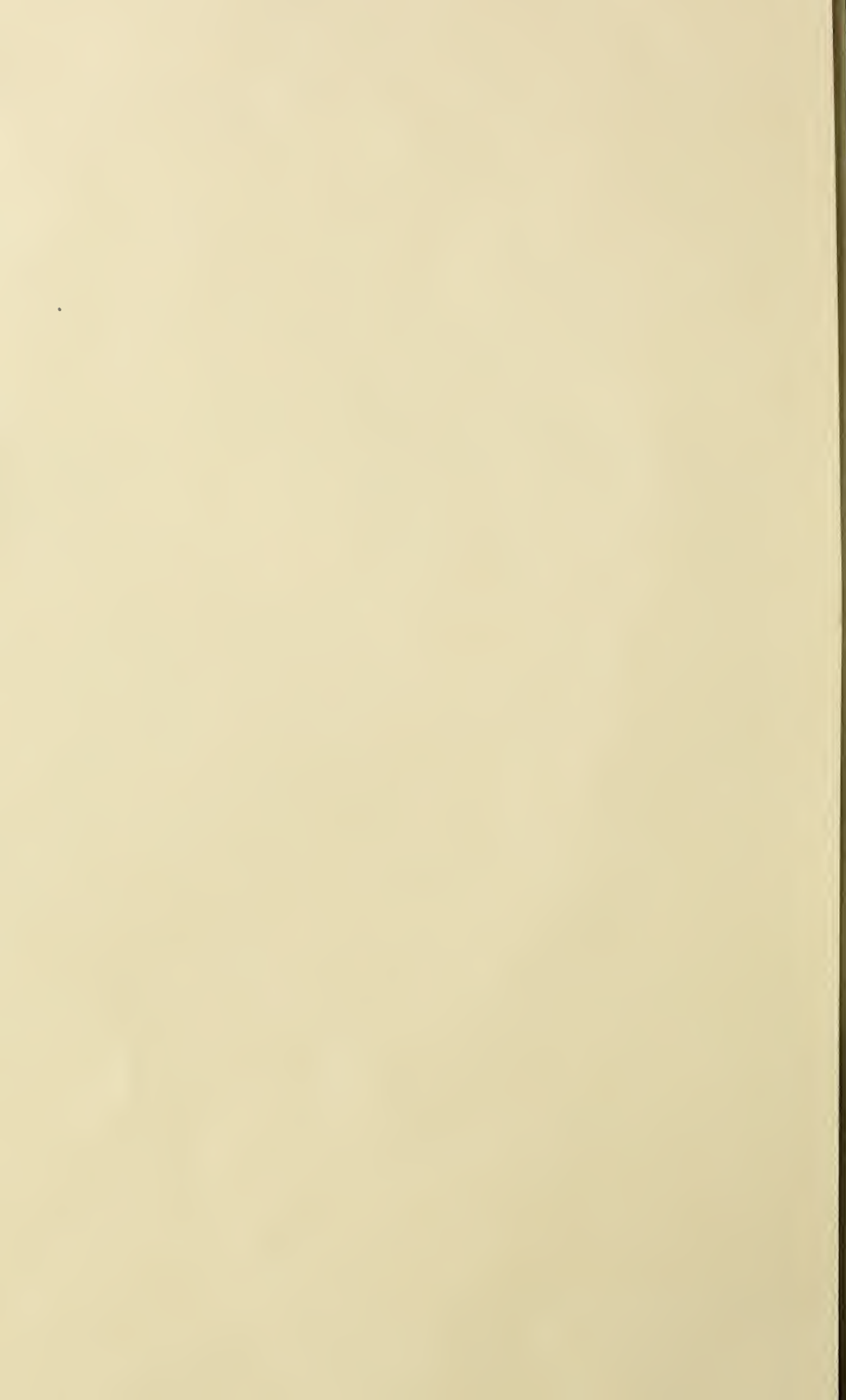


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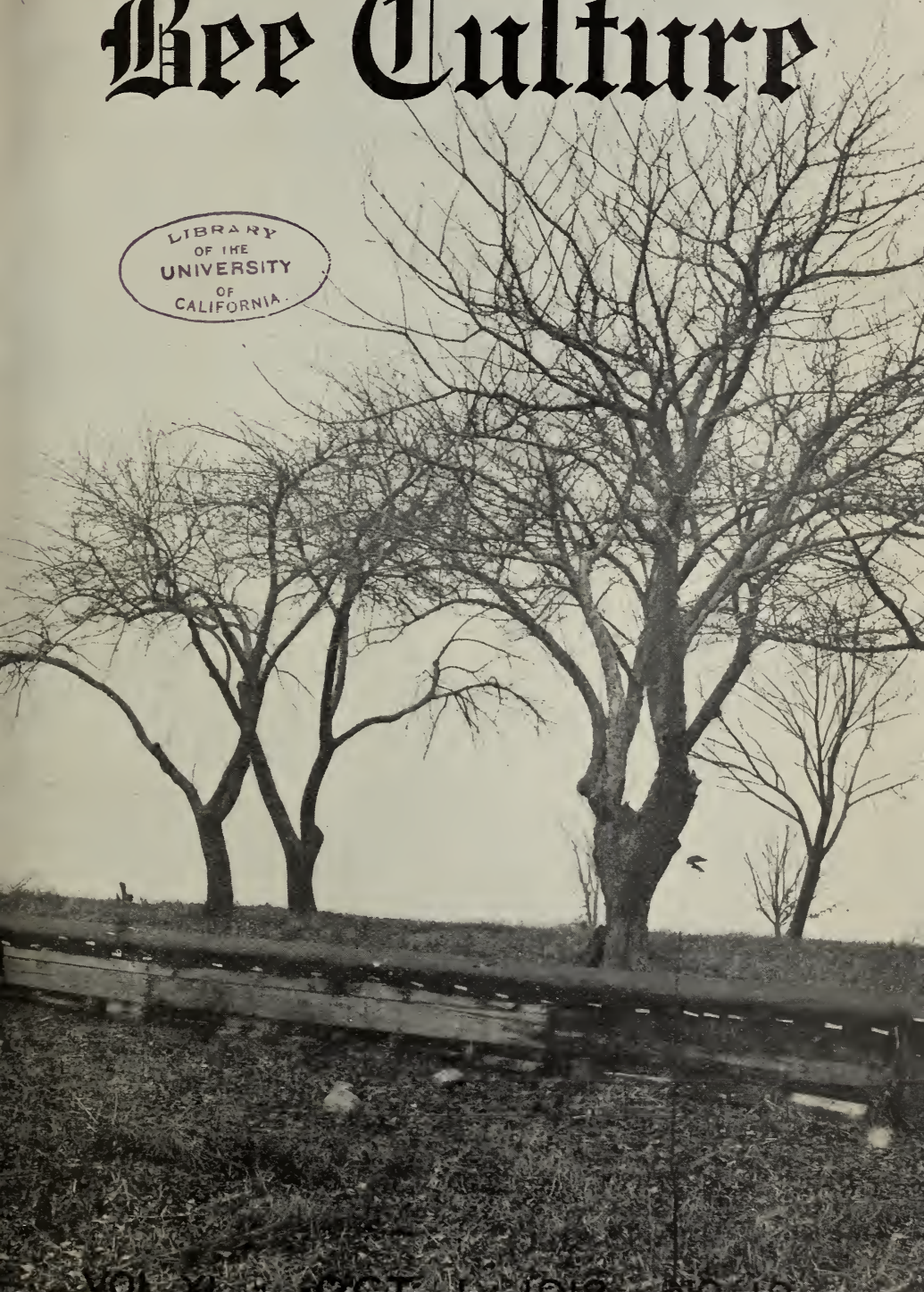
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OCTOBER 1, 1912

NO. 19

Editorial

HONEY-CROP CONDITIONS.

