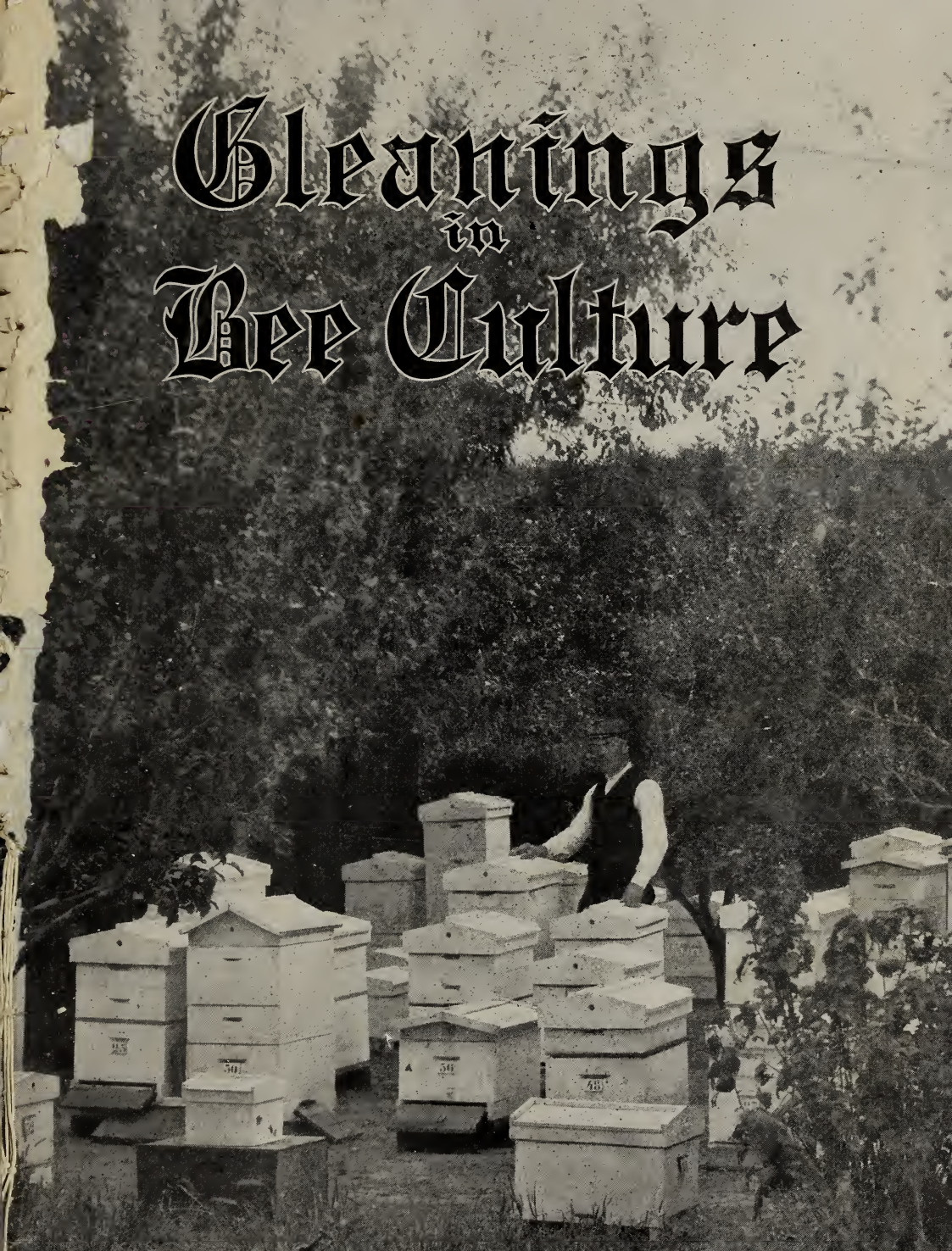
Gleanings in Bee Culture



VOL. XLII. AUG. 15, 1914, NO. 16

HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES

Adopted at Cincinnati, Feb. 13, 1913.

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I. FINISH.

1. *Extra Fancy.*—Sections to be evenly filled, comb firmly attached to the four sides, the section to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy.*—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side exclusive of the outside row.

3. *No. 1.*—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2.*—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III. WEIGHT.

1. *Heavy.*—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium.*—No section designated as medium to weigh less than twelve ounces.

3. *Light.*—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: Fancy, white, heavy (F-W-H); No. 1, amber, medium (1-A-M), etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

FANCY WHITE.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

NO. 1.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

CHOICE.—Sections to be well filled; combs firmly attached; not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

NO. 2.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more, also of such sections as weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

EXTRACTED HONEY.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

STRAINED HONEY.—This is honey obtained from combs by all other means than the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

ALBANY.—We are having an increasing demand for comb honey, with but little coming as yet. We advise and urge beekeepers to get their honey ready and ship to market as early as possible. Do not wait until the full crop is ready, as about all do, and, even with a light crop, cause a congested market about October. We quote extra white at 17; medium, 15 to 16; mixed, 14 to 15; extracted, demand is light.

Albany, Aug. 5. H. R. WRIGHT.

Honey reports continued on page 5.

Gleanings in Bee Culture

E. R. ROOT, Editor — A. I. ROOT, Editor Home Dept. — H. H. ROOT, Managing Editor — J. T. CALVERT, Business Mgr.

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Contents for August 15, 1914

Honey reports continued from page 2.

BOSTON.—Our market on new No. 1 and fancy white comb honey, 16 to 17; fancy white extracted, 11; beeswax, 30.
Boston, Aug. 5. BLAKE-LEE CO.

LIVERPOOL.—For Chilian beeswax the market is firm, at $36.42 to $41.28 per cwt. as to quality. For Chilian honey the market is very dull, with only retail sales at low rate.
Liverpool, July 22. TAYLOR & CO.

IDAHO FALLS.—Honey produced in this section was never so fine as this season. We are selling fancy and No. 1 white comb honey at $2.75 and $3.00, and No. 2 at $2.50 to $2.75 per case of 24 sections. Water-white extracted honey in new 60-lb. tins at 6½.
IDAHO HONEY-PRODUCERS' ASSOCIATION.
Idaho Falls, Aug. 5.

SCHENECTADY.—No new honey in market yet. Some retail dealers have old stock carried over on hand, but it is candied and not very desirable. The crop of white is reported short in this part of the State. Weather conditions at present are favorable to a fair crop of dark. Buckwheat is in full bloom. We advise producers to comply with the pure-food law in regard to weighing and marking each section of comb, and also extracted in every style package.
Schenectady, Aug. 4. CHAS. MACCULLOCH.

ZANESVILLE.—There seems to be a slightly better demand for honey, though the market is still abnormally inactive. But little new honey is arriving as yet. So light is the crop locally that but little will find its way to the large centers. We quote, as heretofore, best grades of white-clover comb at 16½ to 17½ in a jobbing way; about ½ to 2 cts. higher in one or two case lots. Best white extracted in 60-lb. cans, 9 to 10½. Producers are offered for beeswax 31 to 32 cash, 33 to 34 in exchange for bee-supplies.
Zanesville, Aug. 3. E. W. PEIRCE.

CHICAGO.—A little of the honey harvest of 1914 is on the market; but it is meeting with very little demand, and prices are not at all firm. Sales are being made at from 14 to 15 for the best grades of white comb honey in the 1-lb. sections with the ambers at from 1 to 3 cts. per lb. less. Extracted ranges from 7 to 9 for the white grades, and from 6 to 8 for the amber, all according to flavor and other qualities. Beeswax continues to sell upon arrival at 35 if of good color and free from sediment or adulteration of any kind.
Chicago, Aug. 1. R. A. BURNETT & CO.

KANSAS CITY.—There is no change to note in our honey market. No new comb is coming in, and our market is well supplied with extracted honey. Weather is still hot, consequently no demand to speak of for extracted. We think the first shipments of honey will sell as follows: We quote No. 1 white comb honey, 24-section cases, $3.25 to $3.50; No. 2 ditto, $2.75 to $3.00; No. 1 amber, $3.00 to $3.25; No. 2 ditto, $2.75 to $3.00; extracted white honey, per lb., 7½ to 8; extracted amber, 7 to 7½; beeswax, 25 to 30. C. C. CLEMONS PRODUCE CO.
Kansas Ciy, Aug. 1.

ST. LOUIS.—Our honey market is still dull, and there is very little demand for any grade. Some new comb honey is being offered here from the Southern States, and extracted honey in barrels and cans has been arriving quite freely from the South within the past ten days. Our market is quoted, Southern extracted, bright amber in barrels, 5 to 5½; in cans, 5½ to 6; dark, ½ to 1 ct. less; comb honey, fancy white clover, 14 to 15; light amber, 12 to 14; broken and leaky, 7 to 8; comb honey by case, fancy white clover, $3.00 to $3.25; light amber, $2.25 to $2.50; dark and inferior, $2.00. Beeswax, prime, 32; inferior and impure, less.
R. HARTMANN PRODUCE CO.
St. Louis, Mo., Aug. 6.

Gleanings in Bee Culture

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Established 1873 CIRCULATION 35,000 Issued semi-monthly

A. L. BOYDEN, Advertising Manager

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VOL. XLII. AUGUST 15, 1914 NO. 16

EDITORIALS

A New Way to Stop the Robbing Nuisance

We call attention to a short article by A. J. Plummer, in the Heads of Grain department, in this issue, and our reply to the same. See p. 648. We believe that Mr. Plummer has struck on a good scheme, and shall be glad to have our beekeeping friends try it and report.

Our Cover Picture

Our cover for this issue shows a corner of the apiary of E. G. Ward, Christchurch, N. Z. On page 637 is shown the group of beekeepers at the Canterbury field meeting. These conventions in the field, by the way, are becoming more and more popular. We have received so many photographs of meetings of this kind that we propose using a large number of them in our Oct. 1st issue, making that issue almost a special field-day number. As usual the New Zealand beekeepers are not one step behind.

The War in Europe, and its Possible or Temporary Effect on the Honey Market

A month ago no one would have supposed it possible for all Europe to be involved in war; but such is the case at the present writing. The modern war-ships, rapid-fire guns, modern rifles with smokeless powder, to say nothing of aerial war-ships, will probably decide the issue, whatever that is, in a comparatively short time. But in the mean time the money market has been tightening up, not only in Europe but in this country. Banks have been putting out their 60 days' notices, and this makes ready money scarce. The effect of all this has been to decrease prices on luxuries, and advance the cost of necessities. So far honey can hardly be classed as a "necessity." It belongs to the condiment class; and while it is a food of the very best kind, and while it is cheaper than butter, and sometimes cheaper than sugar, it is, to a great extent, a delicacy or luxury. During these troublous times the public will buy necessities, and cut out to some extent things it can get along without.

It is far from our purpose to howl calamity, because we believe that, possibly before next issue, our money scarcity will be over, and that conditions will have resumed their normal trend. The general effect, however, will be to put a check on the upward trend in prices on honey—possibly enough to offset the advance that would naturally come from an advance in clover honey by reason of its scarcity.

Why Every One Should Comply with the Net-weight Law

The operation of the net-weight law is going to be confusing to many small producers. Then, again, there is a large class who do not wish to bother with the intricacies of the net-weight law. All we can say to these people is that they should sell their honey locally, and make sure that it is consumed locally. Do not delude yourself by the notion that, after your honey is sold out of the State, no one will know who produced it. Your dealer will know; and if he gets into trouble he will come back on you. Better get into the band-wagon, and mark your honey as it should be marked, and thus be on the safe side.

Honey-crop Conditions and Prices

There is not much new to add. Our last issue gave extended reports from the fields from every part of the United States. In fact, over a large part of the United States clover was a failure. But there will be considerable clover honey just the same. As stated elsewhere, the shortage of the clover crop will have a tendency to boost prices; but the tightness of the money market as a result of the war in Europe, which we regard as only temporary, will probably offset

a possible advance by reason of scarcity. Taking every thing into consideration, the general honey market will remain nearly stationary. In the mean time conditions ought to be better later, or as soon as the war is brought to a conclusion, for we can not believe that a general European war can last long. If the high seas are kept open to commerce (and at the present writing they *are* being kept open), commerce ought to resume its normal condition soon.

The Army Worm on Alfalfa in Colorado

In sending in his honey-crop report, as given in last issue, Mr. Wesley Foster sent two clippings from the Montrose *Press*, of June 17 and 18 respectively, concerning the army worm which is destroying whole fields of alfalfa, seeds and spuds, in the vicinity. Mr. Foster calls our attention to the fact that the beemen were awake to the situation and called a hurried meeting to prevent indiscriminate spraying that had been recommended, as this would destroy a large part of the percentage of the field bees. Beekeepers recommended the plan which was just recently recommended by the University of Illinois—that is, the sowing broadcast in infested fields a rather dry mash mixed with Paris green, or arsenate of lead. Clean bran and Paris green are mixed together in the proportion of sixteen parts of bran to one of poison, moistening the mixture with water in which a quart of salt has been dissolved for each ten gallons. The mash should be just wet enough to crumble in the hand. Sixteen pounds of mash is sufficient for an acre.

By being alive to their interests it is to be hoped that the beekeepers will not be obliged to suffer indirectly because of the ravages of the army worm.

Swamp Beekeeping in and about Medina

In our last issue, page 570, we referred to some experiments we are making in keeping bees in swamps near Hudson, Ohio, some thirty miles from here, and of swamp bee-pasturage in general. Since then we have been extending our operations in and about other swamps. We now have four swamp yards in all, and possiblly will have two more in a few days. So far the swamps are yielding sufficient nectar and pollen to keep up brood-rearing at a good rate for the purpose of making increase, and that of course is a necessity. At our queen-rearing yard, which we can't move on account of drones, we are feeding outdoors to stimulate breeding for the same purpose. Weather conditions have been favorable, as we have been having hot weather with an occasional heavy rainfall.

While Medina is not in the swamp area, yet there are several swamps within five, ten, and thirty miles—in all, enough to afford us considerable bee-pasturage. The regular yards are being moved as fast as we can find other swamp locations.

As we stated in our last issue, our subscribers, so far as conditions warrant, may find it to their advantage to hunt up swamp bee-pasturage, and locate their bees thereon. The war in Europe will have a tendency to stiffen the price on sugar. In fact, it has already done so. While the advance is not large proportionally, yet so far as possible a more satisfactory increase of bees can be made from *natural* bee-pasturage, and at little expense except the moving of the bees. Even if increase in numbers is not desired, a good fall pasturage will put plenty of stores and young bees in the hives, and that is of prime importance, Young bees with plenty of stores, other things being equal, will insure good wintering.

Very Little Adulteration of Honey

We believe that honey is as free from adulteration, taking the country over, as any article of food on the market, aside from such food products as do not permit of any adulteration whatever. Comb honey, of course, has never been adulterated, and never will be; but there was a time before the passage of the pure-food law when unscrupulous dealers handling liquid honey would put out a mixture of honey and glucose. However, this practice has stopped so largely that it is only on very rare occasions that we hear of any thing of the kind. We believe that the consumer can buy liquid honey now and be just as sure of getting a pure product as when he buys creamery butter; in fact, we believe he is more certain of getting a pure product, and this is saying a good deal. We are constantly on the alert for reports of adulteration; but, as mentioned, we see them so seldom that we may say that it almost never happens.

There is still some fear, however, on the part of certain consumers that they are buying an adulterated product, especially when they buy honey that does not taste like the honey that they are accustomed to buying, or that they bought the last time, etc. Recently we learned of a gentleman living in a city who bought some honey that "tasted funny," and he was sure that it must be

adulterated. The honey in question bore the label of a well-known producer in the West, who, we knew, would go out of business before he would ever stoop to adulterate. We wrote the gentleman to that effect; but it was hard to convince him, simply because the honey did not taste like honey that he usually had eaten. This only goes to prove that honey is honey to most people; and that it may have any one of a good many different flavors, depending upon the flower from which the bees make the honey, is astounding news. Just the other day a lady told us that she had bought some of our honey, but that it was spoiled. We asked her what was the matter with it, and she said it had gone to sugar!

In Part IV. of the Annual Report of the Connecticut Agricultural Experiment Station for 1913 is a short paragraph bearing the simple statement in reference to honey: "The three samples examined were not found to be adulterated." Presumably the three samples were suspected of adulteration; and while this statement by itself is not especially significant, the fact, however, that it is exactly the same kind of statement that appears in almost all cases when honey is examined, does prove that honey is a reliable food that is uniformly pure.

Not Poison, but Probably European Foul Brood

THE following letter from Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., will explain itself:

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ENTOMOLOGY,
WASHINGTON, D. C.

Mr. E. R. Root:—I understand, indirectly, that there has been considerable complaint in Colorado this year of losses to beekeepers, through incorrect spraying. This has evidently also come to the attention of the National Beekeepers' Association, and I rather suspect that it was through you that they took up the work. You will be interested in knowing that I have just received a letter from Mr. R. W. Ensley, Read, Delta Co., Colorado, sending a sample of brood No. 4389. Mr. Ensley asked that this be examined for the presence of arsenic. When I saw the sample I decided that it should first go to the bacteriological laboratory. A report of the examination has just been received showing that European foul brood is present in the sample. I think this will explain the trouble, which they have had in Colorado, although we had not previously suspected the presence of European foul brood in that State. As you will remember, from previous conversations, I told you that we frequently get reports of losses due to spraying; and after an examination of the sample we find that the real trouble is brood disease. In most cases, also, this is European foul brood. I trust that the beekeepers of Colorado will take immediate steps to get this disease under control and will quit looking for poisoning. Of course, they may have suffered some loss from poisoning; but European foul brood is a great deal more serious than a little surplus arsenate of lead. I have notified Mr. Ensley, as well as Mr. Wesley Foster, concerning this sample, and I trust that the inspectors will get to work to get this disease under control and will inform the beekeepers as to the best means of doing this. E. F. PHILLIPS,

In Charge Bee Culture Investigations.

Washington, D. C., Aug. 5.

Dr. Phillips has held that some, at least, of the so-called cases of poisoning on account of improper spraying fruit-trees have been due to the work of European foul brood. At all events he has seen numerous cases of this, and the one above is a case in point.

From a recent conversation with Dr. Phillips we understand that he does not claim that bees may not be killed by spraying-liquids applied while the trees are in bloom. Indeed, if we are correct, experiments are now under way by the Bureau to determine whether bees can be or are destroyed in any such way. The result of this work will doubtless be made public later on. The beekeepers of the country will await with interest the report.

The Net-weight Law Causing Inconvenience to Producers

Thanks for the advance copy of your editorial on the net-weight law, and also for your answers to my questions in this regard.

There is one thing more I should like to know. I keep a local store supplied with comb honey. I sell the honey "by the case," and the storekeeper retails the sections by the piece. Must the storekeeper weigh and mark each individual section before handing it over to a customer, or must I do it before delivering the honey? I could do it with a comparatively few cases in the course of the year, but how is one to take time for it when the crop runs up into tons, and he is pushed to get it all ready for market?

I fear that this net-weight law is going to do great injury to the bee business. Many comb-honey producers will become so disgusted with its unreasonble regulations that they will change to raising extracted honey. The result will be an overproduction of the latter article, and consequent fall in prices, until the bee business will not pay at all, and the law will be to blame for having killed it.

WM. MUTH-RASMUSSEN.

Independence, Cal., July 4.

OUR editorial on this subject in our July 15th issue, page 528, practically covers your inquiry. We may state, however, in answer to the question whether the storekeeper or the producer must mark the net weight on the sections that, in our opinion, that duty devolves on the producer. The dealer or the consumer, under the law, can require the net weight or minimum net weight of each section. If, however, the dealer buys honey without the net weight being marked on it, it will be up to him to supply that deficiency before he can sell it to the consumer. At all events, it is very clear that the consumer can demand every package of comb honey he buys shall have the net weight marked on

the sections. There is no getting around it, as we understand the law. For particulars how to apply the net weight, the reader is referred to our editorial in our last issue, page 528.

The net-weight law is going to work some inconvenience and hardship, and beekeepers will adjust themselves to it. It is not, however, going to protect the consumer, in our opinion. As explained in our last issue, practically every comb-honey producer will be obliged to adopt the scheme of marking the minimum net weight on each section. This will mean that he must lose the difference between actual net weight and a minimum net weight marked on the sections. As beekeepers, like everybody else, are not inclined to give away something for nothing, they will charge enough extra per pound or ounce to cover the deficiency and more.

Fumigated Combs Not Objectionable to Bees

We have received a large number of reports—many more than we can publish—from beekeepers who testify that fumigating with carbon bisulphide does not injure the combs in any way so far as the bees are concerned. These reports cover experience with fumigation of combs in numbers running into the thousands, so that we think it is safe to assert that carbon bisulphide does not make the combs unfit for use again for brood combs, as intimated by P. J. Hovel, page 476, June 15.

The National Net-weight Law on Comb Honey Not Altogether a Nuisance

The new law will encourage the packing of comb honey in cartons in order to avoid the labor of marking each individual section. It will stimulate an effort on the part of the producer to sell his comb honey in local markets and to his neighbors. Both results will be for the good of the comb-honey business and the public generally. If all the comb honey produced were cartoned it would practically eliminate 90 per cent of honey broken in shipment.

The net-weight law will go further. It will eliminate entirely non-separatored comb honey. Such honey, offered at all kinds of prices to move it off, has been a real detriment to comb honey produced as it should be with separators. Thanks to the net-weight law, this stuff will be relegated to the past. That which has been produced already will have to have the individual weight on each section. After a producer tries to mark the exact weight of honey on each section, he will conclude that he will be saving nothing by dispensing with separators.

Another kind of comb honey that will be put out of business will be glassed sections. While these goods have not been a nuisance to the rest of the comb-honey producers, it will not be practicable to sell them any more.

Should Producers Advance Prices on Comb Honey on Account of the Operations of the National Net-weight Law?

The suggestion has been made by one who stands high in the beekeeping fraternity that now is an opportune time to advance prices on comb honey, for the reason that the national net-weight law is forcing an expense on producers in marking, and a loss in the honey to be sold that should be covered in some way; that is, providing it is sold by count. The argument is made that if the producer sold a case of 24 one-pound sections formerly for $3.00, we will say, he should now charge at least $3.25 for that same case, assuming that the two seasons were alike so far as the production of honey was concerned. Last year the weight of the section, or frame around the honey, could be weighed in with the honey and the wax; but the wood part must now be eliminated, and some one must pay for it. Again, last year it was possible for the producer if he sold by count to get pay for all the honey he produced and put into shipping-cases. Under the operation of the net-weight law he can receive pay only for each section on the basis of the lightest section; or, to put it another way, he must sell every section in the case, no matter what it weighs, at the weight of the lightest section in the case. The elimination of the frame around the honey will amount to 24 ounces, or 1½ lbs. to every shipping-case. (This formerly went in at the price of the honey.) If the lightest-weight section in the case is 12½ ounces, exclusive of the wood, all the rest of the sections in that case, no matter whether they weigh 1½ or 2 ounces more, must be sold as weighing 12½ ounces. At a conservative estimate there will be a shrinkage right here of ½ lb. in a 24-lb. case, or, in all, 2 lbs. The actual shrinkage that must be deducted this year over last year on a case of sections sold by count will not be less than 2 lbs. to the case, and sometimes it will run from 2½ to 3 lbs. If the sections were produced without separators, the shrinkage will be

even greater. Let us suppose that the producer receives 12½ cts. for each one-pound section. If he is to make as much money as he did last year (and the presumption is that the law of supply and demand and competition have made 12½ cts. net on whatever he sold for a living price), then he must necessarily charge the producer 25 cts. more per case for his honey.

The net-weight law was designed to protect the consumer; and in a large way it does; but when that consumer buys *comb* honey by count in case lots he should or ought to pay at least 25 cts. more, or, we will say, one cent more per section. When the cost of production is increased, the extra cost is bound to come, sooner or later, upon the consumer. So in this case.

The next question that arises is, "Will the producer charge more for his comb honey?" In our judgment he is certainly entitled to do so, especially this year, when there is quite a marked shortage in the production of clover honey, and a short or light crop of clover has a strong tendency to advance the price of honey, even if there has been a good yield of Western alfalfa and California sage.

COMB HONEY SOLD BY THE CASEFUL BY WEIGHT INSTEAD OF BY COUNT.

