at, and the bees stung him so badly that he lost his footing.

C. O. PERRINE.

Dec. 7, evening.—Friend Keeney was right about Riverside, and I am very glad he invited me here. It is a town of about 5000 inhabitants, three weekly papers, two dailies, and no saloons. They first raised the tax to \$500 for *three months*, and for a while no saloon-keeper dared undertake it with such odds against him. Finally one opened, and charged 15 cts. a drink. At the end of the quarter he announced his determination of trying it another three months. At this crisis the Riverside people arose in their might and decided no saloon should ever more disgrace their beautiful corporation limits at *any price*; and to show that they were in earnest they enlarged their limits, in one direction at least, as far as *ten miles*. We drove out this ten miles on what is called Magnolia Avenue. There are miles and miles of beautifully laden orange-trees, with the limbs propped to keep them from breaking; along the roadsides are the most beautiful palm-trees, and almost every other kind of ornamental shade-tree that this world produces. I doubt if there are on the whole face of the earth any more beautiful residences than these. We drove into one of the prettiest orange-groves to eat our lunch; and when friend Keeney introduced the proprietor, he *too* "knew A. I. Root." Dear reader, who do you suppose it was? Why, Mr. C. O. Perrine, the man who wasted his money on the steamboat apiary, as mentioned in the A B C book. Friend P. bought land here about six years ago, and has, as he says, taken advantage of the boom, and got back the money that went

away when that steamboat proved a failure. As we returned we passed the oldest orange-orchard in Riverside. The owners hauled water in barrels from the river to irrigate them, before the canals were constructed. Some of the trees have borne 20 boxes of oranges in one season; and at \$2.00 per box it is not strange that, with 75 trees to the acre, he should make them average \$1000. Now, dear reader, don't get excited. Riverside is perhaps the best orange district in the world, and this man is an expert. I have passed thousands of acres of oranges that are not paying the interest on the money, and many are abandoned in disgust by their discouraged owners. One of the most beautiful features of Riverside is the bright sparkling water, as it hurries over its gravelly bed through the immense irrigating ditches that traverse the land. Some of them are big enough to take quite a pleasure-boat. At one point, where there is a fall of about 30 feet, they are talking of a water-motor to run an electric motor, to carry a train of motor cars through their beautiful valley. What do you think of such an industry as that, ye scientific mechanical geniuses who read GLEANINGS? I tell you, friends, no one knows what a people may do who can say to the saloon-keepers, "Get thee behind me, Satan." "No good thing will he withhold from them who walk uprightly."

Mrs. Keeney informs me that the temperature is about 10 degrees cooler in summer on their mountain, and nearly 10 degrees warmer in winter. This specially fits it for friend K.'s business of raising orange-trees. He uses cheap cotton cloth to protect them from the sun or from the frost, as the case may be. Frames made of lath are also used, and these answer perhaps better than the cloth, for they give the plants sun half the time. In California, all the greenhouses are made with spaced lath instead of glass. Our friend C. O. Perrine made the only greenhouse, covered with glass, I have seen; and he says it was money thrown away, for they make no use of it.

Now a word about being out of work. My two friends Keeney and Woodberry are both carpenters, and both get \$3.50 per day, and I believe both now have more work than they can do; but when they were out of work they were never idle. Each one looked sharp for the chances. One took hold of strawberries and the other seedling oranges. Before leaving Riverside I went into the fruit-packing establishment. After the raisins are dried in the sun, as I have explained, on wooden trays, they are sorted, and the poor ones are put through a machine that breaks them from the stems. Then an ordinary fanning-mill is used to clean the fruit from the stems, when it is ready to be pressed into boxes. Before putting on the cover, however, a lot of the very largest are used to cover the top. I didn't like this; but when I saw every one of the thousands of boxes marked, in large plain letters, "London," I felt like saying, "O Riverside, Riverside! ye who have banished the saloons, have you yet to learn that truth is always better than untruth?"

Friend Keeney has invented, and got into practical use, a machine that sorts the oranges into 8 different sizes, putting each size into a box by itself. I saw the machine at work, and it does it rapidly and surely. A stencil on the outside of the box then tells how many and what size each box contains.

I can not drop Riverside without a word more in regard to her wonderful irrigating canals. One of them is right beside the railroad track, just in front of the depot. The water moves so fast one can hardly run as fast as the bubbles on the surface. One evening I walked out to find the rooms of the Y. M. C. A. Along every street, even in the darkness, I heard the ripples of the happy brooks as they hustled by on their happy errand.