By consulting our Honey Column it would appear from the reports that the market in some localities is a little quiet, owing to the heavy arrivals of fruit; but the demand will undoubtedly pick up. In some places the arrivals of honey are slow in coming in. The demand for comb honey is active in most places, while in nearly all of them the market for extracted is stationary or a little slow. As we reported in our last issue, the crop of buckwheat honey will be light. It is apparent also that in some sections of the West, the honey season is below average, particularly on the western slope of the Rockies.

THE FRED W. MUTH CO. BURNED OUT.

ON the 10th of last month the warehouse and store of the Fred W. Muth Co., 51 Walnut St., Cincinnati, was visited by a destructive fire. Evidently the fire had been smouldering for hours and finally broke out in early morning. There was \$30,000 worth of goods in the building, on which there was an insurance of \$22,500. As there was not an entire loss, the company probably will not lose much. A new building has been rented at 204 Walnut St., within a square of the former location, and the company will be able to do business again within a couple of weeks at the furthest.

UNRELIABLE PRESS REPORTS CONCERNING HONEY.

IN our issue for Aug. 15, page 509, we published a statement from the *Montrose Press*, in which it was predicted that the crop on the western slope of Colorado would amount to 35 or 40 carloads this year. This clipping was sent us by a correspondent, and we supposed it was reasonably correct or that he would not have sent it; but we have been informed by several parties that the crop will be only about one-fourth of the amount stated.

We are very sorry that the statement appeared; but it is almost impossible for us at long range to know whether all the statements made about the honey-crop conditions are correct. However, we have about decided that we will no more accept statements concerning crop conditions from the ordinary newspaper. In the mean time we hope our friends all over the country will take pains to give us the exact facts. It is our sincere desire to publish only the truth.

CANADIAN GOVERNMENT BULLETIN ON BEES.

THE Division of Entomology of the Canadian Department of Agriculture has issued Bulletin No. 2, by C. Gordon Hewitt, D.Sc., Dominion Entomologist, entitled "The Honey Bee." This bulletin is very full and explicit, and will be of immense help to beginners especially in Canada. In fact, as the introduction states, the bulletin is prepared especially to answer the following question, which is asked in countless letters that are continually received: "I should like to keep bees, and should like to have you tell me how to begin and what to do."

The beginner is taught *how* to begin, and how to locate the apiary. Excellent advice is given regarding equipment, and simplicity of fixtures, etc., and then follows a description and explanation of various paraphernalia connected with the business. A few helpful notes on the habits of bees and their natural history are given; but the leading part of the bulletin is devoted to management, and also to that all-important phase of the question, disease and its treatment. The illustrations from our own "Farmers' Bulletin" No. 442 are used, showing the conditions of the dead larvae of both varieties of diseases.

Among the half-tone illustrations is a very fine picture of the Sibbald hot-water wax-press, which was described some years ago in these columns. In brief, the Sibbald press uses a can large enough to re-

tain a large quantity of hot water, which prevents the slumgum from chilling. There is no heat underneath while the pressing is going on.

The relation of bees to flowers and fruit comes in for a very clear explanation with illustrations. If all Canadian fruit men could read this part of the bulletin they would see at once the tremendously important part that the bees have in accomplishing the pollination of the blossoms.

Residents of Canada can probably obtain this bulletin free of charge, the number of which is 69, by addressing The Government Printing Bureau, Ottawa, Canada.

NOT ENOUGH OF COMB HONEY IN PROPORTION TO THE AMOUNT OF EXTRACTED HONEY PRODUCED. THE VALUE OF SUPERS FOR THE PRODUCTION OF BOTH COMB AND EXTRACTED HONEY.

A REVIEW of the market for several issues back would seem to indicate too much extracted and not enough comb of No. 1 quality. We intend to preach the doctrine of producing more comb until conditions are more nearly equalized. We are glad to note an increasing demand for comb-honey supers adapted to the production of both comb and extracted honey. The two outside rows have extracting-combs, while the center rows have sections with full sheets and bottom sheets. As the season tapers off, as it is bound to do, the dribbles of honey are lodged in the extracting-combs on the outside, while the sections in the center, if the management has been right, will be filled so as to make a No. 1 or choice comb honey. Such supers also, besides eliminating to a great extent unfinished sections that never ought to be put on the market, are well adapted to localities where the honey-flow is of short duration, making it possible to secure only a limited number of sections. But because the seasons have been poor of late, producers have been running more and more to extracted. A weak colony in a good season or a strong colony in a poor season will produce more in extracting-supers than in comb; and this is one potent reason why there has been a dropping-off in the production of comb in favor of extracted. But a combination super, it should be understood, eliminates to a great extent the difficulty of producing comb honey with a weak colony in a good season, or a strong colony in a poor season. Producers will be making up their orders for supplies soon for the coming year. Many of them, if not all, will do

well to try out the combination supers. Some of our most extensive beemen now recognize their efficiency, and are using them in a large way. Among this number we would mention Mr. E. D. Townsend, of Remus, Mich., well known to our readers.

A NEW SPECIAL NUMBER SUGGESTED.

IN response to our request for ideas on special numbers, there have been a number of ideas suggested, concerning which we shall probably have something to say later on. At this time we wish to mention an idea given us by Mr. Morley Pettit, Provincial Apiarist at the Apicultural Department of the Ontario Agricultural College. We give his letter herewith in full.

In reference to special numbers of GLEANINGS, I have appreciated and enjoyed them very much. The idea is an excellent one.

There is a difference of opinion among some of our Canadian beekeepers in out-apiary management as to whether it is better to have a complete outfit at each apiary, and travel from one apiary to another with a horse and buggy, motor cycle, bicycle, or automobile. On the other hand, some consider it much better to have one settled establishment, and then use a team or motor truck to haul the supers home for extracting, bringing every thing home in the fall and then again in the spring.

As a number of our beekeepers are considering establishing out-apiaries, and others are dissatisfied with their present arrangements, it seems to me a discussion of this most important question in a special number would be of value some time before spring.

We believe this kind of special number would prove very practical. We are here reminded of the fact that quite a large number of our readers have written, expressing appreciation of the automobile number, and requesting that we have another one. Now, it occurs to us that a good deal of helpful material along this line would be very appropriate in this special number on equipment. In other words, if you believe in a central extracting plant, and use automobiles or auto-trucks to carry the combs to it, let us hear from you, and, if possible, give us good clear photographs of the truck that you use, and also of your extracting plant.

On the other hand, if you have an extracting outfit at each apiary, and make the trip with your helper to do the work, and then later have the honey hauled home, let us have the particulars, with reasons why you think the plan is the most economical.

There is a third plan which quite a number follow, and this is to have a portable extracting outfit—really an extracting-house on wheels. This is drawn from yard to yard, the honey being hauled on the return trip.

Then there has been in the past quite

a discussion as to the relative merits of using one large extractor instead of two or more smaller ones. There are advocates of both plans. We should like to have this discussed also in this special number. Do you find it better to have one eight-frame extractor or two four frames? In this connection, Mr. R. F. Holtermann, of Brantford, Ontario, Canada, has gone so far as to have one twelve-frame extractor built to order; and after testing it this past season he expects to give us the particulars.

Some of these plans have been illustrated at various times, but we should like to have them all brought together in one special number. We will announce the date of this a little later, but it will probably be one of the early numbers of next year.

Of course it is to be understood that we pay for all material that we use, and we wish to say that, for all articles or photographs that we use in these special numbers, we shall expect to pay a little more than our usual rate. So let us have your ideas, and be sure to give your reason why you think your plan is the best. We will make it worth while to you, and we are sure that your ideas will be helpful to other beekeepers who may be planning to make a change.

MR. HOPKINS AND HIS METHOD OF RIPENING HONEY ARTIFICIALLY.