In the foregoing we have explained the operation of the net-weight law when comb honey is *sold by count,* or so much a shipping-case, irrespective of the weight of the honey in the shipping-case itself except as it is shown by the minimum net weight on each individual section. The producer can save himself loss when he marks the minimum net weight on each section by selling the whole caseful of sections by weight less the weight of the wood around the sections and the weight of the shipping-case. Let us take a concrete example:

The producer we will say has all his comb honey in 1⅞ by 4¼ square beeway sections. He puts it all in three grades; and each section according to its grade is marked not less than so many ounces. If he sells his honey by count, as already explained, he will have to collect more from the dealer or consumer in order to get as much as he did last year. But this may not be practicable. Here is what a large number of producers are going to do—in fact, we may say the majority, so far as we can ascertain: They will mark the minimum net weight on each section according to its grade, and then sell each case of sections by weight less the tare of sections and shipping-case. If the case holds 24 combs the whole caseful will be weighed; and then the tare, one ounce per section, or 24 ounces plus the tare for the weight of the shipping-case, will be deducted from the gross weight, making a net weight of — pounds. If the dealer, we will say, pays 15 cts. per lb. he will pay the actual net weight of the whole case of honey multiplied by 15. At that rate the producer will get paid for every pound of honey he produces. But it goes without saying, that, because he loses 24 ounces per case over what he formerly received for the price of his honey, he will charge the dealer or consumer enough more to make up the difference. If he got 15 cts. per lb. last year for equally good honey he will multiply 1½ lbs. by 15 and add 23 cts. to the case of honey. The dealer, of course, will charge that up to the consumer, and then some.

When he sells a caseful by *count* he loses all the honey in the sections in excess of 12½ ounces, 11 ounces, or 10 ounces unless he charges enough more to make up the difference, and this may not be practicable in all cases.

The National Net-weight Law; a Flood of Inquiries Concerning it

NOTWITHSTANDING the fact that we thought we had covered every possible contingency concerning the operation of the national net-weight law, questions are still coming in. Many have asked this question:

"Does the net-weight law apply to shipments of honey that are sold locally or within the States?"

Any federal or national law is operative only on interstate business, and in the District of Columbia, or any territory not yet made into a State. As there is no territory within the United States proper that has not been made into a State, the law as we understand it would extend to insular possessions such as Porto Rico, Guam, and the Philippine and Hawaiian Islands.

A small beekeeper may sell his honey at a local grocery without any marking or stamping; but if that grocer ships that honey out of the State, that small beekeeper may be held liable to fine under the net-weight law. Right here is where the shoe pinches, as it practically means that the national net-weight law applies even to local shipments. Naturally enough, one does not care to run up against Uncle Sam. For that reason we advise every one to comply with the law, even on local shipments.

The next question that has been repeatedly asked is whether every individual section in a case is to be marked, showing its exact weight or minimum net weight, if the net weight and tare on the outside of the case are correctly shown. Yes, indeed, it

does not make a particle of difference what the markings are on the outside of the shipping-case. Every section in that case must show either the minimum net weight or the exact net weight, and this must be plainly marked on every section unless such sections are to be put in cartons. In that case the carton itself must show the exact weight of the contents of honey and wax, or the minimum net weight.

Another question that has been asked repeatedly is whether the tare and exact net weight shall show on the shipping-cases. We do not understand that the law applies to shipping-cases. It has direct reference only to packages that go to the consumer As a matter of fact, both dealer and buyer will require the tare and the net weight of the shipping-cases, as heretofore, that is providing the sections are not sold by count; but now the net weight must not include the weight of the sections. When sold in that way every section in the case must be marked "Minimum net weight in blank ounces;" but every section, as we have previously explained, may have *more* than the minimum, but no one of them may have *less*

Another question is whether the word "minimum" can be omitted from the statement "Minimum net weight 12½ ounces," for example. That depends. If the producer is willing to go to the trouble of marking the exact weight in ounces and fractions thereof of *every section,* let that weight be what it may, he can omit the word "minimum." But if the sections are to be sold by count, then the word "minimum" must always be used.

Another question is, whether honey packed and marked in the old way, including the weight of the wood, prior to Sept. 3, 1914, will be misbranded. No, not if the fact can be proven; but it may not be possible in all cases to do this. In that case the producer should comply with the law at once; and he should also make an effort to have his dealer dispose of all goods, not properly marked, before Sept. 3, 1914.

Another question that has been asked over and over again is how we are going to determine the minimum net weight or the exact net weight of every section we sell without making the expense cut deeply into the cost of the honey.

A pair of common postoffice scales for weighing letters, weighing ounces and fractions thereof, up to the limits of one or two pounds, can be secured at a price of about $1.25 or $1.50 from dealers, or from the large mail-order houses. Scales should be selected having a flat platform—not a rounding one.

If the producer is putting up his honey in 4¼ by 1⅞ beeway sections, he should grade his honey in three grades. One grade, the heaviest, should weigh as high as or higher than 12½ ounces; the next grade, more than 11 ounces, and the next more than 10 ounces Three rubber stamps showing these corresponding minimum net weights should be provided. Every section, until one becomes expert in judging, should be tested by the scales. In placing sections on the scales care should be taken not to set them down in such a way that the pointer will dance up and down for a second or two. Lay each section on gently, and the pointer will show the exact weight instantly.

As a suggestion we would recommend marking on the dial, in inks of different colors, the point 12½ ounces, 11 ounces, and 10 ounces, so that the eye can tell without squinting in what class the section belongs. After one becomes expert in sorting or grading sections, it is surprising how accurate he will become in determining weights without the use of the scales. It is also surprising how quickly the scales may be used and thus eliminate entirely the matter of guesswork.

After sections have been classified in three lots they can all be marked with a rubber stamp. For instance, the 12½-ounce stamp with its pad can mark the minimum net weight on every section in a lot by itself. In the same way the 11-ounce stamp can be applied to its grade.

If one chooses to go to the trouble of marking the exact net weight on every section, he will have to use a rubber stamp and fill in the blanks with a pencil in plain figures, after he weighs the section and subtracts one ounce. To mark up his crop, the first thing to do is to stamp every section with a rubber stamp; then, as he weighs every section, put the exact weight in pencil in the space provided. This would seem to entail a great amount of labor that would be prohibitive; and for that reason we are advising every one to use the minimum-weight scheme and sell the sections by count.

We also recommend every one to use cartons and have the minimum net weight printed on the cartons themselves. This will save fussing with rubber stamps. The carton will protect the section, and the honey when shipped in cartons will go through to destination in very much better order. There is no question about that.

Still another question is whether the producer's name and address must be marked on the sections or shipping-cases. We do not so understand it.

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.

JOHN E. ROEBLING asks: "In hiving a swarm on sealed brood, would it be all right to take a hive-body of said brood right off another hive—where it had been placed about ten days previously over excluder—without shaking off adhering bees, or would the swarm be likely to kill said bees?" I should not expect any fighting.

BULLETIN No. 92 of United States Department of Agriculture, by Dr. G. F. White, is one of great interest. It shows that 145.4 degrees F. kills European foul brood; 208.4 kills American foul brood; 136.4 kills sac brood; and 134.6 kills nosema disease. This is with the stipulation that the given degree of heat be maintained continuously for at least 10 minutes. That settles it that bringing diseased honey to the boiling-point, and *keeping* it there for 10 minutes, will kill either of the four miscreants.

THE liquor crowd are fond of telling, as quoted on page 567, what a large number of people would be affected if their business should be killed. I wonder if they realize that the more people engaged in it, and the more grain used in it, the stronger the argument for killing it, and for killing it *now*. According to their way of thinking (or at least talking) if there are but a few thieves and thugs, throttle 'em; but if they are sufficiently numerous, give 'em full play, or at least go no further than to "regulate" 'em.

JOSIE GRAY succeeded last year by returning all brood and bees next day to the swarm, p. 353. It's dollars to doughnuts that the plan will not succeed this year. But you say, Mr. Editor, that if the plan is continued there will be weak colonies from the failing of old queens. Why shouldn't the bees supersede the failing queens, just as they do in my apiary, where every good queen is superseded by the bees? [Bees will supersede failing queens, but the point is, that many are not superseded until the colonies have become so weakened that they are not profitable as honey-producers. For this reason many beekeepers replace all queens when two years old. Now, doctor, we really thought that you did this, or at least that you replaced your failing queens with young and vigorous ones. How about it?—ED.]

A PRIME swarm issues about 3 days before the first virgin leaves her cell, says *British Bee Journal*, p. 214, May 28. The accepted tradition on this side, following Quinby, is that the prime swarm issues about the time the first cell is sealed, or 7 to 8 days before the emergence of the first virgin. I suspect that the bees don't follow either rule, but vary greatly. Certainly that is true of my bees. Up to June 25, 12 colonies have swarmed. As to 8 of them I know that they swarmed from 7 days or less to 12 days or less after the *first* egg was laid in a queen-cell, the average being 9.62 or less. But in every case their first cells were destroyed. If they had not been destroyed, the supposition is that they would have swarmed sooner. As to the time from the laying of the eggs in the second set of cells up to the time of swarming, I can give it for the whole 12 cases. It varied from 2 days or less to 11 days or less, averaging 6 days or less. More data and more exact data are needed on this point.

A CALIFORNIAN asks if I had handled foul brood in Europe and America, and found that foul brood was foul brood in either place, how I would name the other. He has none now unless it be the New York bee disease, for which he asks help. I want to say emphatically that foul brood is not always foul brood in the sense that it is always the same disease. It would be much simpler if "black brood" could have been left as the name of the New York disease, which is now called European foul brood, and "foul brood" had remained the name of the other disease now called American foul brood. The important point is that effective treatment for European foul brood will not do at all for American foul brood.

Here's the treatment for European foul brood that works here as well as any thing I know: First, no matter whether the case be severe or mild, *make the colony strong.* In a severe case, kill the queen; and as soon as the colony recognizes its queenlessness, say within 24 hours, give a ripe queen-cell, or, immediately at the time of killing the queen, give a virgin not more than a day old or a cell in a protector. That's all; the bees will do the rest. In a mild case, *make the colony strong,* and cage the queen in the hive for a week or ten days. Only that. But don't expect the disease to be at once and for ever stamped out. Last year I had the disease in a mild form in about one colony in four; this year in about one in twenty. [This treatment is very simple; but if you had used only vigorous Italian blood instead of part hybrid would you not have been entirely free from the disease by this time?—ED.]

BEEKEEPING IN THE SOUTHWEST

Louis H. Scholl, New Braunfels, Texas.

BEEKEEPERS' FIELD-DAY DEMONSTRATION PICNICS; HAPHAZARD MARKETING.

Experience has proven to me time and time again that the beekeeper who always stays at home, never meets with other beekeepers, and does not even accept one or more bee-journals for a companionship, is not only dragging himself disadvantageously through life but is a detriment to his more progressive fellowmen. Such a beekeeper is hampered in many ways, and blundering along and failing very short of what might otherwise mean at least partial success in the work in which he is engaged. He is a detriment, not only to his fellowmen but to himself. He fails to obtain a just reward for his toils on account of the fact that he is ignorant of the true value of the products that he does succeed in producing under the difficulties that continually confront him. And worse than this is the fact that his acts too often mean great injury to the beekeepers who have taken much pains and care in studying all the factors that go to make a successful honey crop and then disposing of it at a good profit. This should not be. But what is our remedy?

The injury done by these "fellows" is far greater during years of good honey crops. Their output is usually not very large during a season of scarcity. During more favorable seasons these beekeepers have quite an amount of honey to sell, and it is ridiculous how they do sell it. It is this very ridiculousness that means so much harm for the "other fellow." The low price set by these inexperienced beekeepers has torn down many a market, and the beekeepers who have to depend for their bread and butter upon their bees and the honey crop produced have felt it keenly. This is a distinct loss to the beekeepers, and amounts to not only hundreds but thousands of dollars in a single season. Yet we have this class of beekeepers to contend with, and it seems that they are going to stay with us for some time yet at least.

Texas is suffering from the results of such haphazard marketing on the part of those who did not know the proper prices for their products. This always has a disastrous effect on the honey markets of this State, and causes great loss indeed. In addition to this many beekeepers have resorted to price-cutting, and there is nothing that does greater harm to a market upon which the producers depend for an outlet for their products. And this is especially true when a crop is large and everybody is in a hurry to get his products to market, whether it be honey, vegetables, fruits, or any thing else.

Such demoralized conditions are not always caused by a lack of demand. I have seen instances when there was a good demand for honey on the part of the consumer, and yet the buyers did not handle it. This was caused by the instability of prices, one beekeeper offering honey lower than another, so that the buyers were afraid to buy for fear that they might lose in the transaction.

Organization would do much to remedy these matters; but, pray, how far have we succeeded in our efforts to organize the beekeepers of the country? I am aware of the fact that some sections of the country have their organizations and are doing good work; but not every portion of the country is so happily situated as to make it possible to organize the producing forces. This was tried in Texas several years ago, and it failed. The situation does not seem any more encouraging now. Besides, there is a large territory to cover, and the number of beekeepers alluded to above is very largely represented. It would be very difficult indeed to get them into an organization of this kind, or to get them to affiliate themselves with it for the purpose of marketing their little product when they have it for sale.

It is evident that the beekeepers of Texas will eventually devote more of their time and attention toward the matter of disposing of the Texas honey crops more satisfactorily. The matter of better marketing systems is being studied most attentively by all classes of producers at the present time, and both State and the national governments are busily engaged in the discussion of this all-important marketing problem. It is high time that the beekeepers fall right in line of the march that has already been begun, and take hold of it most earnestly. While it is being taken up by other States, our Texas beekeepers have not done a great deal in this direction, and it is hoped that steps will be taken at the earliest opportunity to find remedial measures for a more profitable marketing of our honey crops, especially when we have a large crop.

It is to be hoped that this matter will be taken up at the State Association meetings, not so much for the purpose of forming a selling organization at this time, as it seems

Continued on next page

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

From July, 1912, to March, 1914, I lost 35 colonies, so that I had 70 extra supers for tiering up my strongest colonies to two surplus supers. If I had had the seventy supers on 35 additional colonies, and but one super for any of my colonies, I figure that I should have been the loser by several hundred pounds of honey.

* * *

THE FUTURE OF BEEKEEPING IN THE WEST.

A trip through the Rocky Mountain region gave me an opportunity to study the outlook for the bee industry of the future in that region, along lines of prospective development. There is great promise in the future of the West, and in years to come the opportunities for an extension of this industry will multiply. This development will necessarily come with the development and extension of irrigated areas, and, though slow at first, will in time cover large areas of soil now considered hopelessly desert. Some of the projects to be taken up in the future will be to get water on to vast tracts of rich desert lands. To accomplish this, engineering feats perhaps greater than that of the Panama canal may be executed. The necessity, in years to come, for the development of these great irrigating schemes to make the desert help sustain teeming millions of inhabitants is already apparent. With the advent of water on the desert lands will come the bee, and the development of the beekeeping industry on a greater portion of our desert valley lands. Utah, which has thousands upon thousands of acres of rich lands in its southern part, could, with water, become almost an empire in itself. Much of it is already being settled by a sturdy class who expect in time to secure water from some source by the aid of the government. The source is yet somewhat remote; but that water can be brought from a distance for these fertile tracts I have no doubt; and that it will be in a reasonable time is almost certain. As I have said, with the advent of water to these lands will come the honeybee and the expansion of the industry in the West. One thing that impressed me more than others was the wasteful system of irrigation in Utah and Colorado. Here the water is carried in open dirt ditches through mains and laterals. In the orange districts of California every inch of water is conserved by bringing it from the mountains in cement ditches and cement pipe-distributing systems to the cement distributing-flumes, all of which are watertight. This system will in time be adopted generally in all localities, for the water lost through seepage would be sufficient to enlarge an irrigated area to a considerable extent.

There is said to be undeveloped water power in the West yet in the hands of the government, amounting to 5,000,000 horsepower, to say nothing of the vast amount filed on by individuals that is yet undeveloped. This is sure to be a great factor in developing and distributing water for these desert lands; for with this great amount of power at hand it will be possible to raise water over mountain tops if necessary, and lower it to the valley below. The above may seem to some as not bearing on the bee business; but it will have a great bearing in the far West in time; for with water will come alfalfa, and perhaps other plants may find their way into these cultivated areas that will help swell the honey production. I cannot at least refrain from pointing out that the West is as yet only partially developed. The future will give opportunity for many who are ready to grasp situations as they develop.

There are many places to be found in the Pacific and Rocky Mountain States, where water development is the only thing lacking to make a fertile valley and an opportunity for the beekeeper.

Continued from previous page

that the time for such a movement is not quite ripe, but with the idea of creating an agitation that will eventually lead to something practical in this direction.

In the mean time it is also hoped that more beekeepers may get the spirit of holding the now much-talked-about field-day demonstration meetings that are being held in so many places. I would that these were so frequently held over the entire country that all the beekeepers might be in closer touch with each other, and all those most important things that concern them materially in their chosen vocation upon which they must depend for a livelihood. With such meetings held occasionally in every hamlet, town, and city throughout the country, it would be possible to reach the smaller beekeepers and spread the valuable information among the very class of beekeepers that we have not been able to reach. Let us pull for more of these field-day meetings. I'll make a beginning.

J. E. Crane

SIFTINGS

Middlebury, Vt.

"To my notion," says P. C. Chadwick, page 407, June 1, "pollen is the greatest breeding stimulant of all;" and he is right, if, as he says, there is an abundance of honey in the hive.

* * *

I have wondered if it would not be a good investment for the State to buy and present beekeepers with spectacles. I find a good many who find it very difficult to see foul brood in their hives.

* * *

Dr. Miller says, page 405, June 1, that with him "superseding practically always takes place after swarming is all over." With us superseding takes place at all seasons, even in winter, for we often find a young queen has been reared during the cold months, and therefore is worthless in the spring. I believe swarming is often the result of superseding.

* * *

I found a super on the hive of one beekeeper where each row of sections alternated with an extracting-frame. Now, the interesting thing about it was that the foundation in the extracting-frames had been drawn out and pretty well filled with honey while scarcely any thing had been done in the sections.

* * *

A bran-bag is an excellent thing to bring down bees in. We found a swarm in the top of a pine-tree some thirty feet above the ground. Putting a hoop in the mouth of the bag to hold it open, one of our men went up the tree and shook it into the sack; and, closing the mouth, brought it down with the loss of but few bees.

* * *

So much has been written about curing foul brood by introducing an Italian queen that a word of caution may be of use at this time. I find those who have American foul brood are trying to rid their bees by introducing new queens. Now, while it seems certain that good Italian bees will withstand American foul brood, or will last much longer after contracting it than black bees, yet it is doubtful if they can ever rid themselves of it when once it has been introduced into a hive.

* * *

June 1, page 403, we are told by the editor "where to locate outyards." Any one who has had but little experience along this line would do well to pin this editorial in his hat or put it in some other safe place for reference. What is said of the kind of people to avoid is well worth repeating. "Never locate on the farm of a narrow-minded close-fisted man, and one hard to get along with. . . . A narrow-minded, crusty sort of chap will make no end of trouble." True, every word.

* * *

William Beucus' experience, page 462, June 15, in getting farmers to try sweet clover is certainly interesting. I have been surprised in talking with farmers the present season to find so many favorably disposed to sowing it. I believe its use would add immensely to the value of our dry clay soils if farmers could be persuaded to use it, giving an abundance of feed when other plants with a shallow root system dry up. I wish the Department Bulletin No. 485 could be placed in the hands of every farmer in the land. I should like to distribute 200.

* * *

On page 335, May 1, Mr. T. J. Landrum takes issue with Dr. Miller as to the time from the laying of an egg to the emergence of the mature bee. Now, I am inclined to think both may be right—that under some conditions bees may emerge much sooner than 21 days, and under other conditions it may require more than 21 days. We may learn something from the cosmopolitan hen that birds' eggs do not always hatch at exactly the same time, some of the chicks coming out a day or more ahead of time, while the hatching of others is delayed 24 or more hours behind the average time.

* * * *

It's pretty hard to select or call attention to the best articles in a periodical like GLEANINGS, where there are so many of great value to an enterprising beekeeper; but that one by E. S. Miles in the April 1st issue, "What is a Good Queen?" took my fancy. When one has been keeping bees for fifty years he becomes quick to recognize differences that those of less experience might overlook. Or where one has been inspecting bees for even a few years he may recognize as much difference as in different herds of cattle or flocks of sheep. I have come across some bees that I would not take as a gift, while others remind me of the command, "Thou shalt not covet." To say that we cannot improve our stock is puerile and foolish. To try to do so intelligently is to put dollars in the pocket of any young person who will follow it up, as Dr. Miller reminds us, page 244, April 1.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.

LARGE HIVES AND POPULOUS COLONIES.

"I have been using the eight-frame hive, but do not have the success with it that some of you older ones tell about. Talking with quite a prominent beekeeper not long ago he said this hive is too small, and that I would do better to use a larger one or else two eight-frame hives, one on top of the other. Large hives give rousing colonies, and these yield large crops of honey, minding their own business and not swarming."

Well, I think one can hardly say that successful beekeeping is a matter of adding one, two, three, or even four stories to an eight-frame hive. The question of large colonies depends quite a little on how the bees winter, and the age and vitality of the queen. With a poor queen, or a weak colony in early spring, the adding of an upper story would be worse than useless. It would be far better to confine the bees to the combs they can occupy than to add an upper story, thus utilizing the warmth created by these bees in the upper hive while the brood is in the lower one. I am well aware that the bees can form a cluster around the brood they have, and hold it from perishing, even if all "outdoors" surrounds them; but much more honey will be consumed, and brood-rearing will go on to a greater disadvantage than would be the case had the colony a hive small enough to suit their wants. With a rousing colony and a good queen, a gain in bees can be made by adding an upper story to the hive the bees wintered in just before it becomes full of brood; but if comb honey is wanted, I should consider it advisable to use ten-frame hives; and, when adding another ten-frame hive, to put a queen-excluder between the two, in order to keep the queen in the lower story. It looks as if the beekeeper you talked with believed that in some hidden or mysterious way that extra story added to the numerical strength of the colony. Let us look at this:

To keep eight Langstroth combs full of brood any queen must lay about 2500 eggs daily, continuously. That would mean enough bees to give a heavy swarm about every two weeks. Previous to the height of the clover and basswood season, not one queen in fifty will do that. To keep ten frames full of brood, a continuous daily average of about 3000 eggs must be deposited, which would give a rousing swarm every eleven days. Scarcely one queen in a thousand will do this, previous to the time when such great numbers would be of any value to the beekeeper as a source of comb-honey production, coming as it does at the time of great dearth of nectar between basswood and buckwheat. Probably your beekeeper would tell you that, with these two or three story hives, brood would be found in fifteen or twenty frames. Doubtless this is true; but eight combs solid full of brood in a single hive are of more value to the comb-honey producer than twenty combs having the same amount of brood (but scattered), in which the bees have had a chance to store the larger part of the white honey which should have gone into the sections. Eight frames filled with worker comb will accommodate the best of queens, and enable them to have *every* cell for egg-laying. An eight-frame hive will not give her such use.

When the queen has brood to the amount of seven combs full in this ten-frame hive, put on a queen-excluder, and on top of that put another hive containing ten other frames filled with worker comb. You will in this way retard swarming till the nectar from clover is at its best. Then by putting the upper hive in place of the lower one with two section-supers on top, and by shaking the queen and all of the bees off their brood and out of the hive they wintered in, you will have the maximum number of bees in shape to give the best possible yield of section honey from clover and basswood, as the clover honey which has so far been stored in the upper hive will now be carried into the sections to give the queen place for her eggs. This honey, together with the nectar coming from the fields, will fill the sections as by magic if the nectar continues. But lest any one is led to think that all he needs to do is to "hold the dish and catch the porridge" in the manner above given, allow me to say that, up to the time of this writing, July 23, no "porridge" has come into any dish from either clover or basswood at the Doolittle and Clark apiaries, on account of an almost total failure of bloom from either, so that our only hope now is from buckwheat. Should this fail us, the bees will have to be fed for their winter supply.

Up to the year 1914 I have always classed 1869 as the poorest year for bees that I ever knew; but 1914 must, in the future, be the poorest for white honey, as 1869 gave 25 lbs. of white "box" honey from two old colonies in the spring. We had the maximum number of bees all right, and in good time; but with no bloom to provide any nectar, efforts count for naught.