Continued Jan. 15.

JAPANESE BUCKWHEAT.

THE PROFIT MADE IN RAISING IT, ON PAPER.

I BOUGHT one bushel of Japanese buckwheat of you last spring, and I was in hopes of sending a good report; but the frost came too soon.

I sold half a bushel to my neighbor, who sowed it about the first of July. The frost came and killed it before one-fourth of it (so my neighbor thought) was ripe; but he secured 25 bushels. My own was sown about one week later, and the frost spoiled it. The bees worked on the Japanese about the same as on the common that was planted beside it, so far as I could ascertain. My neighbor had both kinds in one field, and the common was not worth harvesting, while the yield of the Japanese would have been, but for the frost, 40 bushels at least. I have been thinking of renting land within a mile or two of my place, and sowing it with buckwheat, for the profit I should derive out of it from the grain alone; then the honey I would get from it would be clear gain. I could get the land to plant on shares, or hire it cheap (waste land for \$2.00 per acre). I would figure it in some such way as this:

	Dr.
10 acres of land at \$2.00 per acre.....	\$20
For plowing, at \$1.50 per acre.....	15
Getting in the seed, at \$1.00 per acre.....	10
Seed (I think I can get Japanese seed at \$1.50 or \$1.60, with freight) 7½ bushels.....	12
Cutting grain and setting up, at \$1.00 per acre	10
Threshing, 4 cts. per bushel, 25 bushels at \$1.00.....	10
	\$77
	Cr.
250 bushels of buckwheat at 60.....	\$150
	77
	\$73

That makes 73 dollars out of the operation. I figured buckwheat at 60 cts. per bushel. It sells here at the mill in Danielsonville, 5 miles from my place, at 65 cts., but it would cost about 5 cts. to market it. I think I could raise 25 bushels per acre without any fertilizer; but if I should put \$50.00 worth of fertilizers on the 10 acres, I should get enough extra buckwheat to more than get my money back; but even if I get but 25 bushels per acre, then it would more than pay me. I know I might fail, and not get one-half the above amount, or perhaps not even 5 bushels; but there is risk in all business.

J. L. HYDE.

Pomfret Landing, Conn., Dec. 13, 1888.

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, JAN. 15, 1889.

And he healed many that were sick of divers diseases, and cast out many devils; and suffered not the devils to speak, because they knew him.—MARK 1: 34.

EARLY QUEENS FROM THE SOUTH.

ALREADY inquiries are coming in, "To whom can I send and get a queen now?" Our friend Nellie Adams, of Florida, comes forward with an advertisement in this issue, but I believe she is the only one. I talked with the folks about it in California, but they are all too well off, or too lazy, or too busy with something else. Now, if there is anybody else in Florida or Texas or California who has young queens on hand ready to mail right off now, let us know, and we will give you an advertisement free of charge.

PRICE LISTS AND CIRCULARS OF APIARIAN SUPPLIES AND PRODUCTS FOR 1889.

We are now ready to make mention of all such circulars and price lists, but we must insist that they have a printed date on them. How else are we to tell whether it is something we noticed last year, or a brand-new one? Sometimes, perhaps, the date is left off by omission; but please remember that nowadays every thing that gives prices or information of any kind in regard to merchandise gives a date. We do not want to waste our time in reading over something that is old and out of date.

THE "WHITE PLUME" LETTUCE.

THE most promising head—the head I wrote about Nov. 15th, died on our hands after it had partially sent up a seed-stalk, so we have got to go back to first principles and start a lot more plants with the seed we raised last summer. The plants are up in the greenhouse, and we can, without question, succeed in getting as nice a head as the one we lost. I presume that none of the friends who received seed from us have done more than to get some nice white heads, without securing seed, unless some friend far enough south secured the seed in the winter. If any such there be, we shall be glad to hear from them.

"GROWING JAPANESE BUCKWHEAT, ON PAPER."

I OMITTED to make any comment or reply to the article on page 67, under the above heading, for the simple reason that I do not know how anybody can advise or suggest in such matters. Many people in many localities would do all and perhaps more than is there figured out; but there are others who would make a failure of the crop, even in the best locality. Then, again, there are experts in farming who would make as good a crop as our friend has figured, on almost any soil, and during almost any season, no matter how unfavorable. The most we can do is to print reports of what others have done;

but it should be borne in mind, when reading these reports, that those who report at all are, for the most part, the ones who have achieved at least a moderate success.