In our issue for May 1, page 265, we published a letter from Mr. A. Ireland, President of the Canterbury Beekeepers' Association, New Zealand, under the title of "Extracting Uncapped Honey Not Practiced Generally in New Zealand." In this article Mr. Ireland, after stating that Mr. Hopkins stood alone in the matter of ripening honey artificially, so far as the beekeepers of New Zealand were concerned, made this statement:

We had an exhibition here some years ago. Mr. Hopkins, then acting for the government, was running an apiary in connection with the exhibition. At that time he was practicing his plan of premature extracting; but the sample of the honey in Agricultural Hall soured, and started to ferment; yet in spite of such adverse experience he still advocates the plan.

Mr. Hopkins has written us in reply that the honey in question, so far from souring, is still good, even after the lapse of five and a half years; that he has sent letters from eight different persons certifying to the excellent quality of the honey on exhibition at Christchurch. They are T. W. Kirk, Director of Orchards, Gardens, and Apiaries; A. McPherson, Government Field Instructor; Miss Olive Feist, in Charge of

the Government Apiary; Daisy R. Hart, in Charge of Ruakura State Apiary; T. W. Lonsdale, District Agent of the Department of Agriculture; E. P. Brogan, Foreign Manager's Assistant of the Ruakura Farm of Instruction; A. P. Young, in Charge of the Apiary of the Department of Agriculture; and Dr. H. W. Wiley, then Chief Chemist of the United States Department of Agriculture.

We have carefully examined the statements made by these parties, and all of them speak of it in the highest terms.

We are glad to make this statement in justice to Mr. Hopkins; and in the mean time we have written him to send us an article describing his method of ripening honey artificially. While we have generally advised against the practice, believing that the artificially ripened product would not be the equal of honey ripened in the hive, we are open to conviction.

LATER.—After writing the foregoing we received a communication from Mr. W. B. Bray, of Deveauchelles Bay, New Zealand, taking issue with Mr. Hopkins in regard to the advisability of trying to ripen honey artificially. As his article seems to be so fairly and candidly written we publish it on page 633 of this issue. While we have no disposition to mingle in the controversy between Mr. Hopkins and his friends on the one side, and Mr. Ireland and Mr. Bray on the other side, we may say that the general experience in this country is decidedly against trying to ripen honey artificially. The people who have made the largest protest are the large buyers of honey—men who would know whether artificially ripened honey is the equal of that ripened by the bees. In saying all this we are not inclined to doubt the ability of Mr. Hopkins to ripen honey artificially, just as he says he can, in his locality and under his conditions. But as our correspondent, Mr. Bray, points out, atmospheric conditions have every thing to do with success or failure of the artificial method of ripening honey. This explains why some not so favorably situated do not meet with success.

We still solicit an article from Mr. Hopkins, who is one of the best authorities on bee culture in New Zealand. Doubtless he will take up these various questions connected with the proposition. In any case, no one can doubt his sincerity, and we are convinced, in view of the testimony that he has offered, that there must have been some mistake about that particular honey souring in Agricultural Hall to which Mr. Ireland refers.

Stray Straws

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

EDITOR GERSTUNG adds formic acid to sugar syrup to aid inversion. — *Deutsche Bzcht.*, XII.

BEES are reported as going down 70 feet into a well after water.—*South African B. J.*, 74. [This seems doubtful.—ED.]

THE FIRST Rietsche foundation-press was sent out in 1883. In 1909 the number had reached 50,000.—*Schweiz. Bztg.*, p. 198.

"A BIRD DOG at Mount Vernon attacked a beehive in a playful mood. The bees stung the dog to death."—*Chicago Record-Herald*. Next time that dog feels like attacking a beehive it will first inquire whether the beehive is in a playful mood. Also whether there are any bees in it.

EDITOR GERSTUNG says, *D. Bzcht.*, 87, that bees generally supersede their queens during the time of building up in the spring. I think that for every one of my queens superseded before the harvest, 10, if not 20, are superseded after it. How is it with others, and what should make the difference? [Same here.—ED.]

C. P. PALMER writes the same thing that N. Fred Gardiner says, p. 525: If a man faces the south his right side will be toward the west, and it's the same with a hive. No doubt that's right, and it's a good thing to have it settled, for sometimes that side is called the right side that is at one's right hand as he stands facing the hive.

CHAS. H. WALKER, p. 417, you'll probably never produce sections without a good many unsealed cells next the wood; and if "one or two cells" are enough to drip in handling, then these cells are not fit to ship. The remedy is to keep them in a place so hot and dry that the honey in the unsealed cells will become too thick to drip.

FRANZ RICHTER, the wide-awake lookout man of *Bienen-Vater*, has my thanks for helping out about who originated that way of getting cells built in a horizontal frame. It should be labeled "Made in Austria," not "Germany." J. Stumvoll was the originator, and I got it from *Bienen-Vater* and mentioned it in a *Straw*, April 15, 1909, p. 224.

YOUNG BEES gone astray are the worst stingers. So one is likely to be stung when working at a hive while the young bees are at play, for then they are thrown astray and become cross.—*Leipz. Bztg.*, 77. That's given on the authority of Weygandt and the editor; but has any one noticed any thing of the kind on this side? [We have had no such experience.—ED.]

IRON in the blood is a matter of the greatest importance. The great trouble, where it is lacking, is to administer it in such form as to be assimilable. You may feed a man a keg of nails without getting much iron in his blood. It is not as well known as it should be that honey contains iron in shape to pass directly into the circulation. As shown in a table, *Schweiz. Bztg.*, 158, honey also contains phosphorus, chlorine, lime, sulphur, magnesia, silicon, potassium, sodium, and manganese. Some or all of these are needed in the human system, and here they are in just the right shape. That makes honey in all cases a valuable food, and in some cases a valuable medicine. Sugar can not fully take its place, either for folks or bees.

THERE is not so much danger of giving too many empty sections to a colony if you keep in mind to wait until the bees have at least made a start in the outside sections of the supers already on. When the first super is only a quarter filled, if it's overflowing with bees, and every prospect of a big yield for many days, there's not such a very big risk in putting an empty super under—and even another on top—*provided* the bees have made a good start on all the sections clear out to the corners. But if there is still untouched foundation at the outsides, and you add another empty, the bees are likely to begin in the center of the new super before starting the outside sections of the old, and there will be a tendency in both to have sealed sections in the center, and empty foundation at the outside.

EDWARD HASTINGS, p. 418, rural mail delivery must be exceptional with you. "In this locality" carriers could double or quadruple their loads without increase of time or pay, and take just as long trips; and if the business should so increase that extra teams should be needed, there would still be money in it at the price charged per pound. I suspect parcels post will prove cheaper than you think, and that country merchants will be surprised to find it an advantage. [What you say concerning the possibility of rural mail-delivery carriers being able to carry double or treble the loads they now carry, without any increase of time or pay, would apply in this locality so far as we have observed. In driving to and from our beeyards in all directions we meet mail-carriers every day, and therefore we have a fair opportunity of forming an opinion.—ED.]

Notes from Canada

J. L. BYER, Mt. Joy, Ont.

The Ontario Beekeepers' Association will hold its annual convention in Toronto during the week of Nov. 12. The program is not yet prepared, but due notice will be given later as to place of meeting, hotel and railway arrangements, etc.

* * *

Owing to a misunderstanding on the part of the directors of the national exhibition held in Toronto this year the exhibit of honey is very limited, only one of the usual displays being in evidence. The other exhibitors this year had fine crops, and arrangements had been made for a record exhibit, when the unfortunate matter alluded to knocked out all their plans. Not being in full possession of the facts in the case, I will wait till next issue before referring to the matter more fully.

* * *

A WARNING.

Reference has been made to the unusual amount of brood in the hives at this date, Sept. 7. That means either starvation this winter or a heavy feeding bill for sugar. While the specialist beekeeper is not apt to be caught napping, this reminder is given for the benefit of those who have a few bees, and always depend upon enough being in the brood-nests for winter. Colonies run for comb honey may be all right; but if run for extracted honey they certainly will need feeding in all sections where conditions are like those here in York Co., Ontario, this season.

* * *

CLOVER PROSPECT GOOD FOR NEXT YEAR.