GENERAL CORRESPONDENCE

COMB-BUILDING; SOME INTERESTING EXPERIMENTS WITH FOUNDATION FROM COLORED WAX

CONDENSED TRANSLATION BY J. A. HEBERLE, B. S.

Some fifteen years ago Editor Bohm began experiments with colored foundation. He used non-poisonous aniline dyes (red, yellow, green, and black), which he mixed thoroughly in the liquid wax. For white foundation he used bleached wax. All the foundation by this and other experimenters was made with the Rietsche foundation-press, not with foundation-mills. Such foundation is somewhat heavier, as it needs more wax. Bohm made comparatively thin sheets, and some of double the weight for the same size. Variously colored strips of foundation were neatly fitted together and put in a frame. This frame was the last one put in the brood-chamber, and after it the window. (The hives in Germany, even those which can be operated from above by taking the cover off, have a door opposite the entrance. To make a large hive—*i. e.*, a large brood-chamber—suit a small colony, a frame with window glass is used as a division-board, called "window" for short.) This enabled the experimenter, by just removing or opening the door, to observe the bees while drawing out the comb without disturbing them. The frame was given as the last one, because in that place the queen was less likely to deposit eggs in it. The bees accepted the foundation willingly.

Bohm summarized the results as follows: The bees gnawed off some of the wax from the heavy (thick) foundation, and used the wax thus obtained to draw out or lengthen the cells.

The differently colored strips of foundation enabled him to observe that the bees while building cells (drawing out the comb) do not remain stationary, but move while working to both sides, right and left, as shown by the colored streaks in the center where the bleached strip was used.

By the use of the thin foundation he found that the surplus wax was sufficient for only about half of the depth of the cells. These were finished with white wax that the bees produced themselves. He concludes from his experiments that heavy (thick) foundation for the brood-chamber is preferable, and asserts that *the bees produce wax themselves only when that furnished with the foundation is not sufficient in quantity.*

The experiments, Bohm asserts, proved that the bees are smart "critters," and are masters in adapting themselves to present conditions.

To see how far bees move while drawing out combs, the following experiment was made. A sheet of very thin tin was fitted into a frame. The tin was made very warm, and on one side three strips of foundation —red, black, and green, and on the other side a sheet of bleached foundation was laid. The warm tin caused some wax to melt, and made the foundation adhere firmly.

It was found that the bees, if not disturbed, did not, while building, go from one side of the comb to the other; that they moved only short distances, and confined their moving to the side of the comb they were at work on. If disturbed, the bees carry wax particles in their mandibles considerable distances. Bohm further asserts: "If brood is allowed in these colored combs the cappings will be of the same color, because the bees take the wax for the capping always from the wax of the brood-comb. Each finished comb shows on the outer cell border a thickening of the cell-edge, to strengthen them. The rims are somewhat T shaped. This strengthening or protecting edge becomes superfluous when the cells are capped, and this surplus wax is used in capping the cells. This material alone is insufficient. There is still another source of wax for capping brood. The continued pressure which is exerted on brood-combs from all directions on the wall of the cells at a comparatively high temperature causes the wax of the cell-walls to move gradually from the center of the comb toward the outer edge (rim), and is also used by the bees to cap the brood. (Bohm adds that in capping honey the process is somewhat modified.) The wax from the walls of the cells is gradually replaced by the cocoons. That explains why old brood-combs when melted give so much less wax than those in which brood has not been reared often. [Old combs might give less wax because the many cocoons become saturated with wax when the combs are melted, and it is difficult to remove the last trace of it from the cocoons.—J. A. H.]

If bees have to rear brood in old comb in which the wax of the cell-walls has been replaced by cocoons, the capping becomes whiter in color because the bees have to

produce wax for the capping to make up for the deficiency.

The bees and drones must gnaw through the capping themselves before they can emerge. The parts of the cappings that fall off on to the bottom-board are carried out of the hive. The parts remaining on the cells are used for repairing them, and to replace the T-shaped rims on the edge of the cells, spoken of before, to strengthen the cells. Any excess of wax material that remains after the repairs are finished is collected and kept for future use in queen-cups similar in form that sometimes reach the size of a hazelnut.

Mr. Aisch made numerous experiments, and, like those of Editor Bohm, they were published in various journals. He experimented extensively to find suitable colors. The colors should be insoluble in wax, otherwise the demarcation line is blurred, and deductions from observations may be inaccurate. He found that with some colors soluble in wax the young nursing bees died of poison; further, the wax soluble colors showed only when dark-colored wax became mixed with such of a bright color. By using wax in soluble colors the bright-colored wax could be seen in the dark-colored wax combs.

After three years of experimenting with various colors, vermilion (cinnabar) was found to be the most suitable of all pigments tried.

The most satisfactory experiment was with a piece of red foundation about 3 in. square. It was rapidly drawn out and finished with virgin wax which the bees produced themselves. Only very few small particles were carried to the right and left side, but quite an amount was carried downward. The most of these downward-carried particles of colored wax were used for the lower walls of the cells. These particles fell down; and, while building, the bees used it either by chance or on purpose.

An experiment with blue-colored Carnauba wax (a wax of vegetable origin) favors the hypothesis that it was an accidental use of the red wax in the above experiment. A frame with ordinary foundation received in the center a piece of foundation made of Carnauba wax colored with aniline blue soluble in alcohol. The ordinary wax foundation had been drawn out a little when the bees began to gnaw on the blue Carnauba foundation. Many particles of this blue Carnauba wax fell down into the partly drawn-out cells, and were used in drawing the cells out further. Mr. Aisch concludes that the blue particles below the blue-colored Carnauba wax were not carried down by the bees, but while gnawing off the superfluous parts they fell off and lodged on the partly drawn-out cells, and were thus accidentally used.

In another experiment a frame with red-colored wax and a frame with yellow foundation was used. On the lower part of the frame, with the yellow foundation, a small dish with small red-colored particles of wax, and with the frame of red foundation, a dish with small particles of yellow wax was used. Most of the wax was carried out of the hive. The particles of wax were too coarse. The experimenter recommends using very finely divided wax, and moistening it with honey. A small part of the wax from the dishes was used by the bees. The bees were then given moist honey cappings in the dishes, and they accepted them readily, using it to draw out combs. The bees gnaw wax off the midrib from foundation, because they need a very thin cell-bottom. They accept and use wax wherever they can get it.

To show *that bees want a thin cell-bottom*, foundation from ceresin, from Carnauba wax, from paraffin, and from beeswax in equal parts, were given. Some colonies gnawed off the pure ceresin, and the pure Carnauba wax foundation, and built drone-cells in their stead. Others accepted them. It was plainly shown that they tried to make the bottom of the cells (midrib) thinner, but only in rare instances were successful. Finally they built upon the heavy midrib cells out of their own wax.

Rev. Mr. Aisch does not agree with Editor Bohm that the bees build or make the edge of the cell stronger with a T-shaped rim. He holds that the finished cells have these reinforced edges only when there is a surplus of wax present; further, that the bees carry wax from honey cappings, not only from the entrance, but even when given in a dish in front of the hive, and that they gather and store it.

To see what bees would do with ceresin and mixtures of it and beeswax a piece of foundation of white ceresin was put in red-colored foundation. The bees drew out the colored foundation. The ceresin on one side showed mere traces of red wax. The other side was very slowly built, the bees using much red wax. Wax with 50 per cent of ceresin was colored red, and a piece of foundation from it put into a frame of foundation of bleached wax. The red-colored mixture was drawn out, but not as readily as pure wax. It was noticed that the bees liked to use the colored wax to glue and paste up all kinds of fissures, cracks, and crevices Did the bees suspect the wax or surmise a fraud? Inspector Hofmann, Munich, has

also begun experimenting in the same line. The experiments will be continued in the spring. When the results are published I shall probably report the results to the readers of GLEANINGS.

Markt Oberdorf, Bavaria, Germany.

THE NET-WEIGHT LAW

BY T. K. MASSIE

It may be remembered by the older readers of the bee-journals that for years past I have seriously objected to the use of light-weight sections, refusing to use them at all myself. It has always looked to me too much like taking the advantage of our customers to sell them a 12, 13, or 14 ounce section when the customers were thinking that they were getting a pound of honey for the price charged. I believed then, and do now, that such practice is an offense in the sight of God. I believed that he would use the works of man to punish those who followed that practice.

For several years I have used the 4¼ x 5 x1⅜ plain section, it being the nearest to the full pound section of any on the market. Now that we have to readjust ourselves on this matter, why not adopt a section with sufficient cubic capacity to hold a pound of honey? In localities like mine, where it is necessary to have the honey ripened up rapidly, a comb 1⅜ inches thick suits better than a thicker one. My latest experiments prove that, with honey produced in sections 1⅜ thick, it requires about 21 square inches of the comb honey to weigh 16 ounces. Making no allowance for the thickness of the sections nor the bee-spaces, the 4¼ x 5 x 1⅜ gives us 29 cubic inches. The 4¼ x 4¼x1½ sections give 27 cubic inches. Now, if we had a section 3¼ x 6½ x 1⅜ it would

Charles Y. Hake's new hives all ready for the bees, and a couple of old earthenware hives.

Earthenware hive 45 years old.

weigh, when thoroughly filled with honey of good body, 17 ounces gross, or one pound of honey net. Then why not adopt such a section? The *only* valid argument against the adoption of such a section is that it would require a little more wood to make it than it would to make a square one. But it would require no more wood to make this size of section plain than it does to make the square beeway sections. Then we should have the advantage that this size of section holds a pound when the others do not. It would take less wood to make this size of section than it would any of the beeway sections.

In this connection the article by Clark W. Wilson, page 515, July 1, one among the most practical articles which has appeared in GLEANINGS for some time, will apply. His sections are held in wide frames, the only practical way of using sections with two fence separators at each outside row. With 3¼ x 6½ sections, fellows who have learned the advantages of a divisible-brood-chamber hive could use the supers and brood-chambers interchangeably—could use the one for the other at will. The wide frames could also be used for the production of "chunk" honey or for extracting-frames.

All know that the natural inclination of a colony of bees is to work in the shape of a globe. But it seems to be impossible to produce a globular form of hive that would be practical. Then the next nearest figure to a globe is a cube. With all the arrangements suggested above we could have a hive cubical in form, combs 31 inches deep, 13 long, and about the same in width, and sections of full one-pound weight without extra trouble.

Hatcher, W. V.

[Under the new net-weight law it will be necessary to show the exact weight in ounces or minimum weight on every section of honey. The time has come when we should forget all about pounds. Practically all the sections on the market for years back have held a scant pound. In other words, a pound section has been a misnomer. There would be no advantage in using a larger section, for it is just as legitimate and just as "honest in the sight of God" to sell 12 or 13 ounces of honey as 16 or 17 ounces. The 4¼ x 5 x 1⅜ section that you recommend would not hold a pound under the new net-weight law.

In view of the fact that thousands and thousands of beekeepers have regular standard equipments for holding sections on the hive while being filled, it is impracticable and expensive to make any change; and so long as the weight shows in ounces no one can be deceived.—ED.]

SOME EARTHENWARE HIVES 45 YEARS OLD

BY CHAS. Y. HAKE

I have just finished painting and getting ready for making increase when the weather will permit to do so. I have arranged twenty ten-frame hives (all empty) with two of my old-fashioned earthenware hives for a photograph. The bell-shaped hive is about 45 years old. You will notice the crack in the lid resembling the "Liberty Bell."

METAL COVERS WITH A PITCH TO SHED THE WATER.

You will also notice that the regular hive-covers I am using on these hives are somewhat different from the regular metal-covered tops. These taper each way from the peak in the center, and will allow the water to drain off instead of lying on top in little

pools. I have them covered with No. 27 galvanized steel, and they cost me approximately 46½ cts. apiece (not painted) in the flat; also a hole at the top for ventilation. I consider this the best and most serviceable cover made, although I have not given it a thorough test.

York, Pa.

A MISSIONARY WHO WAS OBLIGED TO RESORT TO BEEKEEPING TO MAKE A LIVING

BY THEODORE LEE

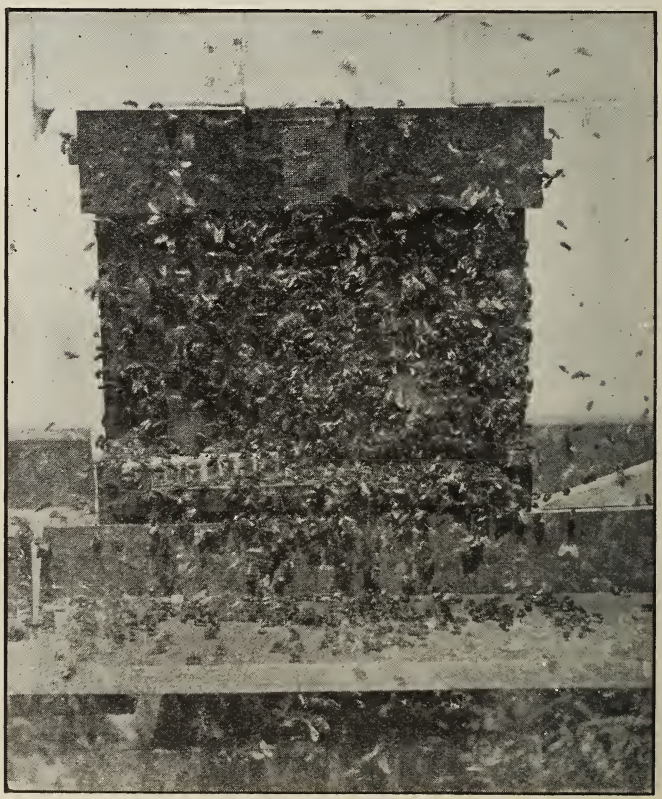
I am a missionary in Utah, and wishing to keep my boys busy during the summer months, and (later) aid them in securing a college education, I took up beekeeping as a side issue. The beginning was a colony of bees, the gift of a beekeeper. They were wintered in a cellar, came out boiling over with bees, and the beekeeper divided them for me. Another colony was purchased, but through lack of knowledge, and an accident, all were lost the following spring.

The next year (1906) thirteen colonies were bought in box hives from almost as many different persons. I studied and practiced beekeeping that summer. By fall all the colonies were hived in Acme hives, and I had sold $107 worth of honey.

In 1907 more bees were bought, and a few were leased, making a total of 50. That was a great year for honey. Six hundred dollars' worth of honey was sold, the colonies netting $8.00 each. Then I leased 120 colonies of my beekeeper friend, and I purchased some more, making a total of 200. The leased bees, which had been shipped from California, made the best showing, and I sold $1524.40 worth of honey.

The next year the honey crop was a failure. That was not my only misfortune, for I found myself without a salary, and, like an old horse (I was nearing sixty) I was turned out to hustle for a living. I leased more bees, and that year loaded 606 cases in a car for Fish & Co., of Chicago, and received a check for $1608. My beekeeping friend now leased me a carload of bees, shipping them in from southern California in the spring of 1912. The California bees again did the best, and I received a check for $2207.10 for 854 cases of honey.

Last year (1913) was not as good a honey year as the previous one, but I harvested 830 cases, and received for my crop $2126.30. As my crop failure and loss of salary came the same year I had to mortgage my home in order to live. I am trying to redeem the place. As a side issue to the bees I am now doing a small dairy business. I milk three Jersey cows, and deliver on an



A swarm caught in the act of leaving.
Photographed by CHAS. Y. HAKE, York, Pa.

Harris' concrete hive-stand and bottom-board.

average thirty quarts of milk per day. My twin boys have been helping during the summers and attending school during winter. They with one sister are now attending Stanford University. I lack one milestone of being sixty. I am leading a strenuous life, but a happy one—too busy for the blues. The outdoor life has brought me renewed health, and I hope the bees and the cows will yet save the day.

Later, July 20.—The twin boys returned from Stanford in May. The season so far has been a busy one, and the most discouraging one of my experience. I have been obliged to move both of my apiaries. To safeguard against further moves I have bought 3½ acres of land which includes an acre of Elberta peach-trees, 150 in number. I am counting on about 400 bushels of peaches. I have now bought the bees, and they are in two yards. I fed them up to July 12. Besides a lot of unfinished sections, they have consumed nearly two tons of sugar at a cost of $200. I have fed less than the average, but have kept up the feed longer than some. A neighbor beekeeper has fed $1000 worth to less than 300 more colonies. I have leased 150 more colonies on the owner's land. The boys and I are just now putting on the first supers. They will all be on in a few days. This season may be my Waterloo in beekeeping, but I am not without hope. The alfalfa weevil took the first crop; but the second crop is beginning to bloom, and is in all stages of growth; so, with the help of sweet clover, we may have a continuous flow till the frost puts a period to our labors.

Spanish Fork, Utah.

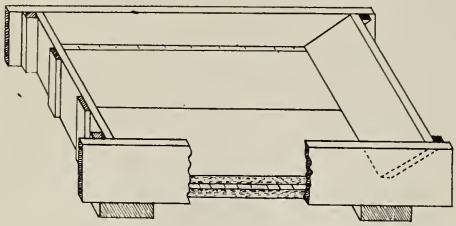
A REINFORCED CONCRETE HIVE-BOTTOM

BY E. A. HARRIS

The accompanying photograph shows a hive-bottom made of concrete reinforced with wire. It is a stand for the man who has a permanent apiary and winters outside. It is simple, cheap, weather-proof, and lasting. Compared with other concrete stands it is light. Unlike others it is a complete bottom as well as a stand. It is a plain two-inch slab of concrete with a sloping front for an alighting-board, and a rim on the two sides and back. This stand is made in a wooden mold. The bottom of the mold is made by nailing pine boards together with cleats. The sides are four cleated pieces. The whole is fastened together by putting a strip with a block nailed on each end across the top and over the sides. The drawings show every thing but the clamp much more clearly than a mere description.

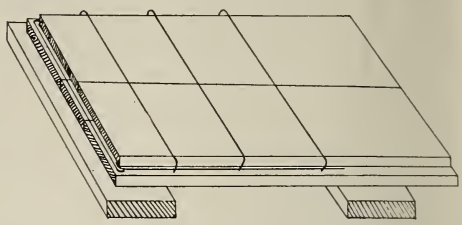
In making a bottom the box-like mold is put together, and three of the reinforcing wires are laid around the edge in what is to be the rim with just a little bit of cement under them to hold them up just high

enough to be in the center of the finished rim. A part of the wet concrete is now packed in. Then the other wires are laid across the bottom of the mold as shown in drawing, and the rest of the wet mixture tamped in. Two inches or two and a half is enough. A handle as shown in the photo-



graph is tamped on each side, and the mold is allowed to rest for a day, when the concrete will have set enough for the newly made stand to be taken out. It should be handled carefully, and dampened every day or so for a week, like any other concrete block, to cure it. The rims will not crack off, because of the way in which the reinforcing wires are placed. The ends of the cross-wires should be carefully bent and pushed down in the rim.

In practice it is best to have five or six molds and make up this many bottoms every day or two until the required number is



obtained. I have had quite a number of these bottoms for three or four years. They have given excellent service, and are now as good as if not better than they were at the time they were made. The material costs about 15 cts. each.

University, Ala.

SOME EXPERIENCES OF AN AMATEUR BEEKEEPER

Confining the Queen Below on One Frame of Brood

BY W. A. DUNTON, M. D.

Last spring when the hives were full to overflowing with bees I placed the queen on one frame of brood and seven frames with narrow starters below, putting all the rest of the brood in a super with a queen-excluder between. Nearly all the bees went above with the brood, only about a handful remaining below with the queen. In some of the hives there was a small space at the side of the excluder caused by the upper edges of the hive warping outward. In these hives the queen invariably went up with the brood. In other hives I left four frames of brood below. In all of these the queen stayed below when there was an excluder; but when there was no excluder they nearly always went into the super, because it is warmer there. Queen-cells were started at once when the queen was confined below, but most of those cells I destroyed before they hatched. Where the cells were not destroyed, the queens that hatched from them were killed by the bees when they were two or three days old. Some of the queens so left below on one frame of brood got disgusted and swarmed out with a handful of bees.

Some of the brood so placed above early in the season chilled to death during the cold California nights because too many of the bees clustered below with the queen. About the first of May, when the bees were very strong, and there was danger of swarming, I placed four frames of brood above and four below, alternating with frames having narrow starters, but having no excluders. In these hives all the brood was well cared for, swarming was prevented and while the brood was hatching they worked on all the combs equally, but the queen went above in nearly all hives so treated. In some hives the queen stayed below, the bees building new combs in the empty frames and neglecting the empty frames placed in the super. In the hives where the queen went above, the lower empties were neglected; and if the honey-flow was not good, in some cases they partly destroyed the drawn-out comb in the lower hive, gnawing it thin in places. These were always white combs, none of the old black combs being so gnawed. When the honey-flow was good, and the queen laying in the super, the lower drawn combs were in some hives filled with honey contrary to the usual custom, which is to place all stores above. Some active queens kept all the combs above and below filled completely full of eggs in all cells not containing honey. When the queen is below, the new comb is

made worker size; and when she is above, the worker comb is built in that compartment.

KILLING DRONES.

For the satisfaction of those who think that workers will not kill drones, let them try the following experiment: Fill a super with capped drone brood over a strong colony with a queen-excluder. The result is one of the most tragic in all the life-history of bees. When the cover is raised a few days later, the first thing noticed is the deep baritone hum of several thousands of drones, expressing fear and agony. The second thing to be observed is the presence of several thousand workers running about, buzzing angrily, some tugging at dead drones, others at living ones, all with the same ob ject in view—the removal of the drones.

Raising the super you will find on top of the queen-excluder probably two handfuls of dead drones in every imaginable state of mutilation, the favorite form being decapitation. You will see rows of heads lying upon the slots of the excluder which they cannot quite pass through.

If the drones were starving or dying of old age the great mortality could be explained otherwise; but it is plainly a slaughter of the defenseless drones—not a quick merciful death by stinging, but by being literally pulled apart limb by limb until they are in pieces small enough to eject from the hive, because there is plenty of honey in the hive, a flow of nectar, and a good force of bees to gather it. Moreover, the drones are all young and vigorous.

A BETTER WAY TO DISPOSE OF DRONE COMB

Place a superful of drone brood over a colony with a young queen, without an excluder. The young vigorous queen will not lay any eggs in the drone-cells; so in 25 days they will be all emptied of brood, cleaned out, and probably with many cells full of honey. They can afterward be used as extracting-combs.

HOW TO FILL ALL BROOD-CHAMBERS WITH WORKER-COMB.

Give your bees plenty of empty frames with half-inch starters. All worker comb is to be placed in the brood-chambers, and all drone comb to be placed in supers. The drone-cells are just as good as worker for extracting combs. By this plan it is not necessary to use full sheets of foundation, as plenty of worker comb will be made at all times. When, as frequently happens, one half is worker and half drone comb, place above. Life is too short to cut out drone comb from a frame or to tie worker comb in. If the honey-flow is good the bees will probably complete a cut comb with drone-cells.

THE BEST WAY TO MAKE INCREASE.

Shake off all bees from four combs excepting the young ones. Place these combs in an empty hive without a super. Turn the old hive at right angles, and place the hive containing the four combs in its place. The workers come back and fill the hive; and, finding no queen, go to work almost immediately to make several. There is such a mighty force of bees on a few combs that ideal conditions exist, and the result is some of the fattest and best queen-cells I have ever seen.

In seven days I move the four combs to a new location, cut out all queen-cells but two, and give the rest to new nuclei. The old hive is turned back into its old position, most of the old workers come home, find their mother, and live happily ever after.

Los Angeles, Cal.

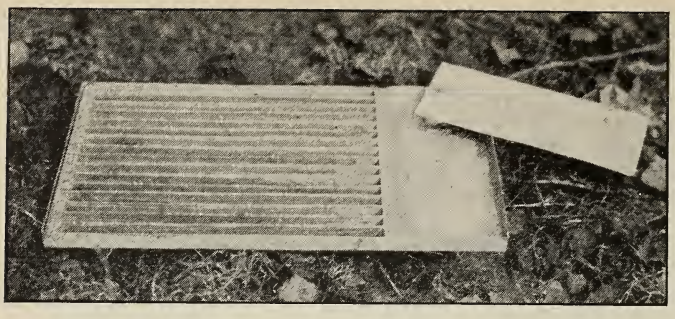
A BOTTOM-BOARD FEEDER

BY JAY SMITH

In the Feb. 15th issue of 1913 I described a feeder which I had built into the back part of the bottom-board. Feed was poured into it through a little door in the back. After using this feeder another year, I find it fills the bill very nicely, yet it has two little defects that I have overcome in another model which is illustrated by the accompanying engraving.