A HINT IN FAVOR OF HOUSE-APIARIES.

ON page 62 Frank W. Reed tells us of a colony of bees under the clapboards of a house, that had wintered safely for twenty years; and the record shows a better condition than we usually get where hives have good care. This colony has had no care whatever, for the very good reason that it was impossible to give them any. Now, why can't our friend, or anybody else, in fact, locate bees under the siding, all over the house? The swarms that come out every year will be so much clear gain, even if you sold them for a dollar apiece to whoever would take them; and it certainly would not be a very difficult matter to give each colony a crate of sections. Does some one urge that the bees would annoy the inmates? Well, then, let some stubborn brother, who loves bees and never expects to get married, conduct the enterprise.

D. A. JONES'S PRACTICAL BEE-KEEPING—A CORRECTION.

OUR friend D. A. Jones is now writing a series of papers on "Practical Bee-keeping," in the *Canadian Bee Journal*. The author is full of bee-lore, and that of a *practical* kind. These papers will be read with interest, because the matter bespeaks experience. But somehow or another, in speaking of the Parker machines he has got us quoted wrong. He says, "Ernest Root tells of a girl in their employ who can average 3000 (putting in foundation sections) a day with the Parker, and on occasion can put foundation in 1200 sections in an hour." We have not used the Parker machine in our establishment for several years—at least not to any great extent—our girls preferring the foot-power instead. Besides, if we could on occasion put foundation in 1200 sections in an hour, we ought certainly to average more than 3000 per day. The average would be nearer 10,000, would it not? Aren't you thinking of what he said on page 795, of the Oct. 15th issue, friend Jones? We there said that our girls could *fold* (not put foundation in) sections at the rate of 1000 per hour, and could, on occasions, *fold* at the rate of 1200 per hour. With regard to the relative merit of the Parker and the foot-power machines, our experience says that the latter work more rapidly and easily, but the Parker does rather *better* work; that is, the foundation is made to hang straighter after it leaves the machine.

NEST-EGGS FOR COLD WEATHER.

I NOTICE that one of the poultry-journals makes objections to glass and porcelain, that they are too cold for winter use. They give the poor biddies the toothache, probably, when they are obliged to sit on them at a zero temperature. They also object to the heavy porcelain, or china eggs, that, because of their weight, they knock against the good eggs and break them. Both objections, however, I think will not hold good to the eggs we have been selling, made of white glass. These are no heavier than ordinary eggs—perhaps not so heavy; and the material of which they are made is so thin they would not be likely to chill the poor biddy. The basswood nest-eggs are free from both the above objections—they can not be broken, and are less expensive. Ernest says, however, their extreme lightness

causes them to be pushed out of the nest; and my objection to them is, that when they get soiled you can not wash them up as you can the glass ones.

BAROMETERS, AND WHAT THEY ARE GOOD FOR.

WHEN I first got up, on the morning of January 9th, I happened to pass the aneroid barometer hanging in the greenhouse. As the indicator was clear down below the markings of the scale, I concluded the machine had broken; but to be sure, I ran at once over to the house, where hangs a mercurial barometer, only to discover that the column of mercury was also clear below the marks on the scale, and below any thing that I had ever known in perhaps twenty years of observation. I at once announced to the family and neighbors that we were going to have a fearful flood, hurricane, cyclone, or something of the sort. As the morning was perfectly still and warm, nobody paid much attention to my warnings, unless it was Huber. He was greatly exercised for fear the house would sail off into the flood which papa was talking about; but when mamma informed him that *brick* houses never float away, he admitted the correctness of her reasoning, and put away his dismal forebodings. Toward noon, however, it began to rain, and by noon it rained in torrents. Pretty soon, with the rain came one of the most fearful winds ever witnessed in this locality. By night it was blowing so that people had difficulty in keeping on the sidewalks, and still the barometers stuck to their positions. The wind blew and shook the buildings all night; and in many places we read accounts of fearful losses of life as well as destruction of property. Now, I think it pays to have a barometer. At the noon service I cautioned the hands about leaving things about that would be blown down and destroyed by the wind. I told them to look well to the glass doors about the premises. At the close of my remarks I was informed that one glass door had been smashed already. Such a warning may easily save many times the cost of a barometer, to say nothing of loss of property and loss of life.

THE COMING BEE IN SIGHT.

I INCLOSE a note from the *Youth's Companion*, on the coming bee. H. P. LANGDON.
East Constable, N. Y., Jan. 8, 1889.