In glancing over my department for Sept. 1 the reader will no doubt wonder at the contradictory items regarding the weather conditions here in Ontario during past summer, as in one place reference is made to the extreme heat and then again I speak of the very cool weather during basswood bloom. This is explained by the fact that the two items referred to were sent in at different times. As a matter of fact, the only really hot weather we had this season was during the first two weeks of July; and since then we have had a long spell of unseasonable, cool *wet* weather that has knocked out all our expectations of getting a bumper crop of buckwheat honey from our yards this year. While some surplus has been stored from

the buckwheat, yet there is not a quarter of what we would have had with seasonable weather. For some reason the brood-nests are more crowded with brood at this date (Sept. 3) than I ever knew before, and of course that will mean lots of young bees for winter; *but* it will also mean a heavy feeding bill to get them in shape for good wintering. But all the rain we have had has not been an unmixed evil, as never before have I seen such prospects for alsike clover. There are hundreds and hundreds of acres of it; and it is so thick and rank on the ground that much of it is blossoming and growing right up among the shocks of grain, which in many places are still in the fields, owing to the unprecedentedly long spell of wet weather.

* * *

COLONIES IN POOR CONDITION WINTER BEST IN A CELLAR.

That symposium on wintering, Sept. 1, is interesting; and on looking over the various articles on the subject I am reminded that a promise was made last spring to furnish an article with illustrations showing the successful caves used for wintering my large apiary in the county of Leeds. While I entirely forgot the promise, owing to being very busy during the past few months, at some future time I hope to describe this simple building that winters so successfully. After all is said and done on the matter of wintering, there will still be advocates of both indoor and outside methods, right in the same locality, all owing to the different conditions found in cellars and other repositories, as well as the different methods taken of wintering outdoors. One thing is certain, and I have learned this by experience with the caves referred to—in a perfect wintering repository bees will winter with little preparation and a small amount of stores when they would die outright if packed in the most approved methods outdoors. On the other hand, if *strong* colonies are given abundance of good stores, and protected in any of the approved ways, they will winter far better than if just as well provided with stores, and wintered in a poor repository. From the fact that perfect wintering repositories are the exception rather than the rule, and that good outdoor wintering can be secured by all, providing proper care is taken, the latter method is and will continue to grow in favor among men who are in the business extensively, and have to keep their bees in different localities.

Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Colo.

SUNFLOWER HONEY.

We are having our honey this year well colored by the flow from the sunflowers. This is the first year that enough nectar has been collected from them to color our alfalfa and sweet-clover honey.

* * *

WHEN TO CUT ALFALFA.

The older stockmen and ranchers still maintain, in the face of the advice of experiment stations, that alfalfa should not be cut till in full bloom, and so I saw many fields of beautiful purple on the western slope that were a joy to the heart of a beekeeper.

* * *

NO NECTAR IN CLEOME THIS YEAR.

Cleome, or Rocky Mountain bee-plant, is to be found in large quantities over the whole State; but so far it seems to be yielding no nectar this season. Many beemen had hoped that it would furnish a fine fall pasture for the bees, but this does not seem to be probable this year.

* * *

Sweet clover is ten feet high beside our orchard, and a man on horseback would almost be lost in the luxuriant growth. The season has been a wet one for Colorado, and the clover is yielding honey well. Southwestern Colorado has red soil, and the sweet clover there is more fragrant, and I should judge it secretes more nectar than in Northern Colorado.

* * *

STEALING HONEY.

Honey thieves tried to drive the bees from one of my filled supers with a shotgun, half a dozen shots being fired into it. The super was pulled off and put into an irrigating ditch to help get the bees out. The hive was tipped over in getting the super off. Mud and dirt were daubed all over the honey. The thieves were run down by a young farmer, and their names secured. He knew most of them. They all had guns, and had been out hunting; but he, unarmed, caught and lectured them. The outcome will be interesting.

* * *

THE ROBBER TENT.

Last fall Robert E. Foster, county bee inspector for Montrose County, and myself, made a tent without a top, as described by the editor, August 15. We got the idea from Dr. Phillips. Perhaps he got it from the editor. The tent worked all right for fall inspection if the apiary was not too large; but the bees finally do find they way

over the top of that tent. Ohio bees may not, but Colorado bees have a habit of finding all six sides of a cube—perhaps from their experience with the steep sides of the Rocky Mountains.

* * *

MAKING THE LOAFERS GET TO WORK.

Bees which cluster on the outside of the hive are wasting their time. A hatful of them could fill a super in a week. Try this plan: Lean a drawn comb beside each outside cluster. The bees will soon desert the side of the hive for the comb. When eight or ten of these combs are covered with bees, beside as many hives, put them all together into a hive; screen them in, and haul to the next apiary. In three or four hours they will be very glad to have a virgin queen run in among them, and such a colony will work with the vigor of a new swarm.

* * *

UNOCCUPIED BEE TERRITORY.

Colorado has a good number of unoccupied fields for beemen, as a trip of investigation will show. A few districts are overstocked, and it is not necessary to warn against locating in these places. There is hardly a county where a person could not buy out one or more apiaries, getting the range with the purchase. Beekeeping is not so profitable that there is much crowding. Winter losses, foul brood, arsenical spray poisoning, honey failures, have all combined to make a cloud which at least has no *golden* lining. We hope a *silver* lining will still be in evidence.

* * *

FEEDING BACK EXTRACTED HONEY FOR COMB HONEY PRODUCTION.

The inter-mountain region is one where feeding back extracted honey for the finishing of bait combs has been a demonstrated success. Some few points should be borne in mind if the best results are to be obtained. The colonies selected to be fed should be strong in bees, and each should have a young vigorous queen. It is important that they be good wax-builders and white-comb makers. Feeding should be started before the honey-flow has ceased. As the flow tapers off, the feeding should start. Combs of even capping and color should be placed on hives doing a corresponding class of work. The feeding should be discontinued when the weather gets cool. September is the last month for successful work, and August is the month to begin. Such colo-

nies, if they have young queens, will winter in well-nigh perfect condition, and are worth three of the ordinary colonies on April 1 of the following year. This feeding will stimulate breeding, and will wear out an old queen, ruining the colony during the winter; it is a fine test for a failing queen, and all such should by all means be superseded at the earliest date. Lastly, it may be stated that only the whitest honey should be fed for the finishing of white comb honey. * * *

BULK COMB HONEY.

Some of the Arkansas Valley beemen cut out their unfinished sections of comb honey and pack them in 60-lb. cans, and then pour extracted honey (heated) over the combs. This is the only bulk comb honey that I know of being put out in Colorado, and there seems as yet to be no trouble with granulation. The amount produced is small, and it is all sold before Christmas. The weight runs around 55 to 56 pounds net, and the honey is sold by the can, not by weight. This honey brings \$6.00 a can—about 11 cents a pound.

The only way, as I see it, to put up comb honey in bulk is to fill the can full of the combs and then fill in with extracted. Trying to make up weight by putting in more extracted and less comb is simply dodging the question. Of course, if the buyer wants just a little comb honey in the can of extracted, it can easily be put up that way; but it is not bulk comb honey; it is extracted honey with some combs in it. * * *

A LATE FLOW.

About August 15 the weather turned cold, especially the nights following a rainy spell. The bees deserted the supers and ceased swarming, and carried all the honey stored in the unsealed cells of the sections to the brood-chamber. The weather warmed up again about the twentieth of the month, the warm nights returned, and the third crop of alfalfa came in bloom. The bees returned to the supers, and at this date, September 1, they are finishing honey in good shape. If the flow continues for two weeks the crop in northern Colorado will be a third larger than it would be with no nectar from the third growth of alfalfa. Honey from the third crop is something that we do not get once in ten years, on account of the cold nights. A fine rain has just started the sweet clover with new bloom, and the hot days put the nectar there for the bees. The rosinweed is in bloom, and this furnishes a yellow and very inferior honey. If the alfalfa and sweet clover yield well we hope that the nectar

gathered from the rosinweed will be negligible in amount. Rosinweed honey granulates very soon after being stored in the comb. * * *

THE COLORADO HONEY REPORT.