Some of the feeders on the market are good for stimulative purposes; others are good for fall feeding. None are exactly satisfactory for both. My built-in feeder did not hold enough for fall feeding; and if the bottom-board was not reversed in winter it would become clogged with dead bees.

The new feeder I used the past season, and find it fills the bill nicely for any kind of feeding, and can be put into the hive in a jiffy without disturbing the bees. Being made of a good quality of galvanized iron, it will not leak; and, if taken care of, it should last a lifetime. It is made in the form of a shallow tray with small slats in it, so that the bees will not drown. It is shallow enough so that it can be shoved into the entrance of any hive having a 7/8-inch opening. It is then raised up and a wedge-



Jay Smith's feeder designed to slip into the entrance under the combs. It is not as wide as it looks, for it does not extend over the full width of hive.

shaped piece of wood forced under it which makes it solid as well as bee-tight, and also brings it up level, as all hives should be slightly tilted forward. It is fitted with a screen so that the bees cannot fly out while being fed.

It will hold from four to five pounds of honey or thick syrup which, I believe, is as much as bees should be given at once for fall feeding. If given more it will cool before they can take it all; and if the weather is cold they will not take it cold. It also contracts the entrance, which is necessary in cold weather, and this feature prevents robbing.

To feed, all that is necessary is to swing back the cover and pour in the feed. One hundred colonies can be fed in fifteen or twenty minutes if each hive has a feeder. When not in use it can be placed in the honey-house. A large number can be put in a small place, as they occupy little room.

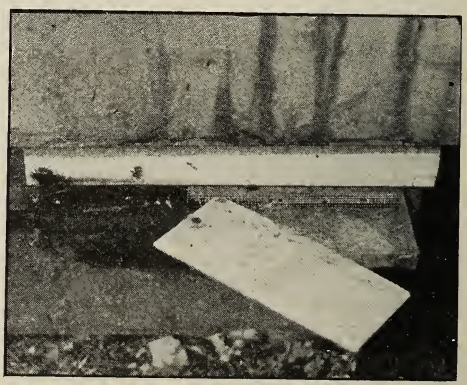
Last year while feeding in cool weather I noticed that the bees would take feed from this feeder when they would not take it any other way—not even from my original feeder built in the bottom-board. The reason, I believe, was because the entrance was contracted by the feeder, keeping the bees as well as the feed warm.

It is not my intention to "knock" on any feeder; but as improvement is what we are all striving for, I do not believe any one will object if I make a few comparisons. The Boardman feeder I have used in a small way for eight years. It will incite robbers if the colony is not strong. Bees will not take feed from it in cool weather. I have had colonies refuse to take feed from it in May. On cool nights the syrup cools and contracts and takes in air. Then in the morning a lot will leak out, making a mussy mess, wasting the feed and inviting robbers. The Boardman, of course, is not good for fall feeding, and was not intended for such. Furthermore, it is too slow. With my feeder I can feed ten in the time it would take me to feed one with the Boardman.

The Alexander feeder, I think, is the only one approaching the metal feeder described above. The two serious objections to the Alexander are that it takes so long to fit it to the hive, and it is too small for fall feeding Another fault with all feeders is, they are made of wood. No matter how much you wax them, when laid away they will shrink and leak. The result is that it takes so much time to get ready to feed that the busy man cannot do it.

I notice that more and more beekeepers are coming to believe that slow feeding to stimulate the queen does not pay; that if there are plenty of stores in the hive the colony will be just as strong. I believe this is right if other factors besides plenty of stores did not enter in. Bees should have plenty of stores to winter on, plenty of stores to build up on in the spring, and plenty of room for the queen to lay. This would take a very large hive—too large for successful wintering, and too large to keep the bees warm during brood-rearing in the spring.

So the solution for those using the regular eight or ten frame hive is to feed in the fall, and then, after brood-rearing is well on the way in the spring, to feed about a pint of good warm syrup every day till the hive is filled with brood. I have tried giving it slowly as with the Boardman, and giving it to them so they can get it all in about ten minutes, and I can see no difference as to results. When given so they can get the whole pint at once, they store it into the



The front of one of Jay Smith's hives, showing the feeder in position.

comb and then take it out again and work it over till it is thick. During this process the queen is fed just as well as she would be if the bees got it a drop at a time.

Many will say that I should have the colonies fed up before it is cold weather. That depends on the locality. Here the bees work on fall flowers till after frost. Then the supers are taken off, and perhaps then the weather turns cold when the bees should be fed.

I was caught this way two years ago. There were lots of flowers in the field. It rained so the bees could not get at them. Later it turned cold, and I had only a few feeders. I got some bakepans and filled them with warm syrup and put them in the supers. The bees would take only a little while it was warm. The result was that the colonies went into winter quarters short of stores, and I lost most of them during the winter. If I had had enough of the present feeders I could have saved every colony.

Vincennes, Ind.

A WHOLE APIARY GONE MAD WITH WHOLESALE ROBBING

BY CARY W. REES

One morning, about a year ago, I was at the home of a neighbor, Mr. Luther Wolfe. We were standing about fifteen steps from one of his apiaries when we thought we saw one of the colonies swarming. It was the first one in the row next to us, and a strong colony. When we went near we saw it was being robbed instead of swarming. There were about thirty colonies in the yard, all strong, and, with perhaps one or two exceptions, well filled with honey. They were in two rows, from three to five feet apart.

Immediately we commenced to break off small limbs with green leaves on them and cover the entrance and front of the hive that was being robbed. The robbers then attacked the next hive, and we covered the front of that the same way. Then they attacked the next hive; and so on down the row they rushed from one hive to another, and spread almost at once over the apiary. In a very few minutes every hive in the yard was robbing or being robbed, the like of which I never saw before.

It appeared as though the contents of each hive were free to all, and that every colony was determined to take all the honey its neighbor had; and the neigbhbor was so busy getting honey from some other colony that they did not appear to know that their own honey was being taken. I had an apiary of 160 colonies about a quarter of a mile away. Some of these bees, although they had water near by, were coming to a pool that was within fifteen steps of these bees, and flew almost directly over them as they came to and from this water. At first none of my bees seemed to be engaged in the robbing; but after a bit we could see that some of them were at it too.

It then appeared that we were helpless,

Covering every hive in an apiary with hay in a frantic effort to stop wholesale robbing.

Mr. Jacobsen's apiary on Little River. Mr. Jacobsen and Mr. James Allen in the apiary.

and that the apiary would be entirely destroyed. Mr. Wolfe had men stacking hay about fifty yards away. We ran to the stack and carried armfuls of hay and covered the entrances to many of the hives. We also had Mrs. Wolfe and nearly all the children carrying water, but we could not get the hay from the stack fast enough. Fortunately a part of the next load of hay for the stack fell off the wagon close by. The driver did not stay to reload it, but hurried away. With plenty of hay near by, so we could nearly cover the hives with it, and plenty of water on the spot, and a good spray-pump, we got the bees quiet at last. For some time we had feared that my bees would carry all the honey in the apiary away.

The next day we contracted all the entrances to the hives to a small space, and watched them closely all day; and when any robbing commenced we showered them with water from the spray-pump, and in this way had no more trouble. It afterward appeared that there was not much damage done.

Pearsall, Texas.

[One who has not had the experience can scarcely realize the seriousness of a bad case of robbing. Almost always, in an instance of this kind, the bees are started in some way as by exposed honey or by the combination of a weak colony with lots of stores and a large entrance. During a honey dearth look out.—ED.]

ANOTHER NEW ZEALAND FIELD DAY

BY E. G. WARD

One of the most successful field days of the Canterbury Beekeepers' Association was held on Saturday, at the apiary of the vice-president, Mr. C. A. Jacobsen, Little River. The members and their friends left the Square at 8:30, and arrived at Little River about 11 A.M., being welcomed by Mr. Jacobsen.

The president, Mr. E. G. Ward, apologized for the absence of Mr. T. W. Kirk, who found it impossible to be present, and introduced Mr. James Allen, president of the National Association, and Mr. L. Bowman, Apiary Inspector of the Canterbury Province, and expressed pleasure at the attendance.

A general introduction then took place, and lunch was partaken of. The weather was ideal, and the time was profitably spent in demonstrating, and addresses by Mr. Allen, the president, and the host.

Mr. A. Ireland spoke on the advantage of co-operation. He referred to what had been done some two years back to interest beekeepers in the matter, and said that the present time was opportune to push on with the scheme. He thought that honey could and ought to be put up in small quantities by the producers, who should form a company for that purpose and supply the shopkeepers, who really did not care to handle the product themselves. By this means the

beekeepers would reap a substantial benefit. Bee material could be handled by the company also, as dealers are not so well acquainted with the wants of beekeepers as they are themselves. Mr. Jacobsen then gave a valuable demonstration on queen-rearing, and showed how this was done. He exhibited queen-cells in various stages of development, and gave many valuable hints to those present.

Mr. L. Bowman gave an address, "Pollen and its Uses in Brood-rearing." He went exhaustively into the matter, and showed what a necessary element the honeybee is in the fertilization of flowers, while at the same time giving the human race such a valuable food in the honey gathered. He also enlarged on the necessity of having good queens, and supplemented the remarks of Mr. Jacobsen. He thought that the black bee had been neglected, and too much made of the Italian.

E. G. Ward and three of his best colonies. No. 12, 188 lbs., and reared 25 queens; No. 24, 197 lbs., and reared 12 queens; No. 2, 146 lbs. The six best colonies stored 223, 197, 196, 188, 171, and 146 pounds respectively. Another picture of Mr. Ward's apiary appears on the cover for this issue.

Mr. Jacobsen took the members round his apiary, and explained fully his methods of working, illustrating his remarks in a practical manner.

Tea was then partaken of, and after the usual farewell speeches and votes of thanks to the host and hostess, the party left for home.

ANNUAL CONFERENCE OF NEW ZEALAND BEE-KEEPERS.

The most important annual conference of New Zealand beekeepers yet held was concluded in Wellington on June 19 after a three-days' sitting. The conference was under the auspices of the National Beekeepers' Association of New Zealand, which was formed last year. About 50 beekeepers were present from all parts of the Dominion, and the proceedings were of an important and interesting nature. Up till the conference just ended, the industry has been in a more or less disorganized state, but it will now be possible for all existing associations to join with the National on equitable terms, as a constitution has been adopted which should meet the needs of individuals as well as those associations which have not up to the present been attached to the National. The National is designed to embrace all the beekeepers of the Dominion, whereas the smaller associations were only of local importance. One strong organization will have tremendous weight compared with a number of small associations. A sliding scale of fees has been adopted which will insure for the affiliated associations sufficient funds to be of good service locally, and still contribute a substantial sum to the National funds.

The conference was opened by the Hon. R. H. Rhodes, postmaster-general. He apol-

Members of the Canterbury Beekeepers' Association at the field meeting held at Mr. Jacobsen's apiary. Front row, reading from left to right, Miss Mackay, Sec. C. B. A.; Mr. James Allan, President N. Z. B. A.; E. G. Ward, President C. B. A.; Mr. R. McKnight, Sec. Christchurch Branch C. B. A.

ogized for the absence of the Premier, the Hon. W. F. Massey, Minister of Agriculture, who was out of town, and promised for Mr. Massey a sympathetic consideration of any requests that might be laid before him.

The annual report stated that the membership is now 256, and it was anticipated that this would be doubled during the coming year. One of last year's activities was to have been a systematic scheme of advertising honey; but on account of lack of funds it had been found impossible to do any thing in this direction. The balance-sheet showed a small debit balance.

Three sessions were held daily. The evening sessions were given up to bee subjects only, and several interesting and instructive papers were read and demonstrations given. Mr. J. S. Cottrell's paper on how to secure an increase of 100 per cent in the crop without increasing the number of colonies was especially good. He dwelt on the importance of having young queens, and suggested the establishment of a queen-rearing apiary under government control in the Cook Islands, where conditions are ideal for the purpose. At a later stage a deputation waited on the Hon. R. H. Rhodes, and laid the views of the conference before him. A very sympathetic hearing was given, and there seems to be every hope that the recommendations will be adopted in the near future.

An address by Mr. F. C. Baines on feeders and capping-melters was also particularly good. He showed a modification of the Severn capping-melter, which particularly took the fancy of those present. He showed how to finish up the day's work with cappings all melted and the honey separated without injury to the honey. His remarks on hastening the granulation of honey were also interesting.

Mr. T. W. Kirk, Director of Orchards and Apiaries Division of the Department of Agriculture, on the second day gave an address on the Department's intentions in reference to the Apiaries Act. He traced the history of what had been done from the earliest days of the industry up to the present time. He has always taken a very keen interest in the beekeeping industry, and his help in furthering legislation has been invaluable. When the Apiaries Act he outlined is law, New Zealand will have an act which will be ahead of any thing else of the kind in any part of the world.

On the third day Mr. Geo. H. Buckridge gave an address on his personal observations of the American and British honey markets. He found that the British markets especially are not in such a flourishing condition as he would like. This was due partly to labor troubles and want of proper management in bringing New Zealand honey before the public. He thought, however, that there is a great future for New Zealand honey when put up in the right way, and exported through the right channel on well-organized lines.

Mr. H. W. Gilling, of Taranaki, gave an

address on co-operation. Last year the New Zealand Honey-producers' Co-operative Association was formed in Taranaki, and Mr. Gilling was the prime mover in the movement. He explained the lines the Taranaki beekeepers were working on, and stated that the success attained was very encouraging. The Canterbury Beekeepers' Association and the Waikato Beekeepers' Association, both of which were well represented at the conference, took the opportunity to discuss the situation, and it is probable that both these associations will fall in line, and a strong co-operative association be formed, which will embrace nearly the whole Dominion.

The desirability of starting a monthly bee-journal was brought up by the executive, and a committee was set up to examine figures submitted, and the lines on which it was proposed to run it. The committee reported favorably, and the first number will probably appear in August. It was thought that 500 subscribers to begin with would pay expenses, and about 100 promises were made in the room. The first three issues will contain a full report of the conference proceedings.

A grant of $100 was made toward expenses by the Government through the good offices of Mr. T. W. Kirk, and a hearty vote of thanks to him carried by acclamation.

Reference was made to the forthcoming Panama exposition, and it was stated that both the Canterbury and Waikato Associations would be sending exhibits. It was learned that Mr. J. S. Cottrell, President of the Waikato Association, and Vice-president of the National Association, would be attending the exposition, and he was unanimously appointed to represent the National Association in particular and New Zealand beekeepers in general, while there. (I take the opportunity here to solicit for Mr. Cottrell any assistance or advice our American or Canadian friends can give him, and can assure them that it will be greatly appreciated. Mr. Cottrell will be found to be "right up to date" in all bee matters relating to New Zealand.)

It was learned with regret that Mr. Isaac Hopkins, who is recognized as the father of beekeeping in New Zealand, would leave the Dominion for good the coming year. It was resolved to place on record the sincere appreciation of all New Zealand beekeepers of Mr. Hopkins' many years of work in the interests of the industry. He will not be allowed to leave these shores without some small memento of the kindly feeling toward him.

The Government inspectors gave a demonstration of the methods of grading honey for export, and answered a number of questions.

The Conference closed after three days of solid work after electing the following officers for the ensuing year: President, James Allen, Southland; Vice-president, J. S. Cottrell, Waikato; Secretary-treasurer, R. W. Brickell, Dunedin; Auditor, Mr. F.C. Bains, Taranaki; North Island Representatives, H. W. Gilling, Taranaki, J. Hutchinson, Waikato; South Island Representatives, A. Ireland, Canterbury, C. A. Jacobsen, Canterbury.

Christchurch, N. Z.

LATE SUMMER AND FALL PROSPECTS AROUND CINCINNATI, OHIO

BY HENRY REDDERT

It is raining now, and this rain may save the fall aster. Clover is burned out of the ground. Sweet clover bloomed, and is still blooming in spots where the sun hadn't so much force; but it is limited in area to a great extent, this not being a sweet-clover year. Next year sweet clover will be in its glory in this locality if weather conditions are favorable. We had a cool wet spring—cool at night, warm at day time. I've noticed in the past years cold weather in the early spring is not very favorable to sweet clover. Hot moist weather is when sweet clover flows abundantly.

We had some locust bloom, but the cool nights evaporated the nectar. The only time the bees worked on it on sunny days was from about two o'clock in the afternoon to sundown. This was nectar secreted during the morning hours. Any one walking through a locust woods while in bloom on cool nights will scent the evaporating nectar a mile off.

These conditions seem not to affect the small white clover provided it has an occasional rain. Last year was a pure white-clover season—fruit-bloom, basswood, locust, and the various other wild bloom affecting only the rearing of strong colonies. Up to the present we have had but two rains the past two months. One amounted to almost nothing, but the second one saved our corn crop. One of our

Honey exhibit at the Monmouth Poultry Club show, Asbury Park, N. J., Nov. 24-29, 1913.

prominent beekeepers along the Big Miami River wrote recently he would not get one pound of honey out of about 100 colonies, owing to the drouth. Conditions are not quite so bad around Cincinnati—that is, in its vicinity. During a long drouth bees are afforded better forage among the hills and valleys than in the level fields. On the level the sun burns down like fire all day, while in the hills there are always spots that the sun touches only at certain times of the day; hence the moisture collected in the early spring doesn't evaporate so quickly. If the bees in this country along the Big Miami River, of which there are many, are so destitute of honey, their masters will all be forced to feed for the winter unless aster provides them with nectar.

I haven't seen so much aster in many years as now; yet it is problematical if we receive a good flow during fall bloom, the frosts at times setting in early.

Cincinnati, O., July 26.

CASH PREMIUMS FOR HONEY AT A POULTRY SHOW

BY E. G. CARR

What was probably the best exhibit of apiarian products and demonstrations ever given before a popular audience in New Jersey was held in connection with the annual show of the Monmouth County Poultry Club at Asbury Park, Nov. 24-29. Cash premiums were offered by the club for the best Italian bees, best case of comb honey, best 25 lbs. of extracted honey, best display of wax, 25 lbs. or more; best display of comb honey, and for the best display of extracted honey, both liquid and granulated. There were also offered $5.00 in gold and three silver cups as specials.

The winnings were as follows: Bees, display of comb honey, and display of extracted, C. H. Root, Red Bank. Best extracted, 1st, C. H. Root, Red Bank; 2d, W. Garrabrant, Chester, N. J.; comb honey, 1st, N. G. Noble, Lakewood; 2d, E. G. Carr, New

Egypt; 3d, C. H. Root, Red Bank; 4th, W. Garrabant. Wax, 1st, E. G. Carr; 2d, C. H. Root.

Twice each day extracting was demonstrated, and attracted much attention. We believe this did much to remove the prejudice found against extracted honey by those who probably had never sampled any thing but a very poor box-hive product, as many expressed surprise when given a taste from the extractor.

Before the extracting demonstration, a short sketch was given of the development of honey-production from the time it was gathered from the rocks and hollow trees to the present, illustrated by a straw skep, box hive, and a modern frame hive.

Each evening handling live bees in a cage was demonstrated by the writer; but it cannot be said this had any value except to attract the crowd and give the attendants an opportunity to call their attention to honey and give them some facts regarding its food value.

About 1000 lbs. of honey was on display, together with apiarian utensils.

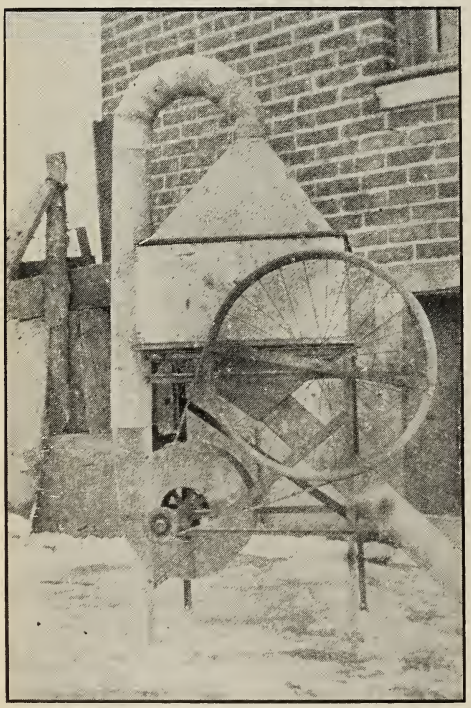
The illustration gives some idea of the exhibit, but, of course, does not show the honey well.

New Egypt, N. J.

FREEING COMBS OF BEES; WIRE-CLOTH ESCAPE-FRAME; A BEE BLOWER

BY ARTHUR F. HODGSON

Freeing supers of bees is a vital question to all large producers of either comb or extracted honey, and one which will permit of careful study. Blowing bees off the combs one super at a time, and delivering them to the front of the hive from which they were taken, is possible, as I will illustrate; yet I unhesitatingly pronounce the method wrong, and strongly advocate the use of my screen-cloth escape-board as given in GLEANINGS for Aug. 15, 1913.



AN ABANDONED IDEA.
A blower constructed for the purpose of freeing supers of bees.

In the season of 1908 I made and used a hand-power bee-blower. The accompanying photograph gives some idea of the construction of the machine. Being mounted on a truck it is easily moved from hive to hive. To operate, the blower is placed in front of hive. A super is removed and set in place on the machine. The hood is swung in position above the super, which now becomes an air-tight box except for the exit, the air-inlet for the present being closed. The crank is now turned until sufficient speed is developed, when the air is allowed to pass through the super of combs, the bees being dislodged by the sudden blast. A series of spreaders and conductors are arranged in the hood of the machine to direct the air uniformly between the combs. The air must pass through the super very suddenly and with great force, otherwise the bees become prepared and hang on until they are practically torn off. Without going into detail, this is the description and action of the blower. Others may see improvements and take up with this method. However, I consider it entirely too mechanical and too unnatural to become practical.

This caused me to experiment along another line, with the result that I discovered screen-wire escape-frames to be the best and most agreeable inducement in causing bees to leave their combs. Why this violent treatment when the same result can be obtained peacefully through the earnest desire of the bees themselves?

Jarvis, Ont., Canada.

A NEW DANGER FROM SPRAYING

Bees Poisoned by Working on Red Clover Under the Trees that are Covered with the Spray

BY JAMES G. BROWN

I have noticed in many numbers of GLEANINGS, articles on spray poison, and feel that I should be remiss in my duty as a member of the beekeeping fraternity if I failed to call your attention to a condition that we of the orchard section of western Colorado are facing along this line.

Until recent years clean cultivation was the rule in all orchards here; but the soil began showing signs of exhaustion, and the fruit-men began sowing legumes to rebuild the soil. In the Montrose section, practically all orchards are sown to red clover, and this is becoming an important honey-plant, as it comes between fruit-bloom and alfalfa, and continues furnishing nectar until long after the sweet clover has bloomed out. This year, as never before, the bees have been working the clover; and as it is covered with spray poison falling from the trees the bees are killed by the tens of thousands.

On June 2 I noticed a few bees crawling from the entrances and running from the hives for a few feet and then die " on foot." Each morning thereafter the number became greater until it was impossible to walk down through the groups of hives without walking on bees. The only plant in my locality furnishing nectar was red clover. I visited some orchards near by and discovered the cause of my trouble. The clover was gray from its coat of arsenate of lead, and the bees were working all the near orchards so sprayed.

I have never seen bees so strong in May as was this apiary. At the beginning of June it contained 123 colonies, most of them two-story ten-framed hives. June 17 there were 98. July 2 there were 95 colonies or nuclei occupying but two or three frames in one story. The bees died so rapidly that the cluster could not cover a fourth of the brood unhatched, and the end is not yet.

I called attention to the matter, and other beekeepers having outyards within reach of the orchards found the same conditions prevailing. Mr. D. J. Harris lost 25 out of one yard of 60. Mr. J. J. Corbut lost heavily, and moved out of this district. Mr. J. C. Mathews moved one yard of 130 colonies to prevent further decimation; and to-day, July 6, O. C. Skinner and Wm. Corbut, both extensive beekeepers, are preparing to move.