TRAVELING BEES.

The distances traversed by bees in pursuit of honey are surprising to a person unfamiliar with the habits of these busy workers.

A bee-keeper one morning dredged the backs of his bees with flour, as they were leaving the hives. He did this by a preconcerted arrangement with a friend who had a fine clover-field in bloom forty miles away.

The day following the experiment, he received a letter from this friend, stating, "There are plenty of your white-jacket bees here in my clover." It was truly a wonderful instinct that sent the bees so far from home in quest of honey.

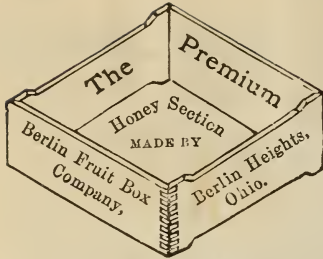
Well done, friend L. But is not the *Youth's Companion* getting out of its beat just a little? Their item would do nicely for a joke; but the trouble is, the general press will go to work and copy it, and spread it broadcast, taking it for fact. True, it is not so bad as the stories about artificial honey and artificial eggs; but still it should be corrected at once, and we hereby beg the publishers of the *Youth's Companion* to at once inform their readers that their statement is a blunder. It should have been *four* miles instead of *forty*. The extreme limit of reports like this—that is, tests made by sprinkling the bees with flour—has shown that they may fly in quest of stores as far as perhaps eight miles. In all of the reports that have come in, not one has ever gone beyond this; and the general testimony

seems to be to the effect that bees seldom go beyond two or three miles. When the Italians were first introduced in Medina County I took pains to go out with the horse and buggy in different directions, and at different seasons of the year, and it was only in extreme cases that I found them as much as three miles away from home. In view of the fearful blunders that journalists have been making in matters out of their beat, would it not be a wise precaution to submit questions pertaining to some particular branch or industry to experts or editors of journals pertaining to that particular industry? It is an easy matter to start a misleading statement; but it is a tremendous task to chase it out and head it off when it once gets into print.

DIMENSIONS OF FRAMES IN COMMON USE, ETC.

THE *Bee-Keeper's Guide* stirs things up lively in its issue for Jan. 1, on the matter of frames. A. I. Root and Prof. Cook are the parties who need correcting. For myself, I can only repeat that, when I commenced making Langstroth hives, I sent to father Langstroth and had him express to me a frame of exactly the dimensions he would have it. He sent me the frame, and I think I have it yet up in the attic. From this frame I took my figures, not noticing that it did not agree exactly with the dimensions given in his book. This frame, as I started it, is also exactly right for eight Simplicity sections, $4\frac{1}{4} \times 4\frac{1}{4}$. Now, if we go back to the old dimensions of the old frame, it will not hold eight sections; and, as a matter of course, we want the wide frames to have exactly the same dimensions as the brood-frames. In regard to the American frame and American hive, which was originated by H. A. King more than thirty years ago, I also got the dimensions of my American frame from friend King himself. This, however, was after he had decided to change the dimensions of his frame from what it had been originally. If I am correct, the first American hives made were changed so many times there was for a time no particular dimensions to either the frames or hives. Perhaps H. A. King or his brother can tell us something about the correct dimensions of the American frame. At the same time, I think we can show that there are more frames of both Langstroth and American, of the dimensions we give, *than of all the rest in the world*, by a very great odds. This being true, it would be folly to attempt, at this late date, to make any change. It now remains for Prof. Cook to stand up and tell us why he doesn't say whether the dimensions he gives in his Manual are *inside* or *outside* dimensions. Inasmuch as the outside dimensions must be exact, while the inside may be just as it happens (according to the thickness of the material), I do not see why anybody should ever think of taking dimensions of frames to refer to the inside. Permit us to thank friend Hill for his very kind mention of our latest edition of the ABC book. He says: "It is the largest and most extravagant publication of the kind, and one must see it to appreciate or comprehend its excellence. It is the accumulation of years." We don't exactly know what he means by the word "*extravagant*;" but from the general bearing of the notice we feel sure it can not mean any thing bad.

DAVANT'S FOUNDATION FACTORY, WHOLE-
SALE AND RETAIL. See advertisement in
another column. 3b1fd



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 No. 1 sections

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

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I will sell choice pure-bred cockerels now at \$2.00 each. W. K. LEWIS, Dry Ridge, Ky. 24tfdb

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