The crop conditions in Colorado were fairly accurately reported in the August 15th number, except the report taken from the Montrose *Weekly Press*, which reported a far larger crop than will be harvested. Montrose was credited with six or seven cars, while two cars of comb honey will be the very most in car shipments, and no cars of extracted will be shipped from Montrose. It is possible that three cars of comb and extracted honey may be produced in and near Montrose, but it is doubtful. The local shipments take a considerable amount, and some honey is used in the local markets.

If ten cars of comb honey are shipped from the western slope this year I shall be greatly surprised, and that will be about as much as went out last season. Twenty-two cars of comb honey were not shipped from western Colorado last year, as stated, nor of comb and extracted combined. The total shipments from all of Colorado will not total thirty-five or forty cars. I think that a newspaper report without authoritative data may do a great injury to the honey market.

The Arkansas Valley may ship two cars of comb honey to the eastern markets, and as much as one or more cars may go east a short distance by small local shipments. No cars of honey will be shipped from Fremont County. Two cars of honey may be shipped from Montrose. Not more than two cars of comb honey will leave Delta County, as there is considerable extracted honey produced, and the loss of bees has been heavy. Mesa County may ship as much as three cars of comb honey, but I do not know where it is all coming from. Extracted honey is produced by the larger beemen. Garfield County may ship one but hardly two cars of comb honey, and no cars of extracted. Northern Colorado may have ten cars of comb honey, and I know of six or seven that are quite likely to materialize. Southwestern Colorado, comprising La Plata and Montezuma counties, will have no carload shipments of comb honey, while several hundred cases may be shipped by local freight. Most of this is consumed in the local markets.

It should be borne in mind that the honey-flow is not over with at this date, September 1, but is likely to close at almost any time, and probably has closed in some parts of the State.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

Ex-President B. G. Burdick, of the State Association, is nursing a broken foot, due to his automobile moving without caution.

* * *

Try burlap in your smoker. I find it surpasses any other fuel I have ever used for cheapness and convenience. Nearly every one has some old burlap bags lying around.

* * *

Mr. Crane, I did not intend to imply on page 297, May 15, that sealed brood in any stage would stand a temperature of 40 degrees for I do not think it would, though I have never tested it thoroughly. What I mentioned was the fact that mature bees hatched three days after being exposed to a temperature as low as 40 degrees. The nearer mature, the more cold they will stand.

* * *

In a dispatch from Portersville, Cal., clipped from the Los Angeles *Tribune*, Mr. Robert J. Smith, in writing of the cause and cure for the June orange drop, recommends the spraying of orange-trees. I infer from Mr. Smith's article that this would be done during the blooming period, though this point is not made clear. Should this be the case, and come into general practice, it would be a sad blow to the beekeeping industry in the orange districts.

* * *

On page 525, Aug. 15, Walter C. Bennett takes a "hot shot" at the editor of this department as well as the editor in chief. Mr. Bennett wants a large piece of pork to make him swallow the report I gave of an average of 700 lbs. per colony for Orange Co. in 1884. Can't some of you old-timers from Orange Co. come to my rescue? We are rather short on pork in these parts; but I look for a return of one of those bumper seasons some time that will produce enough honey to wash this story down for Mr. Bennett. I may say, however, that a yield of 500 lbs. for a single colony is not at all uncommon any good season now, though much above the average, and we do not use box cars either.

* * *

A prominent beekeeper recently suggested to me that honey taken from over excluders, free from brood contamination, should bring at least one cent more per pound than where no excluders are used,

and more or less larvæ find their way into the strainer, or even into the honey-tank. Sometimes I fully agree with this gentleman's suggestions, though at the same time I realize what a howl will go up from many beekeepers at this suggestion. Perhaps the quickest way to bring this about, were it possible, would be to parade the consuming public through honey-houses at extracting time where the excluders were and were not used.

* * *

BEES DO NOT PREFER LARGE ENTRANCES.

Mr. Crane, page 363, June 15, seems to have found grounds for entrances as large as those of Mr. Latham or Arthur C. Miller.

A close study of the natural tendencies of the bees leads me to the conclusion that large entrances are neither sought nor desired by them. There is no question but that they select some very large entrances; but this is due often to inability to find a better place readily. I have watched the scouts in the woods searching for a habitation. With a zigzag nervous flight they will move up and down a tree only an inch or two from the bark, searching for an entrance to the body or limb. If they were in search of a large entrance their close searching flight would not be necessary. In the majority of cases they select a small knot-hole or crack through which to enter the cavity. Here in town, where where they have made their homes in houses they have nearly always entered through very small cracks or knot-holes. There is a swarm in the First M. E. church of this city that enters a crack $1\frac{1}{2}$ inches long by $\frac{1}{4}$ inch wide. The desire for a small entrance is undoubtedly for protection from robber bees, other insects, and small animals, as well as from inclement weather. I use a $\frac{3}{8}$ -inch entrance across the front of my hives, and find it ample for all purposes, even under the scorching sun of our midsummer skies.

General Honey-crop Report from the Southeast

Reports of the summer honey crop have come in from almost all sections of the Southeast, and we are able to make a definite report from our section. The honey-flow has been very heavy over the partridge-pea and clover section, and also over the great cotton belt; and a great honey harvest has been the result, such as we have never experienced before. This was due to ideal weather conditions. Local showers have been frequent over almost all sections, causing a most vigorous growth of the honey-plants. The temperature has been high and the wind has been calm, making conditions ideal for a great honey harvest, and for which we are very thankful.

Cordele, Ga., Sept. 14.

J. J. WILDER.

Conversations with Doolittle

At Borodino, New York

BUILDING AN UNDERGROUND CELLAR.

"Mr. Doolittle, I am thinking of building an underground cellar for wintering bees, as I find that this plan is much talked about in the bee journals."

"Well, Mr. Barber, any one who proposes to build a cellar to be used solely for wintering bees should first count the cost; and the advantages and disadvantages of cellar wintering should be looked into, so that as few mistakes as possible may be made. Most of those who winter in a cellar do so to protect their bees from the severe weather. You will remember that last year, from the first of January right through to the middle of February we had one continuous siege of cold weather when the thermometer was anywhere from 25 below zero up to zero, while at the same time winds were blowing that carried this cold air into every crack and crevice. The advantage of a cellar under such conditions is far-reaching, in that it allows us to economize to the greatest possible extent on the consumption of stores by the bees, and at the same time the per cent of loss is decreased to two per cent, and the vitality and vigor of the bees that live over are conserved to the greatest degree."

"But you have mentioned disadvantages of cellar wintering. What are they?"

"The disadvantages can be summed up thus: The labor required in carrying the bees in and out of the cellar, the difficulty of caring for any individual colony which may require looking after, without disturbing all the other colonies in the cellar, and the difficulty in controlling the temperature in the cellar. This last disadvantage is the most serious of all. When the sun gets around in the north in the spring, and damp still weather prevails, the temperature in the cellar often has a tendency to run too high, thereby exciting the bees. The excitement induces untimely breeding and a wearing-out of the vitality of the mature bees, which may bring on bee dysentery or death, and which also causes spring dwindling, so that many of the colonies become too weak to be of any use when the harvest of white honey begins. When I wintered bees in the cellar under my house I could control all conditions until about the middle of February or the first of March, and I thought there was nothing like this plan of wintering; but all at once the weather would change, and the thermometer would jump to 40, 50, and even 60 degrees, while the air would be muggy and damp. At such a time

the roaring of the bees in the cellar would sound like the rushing of the wind through the bare and leafless trees in the forest, and the bees would come out and die on the cellar bottom till they could be swept up by the bushel."

"But I thought this state of affairs could be prevented by opening the doors at night or carrying the bees out for a mid-winter flight."