While we have a law regulating the spraying of fruit-trees while in bloom, it does not cover our case here.

Our local association has held two meetings to consider what could be done; and while a remedy could be found in the orchardist cutting his clover before he sprayed, the matter is entirely optional with him, and the association has advised all its members to move out of the fruit section, and they are going. There will be no bees to speak of in reach of the orchards next bloom-time.

Many of the orchard men, realizing the real worth of the bees to the orchard, have done their utmost to prevent the bees from going away; but there is always the indifferent fellow, and he will be in supreme command until our next legislature meets.

Montrose, Colo.

BEES DO NOT SPREAD PEAR-BLIGHT

BY L. V. DIX

This question of bees spreading blight comes up quite often, and I am surprised at the theories advanced as to the cause of its spread. I have had a life-long experience in the growing of pears, and during the last twenty years I have been growing them in a commercial way. This present season confirms me more thoroughly than ever of the great mistake that has been made by some who claim to be expert horticulturists as to the cause and spread of pear-blight.

In 1912 my crop of pears sold amounted to 6000 bushels. No blight appeared until after the fruit was as large as hickory-nuts, and then it did no damage, for it helped to thin the fruit to some extent, which is needed. At this date, April 30, I have a better prospect for a crop of pears than in 1912. The fruit is all set, no signs of blight yet, but I expect it to appear to a greater or less extent within the next twenty days.

Blight does not live over winter in so-called blight-pockets, but is caused each sea-

son that it appears by atmospheric and weather conditions.

In all my life-long experience I never have seen any sweet sticky substance oozing out of so-called hold-over blight-pockets. I have sixteen colonies of bees right at one pear-orchard, and there are other colonies not far off; so if bees caused blight to spread I ought to have it all through my orchard right now. As a matter of fact, the fruit is as large as cherries at this date, and there is not the least sign of blight. Some seasons we are entirely exempt from it, although during the previous season it might have been very bad.

We can all tell when our fruit is killed by cold; then why are we not able to tell when it is killed by heat instead of blaming our most useful insect, the bee?

Jefferson City, April 30.

THE FRIENDLINESS OF BEEMEN

BY MRS. ARMSTRONG ALLEN

[Mrs. Allen is the author of a number of delightful little poems relating to bees. In the last issue and in this one are samples of her work.—Ed.]

If we were an amateurish sort of grocer and went visiting the successful grocers of our vicinity, I wonder if they would take us all through their stores and show us things and tell us things, and send us on our way with their best wishes, and the assurance that, if there is any thing we want to know at any time, come and ask them, and they'll help us out all they can. Now, may be that's just what they would do. I don't know We've never been a grocer!

But this I do know. Out under our cherry-tree, in the spring of 1913 we proudly placed a newly purchased hive of bees; into our bookcase we slipped the A B C and X Y Z of Bee Culture, and on our reading-table a copy of Gleanings came dropping twice every month. The bees swarmed in May, and then there were two white hives under the cherry-tree, and in our visions of the future there were (and are) many hives under many trees, each one emitting its fascinating hum. So we decided to visit some successful apiarists. And we hereby pay our hearty and sincere tribute of genuine appreciation to the courtesy and friendliness and well-wishing of these neighborly beemen.

About two weeks after our memorable first swarm, we took a trip to the country. (We are in the city ourselves—backlotters.) We first visited one of the apiaries of Buchanan Brothers, near Franklin, and they put veils on us and took us around while they did various things—cut out queen-cells here, and put on a super there, and they answered a score of questions and offered the friendliest advice. One most interesting thing was their simple introduction of a new queen. Mr. Buchanan just put her down on the frame, and that was all there was to it —no smoking, no fuss of any kind. She had been allowed to become hungry, and seemed to request a bit of hospitality for her neglected royalty, and the bees just welcomed her in and took care of her straightway. Then our hosts kindly motored us over to Franklin, and after dinner we drove to the home apiary and queen-yard of Mr. John M. Davis, of Spring Hill, to whom all beemen in this part of the country take off willing hats. Here too we were shown genuine cordiality and courtesy, in spite of being utter strangers who wanted to learn the bee business. We were shown the mysteries and the delicate details of queen-rearing. It was a truly wonderful sight for a raw beginner to see the almost invisible eggs picked up out of the cells where they had been laid, and transferred to their new quarters. And queens were placed with their traveling companions in well-fitted private cars to go on long journeys all over the country. The funniest thing we saw there was the darkey who was hoeing the garden near the beeyard. It was a hot day; but he wore not only hat and veil, but also sweater and slicker and gloves, and he kept up a perpetual sort of grinning grumble about "dem bees."

Another time we dropped in, unknown and unannounced, on Mr. Will Morris, of this city, who took us into his thriving back-yard apiary of thirty or more colonies, where he was working when we arrived. Mr. Morris has gleaned a lot of valuable and practical experience out in California, and talked freely of various operations. He certainly had strong colonies—double brood-chambers, and then full-sized supers tiered to an almost dizzy height.

This was all so delightful last spring that three weeks ago we tried it again. A drive almost too beautiful to describe took us out on the river road, past blossoming dogwood, white locust, and riotously fragrant honeysuckle, right into the heart of the hills. There we found Mr. Lucian Watkins with his 104 colonies. The hives were painted different colors, and, standing among young

apple-trees on the side of a hill, made the prettiest apiary we had seen yet. Mr. Watkins runs for comb honey exclusively, and every colony was a hummer. The swarming season was on, and the swarm-catcher was standing near.

"No, I don't clip my queens," he said, answering a question. "Yes, they keep me pretty busy at this time of year," he replied to the next. "I returned several swarms to-day."

"Returned?" we echoed. "To the same hive? And will they stay?"

"Generally," he answered. "Occasionally I get one that won't stay put. After trying it once or twice I have to give them a new hive, though I don't really want any more."

So now two of our own hives are standing on Mr. Watkins' hillside; and when a big hard-headed swarm declines to stay where it is put it will go into one of our hives, and eventually it will come to live under our cherry-tree. But when it does, it will be leaving a Mr. and Mrs. Beekeeper whose friendly welcome and courteous hospitality have taken their place in our memories as an integral part of a beautiful day along with

The song of the birds and the sun on the trees
And the glad brave hum of a million bees.

Nashville, Tenn.

[We have read with considerable interest the discussion in some of the other bee-journals as well as in GLEANINGS regarding the advisability of giving help to a beginner. Even in Australia the subject is a live one as evidenced by the amount of space given up to it in the April 15th number of *The Australasian Beekeeper*. So far we have had but little to say, since, as publishers of a bee journal, any argument that we might bring forth is so likely to be considered as biased. Nevertheless we cannot blame any beekeeper who might feel that he had made a mistake in helping or encouraging a beginner if that beginner in turn should be so shortsighted as to locate an apiary right in the same range, or should attempt to crowd out in any way whatsoever, the one first in the field. Yet, on the other hand, there are really very few beginners who are able to produce enough honey to supply their own demand—a demand created by their own enthusiasm. Encroaching on another's territory is bad; but that practice, unfortunately, is not confined to beginners. On the contrary, we sometimes think we hear more of such work among beekeepers long since past the beginner's stage, who have been in the business long enough, certainly, to know better.

We cannot imagine any one refusing to aid in any way possible so enthusiastic a beginner as our correspondent. Beginners there always are and always must be; but from the fact that there are fewer beekeepers in the country to-day than ten or fifteen years ago, although probably no fewer colonies of bees, it is evident that there are not as many beginners or those who come under the same general class with beginners as there were a few years ago. We cannot believe that professional beekeepers have any thing to fear from intelligent beginners. —ED.]

THE BEGINNER AS AN ASSET TO BEEKEEPING

Read Before the Spring Meeting of the Philadelphia Beekeepers' Association

BY C. M HARRIS

This subject was suggested by the March 1st number of GLEANINGS, which was devoted to city beekeeping. The first intention was to give a résumé of the articles contained in it; but further study and thought boiled the subject down to "The Beginner as an Asset to Beekeeping."

One of the greatest needs of our business is publicity. The great manufacturing industries get together in trade associations for the purpose of spreading interesting facts about their business—facts which will increase the consumption of their product. They spend great sums of money in this work, and all are agreed that it is profitable as a financial proposition. There does not seem to have been any plan adopted to do this work for the beekeepers. Our principal publicity is, as a rule, of the injurious sort, such as a revival of the comb-honey canard, or a severe case of stinging, where if the facts were known, neither the beekeeper nor the bees were to blame.

Right here is where I believe the beginner can render great service to every one who is interested in the production of honey or bees. Beginners are enthusiastic, and their enthusiasm is the kind that will not let them keep quiet about their new hobby. They must talk to their friends and neighbors—or, indeed, to any one, whether he wants to listen or not. What is the result? The

public becomes interested in our business, it is given facts, not flowery stories, or, what is worse, utter falsehoods. People learn the value of honey as a food, and begin to realize that it is a necessity, not a luxury. The beginner, in the lean years of his childhood as a beekeeper, certainly cannot supply the demand which he has created. Either he will come to those who have honey to sell, and supply the demand himself, or he will recommend some one of his beekeeping acquaintances as being able to furnish the desired supply. In either case the beekeepers reap the result of the best kind of publicity, that which acquaints the public with the product and its method of production.

The second way in which the beginner is an asset is that the novice is always and eternally asking why. He wishes to know, and is not afraid to inquire. Some of the most searching questions are asked by the beginner. Indeed, not a few of them are unanswerable; and even the veteran must acknowledge "I don't know." But such an ordeal as this is of inestimable value to us. The only way to find out just how much we do not know is to be brought face to face with hard questions. This serves to bring out a frank discussion of the point at issue, and thus we get a variety of opinions. Even in regard to the subjects in which we are well informed, by telling others what we know, we fix the principles more firmly in our own minds, and in describing some single operation we are led to see weak points, and thus become able to strengthen them.

Therefore, let us extend a helping hand to beginners, for the beginner of to-day is very likely to be the beekeeper of tomorrow.

BEEKEEPING ON PUGET SOUND

BY CLAUDE C. PIKE

In the fall of 1912 when I came to Kent, which lies in Green River Valley, half way between Seattle and Tacoma, the people here told me it was no bee country—too wet, bees died, etc. Well, I have always been a lover of bees, and honey tickles my palate; so in the spring of 1913 I purchased three colonies of bees. One colony was nice and strong in an up-to-date ten-frame hive. The other two were in cheap hives and they were not very strong. In May I transferred the stronger one of these two into a new ten-frame hive. As the combs of the weakest were mixed up, and I didn't have time to drum it out, I gave the one just transferred a good smoking, and placed the weak colony on top of it to fight it out. This left me two strong colonies in ten-frame hives for the season, so I put double supers of sections on them and went on an outing.

In the fall, August and September, No. 1 was full of nice white-clover honey, about forty pounds of sections, all crowded in the brood-chamber. No. 2 hadn't done very much, so I gave the bees some brood and part of the honey in brood-chamber of No. 1, and fixed them up for the winter and rainy season. One trouble here is the bees don't go to sleep as they do in Nevada and the Eastern States. They keep crawling the greater part of the winter, and therefore it takes more honey to keep them.

Feb. 14, 1914, was a bright sunshiny day; so in the afternoon I decided to see how the bees pulled through the winter. I was very much surprised to find both colonies nice and strong, with two or three combs of capped brood. This was Feb. 14, and there was possibly enough honey to carry them through; so you see, beekeeping on the Sound isn't bad.

We have many sunshiny days all through the winter, especially in January and February. One peculiar characteristic of bees in western Washington is that they don't mind cloudy weather when it isn't too cold. Many times in the spring and summer when it is raining they will fly.

This is a natural white-clover country, so that is the main source of honey. We also have fruit-bloom, berry-blossoms, wild flowers, and other clovers.

We have been reading GLEANINGS and A. I. Root's writings for some time, as you will see by the following: While a missionary to the Indians, on the Frazer River, in British Columbia, Canada, my father, Robert G. Pike, came across one of A. I. Root's early bee books and papers in the year 1885. He afterward helped rob beetrees and hive swarms. While reading these early books of the "Father of Beekeeping" in America (A. I. Root) he said to himself that if he ever got settled down he must have some bees. He afterward moved to Wisconsin, where I was born in 1890. He there became an extensive beekeeper and reader of A. I. Root's writings, besides preaching the gospel of Christ.

About 1901 we moved to Carson City, Nevada, after a number of years of moving

around. As this was an extensive alfalfa country we began to subscribe again for GLEANINGS, and decided to get some bees. We purchased 14 old gums, transferred and Italianized them, and it wasn't long before we had 50, then 75 colonies. This was new to the natives around there, we having queens come through the mail, and handling the bees without gloves. So it soon became the talk of the town.

My father was a busy man, preaching at several different small appointments, and moving and building a church. I was the oldest boy, and liked bees, and was kept from school a great deal. At examination time I had to study hard, sometimes in the vacation months, to pass in September. We rigged up a honey-house, bought a four-frame extractor and other necessary articles, and ran mostly for extracted honey. We made some great records, used to extract every two weeks in June, July, and August. We sold all or nearly all our honey in Carson City for 50 cents a quart, Mason jar and all. In bulk we received $5.00 for a five-gallon can. One reason of our success was that the Lord was with us, just as he has been with our old friend A. I. Root all these years. He always led a good Christian life with a personal Savior.

We have always enjoyed Mr. Root's writings. I remember when quite a small boy my father reading "'Merrybanks and his Neighbor" out loud to us. It was so good we read it again. Also, "What to Do and How to be Happy while Doing it."

Kent, Wash.

FOUL-BROOD INSPECTION IN ARIZONA

BY W. I. LIVELY

I have noticed several references to the report of the Arizona bee inspector. It seems to me that some of these writers, probably without meaning to do so, rather reflect on the work of Mr. Ivy. I think the Arizona beekeepers, almost without exception, feel that we have one of the most efficient inspectors to be found anywhere, and I think a little explanation will clear up some of the wonder as to the vast amount of work performed by him.

To begin with, there is but one county in the State in which foul brood is to be found and in only a very few apiaries there. Until very recently it was unknown here. The cases at present are in an isolated region. We have not a single case in the Salt River Valley, and we will not permit it to come in, as some have found by experience.

Now, in the regions where foul brood was found, our inspector went through each apiary and each hive; and wherever a trace was found (and if it is there, believe me Mr Ivy will find it), the hive was branded and the owner given so many days in which to eradicate it; and the fact was emphasized that it *must* be eradicated. Thus it was in a short time brought under control, and at this writing is practically eliminated.

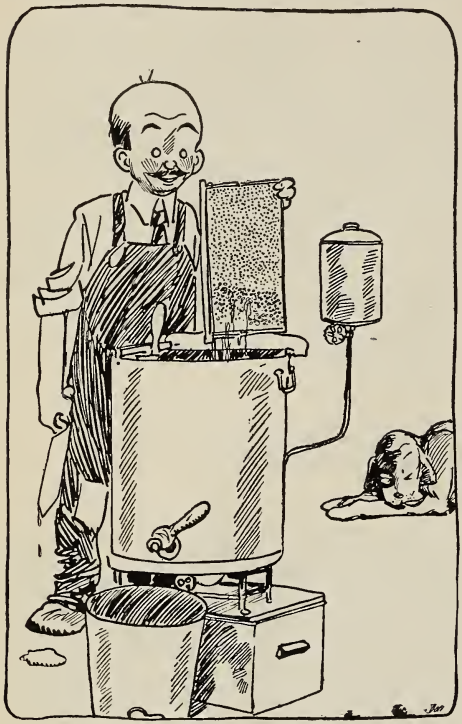
Outside of this one locality there is no disease, and never has been. This fact, as Mr. Foster says in his department, June 1, makes it unnecessary to go through every hive in an apiary. If an inspector came into my apiary, where both he and myself knew in all reason that there was no disease, and began systematically to examine every comb, running the risk of starting robbing, I should certainly hit him over the head with some little object like a hive-cover. On the other hand, if I even *suspected* its existence I would send post haste for the inspector; and once my suspicions were confirmed I would treat it by bonfire That is the approved Arizona method of dealing with it.

This explains why Mr. Ivy could cover more territory than he could have done in a State where the disease is quite generally disseminated. He is certainly wide awake, and on his job, and is an expert on foul brood, having been raised with it in another State. Not long ago I phoned him that I had a colony which showed symptoms of paralysis. He promptly ran up in his car, a round trip of nearly twenty miles, confirmed my suspicions, and advised me as to treatment.

But, to return to the number of colonies which can be examined in one day. Isn't "from thirty-five to fifty" putting the average pretty low, even where the most thorough inspection is necessary? I regularly extract from 20 to 25 hives per day, working alone. Some of the more progressive beekeepers of this State could go through 35 hives in a day, and strike up a personal acquaintance with a large per cent of the individual bees. Mr. Foster's estimate of 100 per day looks better to me. Send some of your inspectors to Arizona, and let them live on alfalfa and sunshine for awhile, and see them speed up.

Glendale, Ariz.

Heads of Grain from Different Fields



THE BACKLOT BUZZER.

When you find a little cluster of chilled bees clinging together on the running board, tote them into the house and warm them up, you notice one or two immediately begin to feed their hungry companions, and you think that's almost human; but when you remember the time you and Beany ran off and went fishing, and you fell in the creek, and got so hungry, and you wanted a piece of Beany's lunch, and he refused you, well, that *is human.*

The Choice of Section; Overstocking a Location with Bees

Dr. C. C. Miller:—I am a beginner in the bee business, and I expect to produce comb honey. I had 15 colonies last spring, and produced about 1000 lbs. of comb and 1500 lbs. of extracted honey. I divided, making 42 colonies. I now have 41 colonies. I plan to increase these to 100. I will raise my own queens. I think I can get 10,000 sections of comb honey. It is of a fine quality. I won five prizes at the fair last year.

What kind of sections would you use? I used 4¼ x 4¼ four-beeway sections last year. I reasoned that bees would work better in a four-beeway section than in a two beeway.

If I do not use the four-beeway I will get the plain section with a slat over the top and use fence separators. I should think they would save a lot of work, as I should not have to scrape propolis from the sections. Have you tried different sections? and do you know in which bees work best?

Is it true, as Alexander says, that it is almost impossible to overstock a locality? We have about 1000 acres of fireweed for our main honey-flow. It blooms from July 1 to about Aug. 20. We have plenty of bloom for brood-rearing after April 10, but we have so much rain that the bees cannot support themselves all the time. I had to feed in June last year when the white clover was in bloom.

I should like to keep about 400 colonies if my locality will bear that many.

Elbe, Wash., Feb. 28. LILLIAN L. HILL.

[Dr. Miller replies:]

For my own use I prefer the sections most popularly in use, the two-beeway 4¼ x 4¼ x 1⅞.

One might reason that four-beeways would be a good deal better than two; but when the matter is referred to the bees they don't endorse the reasoning. Before settling down on the 4 it would be well to give a trial to the 2. Try both kinds side by side.

Yes, I have tried a lot of different kinds of sections—tried some of them on a large scale, thinking them an improvement—but after trial I have always come back to the old standby as being best on the whole for the bees, easy as any to clean, and securing as large a crop as any.

I do not believe that Mr. Alexander meant it to be literally understood that it is "almost impossible to overstock a locality." There is not now, there never was, there never will be a locality, that may not be overstocked. It's only a question of how many colonies it will take to overstock it. And that's a very difficult matter to determine. A given number that did finely last season may overstock the same locality another season. With no more than 100 colonies, my locality has been overstocked more than once; but I don't know how many colonies it would support in the best years. I'd give a good deal to know. Not one in a thousand has a location like the Alexander yard. If I am correct, he had some 50,000 acres of buckwheat in range, and had 700 colonies or more in one spot. I never heard of any other location like it. In by far the greater number of cases, I suspect that 100 colonies will not do quite so well as a smaller number in one locality, take it one year with another.

With 1000 acres of fireweed, if you can count on a seven-weeks' flow every year I wouldn't dare say you may not profitably reach 400 colonies. Work toward it a bit carefully, and don't be too much disappointed if you find 200 better. In any case, take my best wishes with you.

Squash Honey

Strong colonies here in May gave a superful of section honey from apple bloom and horsechestnut. There has been nothing doing since June came in—cold nights and severe drouth. The bees have given up, as they have expelled their drones. August is our great month here.

Mr. Coburn, page 433, June 1, mentions the yield from *white* alder. If you can believe your botany, all alders bloom in the spring, and alder honey could be classed with hens' teeth. Mr. Coburn doubtless refers to button-bush; but there is not enough for any such amount. He lives two miles north of me, and our fall honey all comes from squash blossom, which begins Aug. 1, and lasts until frost kills it.

Until we moved here we had aways kept the apple for our own table, and we eat from 50 to 75 lbs. a year, and I have had bees for more than 50 years. We have had all the Western honeys, but nothing (for us) touches the squash. It is of a beautiful light color, just a tinge of yellow, and a flavor that appeals to every one. The squash has a highly colored flower with also lots of nectar—often three to five bees in a blossom. If you know any thing about squashes you know the blossom is open only one day; and if the little squash is not fertilized

that day it is "good-by, squash." We reach not one acre or ten, but hundreds. More squashes are raised here than any other place in New England, and there are parties who depend on them for a living.

Woburn, Mass., June 24. E. C. NEWELL.

California Beekeepers at Panama Pacific Exhibition

The Exhibit Committee of the California State Beekeepers' Association, Mr. Willis Lynch, of Salida, chairman, held a preliminary meeting July 18, at Sacramento.

Dr. Cook, State Horticulturist, spoke at the morning session on the desirability of an exhibit being made by the beekeepers of California, at the Panama Pacific Exposition in 1915. He claims that, as California is to be the hostess to the world, she should naturally have the best exhibit in all departments. He called on beekeepers to encourage and assist their chairmen to the extent that the 1915 exhibit would excel every thing yet produced in the beekeeping line.

The afternoon session was largely taken up in discussing ways and means by which this work could be assembled and put in operation. The temporary organization was made permanent by the unanimous election of Willis Lynch, chairman, and A. L. Heim, of Fair Oaks, Secretary, the chairman to appoint a Treasurer later.

There was not a dissenting voice when our chairman put the pertinent question, "Shall we go ahead and have an exhibit?" Of course we all realize that there is plenty of work ahead for all; but what grand undertaking was ever brought to a successful issue without work and funds to back up the work?

A publicity committee was appointed by the chairman, whereby we are to let the world know that the California beekeepers are to have a fine educational exhibit at the fair in 1915.

Our chairman requested time for consideration before appointing the various other committees, the personnel of which will appear in these columns when available. MRS. H. G. ACKLIN.

Member Pub. Com.

Were there a Million Bees?

Referring to the September 1, 1913, issue, page 620, I would like to say that perhaps J. H. Diebel does not know that a million bees are equal to 200 lbs. weight, which could just about have enough room in a capacity of 6 ft. high and a diameter of 14 inches to get in without any combs at all, much less a barrel of honey. A million bees, or 200 lbs., is "tall," to say the least of it.

R. H. TOWNDS.

Barberton, South Africa, Oct. 25.

[Our correspondent in our issue for Sept. 1, 1913, was, of course, using the language of hyperbole. We sometimes say that "the horse runs like lightning," but, of course, we do not mean what we say. Mr. Townds is probably correct, when we get down to actual figures; but the average layman, when he sees a big swarm of bees in the air, will declare there are a million bees flying, when the fact is there are probably not over fifty thousand at the most. The largest swarm of bees that we ever weighed registered 9½ lbs. on the scales, and it was a big one. As there are about 4200 bees in a pound, the number would be a little short of forty thousand. A colony of bees, however, *may*, if it belongs to the skyscraper class, contain 100,000 bees.—ED.]

Two Wires on One Side of the Foundation and Two on the Other

One would think that, after the very full and careful write-up by Mr. H. H. Root, of the manner of putting foundation into frames, and another very good article that followed him, there should not be any more "say" on the matter left. However, here is a suggestion according to which I put foundation into Langstroth frames. I bend the sheet in past the bottom wire in such a manner that the two middle wires are on one side of it, and the top and bottom on the other. The trick is a little awkward at first, but quite worth while. The wire, even though pressed on but lightly with the wheel, never leaves the foundation, even if the frame be laid down on either side. I put in strips of foundation for vertical starters in the same manner.

It does not follow that bees will build worker comb only when such starters are used—no, indeed. But they do not join the combs and make a general mess as when only the conventional inch starters are used. However, where a good queen is at the head of affairs, combs thus startered are usually built out just as straight and regular as full sheets of foundation. Whether starters or full sheets, I prefer to fasten with melted beeswax; but if I use wedges, then I cut those wedges into three equal parts, and use only the two of those parts to fasten the full sheets of foundation toward the ends of frames. The operation is much easier, and the wedges never spring out. STEPHEN ANTHONY.

Waitete, Amodeo Bay, Auckland, N. Z.

More about Medicinal Treatment for Cases of Paralysis

In the November 1st issue, page 765, I notice what is said about bee paralysis. I am only a small beekeeper, but my bees died by the hundred of the very same malady in 1912. I have only five colonies, and saved them all—at any rate the disease has disappeared. A friend who lives three blocks from me had thirteen colonies, and lost all but four the same year. This year (1913) our bees are strong with plenty of stores, although we got very little surplus.

My bees were dying, and I did not know what to do for them. I saw that they were diseased, so I thought I would give them some physic. Accordingly I bought a bottle of California Syrup of Figs. I then boiled sugar, honey, and water, the same as you would for feeding—one quart all together. To this I added two tablespoonfuls of syrup of figs, and when it had cooled I poured this into the empty cells in the brood-frames. Two days after this there were no more dead bees.

If one lives in the city, as I do, he should tell his neighbors not to hang their washings out for a few days, as they will surely be daubed with yellow spots. My wife had the pleasure of washing all her clothes over again.

San Francisco, Cal., Nov. 11. FRED KLINGER.

Supporting the Alexander Feeder with Large Staples

Mention has been made of the difficulty of adjusting the Alexander feeders. I labored under the same difficulty until I bethought me of those staples with which the bottom-board is fastened to the hive. Nothing is more simple. After moving the hive back on the bottom-board the width of the feeder, I use two staples at each end of the feeder; fasten it to the hive, twisting one of the staples at the projecting end of the feeder half around.

Greenville, N. Y. C. H. CHATTERTON.

[The scheme of using staples is all right; but care should be taken that the points of the staple do not split the wood, causing the feeder to leak. For this purpose a staple with a smaller wire and shorter prongs will be more suitable. A hive staple must be extra heavy and strong.—ED.]

Bees Work on Grapes

It was with interest that I read the article in GLEANINGS for Feb. 1 regarding bees and grapes, for I am able to say a good word for the bees. I

have a few good grapevines, and when they are blooming the bees work on them for several days, and in good numbers too. Some of the vines are not more than ten yards from the hives; but the bees never touch the fruit. Last season, when I had to feed my bees to keep them alive, the grapes were not touched, but when some of the grapes burst, through being overripe, I could not find more than half a dozen bees sucking them. I have often met people who believe that bees puncture grapes; but it has not been hard to convince them that the bees can not do so. DOUGLAS D. BREARLEY.

Subiaco, W. Australia, March 21.

The Net-weight Law

Having read your articles on the weight the new law requires us to mark on comb honey, I would say we are producers of comb honey only, and generally sell in Washington, D. C. We beg to ask you if this law requires us to stamp all of our sections individually, or can we mark them as we always did, gross weight, case weight, long weight, etc., and tell us if we still have to stamp them.

CHAS. AND WARNER MILLER.

Washington, Va., July 25.

[It is our understanding that every section must be marked. The law does not specify that the net weight shall show on the shipping-case. But all dealers and buyers will require it, so that you will have to do both. To get at the net weight of the honey in a shipping-case, weigh up all the sections and then deduct as many ounces as there are sections in the shipping-case. It will no more be permissible to weigh in the wood with the section in getting at the net weight in the case.—ED.]

Net-weight Law Does Not Apply to Honey Sold Locally

I see that the net-weight law applies to interstate commerce. Does this mean honey shipped from one State to another, or does it apply to honey produced and sold within the State? I wish to know whether it is necessary to brand honey that one sells in his home market that does not go out of his own State.

Mt. Carmel, Ill. ROBERT WATT.

[The net-weight law does not apply to honey that is sold within the State; but some one else to whom you sell may ship it into another State, in which case you, the original producer, would be liable. If you can make sure that your honey is not going out side of your State, and will be consumed locally, you can sell it as you did before, providing there is no State law to the contrary.—ED.]

A Good Plan for Stopping Robbing and Disposing of Robbers

I have a plan to stop robbing which I should like you to try if you have not already. When you find the bees robbing, close the entrance, leaving just room enough to insert a Porter bee-escape to let them in, but so they cannot get out, and leave it 48 hours, then open the entrance, and the robbers and the robbed will work in harmony together. It may not work with you, but it does with me. I had a colony of black bees that was well started robbing out a mating-hive of Italians. I tried this plan and the robbers did not return to the old hive. I have also tried it on larger colonies with the same success. You would have to provide shade and ventilation in hot weather.

Winchester, N. H., July 20. A. J. PLUMMER.

[We believe the plan here outlined is all right. We have tested out something very similar, and find that it is quite possible to trap the robbers and confine them, and then make them adopt their new home. The scheme catches all the robbers, and thus entirely stops the pilfering at other hives. Closing the entrance to a robbed hive does not by any means stop the nuisance; for the robbers will then pounce on every other hive in the vicinity; and the trouble, instead of being mitigated, is only made worse. The Plummer plan puts all the robbers out of business. and we feel sure it is worth trying.

The plan that we tested out was similar in principle. We placed a wire-cloth cage of suitable dimensions over a hive that was being robbed. In a short time there were hundreds and hundreds of robbers buzzing around the cage. We lifted this up momentarily, letting in all the robbers. They rushed into the hive, and then we set it down again. In the mean time the confined robbers hovered near the top of the cage. This operation was repeated at intervals of about ten minutes for two or three times. In the course of half an hour we had all the robbers in the top of the cage. Toward night they were clustered in one corner. We left them there until the next night, just about dusk. Then we bumped the whole bunch of bees in front of the entrance where they had been robbing. They went right in, and the hive that formerly did not have force enough to protect itself was now a good colony ready to resist any kind of onslaught. We tried this on several colonies, or, rather, nuclei, that had been robbed. In each case they were made over into colonies.

As the principles involved in this case are exactly the same as those used by our correspondent, we believe it will work, and, what is more, is simpler and cheaper; but in every case in hot weather we would advise at the time of putting the bee-escape on the entrance to place a wire screen on top of the hive to prevent suffocation. A big force of robbers confined in a hive, with no other ventilation than that through a bee-escape of the Porter type, if the weather is sufficiently warm, especially if the bees are out in the sun, would be quite likely to smother. —ED.]

No Mosquito-Hawks

There are no mosquito-hawks in this locality to bother the bees. As I have kept bees in North Carolina and South Carolina for 12 years I certainly know what they are. This is no honey country, but there has been enough honey for fair queen-rearing since the last of January.

McIntosh, Fla., June 24. JAMES AMMONS.

HOW LONG?

BY GRACE ALLEN

I wonder how long the bees have been humming;
I wonder what lies at the heart of their song.
Is it worship, I wonder, as, going and coming,
They've glimpses of glory that's splendid and strong?

In the far-away, long-ago days half forgotten,
When men were as children (what are they to-day?)
When things were what thundering prophets called "rotten,"
And men turned from God and went cursing away,

The bees in the vineyards were coming and going,
Were flying from fig-tree to thistle and thyme,
Contentedly humming, while warm winds were blowing
Their eager refrain into rhythm and rhyme.

I wonder how long the bees have been humming;
I wonder what lies at the heart of their song.
I wonder if men, in their going and coming,
Will ever be singing so steady and strong.

A. I. Root

OUR HOMES

Editor

Love your enemies, bless them that curse you, do good to them that hate you, and pray for them which despitefully use you and persecute you.—MATT. 5:44.

AN ADDRESS DELIVERED BEFORE THE OHIO STATE BEEKEEPERS' ASSOCIATION ON FIELD DAY, JULY 9, 1914.

Continued from previous issue.

About five miles out in the country from Medina was an old gentleman who had kept bees nearly all his life in box hives; and I think that at the time of my experiments he had forty or fifty colonies, perhaps more. I knew him by reputation, but not personally. He was generally regarded as authority on bee culture; but as he had only box hives I had never paid him a visit. After my statement came out in the Medina *Gazette*, of getting a barrel of honey from a single colony, somebody told me that Mr. Chase said this was an utter impossibility. Not long after, I saw him passing along the street. I went out and accosted him as follows:

"Mr. Chase, is it really true that you have been saying hard things about me and my new Italian bees?"

"Yes, Mr. Root, I have said some rather severe things, and my conscience has been troubling me a little. What you have said seems to me like an utter impossibility."

I did not stop to argue the matter. I simply said:

"Have you a little time to spare this morning?"

When he replied that he ought to get back home I insisted that he accompany me to the apiary. At the time, I had a hive of my best Italians suspended by a spring scale with a large plain dial that recorded ounces. I brought out an easy-chair, placed it before the hive, and said:

"Mr. Chase, instead of answering you myself I prefer to let the bees answer. Sit down and watch that scale. I can bring you a newspaper if you wish. But every now and then I want you to watch that hand on the dial."

Then I left him. In a little while I came back.

"Why, Mr. Root, do you really mean to say that those bees have brought in several ounces of honey while I have been sitting here?"

It was just the time of day when honey and pollen were coming in with a rush, and I made my point. He took off his hat and made a full apology, remarking that he was old enough to have learned by experience that it is best to *inform* ourselves before rejecting new things. A little later he came down while we were extracting from a certain hive. I told him how many pounds we had secured with my new home-made all-metal honey-extractor—the first the world had ever seen. Our German friends have the credit of inventing the extractor; but theirs but a clumsy machine made of wood. I said right off it should be all metal. Well, Mr. Chase did not say very much, but he came into my store a week or ten days later and said:

"Mr. Root, will you have the kindness to do me a favor?"

Of course I responded with alacrity. He then said:

"I want to see that hive once more that you robbed of almost every drop of its honey."

I told him it was about ready to extract again, and that I should be very glad to have him see it. When he saw the same combs of a two-story hive filled and sealed over with a larger yield of honey than we took out the first time, his astonishment was complete. Said he:

"Mr. Root, when I saw you take all that honey out of the brood-nest as well as out of the upper story, I told my friends the colony would surely starve before winter."

During that first season the colony on spring scales during three days gathered 42 lbs. of honey. I have often wondered why more beekeepers do not have a colony suspended in that way.

At that time, I made a statement that the time would come when honey would not only be on sale in every corner grocery in our land, but that, like butter and eggs, it would be on sale *every day in the year*. Just a few days ago one of my sons-in-law said to me:

"Father, we have just got an order for 50 gross of these new individual bottles of honey from a hotel in the city of New York. They are using about one gross a day."

I expressed great surprise, and repeated it around among my friends. A day or two afterward he said:

"Father, you thought it was a big thing when we got one order for 50 gross of the little jars of honey. Well, to-day we have still another order, for *four hundred gross*."

It is a little singular that Langstroth and Quinby, each without the knowledge of the other, got out a book on bees in 1853. Langstroth described his new invention of a movable-comb hive. Quinby's book was

written in reference to box hives. But Quinby was a practical business man, and made money with his bees *without* movable combs. Langstroth was a minister, and, like many other ministers, he was not much of a business man. Besides, a number of people right and left appropriated his patent without paying him a penny for it, and he, being a minister, could not very well defend himself. As a result, he was a comparatively poor man all his life, and more or less dependent on his relatives and friends. Our attorney once remarked that *preachers*, especially successful ones, are, as a rule, poor business men. I remonstrated, and told him that one of our former pastors, calling him by name, was certainly a *good* business man. Our attorney, with a sly twinkle in his eye, replied:

"Mr. Root, if you mean that preacher's *wife*, instead of him, I entirely agree with you."

May God bless the ministers *and* their wives. What would their husbands have amounted to, many of them, had it not been for their wives and *their* businesslike methods? Langstroth, during his busy life, laid up treasures in heaven rather than here on earth. Our friend Quinby was a good man, and made every thing prosper, and their two books go well together. I read Quinby's book clear through carefully some time after I had the Langstroth movable-comb hive; and I confess I got a great deal of enthusiasm from it—yes, to such an extent that I thought for a time I should really like to have a box-hive apiary. It seems that neither one of these good men knew what the other was doing; but, notwithstanding this, they agreed substantially in all matters of natural history. After Quinby's attention had been called to Langstroth's book he got out another edition of his own book, and in the back part of it he made brief mention of Langstroth. Below is a short extract from Quinby's appendix:

A friend of mine, on ascertaining that I did not allow prejudice to operate against my own interest knowingly, even in a bee-hive—that I would not reject an advantage because it was found in a patent, but was willing to profit by whatever could be made profitable—sent me a copy of the Rev. L. L. Langstroth's work on the "Hive and Honey-Bee," early in 1856. I had heard of the work previously, but had understood that it recommended a patent hive, and, not having reason to esteem them very highly, I took no pains to procure the work. I found, on perusal, that he agreed with me on so many disputed points in natural history and practical lessons, that had it not appeared simultaneously with the "Mysteries," thus making it impossible for him to have taken any part from it, I should perhaps have judged him wrongfully, and very likely he would have done the same by me. It was evident, therefore, that both of us had arrived at correct conclusions by the same process—close observation. This gave me a favorable impression. I found also that his hive, for a wonder (being a patent), did not necessarily interfere with the natural habits of the bees.

Langstroth soon called my attention to the fact that an American bee journal had been published for three years by Samuel Wagner, of Washington, D. C., another of God's noblemen. After some correspondence with friend Wagner I induced him to recommence the publication of the old *American Bee Journal*, promising to write for it. Some of the gray-headed veterans will remember the articles that appeared, headed "A Novice's Experiences in Bee Culture." While Samuel Wagner lived I had no thought of a journal of my own; but at his death the *American Bee Journal* was sold to a party who was not a beekeeper, and moved to Chicago. Meanwhile the news of my all-metal honey-extractor, the success I had made with the Italians, etc., called forth such a correspondence that I started a little quarterly in 1873, which was received with so much favor that almost immediately it was changed to a semimonthly at 75 cents a year. By this time I had become pretty well acquainted with Mr. Langstroth, and was told he was subject to spells of mental depression. I finally corresponded with him, and by my enthusiasm I waked him up, so to speak, so that I got him to make me a visit. Before I speak of that visit, however, I am going to branch off for a little time and take up something that is not exactly bee culture.

When I began watch repairing in Medina there were two jewelers already in the town, and people naturally thought it was preposterous to start a third store, especially by a young boy who had had but little experience. One summer day a stranger came in from the West with a covered wagon, leading a pretty little pony which he wanted to sell (as he was out of funds) to enable him to get to his destination. In those days "horse-jockeys" were a common thing, and some of those fellows loafing around the street planned to cheat this poor man out of his pony. They offered him a good price, but wanted to turn in a gold watch. He brought it to me and asked if it was really a *gold* watch. I told him it was low-carat gold, something that jewelers knew at that time as "Philadelphia gold." Then he asked if it was worth fifty dollars. I told him that *fifteen* dollars would be nearer its actual value. Then he asked me to test it with acid. I demurred, telling him it would leave a spot on the watch; but he so stoutly insisted that I just touched the case with acid. I tried to polish it off so the spot would not show. The trade was broken up, and then for the first time in my life I learned that it might be sometimes a little dangerous to

"butt in" and break up a horse-trade. In a little time the man who owned the watch marched into the store with a crowd of toughs, as it seemed, and gave me a blowing-up. He accused me of putting aquafortis on the watch. He said I was only a backwoods farmer, never learned any trade, and that my whole place was only a one-horse institution. I remonstrated with him, and told him the plain truth about the watch, but it only made him the uglier and more abusive. If any of you are just commencing in business, and ever get a blowing-up like that, when in the right, and innocent, you can tell how I felt. I was so indignant I trembled all over, and my voice shook so I could hardly talk. After the crowd had gone and left me alone a lady came in; and I can remember vividly how I calmed myself down and tried to talk naturally to my customer. She had a little piece of jewelry that then was called a microscopic photograph that she valued very highly. She said she had had it repaired several times, but they always got the "motto" twisted or slanting. She cautioned me to be sure to have the motto stand horizontally as I held it up toward the sky. She then went out, saying she would call again soon. Let me digress a little once more.

My good mother, because of my narrow escape from death, watched over me with perhaps greater solicitude than she had shown for any of the other six children. She saw me grow in strength, and was pleased to note my love for science and God's works; but she was not pleased when, for a brief time, I drifted toward skepticism. When I had success with Italian bees she visited our home often; but again and again she would say to me, "Amos, I am glad to see you prosper. I rejoice to know what you are doing for the world in developing beekeeping; but the time is coming when you will be glad to be doing something of more importance to the world than to work with bees and honey. I know—I am sure of it, for I had evidence when I prayed for you, and, in answer to my prayers, God spared your life." She said this so many times during the early part of my manhood that I often laughed at her, and bantered her about her "queer notions." Let us now get back to that motto and the jewelry store.

Without any thought of what was coming I held that little piece of jewelry up to my eye and gazed toward the sky through the big plate-glass window. What do you think it was that she called a "motto"? This is what I read as if it were painted across the sky.

> But I say unto you, Love ye your enemies; do good to them that hate you; bless them that curse you, and pray for them that despitefully use you.

I saw the application at once. These words just then were like a drink of cold water to a person stranded in the desert. I recalled hearing the same words before when I attended Sunday-school; but it had been so many years since I attended, or at least at rare intervals, that I had forgotten all about it. When I was a child, I did not see the *beauty* and *grandeur* of those precious words; but now that I was a man and vexed in spirit, I took in their full import. When I saw my mother again I asked her if she could find where those words occur in the Bible.

"Oh, yes!" she said; and I soon began to read them over; and I read that whole wonderful sermon on the mount. May God forgive me for living on till I was toward 35 years old before I had hardly a *thought* of laying up "treasures in heaven where moth and rust do not corrupt and where thieves do not break through nor steal," as well as here on earth. Just about that time a queer individual was traveling through this county painting scripture texts on the fences. Some people said he was daft; others said he was doing *missionary* work; and I remember distinctly a text in very plain characters painted on a board fence just a little out of town: "Blessed are ye when men shall revile you and persecute you, and say all maner of evil against you falsely for my sake." I said, "Mother, those words came from heaven. They are not of earth;" and some time after testing these precious promises I said again, "Mother, loving your enemies and doing good to those who hate you is an *unexplored region.* It is something humanity has not discovered. It will revolutionize the world. It will settle quarrels, not only between neighbors, but communities and states, and among the nations of the world;" and, my dear friends, it has been my delight for the last forty years or so to *test* these grand and divine precepts that came straight from the mouth of the Lord Jesus.

Right in line with the above comes something that I have clipped from the *Sunday-school Times.* It is gospel truth in common everyday language. Again and again I have wanted to quote it to you; and just now I can not think of any thing that will do the world so much good in this twentieth century as the scattering broadcast of the wonderful truths outlined in this brief paragraph. I am thinking of having it printed in large type so that even old people can read it without spectacles; and I am so well convinced of the wonderful truth in the above

that I will furnish it without price or postage so that all the dear friends of the GLEANINGS family will take and distribute it. By the way, if there is any other religious periodical that gives the world such thoughts as these I have not yet found it. May God bless and prosper the editors of the *Sunday-school Times*.

THE DEFEAT OF INJUSTICE.

No one can ever afford to think about any injustice he receives. It is disaster and destruction to do so. It is like deliberately lifting a glass of poison to our lips and swallowing it. Injustice inflicted upon us never harms us until we dwell on it. While we ignore it, and do right, it is powerless against us. When we begin to turn it over in our mind, it starts its murderous work upon us. It soon exaggerates itself, blinds us, rankles, inflames, embitters. It breeds self-pity, which soon reduces us to a condition of worse than helpless uselessness. Jesus paid no attention to the awful injustices of his lot. We can not afford to do other than he did, but with our lesser injustices. If love is our master-passion, "thinking no evil" and "bearing all things," we shall live *emancipated* from the misery of dressing our own wounds. Such wounds heal quickly when we are lovingly busied with the needs of others.

Let us now get back to bees and bee culture.

Mr. Langstroth came up and paid us a visit. He told us a long story about his patent. This poor man had dwelt on it so long that even he, a minister of the gospel, and a successful one, had lost his peace of mind; and if he had not lost his faith in God it shook his faith in humanity. I called his attention to the hopeful text on that beautiful microscopic photo; but even he, minister of the gospel, did not catch on. I urged until he seemed annoyed, and I was afraid of a return of his malady. With a sad heart I gave it up. As it was getting to be late and toward bed time I went with him to his room. He said very little, although he was naturally exceedingly talkative, and I felt I had offended him by my importunity. In the morning, when breakfast was ready, as he had not put in an appearance Mrs. Root thought I had better go to his room. It was warm weather, and the door was wide open. The old gentleman was awake and partly sitting up, leaning on his elbow. As soon as he saw me he beckoned me to come up near him, with his finger. I was really afraid he was going into one of his "spells." He took his watch out from under his pillow and asked me to listen. As I was a watch repairer I supposed there was something wrong with the beat; but when I told him that it seemed to be in perfect order, and that it beat clearly and regularly, what do you think he said? He asked me what the watch said to me. I replied that it did not "say" any thing, and now felt sure that he was losing his mind. His reply made me think of one of my favorite texts: "O thou of little faith! wherefore didst thou doubt?" This is what he said:

"Mr. Root, that watch has been saying 'Quinby! Quinby! Quinby!' all night long, and I can't stand it any longer. I am going to start to-day. I am going to see Mr. Quinby. I am not going to say a word about the patent or about the hive. I am going to him as though we had always been friends."

You may be sure I thanked God for having rebuked my want of faith. "Let us not be weary in well doing; for in due time we shall reap if we faint not."

Friend Langstroth went to see Mr. Quinby, as he declared he would do, and they had "the best time in the world," and Mr. Langstroth got over his mental malady, if I am correct, and had little or none of it from that time until his death.

He and Mr. Quinby were warm friends until the day of their respective deaths—Quinby in 1875 and Langstroth in 1895. Both were born the same year—1810. After this the subject of the Langstroth patent was never mentioned. Our old friend seemed to have gotten hold of still another text from God's holy word: "Do good and lend, hoping for nothing again."

Later.—To-day is July 30; and as I write, war has broken out in the Old World, and reports seem to indicate that nothing can be done to stop it. Even the Peace Commission of the powers of the earth seem unable to stem the torrent of evil. The poor deluded people, from the humblest laborer to the king on his throne, seem totally oblivious of the grand text I have been talking about and quoting. The statement I made to my mother toward forty years ago, that rendering good for evil was as yet an "unexplored region," seems to be true even now. In spite of what missionaries have done, in spite of the thousands of copies of the Bible translated into all languages, and scattered among all the nations of the earth, the world has not yet learned to—"love your enemies and do good to those that hate you."

THOU HAST BEEN FAITHFUL OVER A FEW THINGS, I WILL MAKE THEE RULER OVER MANY THINGS.

I have several times spoken about the enjoyment I get with my little Stanhope electric automobile. Well, heretofore it has required charging about once in ten or fifteen miles. By getting it in fine shape as well as we could here at our own place of business I managed to get it up to 25 miles on one charge of the battery. But as I wanted it in such trim as to make 30 miles, the distance from here to Cleveland, I had

an expert from the makers of the vehicle to overhaul it thoroughly, getting rid of all the friction possible. It was quite a treat to me to be with the expert while he took the machine to pieces, critically examined every part, and gave me new ideas, not only in regard to storage batteries, electricity, "ball-bearing," etc., but he gave valuable instructions about repairing, to my good friends who have charge of our automobile-repair shop. Well, on Saturday morning, about ten o'clock, he discovered he wanted some special parts; and as he expected to finish up his job by night it was quite important that they reach here that same afternoon. I expressed some doubt about his getting them so the machine could be put together so I could use it to go to church. He said *he* could telephone them so they would be sure to get it right off. Now, the point of my story is what I found written on the shipping-tag when it came in at three in the afternoon on the electric-package car.

Rush! Special rush—man waiting! Notify consignee by phone immediately on arrival. BAKER MOTOR VEHICLE CO., Cleveland.