"I know that some advise this; but opening the doors at night always seems worse than nothing when the air outside is warmer than that inside; and carrying the bees out for a flight and taking them back again makes a lot of extra work, and the results are not enough better to pay for it. After trying all of these plans for several years—for example, setting a part of the colonies outside and leaving the rest inside till all of them could be taken out for good, as well as opening the doors at certain times and keeping them shut at other times—I came to the conclusion that the bees were just as well off by May 10 if they and the cellar had been left entirely alone."

"But you do not propose to winter under a dwelling-house; therefore, when building your special cellar, you can so design it that it will afford proper protection during these warm spells, so that the temperature remains unchanged throughout the winter and spring. You will thus have only two main points to be kept in view—proper protection and convenience of access."

How Long Does it Take to Nail Together Five Hives?

I made the following notes on setting up: Five ten-frame dovetailed Root hives, R. cover, no supers. I did not nail the hand-hold blocks on. Commenced work at 7 A. M.; at 10.45 A. M. division-boards nailed; frames nailed, stapled, and wired, ready for foundation. At 1 P. M. bottom-boards and covers done; nails countersunk and puttied. At 1 to 2 P. M., rest. At 3 P. M. I set up the fifth hive body; countersunk all hive-body nails, and puttied nail-holes; nailed in from rest tins, having now hives complete for paint. At 4 P. M., priming coat done; bottom-boards primed all over.

Galena, Kan., July 20. J. P. BRUMFIELD.

Six Inches of Leaves for Packing

I winter my bees on the summer stands by setting a box without bottom and with a movable cover over the hive, and packing about six inches of leaves on all sides and on top of the hive. The covers have a slope of six inches, and a bridge at the hive entrance gives the bees a flight at any time. No losses.

Payson, Ill. DANIEL E. ROBBINS.

Mending the Cappings with Paraffine

I produce fancy comb honey in a limited way, and I find that my finest sections are frequently damaged by being broken, or the cells uncapped. As I use paraffine in numerous ways, I hit on the plan of mending the cappings with warm paraffine.

Dayton, O., July 16. EDNA T. MAUTINS, M. D.

General Correspondence

A BEE-LINE THAT WAS NOT STRAIGHT

How Various Conditions Change the Line of Flight

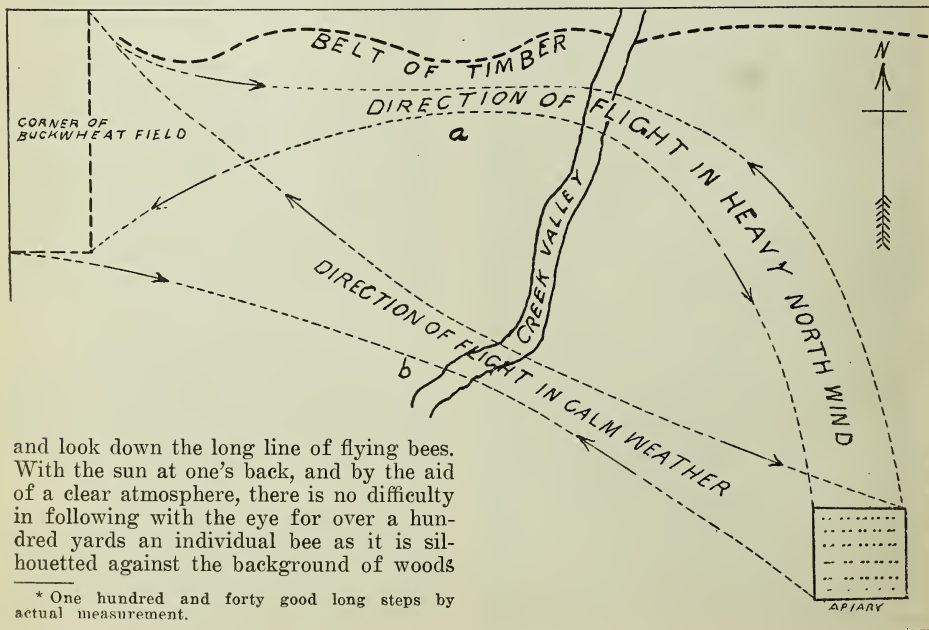
BY J. FORD SEMPERS

Most of us have been accustomed to accept without question the teaching that the bee's flight for home with her load of nectar or pollen is in a perfectly straight line. The "bee-line" has become the synonym for straightness itself. Possibly we owe this belief to the bee-hunter's tactics, who, in liberating a bee from his box, is guided by the course which it finally takes after having made its preliminary circles about him in finding its bearings. It is not likely that the hunter or any one else knows how the bee flies after it once gets beyond the range of vision. It may go in a straight line or it may not, and he is none the wiser. All he knows is that it started in a certain direction, presumably toward its home.

There are certain combinations of light and shade, topography and atmospheric conditions, by which it is possible to watch the flight of an individual bee for a considerable distance, a hundred yards or more.* For example, my yard is something more than that distance from a favorite moist sandy stream-bank to which the bees go in great numbers for water. The yard is on a hillside perhaps fifty feet above the stream. One can, therefore, stand near the apiary

in the valley below. This short flight is in a straight line if the air is calm. I have not been able to watch the course taken when a strong wind was blowing except when it came from the northeast. With such a wind the bees invariably describe an arc of a circle, the "bend" going toward the direction from which the wind is blowing, and the curve becoming deeper as the wind increases. Whether the bees behave in the same way when making a flight of one, two, or three miles is a question likely to remain unanswered unless possibly under some unusual circumstances, as in the present case I am relating, where conditions favor the definite outlining of the course taken.

While it is next to impossible to watch the flight of a single bee except for a very short distance, there is not so much difficulty in following the line established by a large number of bees between the apiary and some attractive forage grounds, when there is a general dearth of nectar or pollen elsewhere. During a general honey harvest the bees are scattered in every direction, and there is no way of knowing what course is taken after once the bees are beyond one's vision. Conditions favoring the formation of what I may for convenience call an audible or visible bee-line are just the opposite of those existing during a general honey-flow, since in the case favoring the



and look down the long line of flying bees. With the sun at one's back, and by the aid of a clear atmosphere, there is no difficulty in following with the eye for over a hundred yards an individual bee as it is silhouetted against the background of woods

* One hundred and forty good long steps by actual measurement.

formation of a bee-line, the bees are all concentrated toward a comparatively small spot. They are all moving over the same course to and from the apiary—all bent on the same errand, with the result that we have a buzzing, roaring, aerial bee highway between the apiary and the point being visited.

Under favoring conditions it is not so difficult to follow such a bee-line for fractions of a mile at least, depending mainly as a guide on the noise made by the bees. It is one of these bee-lines that I shall endeavor to describe. In the past ten or more years I have noticed a number of them. The one illustrated by the accompanying diagram occurred late in August, 1901. The diagram was made at that time. A number of other lines have taken place since, but these were less pronounced, or at least not so easily followed. It is very noticeable, if the weather is fair with little wind, that the course taken is apparently straight and high in the air. If threatening, lowering weather prevails, the flight is low. In the case of high winds I presume the flight may become any thing but an orthodox bee-line. The diagram shows how completely the bees have altered their course (at least in this instance) that they may make the most of prevailing conditions.

It was by accident that my attention was called to this spectacle. I had been working for several days on an out-building near the beeyard (to the west of it), and had noticed the line of bees passing daily back and forth over my head. The weather was warm, humid, and threatening rain, which, however, did not come, so the conditions were just right for nectar secretion. This was followed by a sudden clearing at night, a decided drop in the temperature, and high north winds. Resuming my work in the morning following this change I at once missed the busy hum overhead, and concluded that the change in the weather had cut off the nectar. Glancing over at the apiary I was puzzled to see the bees still working almost as busily as ever. My curiosity was at once aroused. I soon found the bees were flying in a nearly northerly course instead of the westerly direction which took them straight to the buckwheat before the heavy wind set in. Following the new line I found the bees were heading for a belt of timber to the north of the apiary, which extended in a westerly direction to the buckwheat. The line turned rather sharply to the west just before reaching the timber, the bees flying just below the tree-tops, *out of the wind* until the buckwheat was reached. They were quite

low; and as a part of the course ran parallel with a public road they attracted the attention of passersby, several of whom asked, "What is the matter? Are your bees going to swarm?"