By the way, friends, is there any one among you who has not been annoyed by the half-heartedness or stupidity of express agents and others connected with transportation? Again and again I have been told things had not come that I wanted badly. Sometimes by importunity I have made the express man wake up and take a good look. Then, again, I have phoned and wired big establishments for something I wanted badly, and would not get a reply for several days. I have had so many such disappointments that I do not know but I was beginning to lose faith in humanity. But the Baker Electric Co. had always been so prompt in their correspondence, and so willing to make every thing plain, that I was *beginning* to have confidence again. The printed matter on that shipping-tag gave me more confidence. One of my grandsons took his wheel when the car came in, grabbed the package, and handed it to me without even stopping, and it was in the hands of the expert just as soon as he was really *ready* for it. The car was all fixed, he gathered up his tools, and left me the happy possessor of my car with all the *moving* parts practically "brand-new." It made 31 miles on one charge, and I expect to get several more miles out of it if I fully comply with his instructions. Now for the moral.

The people who do business in that way, take as much pains with an order for a 25-cent article that is badly needed as if they were going to make a sale of $25.00 or $2500. The young man or young woman who starts out in the world with the determination to be "faithful in a few things" will very soon be made by the people "ruler over many things." While I am on this subject I wish to tell you another little incident. First we will have a heading like this:

THE LOW COST OF LIVING.

Now do not think, friends, that I have made a mistake and got it wrong. So much has been said in regard to the *high* cost of living that I am exceedingly glad of the opportunity to say something on the other side; and the incident I am going to speak of did not occur out in the country nor in a rural village. It was almost in the heart of the great city of Cleveland. A great deal has been said about the expense of living, in *large cities*. Now, at the time of my story I happened to be in the city with one of my grandsons, a full-grown man, and another stout fellow who has charge of our auto-repair shop. I had finished my business, and was in a hurry to get home. I had but twenty minutes to catch our Medina car quite a piece away. Mrs. Root told me, when I started to go out, to be sure to take the boys to dinner as a return for taking me along in their auto. I said to Howard, "We cannot get dinner, and get over to where the car stops, in twenty minutes, so I shall have to wait for the next car."

Then we started for a restaurant. It was up an elevator on the second floor. Howard took the lead, gave me a big tin server, pointed to a knife, fork, and spoon, to which we helped ourselves. He then took the lead to a long table where hot smoking viands of every description were ready to be ladled out for the benefit of hungry people. It was one of those restaurants that I think they call "help yourself." I took a little roll of corn bread—I think it might be called the "hoe cake" that I have spoken about so often, and it was certainly tiptop. Then I had three slices of extra-nice bread cut from one of the loaves a yard long or less. A nice pleasant woman with a spoon in her hand presided over a dish that looked something like a meat pie. She gave me a spoonful, and I pointed to a nice little chunk of roast beef. Another pleasant-faced little woman gave me a generous spoonful of fried potatoes. A third one asked me if I would have some brown beef gravy on my potatoes. I nodded assent. You may wonder why I thus go into details over such commonplace matters. Well, I do so because I feel sure there are many among our readers who, like myself, have not kept pace with the great improvements in feeding the multitudes in a big city and in reducing the high cost of living.

As I had given up all hope of catching my car I ate my dinner quite leisurely, chewing my food as usual quite thoroughly. As it was very likely well cooked, and the meat in the pie was ground fine, it did not take very long. We are now coming to the point of this story.

As we passed along with the crowd, each one of us held his plate in full view of another pleasant-faced woman who had a lot of ivory tablets about as large as a silver quarter. On these tablets were figures. She just gave my server a quick glance, and tossed on it a tablet with the figures "14" on it. I supposed my nice dinner was going to cost 30 or 40 cents; but when I asked Howard what *14* meant on my check he said, "Why, grandpa, that is what your dinner cost."

"Why, do you mean, Howard, that this nice dinner that we have just had cost only 14 cents?"

He laughed, and nodded his head. I then noticed the checks given those two big stout men, and they were just *23* cents each. Now, what do you think of it, friends? Many of our country restaurants are saying they can not furnish meals any longer for 25 cts., and are charging 35 to 50 cents; but here in this big city we had a splendid dinner (I think the boys had some kind of dessert also) for the 23 cents, and my excellent and wholesome meal, without any "frizzles," of course, was *only 14* cents. We got it without *waiting a second*—no hurrying up slow half-hearted waiters. Well, the above is a pretty good story, even if I stop here. As I finished my dinner my good friend "Herb" (as that is what I used to call him when he was a small boy I like to speak of him that way even yet, even if he has pretty well-grown-up children of his own just now) said, looking at his watch, "Mr. Root, if you are anxious to get that car I think you can do it, yet."

Howard immediately added, "Yes, I think I can get you there, especially if they happen to be a little late." Then Howard started to "make time." One cannot go past a standing car in a large city; and you can not pass a policeman without his signal, so we were hindered a good deal. But we finally caught sight of the Medina car just starting out. Howard said he could make it; but lots of people got in the way, and I said we would have to give it up. Howard replied, "Not so." The car stopped for a passenger, and I was almost ready to get on when off it went again. Then another car "held us up." But Howard would *not* give up. Just as the last bit of hope was vanishing, the drawbridge over the river was turned, and the car was compelled to hold up, and this enabled us to catch up. The result was that I had *two more hours* to read periodicals, read letters from our many friends, or to hoe in the garden.

Now, my good friends, even if it is true that there are some things going wrong during this twentieth century, is it not also true that there is a whole lot of things that we ought to *thank God for* every day of our lives, especially if we are *bright* and on the *alert,* and *hopeful?*

HEALTH NOTES

ROBBING SICK PEOPLE.

I do not know but I shall be obliged to have more or less of this in every issue. Read the following from the *Good Health Magazine:*

THE HIGH COST OF CONSUMPTIVE CURES.

A statement just issued by the National Association for the study and prevention of tuberculosis shows how $15,000,000 a year is contributed to the high cost of living, this sum being spent by the American people for fake consumptive cures. "In spite of the statements of a number of individuals who have recently claimed that they have found a 'cure' for consumption, there is no information at hand to justify the belief that any specific cure for tuberculosis has been discovered which deserves the confidence of the medical profession and the people."

In backing up these statements, the United States public-health service declares that "outside of the three essentials in the treatment of consumption—namely, rest, fresh air, and good food, there is no drug known, however rare or expensive it may be, that has any curative action in this disease, and all remedies advertised as such are to be avoided."

Fifteen million dollars a year! What do you think of it, friends? This vast sum of money is not only wasted, but I presume a good deal of it goes for Duffy's malt whisky, which does *harm* to the consumer, makes him an inebriate, very likely, and not only hastens him to the grave, but many times it hastens him to the grave of a *drunkard.* The trouble is the one we have pointed out so many times. Sick people, especially those sick with consumption, have a peculiar hopefulness; no matter what medicine they take, they say they "feel better." In fact, after using the senseless electropoise or oxydonor, they feel better, or imagine they do; and they keep on until these vile robbers of sick people get a lot of their dollars. I suppose I have made quite a few enemies in trying to teach people that they simply *imagine* they have been helped. It is the

same thing with the chiropractic people The venders of these new inventions point you to their testimonials from the people they have helped. My reply is that the oxydonor people have just as many testimonials, or even more, and yet that little piece of metal representing a scientific instrument contains nothing but sulphur and graphite, or some other senseless ingredient.

Let me repeat an incident that was reported to me. Years ago the electropoise people had a $50.00 instrument. It looked something like a clock. On the dial was printed the name of ever so many diseases, including diphtheria, pneumonia, cancer, etc. When the patient who owned one of these clocks was sick he simply turned the hand on the dial of the clock to the particular disease he thought he had. A well-to-do man in Michigan, when building a fine residence had one of these electropoise clocks put in so as to have his home up to date. Somebody asked him what sort of complicated machinery was inside that enabled it to pick out any particular disease and send the remedy through the wire hitched to the patient's ankle. The owner said he was curious about it himself, and would like to investigate. The machine could not be unscrewed, so he got a chisel and pried it open. What sort of scientific apparatus do you suppose they found? Why, they found just a common nail driven into the back of the clock, and the wire that was hitched to the clasp that went around the ankle was simply twisted around that nail. Now, the inventors, or venders, perhaps I should say, had testimonials to the wonderful cures performed by that "clock."

To come right down to date I wish to mention "sanatogen." You see it advertised in many papers. Just recently I saw it in a prominent religious weekly, with the statement that it had the indorsement of *21,000* doctors. Ask your family physician what *he* thinks about sanatogen, and then consider the statement of so many doctors! Electropoise said years ago they had the indorsement of a *hundred ministers of the gospel.* If this were true, the greater shame to such ministers. Well, sanatogen may be a little better, owing to the fact that it really does help people; but *Collier's Weekly* tells us that it helps just about as much as the same amount of cottage cheese. The only trouble is that we have to buy $100 worth of sanatogen to get the same amount of energy that we do from a dollar's worth of wheat flour. The price of it is from one dollar up; and where people have more dollars than they have use for it *might* be a good investment.

Dr. H. W. Wiley, in *Good Housekeeping* for January, 1913, agrees substantially with the above. In fact, he says:

> One dollar's worth of sanatogen yields approximately not more energy than six cents' worth of good milk or one cent's worth of ordinary wheat flour. The following claims made for sanatogen are seen, therefore, to be highly exaggerated:
>
> The re-creator of lost health.
>
> Sanatogen is . . . . a rebuilding food.
>
> . . . . . revitalizes the overworked nervous system.
>
> Specific nerve-tonic action.
>
> Most reliable and scientific of all nutrients.

By the way, since reading of the wonderful results from the use of sanatogen I thought I would test cottage cheese. I used it with my fruit for my supper instead of common cheese; and I am rejoiced to say that it fills the bill better than any other cheese I ever got hold of. Last night I had for my supper beautiful luscious peaches—six cents' worth—and a little bowl of cottage cheese with some buttermilk stirred in. I told Mrs. Root it was the most delicious meal I ever had in all my life. She would not allow this to go in print if she knew it, because she says I have said it so many times; but I tell her the *world* is progressing. Every day gives us something better than we ever had before.

I do not know exactly what price I ought to put on the cottage cheese and buttermilk, for we have two good cows; and while our young folks are off at our cottage on the lake, there is more milk than all the families can use; so if I do not have the cottage cheese and buttermilk it would go to the chickens.

Now, good people, those of you who have paid from 25 to 50 cents (or more) for your supper, just hunt up some nice peaches and get some cottage cheese somewhere, and you see if it does not make a meal fit for a king, and ten cents will pay the bill. Mrs. Root says if I am going to continue with the above meal I need not tell people any longer that I "do not eat any supper."

Now just one word more. Mrs. Root prepares my cup of cheese and buttermilk at any odd time during the day, and places it where I can find it readily. I get the peaches at the grocery. When I am through I drop the peachstones in the bowl that contained my cheese, carry them away, and then Mrs. Root simply has the one bowl and spoon to wash. Perhaps I had better add that *her* supper is about as simple as mine. I think, however, she has a little dry toast and butter, or something that does not require a lot of dishes, and nothing to clear up after supper.

Now, perhaps it *may be* a good idea to *read* the exaggerated statements in regard to the value of sanatogen, but instead of paying a dollar a bottle, which is a hundred times what it is really worth, use cottage cheese and buttermilk that can be found at a reasonable price (thank God) almost all over our land.

TEMPERANCE

DOES PROHIBITION PROHIBIT? SOME "FACTS" FROM OUR GOOD FRIEND T. GREINER.

How absurd, and how easily disproved by the facts, is this claim of the liquor men that prohibition does not prohibit! how, just at this time, by denials and misstatements and misrepresentations, they try to wiggle out of the hole that the unexampled and wonderful prosperity of the dry State of Kansas has put them in! And this prosperity cannot be denied. Our good friend F. D. Coburn vouches for this prosperity, and we may well take his word for it as against the whole of the liquor forces.

We have in New York one county that is wholly dry. This is Yates. It has one large village, Penn Yan, which has been dry for over four years. I was anxious to learn how things look there now, and asked Assemblyman Gillette some pointed questions. The following are the facts as reported to me:

During the year of *license*, 210 persons were arrested in Penn Yan, 118 of them for intoxication. During the four years of *no license* (Oct. 1, 1909, to same date 1913), the number of arrests was gradually reduced to 96, 91, 81, and 90, respectively, of which numbers 74, 55, 62, and 53, respectively, were for intoxication. In the slightly larger village of Canandaigua, a license town with a large brewery in Ontario County, probably not more than 20 miles distant, 710 persons, 411 of them for intoxication, were arrested during the year 1912. Some difference, apparently!

It is true that some liquor has been brought and shipped into Penn Yan during the dry years, and that there have been cases of intoxication. But it is also true that no divine commandment, no law made by man, has had the effect of entirely stopping the prohibited practices or acts. Our State laws prohibit murder and assault and larceny, etc.; but murdering and assaulting and stealing are going on just the same. What sane person would think of repealing our criminal laws for that reason?

Penn Yan is the county-seat of Yates Co. Since it voted dry, there has been so little business for the police court there that the people voted to abolish the office of police justice, with a salary of $600 per year, for the apparent reason that the justices of the peace are fully able to take care of the reduced number of criminal cases. Moreover, when county court was called on June 9, 1913, there was not a single case, either civil or criminal, to be tried. It was a surprising and wholly unprecedented situation. "It may be a coincidence," says one commentator, "but it is a most gratifying fact that this unheard-of condition occurred while Yates Co. did not have a legalized bar within its borders." It is no wonder, then, that the great majority of Penn Yan's physicians, eleven in number, ask the voters of Milo Township to vote "No" on all four propositions, and that every grange in Yates Co. has passed resolutions in favor of no license.

HOW PROHIBITION AFFECTS THE BANKS.

The two banks in Penn Yan report the following amounts of deposits:

Report of Sept. 14, 1909, the last during *license*. Total	$ 928,382.00
Nov. 16, 1909, first during *no license*.	1,106,811.00
Nov. 10, 1910, *no license*	1,151,440.04
Dec. 21, 1911, *no license*	1,158,439.41
Dec. 26, 1912, *no license*	1,328,663.09

A total increase under the no-license years of $400,280.53.

No wonder the banks and their depositors are in favor of *no license!*

Finally let me quote the substance of Assemblyman Gillette's personal reply to my questions:

"As to conditions here, they certainly are better than they were when liquor was openly sold. A great deal of liquor is brought in here and slyly sold. But we seldom see a drunken man on the street. Almost without exception the merchants are in favor of the dry town now. I think that every place which used to be used for a saloon is now occupied by some legitimate business, but some of them at far lower rents. The owners of property which was used as saloons, and the hotels, have been hit pretty hard; but all other kinds of business are well satisfied. Factories and all employers of labor like it much better, as their men are sober and ready to go to work Monday morning.

What have the liquor men to say to such facts and statements? Will they claim that "prohibition does not prohibit?" T. GREINER.

La Salle, N. Y., July 24.

VERA CRUZ, MEXICO, BY ONE ON THE SPOT.

I have several times made extracts from letters from my nephew, Homer H. Root, a young man who is in the United States Navy, on the warship Arkansas. For some reason the Arkansas has been stationed for quite a time at Vera Cruz. Below is the letter:

Dear Uncle:—I have been here in Vera Cruz two months to-day, and can't say that I particularly like it here; but as I have to stay I might as well make the best of things. We had quite a little excitement here the first three or four days; but since then it has changed considerably. The people seem to think a great deal of us here since they have learned the truth. Before we came the people were told if the Americans win they would kill all the people they caught, but since they have found out we are here for their own good they are very nice to us. I don't think Mexico will ever get back on her feet without the help of the United States or some other big nation.

I have only nine months more before I receive my discharge. It does not seem possible I have been in the navy three years and three months; but I am not sorry I ever came into the navy, as it has taught me a great many lessons, and I have seen a great deal of the world.

Vera Cruz, Mexico, June 21. HOMER H. ROOT.

It seems from the above that the great bulk of the people of Mexico are very poorly informed in regard to the attitude of the United States; and if there was ever a field where *missionary* work was needed, and where the gospel of Jesus Christ was needed, it seems to be just now in poor unfortunate Mexico.

Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the Classified Columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

FOR SALE.—Orange honey; 120-lb. cases, at 9 cts. Sample free. JAMES MCKEE, Riverside, Cal.

FOR SALE.—New clover honey, finest quality, clean and waxy, 9½ cts. f.o.b. Lawton Sta., N. Y. A. IRISH.

FOR SALE.—No. 1 white comb, $3.00 per case; fancy, $3.25; 24 Danz. sections to case, six cases to carrier. WILEY A. LATSHAW, Clarion, Mich.

FOR SALE.—Light extracted in new 60-pound cans, 8½ cents per pound; in ten-case lots, 8 cents; dark amber, ½ cent less. H. G. QUIRIN, Bellevue, O.

FOR SALE.—Several tons of fine raspberry-milkweed honey in new 60-lb. cans (2 in case). Sample free. Write for prices.
P. W. SOWINSKI, Bellaire, Mich.

FOR SALE.—Best quality white-clover extracted honey in 60-lb. cans. State how much you can use, and I will quote price. L. S. GRIGGS,
711 Avon St., Flint, Mich.

RASPBERRY HONEY FOR SALE.—Left on the hives until it was all sealed and thoroughly ripened. It is thick, rich, and delicious. Put up in new 60-lb. tin cans. Price $6.00 a can. Sample by mail, 10 cts. Said 10 cts. may be applied on order for honey.
ELMER HUTCHINSON, Rt. 2, Lake City, Mich.

FOR SALE.—An extra-fine quality of white extracted honey put up in new 60-lb. net tin cans, two in a case for shipment. Our crop of honey this year is a blend of about half each of clover and basswood, thoroughly cured on the hives by the bees before extracting. The fact is, not a single pound of the crop was extracted until some time after the close of the hony-flow. Rich, ripe ropy goods, worth twice as much as thin unripe honey extracted during the flow. For this exquisite stock we are asking ten cents per pound on car here. Do not be deceived by cheap unripe stock when a trifle more buys this superior white-clover-basswood blend that your customers will want more of from time to time. Ten yards. One thousand colonies. Liberal sample free. Address
E. D. TOWNSEND & SONS, Northstar, Mich.

HONEY AND WAX WANTED

WANTED.—Comb, extracted honey, and beeswax. R. A. BURNETT & Co., 173 S. Water St., Chicago.

WANTED.—Comb honey and beeswax. State what you have and price. J. E. HARRIS, Morristown, Tenn.

WANTED.—Honey, extracted and comb. Will buy or handle an commission. Beeswax—will pay highest price. HILDRETH & SEGELKEN, New York, N. Y.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Full line of Root's goods at factory prices. E. M. DUNKEL, Osceola Mills, Pa.

Unhulled white-sweet-clover seed, $5.00 per bushel of 30 lbs. ROY WOOD, Ellsworth, Neb.

FOR SALE.—New and second-hand double-walled bee-hives. L. F. HOWDEN MFG. Co., Fillmore, N. Y.

FOR SALE.—500 cases of empty five-gallon honey-cans at 25 cts. per case.
J. E. CRANE & SON, Middlebury, Vt.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. Co,, Greenville, Tex.

The A. I. Root Co.'s Canadian House, Dadant foundation, bees, queens, honey, wax, poultry supplies, seeds. Write for catalog. THE CHAS. E. HOPPER Co., 185 Wright Ave., Toronto, Ontario.

"Root" bee supplies and "American" honey-cans always on hand in carload lots. SUPERIOR HONEY Co., Ogden, Utah. (Branch at Idaho Falls, Ida.) Manufacturers of the celebrated "Weed Process" foundation. Highest prices paid for beeswax.

The Beekeepers' Review is now owned and published by the honey-producers themselves. It is *the* paper that *all honey-producers* should support. Eight months' trial subscription, beginning with the May number, for only 50 cts. Sample copy free. Address THE BEEKEEPERS' REVIEW, Northstar, Mich.

WANTS AND EXCHANGES

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered.* Send me your order or a list of your requirements for 1914. Our catalog and price list will be mailed to you free. Order early and get the discounts.
C. E. SHRIVER, Boise, Idaho.

FARMERS, ATTENTION. Wanted.—Location for seven $150,000 Condensed-milk Plants and twelve $115,000 Milk, Flour, and Sugar Plants. We sell no stock or bonds, nor ask for free site. Show us you have natural surroundings to develop into dairy country if milk prices are such to make it possible to do so at a profit. Send full information of your advantages, pictures of farms, publications, books, etc., to HERMAN R. FRANZEN, Ephrata, Lancaster Co., Penna.

BEES AND QUEENS

FOR SALE.—Untested Golden Italian queens, 60 cts. each. J. F. MICHAEL, Winchester, Ind.

FOR SALE.—Fine Italian queens. See my large ad. in this issue.
J. F. ARCHDEKIN, Rt. 7, St. Joseph, Mo.

Phelps' golden bees, $2.00 per lb. Common bees from outyards, $1.50 per lb.
C. W. PHELPS & SON, Binghamton, N. Y.

Three-band Italian queens. Tested, $1.00; untested, 75 cts. Ready May 15.
S. CLICK, Mt. Jackson, Va.

FOR SALE.—300 fine Italian queens at 25 cts. each; very few over one year old.
THE STOVER APIARIES, Mayhew, Miss.

Connecticut queens, three-banded Italians only; large and vigorous; ready May 15. Price list.
W. K. ROCKWELL, Bloomfield, Ct.

FOR SALE.—250 colonies bees, ten-frame, free from disease. Unlimited range. For particulars address G. W. ROBERTS, Manard, Texas.

Three-banded Italian queens, bred for business; untested, 75 cts. each; 6 for $4.25. Satisfaction guaranteed. CHARLES ZWEILY, Lemont, Ill.

Try my bright queens. Select untested, 60 cts. each; $7.00 per 12. Safe arrival and satisfaction guaranteed. M. BATES, Rt. 4, Greenville, Ala.

Untested three-banded Italian queens for the rest of the season in any quantity, 50c each. Safe arrival. W. J. FOREHAND, Rt. 2, Ft. Deposit, Ala.

Will sell Italian bees in August at $4.00 per colony in 8-frame Gallup hives. No disease.
G. H. ADAMS, Spring and Central Aves., Troy, N. Y.

Young tested queens, 85 cts. each. Bred from comb-honey stock which I have been selecting for 20 years. C. F. BENDER, Newman, Ill.

Golden yellow Italian queens my specialty. Untested, 75 cts.; 3 for $2.00; 6, $3.75; 12, $7.25; tested, $1.50. Address E.A. SIMMONS, Greenville, Ala.

Golden and leather Italian queens, 100, $60; 50, $32.50; 12, $8.25; 6, $4.50; 1, 75 cts.; tested, $1.50. BURDICK & MEEKER, Redlands, Cal.

Untested Italian queens 75 cts. each; six, $4.00; 1 lb. bees with queen in Root cage, $2.50. Circular and "Good Cheer" blotter free.
J. B. HOLLOPETER, Pentz, Pa.

QUEENS OF QUALITY.—Three-band, leather color, select untested, 75 cts. each; $8.00 per dozen. Satisfaction guaranteed. Circular free.
J. I. BANKS, Liberty, Tenn.

Untested yellow Italian queens, each, 75 cts.; six, $4.00. Bees gentle, prolific, hustlers, with good honey records. Ready to mail.
J. B. CASE, Port Orange, Fla.

Queens from a superior strain of 3-band Italians. Hardy, gentle, and they are hustlers. Mated, $1.00; $9.00 per doz.; tested, $1.50.
L. MORRISON, Rt. 1, Argenta, Ark.

Northern-reared queens of Moore's strain of leather-colored three-banded Italians. After June 20, untested, $1.00 each; 6 for $5.00; 12 for $9.00.
RAMER & GLUEN, Harmony, Minn.

Doolittle & Clark's Italian queens. Safe delivery guaranteed in the United States and Canada. Breeders, $2.50, $5, and $10; untested, $9 per dozen.
DOOLITTLE & CLARK, Marietta, Onondaga Co., N. Y.

FOR SALE.—Having sold my farm I now offer for sale 59 colonies of bees in 10-frame hives, with or without supers and supplies. . No foul brood.
C. S. RUSSELL, Pine City, Minn.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1.00; 6 for $5.00. WM. S. BARNETT, Barnett's, Va.