At points just west of the stream (*a* and *b* on the diagram) the bees flew remarkably close together, and the very loud hum could be heard by one approaching long before a bee could be seen. The bees in the fair-weather course were invisible except a few stragglers who evidently made up the lower edge of the line.

I have noticed once in a while in GLEANINGS some reference to these bee-lines, but am uncertain if the subject has been dealt with in detail. Possibly the topography may have played an important part in the behavior of the bees.

I may add that the belt of timber referred to extended unbroken for a mile or more to the north and west of the buckwheat-field, thus giving the bees a complete windbreak. I should also explain that buckwheat is seldom sown here, and it rarely happens that more than one field is within range of the bees at the same time. Coming into bloom at a time when there is a general dearth of nectar, the bees make a great fuss over it every morning as long as it lasts.

Aikin, Md.

THE EFFECT OF WINDBREAKS IN WINTER

Tenement Hives and Outyards

BY H. G. QUIRIN

The Sept. 1st issue ought to be worth a small fortune to the beginner, as it deals with one of the most vital problems that he has to contend with. We, too, thought that a tight board fence would be a fine thing as a windbreak; so, three years ago, we constructed about sixty rods seven feet high; but last winter changed our mind on the subject, as the snow drifted inside the fence four to six feet deep. It packed, and eventually formed solid ice far above the entrances; to give them air we dug down to the covers and raised the cushions; but most of the colonies having ice above the entrance of the hives did not come through in very good shape. Were it not for our queen-rearing nuclei we would certainly take down this fence, but find it a fine thing to shield them from the winds in early spring.

We have another yard located on the south side of a woods. This woods is about as bad for catching the snow as the tight board fence. We have still another yard

located right out in the free open, and one would naturally suppose this yard would have perished; but the colonies wintered nearly the best of all. The only protection this yard had was some buildings about forty rods away on the west side, and a small copse sixty rods to the north. There was nothing around these hives to catch the snow, and the ground had not more than six or eight inches of snow on it at any time. Then as soon as it warmed up the snow melted and the ground was bare. Not so at the other two yards. There was ice around the hives and nearly over the entire yard till quite late, and every little sunshine that brought the bees out caused them to drop in the puddles of water, and the colonies kept growing weaker.

We have a fourth yard, which was located in a hollow or sort of cove. This yard usually winters without the loss of a single colony, and on our last visit last spring nearly every colony covered ten frames. It seems, however, that fate decided that these bees should not gather honey for their owner; for, a day after our last visit, the sun came out warm, and the snow was turned to water. The bees were located near a river with an ice-jam a few miles below, and a milldam a few miles above, and when the ice went over the dam it backed water two feet deep into the beeyard. No water was ever known to come up anywhere near the yard, and we have come to the conclusion that rivers, like many other things, can not be trusted.

The hives we winter in are of the tenement pattern, and also the old-style Root chaff hive. The tenement hive winters the bees the best, but it is not so handy to work with. The bees remain in the tenement hives winter and summer, with one large chaff cushion stamped down tight. The four colonies are then in winter quarters, and they require no further attention till warm weather in the spring. These tenement hives are a fine thing for outyards, especially when stock is turned in the orchards or yard, as they are proof against being knocked over; but it takes two to four men or a derrick to load them on a wagon for moving.

Bellevue, Ohio, Sept. 2.

[This problem of windbreaks to shield an apiary during winter is a perplexing one. But we think we have determined that a solid high board fence is not as good as an open fence, nor yet as good as low shrubbery by which the force of the wind may be broken—or enough so that it will not strike the hives with a blast. A solid board fence causes the wind to glance up-

ward. It then dives down, hitting some hives with peculiar force.

We were pretty well satisfied last winter, and especially in the spring, that hives having entrances facing a stretch of country without a windbreak, where the wind could gather momentum, suffered much more than other hives in a more screened position. Indeed, many of the former died outright. Hives with exposed entrances almost invariably were in bad condition.—ED.]

THE ESSENTIALS OF TRUE SALESMANSHIP

BY R. A. NUSBAUM

Can we not get something started in the press that will cause the "mob" to buy honey for the same reason that they buy "grape-nuts," "food shot from guns," "meadow gold butter," etc.? Of course that would cost more money than most of us would care to spend; but I believe it would pay as well as any thing else.

Some of us have sold large quantities of honey by making a personal call at the home. In a very few minutes we have made a good sale to Mrs. Jones, who just a few moments before had never an idea of purchasing any of God's choicest gift to man.

Honey can be sold just as easily as vegetables, books, flavors, etc. In order to do this successfully one must have a carefully prepared speech, or what a book agent calls his "canvass." This talk must be so arranged that it will lead the prospective customer through four distinct mental processes: First, he must get the attention of his prospective customer; second, he must develop an interest in the article sold; third, he must create a desire on the part of his prospective customer to possess this particular article; fourth, he must induce action—the order or sale. In the first place, these four steps are absolutely necessary in making any and every sale.

I venture to say that many beekeepers try to sell part of their crop every year without knowing the very fundamental rules of the salesmanship game. There should be a "canvass" built on attention, interest, desire, and action—the four corners of the foundation upon which all successful salesmanship is built. I think it should not be more than eight or twelve minutes long. A well-worded and balanced canvass should be worth hundreds of dollars to any one who has to do with the sale of honey.

Cleveland, O., Sept. 8.



New apicultural building at the Massachusetts Agricultural College, Amherst, Mass.

FIELD MEET AT THE MASSACHUSETTS AGRICULTURAL COLLEGE

BY A. W. YATES

The field-day and special meeting of the Hampshire, Hampden, Franklin Beekeepers' Association, held at the Massachusetts Agricultural College, Amherst, June 12, 13, 1912, was largely attended, many being present from out of the State.

The morning of the first day was given up to sight-seeing and the examination of the products of manufacturers and queen-breeders, of which a large hall was filled. Some of those making these exhibits were: O. F. Fuller, F. M. Keith, A. W. Yates, Dadant & Sons, queens and queen-rearing; H. F. Davis, F. Danzenbaker, Gus Ditmer Co., H. H. Jepson, Kretchmer Mfg. Co., E. M. Nichols, Ross Bros., supplies.

There was also a large collection of hives, implements, honey-packages, curiosities, and literature in the collection of the college, that was very interesting.

The speakers of the afternoon of the first day were A. W. Yates, of Hartford, Ct.; subject, "Bees in Relation to Fruit Culture and Plant Life," and R. H. Holmes, Shoreham, Vt.; subject, "Securing Fancy Vermont Honey." After this a demonstration was given of an electric

foundation-fastener by H. F. Davis. Mr. F. Danzenbaker explained the improvements on his new hive, and showed a case of fancy section honey produced in one of them.

All then adjourned to the apiary building. Dr. Gates explained the features of the new building, including its two floors and basement. Special attention has been paid to lighting and ventilation. On the first floor are a large laboratory and workshop, a room for the separation of commercial honey, and an office. The upper floor has three good-sized rooms. In the basement are the storage rooms for the wintering of colonies, the heating plant, and apparatus for wax-rendering. In the college apiary, which is located in a sheltered place on the hillside above the building, Mr. Keith gave a demonstration of cell-grafting that was very instructive.

The evening was taken up by the address of welcome by President Kenyon, L. Butterfield, and an address by J. Lewis Ellsworth, Sec'y State Board of Agriculture. Dr. James P. Porter gave a very interesting illustrated lecture on "The Life, Habits, and Development of the Honey-bee," showing the different stages of development from the solitary bee.

In the forenoon of the second and last day Dr. E. F. Phillips gave an idea of



Another view of the collection.

what was being done by his department in the federal government in regard to bee diseases and the extent to which they are scattered over the country. He also gave a demonstration of the treatment of foul brood by shaking the bees from the comb. This was watched with much interest. Beekeepers should feel thankful that this Department is taking such an active part in the protection of our bees, and that we have so able and enthusiastic a leader at its head as Dr. Phillips.