Bees and queens; three-banded Italians; 1 lb. bees with queen, $2.00; ½ lb. with queen, $1.50. Untested queens, one, 50 cts. each; 6, $3.00; 12, $6.00. Safe arrival. W. J. FOREHAND, Ft. Deposit, Ala.

Golden Italian queens that produce golden bees, the brighest kind, gentle, and as good honey-gatherers as can be found. Each, $1.00; six, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. BROCKWELL, Barnett's, Va.

FOR SALE.—After June 20 fine golden Italians; untested, 75c each; six, $4; select untested, $1.25 each; few choice breeders, $3 each. No better honey-gatherers. Will resist brood diseases. Cash with order. EDW. REDDOUT, Box 43, Lysander, N. Y.

FOR SALE.—150 modern eight-frame hives of Italian and hybrid bees. Moore's and Robey strain, hived on full sheets of foundation. No disease. A bargain for $3.00 per hive. All supplies for less than half their cost sold with bees.
J. S. DEAN, Rensselaer Falls, N. Y.

Italian untested queens by return mail. We guarantee our queens to satisfy you. No disease. They are bred for honey-producers. For the rest of the season they go at 50 cts. each, any number. If you are particular about your queens, we wish to supply you. W. D. ACHORD, Fitzpatrick, Ala.

Golden Italian queens, good layers and good honey-gatherers; tested, $1.00; select tested, $1.25; untested, 60 cts.; dozen, $7.00.
D. T. GASTER, Rt. 2, Randleman, N. C.

Queens by return mail, or your money back. See larger ad. Write for free booklet, "How to Transfer, Get Honey, and Increase."
J. M. GINGERICH, Arthur, Ill.

FOR SALE.—Choice select tested 1913 hatch Italian queens, $1.00, August; 75 cts., September. We wish to replace for 1915 sales. Order before all are gone.
E. E. MOTT, Glenwood, Mich.

High-grade queens by return mail. Tested, $1.25; warranted, 75 cts.; choice breeding queens, $2.50. Italian, Carniolan, or Caucasian virgins of any of the above strains, 3 for $1.00.
STANLEY & FINCH, 1451 Ogden Ave., Chicago, Ill.

Golden and three-band Italian and Carniolan queens ready to ship after April 1. Tested, $1.00; 3 to 6, 95 cts. each; 6 to 12 or more, 90 cts. each. Untested, 75 cts. each; 3 to 6, 70 cts.; 6 or more 65 cts. each. Bees, per lb., $1.50; nuclei, per frame, $1.50. C. B. BANKSTON, Buffalo, Leon Co., Texas.

FOR SALE.—We offer best Italian bees in ten-frame hives, from one to carload, f. o. b. here, or in yards of 100 or more complete with fixtures and location. Cash or reasonable time. If preferred, will rent on shares several years with privilege to buy. Particulars on request. SPENCER APIARIES, Nordhoff, Cal.

Try Forehand's three-band Italian queens. They are raised from imported stock, unexcelled for honey and gentleness. One untested, 75 cts.; 6, $4.25; 12, $8.00. Send me your order; and if not satisfied I will return money. Safe arrival.
N. FOREHAND, Rt. 2, Brewton, Ala.

Bees with improved and unimproved land in never failing alfalfa and sweet-clover-seed raising locality. Bees with or without land, on easy payments; labor accepted as part payment; also bees in good isolated queen-rearing locality for early queens; can use a steady man.
OGDEN BEE AND HONEY CO., Ogden, Utah.

Hardy three-band Italian bees and queens; gentle, prolific honey-gatherers; guaranteed purely mated or another queen; no disease. Select tested, $1.50; six, $7.00. Untested, $1.00; six, $5.00; 12, $8.00, by return mail. Colonies, $6.00. Nuclei, $3.00 with queens.
S. G. CROCKER, JR., Roland Park, Baltimore, Md.

Golden and three-banded Italians—ready March 1. They have been bred for three points—prolificness, gentleness, and honey-gathering qualities. Select untested, each, 75 cts.; six, $4.25; 12, $8.25; 50, $32.50; 100, $60; tested, $1.50; select tested, $2.00; three-banded breeders, $4.00; golden breeders, $5.00.
GARDEN CITY APIARY CO.,
Rt. 3, Box 86, San Jose, Cal.

FOR SALE.—Our three-banded leather-colored hustlers. Queens are bred from a few select colonies, the record-breakers out of over 700. Tested, $1.25; warranted, 75 cts.; untested, 50 cts.; select untested, 60 cts. Queens are ready by return mail. Satisfaction and safe arrival guaranteed. No disease. For large quantities write for wholesale prices.
BROWN & BERRY, Hayneville, Ala.

FOR SALE.—Three-banded Italian queens, from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75 cts.; 6, $4.25; 12, $8.00; tested queens, $1.25; 6, $7.00; 12, $12.00. Selected queens, add 25 cts. each to above prices. Breeding queens, $3.00 to $5.00 each. For queens in larger quantities, write for prices and circulars.
ROBERT B. SPICER, Wharton, N. J.

California Italian queens, goldens and three-banders, by return mail, select untested, one, $1.00; 3, $2.50; 12, $8.00; tested, $1.25. Bees by the pound a specialty. One 1-lb., $1.25; one 2-lb., $2.25. Safe arrival and satisfaction guaranteed. Correspondence invited. Circular free. J. E. WING,
155 Schiele Ave., San Jose, Cal.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. PHELPS & SON, 3 Wilcox St., Binghamton, N. Y.

Dunn's Golden Italian queens, bred strictly for business that produce a strong race of honey-gatherers. March 1 to Oct. 15: One, mated, 75 cts.; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60.00. Tested, $3.00; breeders, $10.00. L. J. DUNN, Queen-breeder, Box 337G, Rt. 6, San Jose, Cal.

Queens by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of three-banded Italians, bred for gentleness, honey-gathering and wintering. State Inspector's certificate. Select untested, 1, 75 cts.; 6, $4.00; 12, $7.00; tested, 1 $1.00; 6, $5.00; 12, $9.00; select tested, 1, $1.25; 6, $7; 12, $13. Breeders, $4.00. Write for price on large orders; 10 per cent discount on 30 days' advance orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Reference, First National Bank. J. M. GINGERICH, Arthur, Ill.

PIONEER APIARY.—I am now doing my annual requeening, and have decided to offer my present stock of queens for sale. They are nearly all one and two years old, are all clipped, and are all descendants of the famous Moore strain. They are good queens, mothers of splendid colonies that have gathered a large crop of honey this year. There are many queens in the lot, equal to any I have formerly sold for $5.00 and $7.00 each for breeders. They are nearly all pure Italians, and the most of them purely mated. I offer them for sale for 50 cts. each, in lots of two or more. No selections made for any one, at any price. You take them as they come, and every one has an equal chance for the prize. Safe arrival guaranteed.
ELMER HUTCHINSON, Rt. 2, Lake City, Mich.

POULTRY

S. C. White Minorcas, $3.00 per 15; R. C. Buff Leghorns, S. C. Brown Leghorns, and Partridge Wyandottes, $1.00 per 15.
HILLCREST FARM, Winchester, Ind.

Runner and Pekin Ducklings and hatching eggs. White-egg strain. Blue-ribbon stock. Also drakes. Catalog for stamp.
THE DEROY TAYLOR CO., Newark, N. Y.

MISCELLANEOUS

You have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time. A year's dues to the National, and eight months' subscription to our own paper, the *Beekeepers' Review*, beginning with the May number, both for only a dollar. Address, with remittance, THE BEEKEEPERS' REVIEW, Northstar, Mich.

HELP WANTED

WANTED.—A sober young man who has had experience; a position in a beeyard for the season of 1915. ALEX. ELWOOD, Walton, N. Y.

WANTED.—Family to take care of apiary, and work in garden and orchard. Must be temperate, workers, and give reference. Box 715, McCook, Neb.

WANTED.—Young man with experience wants position during the rest of the season, with promise of work during the coming year. Prefer work at queen-rearing next season. Good references.
DWIGHT C. ANDERSON, Ironton, Mo.

BEEKEEPERS' DIRECTORY

Nutmeg Italian queens, leather color, after June 1, $1.00 by return mail. A. W. YATES, Hartford, Ct.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York.

QUEENS.—Improved red-clover Italians bred for business June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00 each; dozen, $10; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. CLEMONS, Boyd, Ky.

SPECIAL NOTICES

BY OUR BUSINESS MANAGER.

HONEY-TUMBLERS.

The tumblers we list in our catalog as half-pound are scant, and do not hold by actual measure more than 6½ to 7 oz. of honey. If you require a tumbler holding a full half-pound, better so specify, and they will cost a little more than those we list.

SWEET-CLOVER SEED.

We shall be pleased to hear from those who are harvesting a crop of sweet-clover seed for which they have no market at home. We are in the market to buy a carload or more of seed, especially hulled white seed. Send us sample and advise how much you expect to have and what you ask for it.

BARGAINS IN SHIPPING-CASES.

If you want cheap shipping-cases, do not fail to write us, telling what you need. We have hundreds of cases all nailed up, ready to fill, in good condition, which we are selling at bargain prices. Among them are several hundred double-tiered cases for 24 4¼ x 1⅞ sections, at $10.00 for 100. We also have a lot of new cases for 12 and 16 sections—sizes we no longer catalog. These we are closing out at bargain prices. If you can use such cases it will be worth your while to write and find out what we have to offer you.

SPECIAL NOTICES

BY A. I. ROOT

THE WAR IN EUROPE, ETC.

Just as we go to press there is a "great lot" that I should like to say in the way of protest against war as a means of settling differences. We have been making great progress in saving human life; we have got pretty much the upper hand of contagious diseases; we are caring for the *babies* as they were never cared for before; and we had hoped we were making progress in civilization as well as Christianity; but like a thunderbolt comes the news that the greater part of the continent of Europe is now engaged in a great war with all its dreadful late inventions for human slaughter, and I hardly think that *anybody* knows *exactly*

what they are all fighting about. If the *men* who rule the nations have all gone crazy, God grant that the time may be hastened when the *women* folks may have a chance to call us to our senses. Read the following which we clip from the *Woman's Journal:*

NOT CONSULTED.

War has been declared by the big European nations this week without consulting the women.

Are not women's interests at stake?

Are not the lives, not only of their loved ones, but of themselves at stake?

Why are they not consulted?

Wake up, women of the United States, and secure your enfranchisement before you, too, find yourselves in the abyss.

How about the sermon on the mount? Has it been trampled under foot, in the mud and mire, until it is clear out of sight? and has the whole wide world gone *entirely* over to the dominion of Satan? God forbid.

WOMAN SUFFRAGE; OUR GOOD FRIEND THE HON. W. J. BRYAN, SECRETARY OF STATE, TELLS WHY HE FAVORS IT.

Read the following, my good friends, and see if you cannot utter a hearty amen as I have done.

"The Creator has placed upon the mother a burden which she could not shift if she so desired, and he has given her the disposition to bear it. Her life trembles in the balance at the child's birth; her active years are given to the care and nurture of her children; her nerve force and vital energy are expended in their behalf; her exhaustless love is poured out upon them.

"Because the wealth of her existence is bestowed upon them, they are a part of her very being—'where your treasure is, there will your heart be also.'

"When one considers the cost to the mother of raising a child, it seems impossible that any one would attempt to lead a child astray or rob its parents of the priceless reward to which they are entitled; and yet there are in every community those who are inhuman enough deliberately to lie in wait to make a wreckage of the lives of young men and young women.

"They lay snares for them, and the men who ply this ghastly trade are allowed to use the ballot to advance their pecuniary interests. I am not willing to stay the mother's hand if she thinks that, by the use of suffrage, she can safeguard the welfare of those who are dearer to her than her own life.

"The mother can justly claim the right to employ every weapon which can be made effective for the protection of those whose interest she guards, and the ballot will put within her reach all the instrumentalities of government, including the police power. If she is a widow, there is no one who is in position to speak for her in this matter of supreme importance; if her husband is living, she can supplement her influence if they agree as to what is best for those under their joint care; if they do not agree, who will say that only the father should be consulted?

"Politics will not suffer by woman's entrance into it. If the political world has grown more pure in spite of the evil influences that have operated to debase it, it will not be polluted by the presence and participation of woman.

"Let her vote; and may that discernment which has, throughout the ages, ever enabled her to grasp great truths quickly so direct her in the discharge of her political duties as to add new glories to her, and through her still further bless society."

I take pleasure in clipping the following from our Medina *Gazette:*

Senator Borah said he saw no reason why half the intelligence and most of the goodness in a State should be denied franchise, and that they had had twenty years' satisfactory experience with woman's suffrage in his State, Idaho.

Mr. Fairbanks, formerly vice-president, said: "The ballot in the hands of woman has not been a firebrand, but a steadying, wholesome influence. By what divine patent do men monopolize political power? The right of women to vote has been conferred in many States; the experiment has not proved disastrous. There were prophets of evil when it was attempted; but the rafters of the republic have not fallen; chaos has not come; on the contrary, orderly progress has been maintained."

It gives me pleasure, not only to reproduce the above, but it has the indorsement of two great and good men widely known almost the whole world over.

GOD'S KINGDOM COMING.

Every thoughtful person who contemplates the wonderful progress going on—automobiles, wireless telegraphy, flying-machines, etc., no doubt asks himself the question, "What is coming next?" Well, I think I see, though perhaps dimly, one thing in God's plan that is coming soon; and that is, a wiser class of men and women than we have now—yes, *better* men than you and I. I for one can readily understand how God's plans must include something greater, grander, and much better than my poor self. How is it going to be brought about? Well, the following, clipped from the Chicago *Herald* of July 15, gives us an inkling. Read it.

SCIENTISTS BRAND ALCOHOL AS A POISON; TEXT OF RESOLUTIONS ADOPTED BY THE NATIONAL CONVENTION OF ALIENISTS AND NEUROLOGISTS.

Resolutions that were unanimously adopted yesterday by the national convention of alienists and neurologists, in session at the Hotel La Salle:

Whereas, In the opinion of the meeting of alienists and neurologists of the United States in convention assembled it has been definitely established that alcohol when taken into the system acts as a definite poison to the brain and other tissues, and that the effects of this poison are directly or indirectly responsible for a large proportion of the insane, epileptic, feeble-minded, and other forms of mental, moral, and physical degeneracy; and

Whereas, The laws of many States make alcohol freely available for drinking purposes, and therefore cater to the physical, mental, and moral degradation of the people, and many hospitals for the insane and other public institutions are now compelled to admit and care for a multitude of inebriates, and many States have already established separate colonies for the treatment and re-education of such inebriates, with great benefit to the individuals and to the commonwealth; therefore, be it

Resolved, That we unqualifiedly condemn the use of alcoholic beverages, and recommend that the various State legislatures take steps to eliminate such use, and that we recommend the general establishment by all States and territories of special colonies or hospitals for the care of inebriates; and

Resolved, That organized science should initiate

and carry on a systematic, persistent propaganda for the education of the public regarding the deleterious effects of alcohol; and be it further

Resolved, That the medical profession should take the lead in securing adequate legislation to the ends herein specified.—*Chicago Herald*, July 15.

CIGARETTES AND THE CIGARETTE HABIT; A TESTIMONIAL FROM ONE OF OUR GOOD FRIENDS DOWN IN BRAZIL.

Charlie was a boy of twelve. His father had always said that tobacco was not a good thing to use; but finally his father began using it, and, to be consistent, did not oppose his boy's using it. Charlie, having a so-called friend who smoked cigarettes, and seeing other boys doing the same, being led to believe by them that he could not be a man without smoking, tried it. The first time or two or three, I may say, he got sick as only those who have tried it know. But finally he got to craving it, and finally none but the strongest of tobacco would do him. He grew up, came to be an overseer on a coffee-farm, had nothing to do but oversee and keep accounts. Then is when his smoking reached its climax, and he smoked all the time, and at length became a real tobacco wreck—was troubled with heartburn in the morning; would have a very bad taste in his mouth; began to have bad attacks of sick headache, but would put that off as being hereditary; would justify himself by hearing folks speak of "the pipe of peace," etc. Poor consolation! Finally he began to consider—"Is smoking making a man or a wreck of me?" and so he resolved, and said to himself and others, "If it is the *Lord's will* I will not smoke any more."

Little did he think then what an effort it would be to hold out; but he would say, "Am I a man or a 'slave of the weed'?" So, after smoking for about 16 years he quit. He carried cigarettes and matches in his pockets for a month afterward to see if that, with the temptation so close, he could hold out. Many a time he found himself preparing to light a cigarette, but would boldly put it back. When he would get a smell of smoke from others smoking it would seem that he just *had* to smoke.

For about five years he would even dream of it. For a long time afterward, when the taste and smell had left his mouth and nose, when he would perspire freely he could plainly smell the nicotine. One who smokes cannot realize how *disagreeable* the smell is.

To you who smoke, if this sounds like real experience, listen: It is now 13 years since he has put a cigarette in his mouth, and he does not crave it any more, has no more of the sick headaches; isn't bothered with heartburn; has not such a bad taste in his mouth in the mornings, and last, but not least, has more confidence in and respect for himself. Remember the battle must be hard and long; *but the victory is worth fighting for.* CARLOS SMITH.

Cayerios, Sao Paulo, Brazil, April 23.

Although our good friend puts the above letter in the third person, I hope he will excuse me if I suggest that it is his own personal experience, and I think I may safely add that the cigarettes of South America, like the greater part of those used in Cuba, are pure tobacco; and while nicotine is bad enough, I am quite sure the pure cigarettes or the little cigars of Cuba and South America are not as deadly as the kind made and sold here in the United States. Somebody asked Prof. H. W. Wiley, while he was United States Chemist, what baneful drugs were used in the manufacture of cigarettes. He replied that, before he could answer the question, he would have to make an analysis; but when it came to speaking of "*baneful drugs*" he said he did not know of any *worse* poison, especially for children, than nicotine itself. May God bless and strengthen the good brother who has given us the above account of a victorious fight against the powers of darkness.

MY ELECTRIC AUTOMOBILE—LATER.

On pages 652, 653 I told you about my little car that would make only 25 miles on one charge of the battery. After the expert had picked up his tools and left I commenced testing my little car that had been made over. I soon got up to 30 miles, then 32, and decided for the first time to start off across the country to Elyria, 23 miles away. Over country roads, uphill and down, is more of a trial on such a vehicle than on the town pavements and over hard stone roads. I made the trip easily, however, got the batteries stored at the garage over night, and the next morning made the trip home and then ran *17 miles more*, making fully 40 miles on one battery charge. The expert told me he hoped it might make 35 miles; and I can hardly tell you with what boyish pleasure and enthusiasm I "coaxed" it in running at a fair speed clear up to the forty-mile limit. Now, in order to do this I planned, when going downhill, to let gravity save the electric current; and in turning corners where it was possible, I let it go on its own momentum in order to relieve what is known as differentiation. The book of instructions in caring for storage batteries I read over and over, and studied carefully almost every sentence. The charge at the garage for storing it, before it made the 40 miles, was $1.00, or 2½ cents per mile. I am told that in Cleveland there are places where such a battery may be charged for 50 cents. Here in our own home, where I have my own charging apparatus, with a current taken from our factory, the cost is hardly worth mentioning. The great drawback, however, to all electric automobiles is to find a charging station when one is out of current. But these stations are coming thick and fast, and the rates per kilowatt for an electric current is daily getting lower. Jacksonville, Fla., makes a rate of only 2 cents. Just of late in Cleveland they are making also a similar rate (or even still lower) where the current is used in considerable quantities for heating, lighting, and running machinery.

After the above was put in type I found the following from Edison, in Elbert Hubbard's journal called *The Fra:*

Everybody should have an electric runabout—something cheap—that will cost a few hundred dollars instead of these great expensive motor-cars that we now have. We ought to be able to get a car charged every few miles anywhere, and we ought to have roads that would make an electric a delight. It is bound to come.

The Old Original 1853 Edition of Langstroth Reprinted Now Ready for Distribution

One of the Most Charmingly Written and Entertaining Books that was Ever Published

It so stirred A. I. Root in the early days that he wrote: "What a gold mine that book seemed to me! . . . . Never was romance so enticing—not even Robinson Crusoe; and, best of all, right at my own home I could live out and verirfy all the wonderful things told therein."

Here is what Others say:

This will preserve the original for future generations. G. M. DOOLITTLE.
Marietta, N. Y., April 16.

I am much pleased with the reprint which has come to hand.
Amherst, Mass., April 15. B. N. GATES.

It is very interesting, not only from a sentimental but from a practical standpoint.
Guelph, Can., April 21. MORLEY PETTIT.

The dear old man was one of God's very own; and to have this reminder of him on my bookshelf will give me much pleasure. A. J. COOK,
State Commissioner of Horticulture.
Sacramento, Cal., April 18.

It seems good to read again this charming work. It must ever remain to the American beekeeper a classic, both instructive and fascinating.
Middlebury, Vt., April 15. J. E. CRANE.

It is well to have Langstroth reprinted; and if all would read it, many would be saved from going over well-thrashed straw. I have several of the early editions, and am glad to add this to them.
ARTHUR C. MILLER.
Providence, R. I., April 20.

I have a copy of the reprint of the 1853 Langstroth. I have long admired the writings of Langstroth, and had read his original edition with great interest. It is especially interesting in that he discusses some of the points that are annually "discovered" by others who are unfamiliar with the literature on bees. I feel that it might benefit American beekeepers to become familiar with this book, and trust that it will have a wide distribution. The book is a classic, and should be known to all good beekeepers. E. F. PHILLIPS.
Washington, D. C., April 16.

I am much pleased to get the reprint of Langstroth, and I thank you heartily for the same. I have not yet had a chance to look it through, but did look into it enough to recognize the dear old book. It was the very first thing I ever read on bees, and I read it through the first night—the night of the day I captured my first swarm. At least I read it till I dared not sit up any longer, lest my father arrive on the scene with a slipper. I did not dare look at the clock when I finally did go to bed. Yes, I got the fever bad.
Norwichtown, Ct., April 30. ALLEN LATHAM.

"Entered according to Act of Congress in the year 1853, by L. L. Langstroth." Entered at the same time, without any act of Congress, by means of the book containing the aforesaid legend and the hive which accompanied it, a flood of light upon the dense darkness that had from the foundation of the world enshrouded the secret and mysterious doings of the little busy bee within its closed domicil.

That divides the history of beekeeping into two distinct periods—the long ages before 1853, and the little span of threescore years since then. The rapidly diminishing few who have lived in both periods are in best position to appreciate the immense difference in the two. As we scan again the pages of the old—and ever new—book, "Langstroth on the Hive and the Honey-bee," how memories arise of "the grand old man" with the inventive brain and loving heart, and with the gentle voice we loved so well to hear! What a blessing that the same man who could make such a revolutionary invention could also write so beautifully! Whatever other books the beekeeper may or may not have, he is likely always to cherish the one classic from the graceful pen of the beloved Langstroth.
Marengo, Ill. C. C. MILLER.

While some of our readers may, perhaps, feel that this work would be out of date, the fact is,

FATHER LANGSTROTH WAS 60 YEARS AHEAD OF HIS TIME.

So much so that he revolutionized beekeeping throughout the world.

The book that helped to bring about this remarkable revolution is well worth reading to-day. It is full of valuable tricks of the trade.

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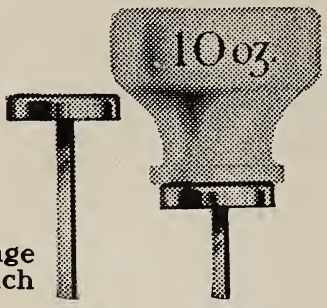
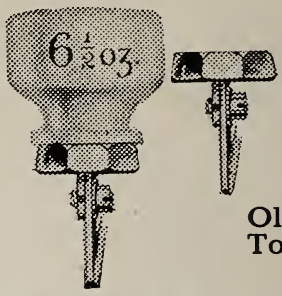
The A. I. Root Company, Medina, Ohio



Average Touch



Oliver Touch

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Now mark the story this test tells. To operate the average typewriter requires a 10-ounce pressure on the keys. Some 7½, some 13½. Mark that the Oliver writes at 6½ ounces—scaled down to *50% lighter!* And it wins its leadership in other points, too.

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The Silent Seven

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