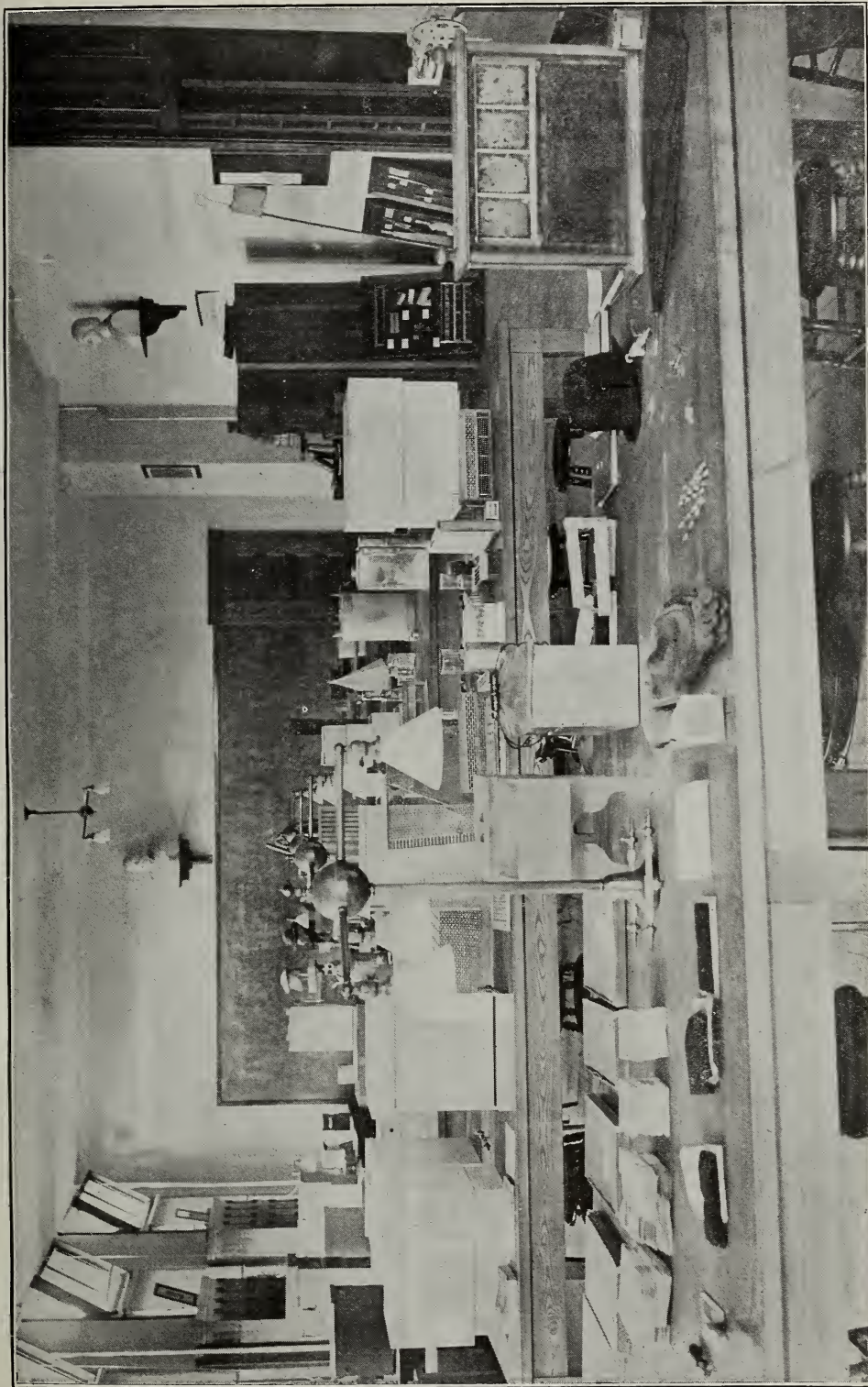
Dr. J. B. Paige demonstrated the use of new tools, etc., for beekeepers, and O. F. Fuller showed his queen-rearing outfit in operation.

Methods of shaking swarms, etc., were explained by H. F. Carey and others.

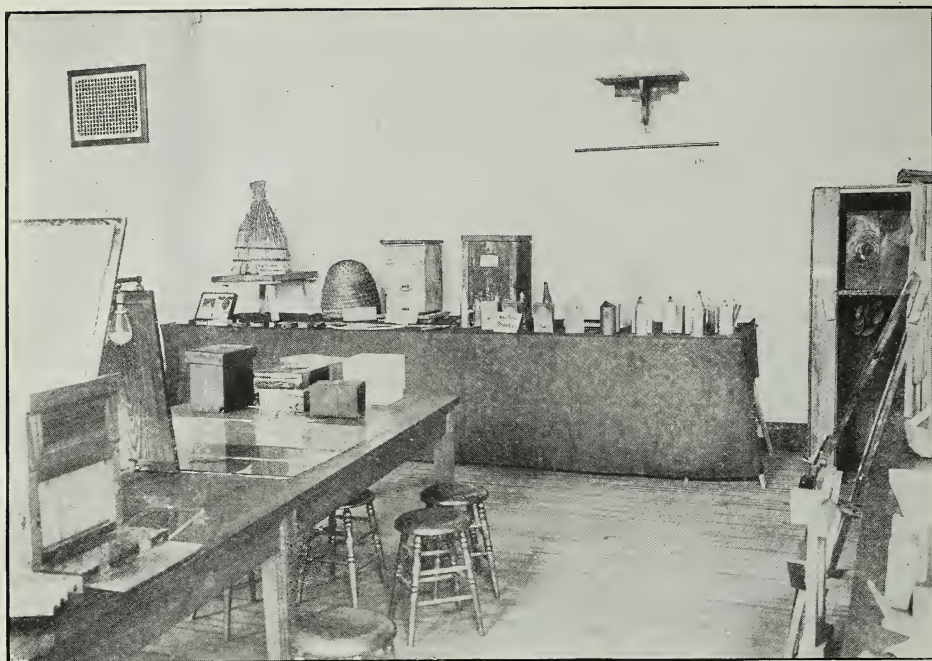
Beekeeping in Massachusetts is coming into its own. Not only are established beekeepers receiving aid, but new comers are being brought into the ranks by the work of the beekeeping department of the Massachusetts Agricultural College under the able direction of Dr. Burton N. Gates. Begun about two years ago in a small and modest way, the department under Dr. Gates has grown in size and scope until now it is doing a really important service to the beekeepers of the State. A thoroughly practical course in management and manipulation offered to regular students

at the college is but one phase of the work which is being done for beekeeping in Massachusetts. A short history of beekeeping as an art supplements this practical course. Other lines of work carried on by the department are State inspection of apiaries with a view to combat and control the two most important bee diseases—American and European foul brood; the offering of courses to those attending the two weeks short course held in May, and general instruction of beekeepers.

The course offered to the regular students is one of the very few given in this country, there being, perhaps, but two other colleges, at the most, giving instruction in this work. Over 85 students enrolled in the course, attesting to its popularity and value. The nature of the work, of course, requires that much of the time be spent in the laboratory. During the winter months the time is occupied with setting up hives, nailing frames and other hive parts, and the study of mechanical hive manipulation. When the weather becomes more mild, considerable attention is given to the management of colonies, the study of swarming, the taking care of swarms, wax extraction, and other important work that confronts the practical beekeeper. Working with the idea that proper management depends directly on the intelligent study of the habits



General view of the apicultural exhibit at the spring convention held at the Massachusetts Agricultural College.



One corner of the exhibit room.

of the bees, so called "rules" for beekeepers are discarded, and much time is given to the study and habits of the different castes of bees. Especial attention is paid to the habits of the queen with regard to swarming. A feature of the instruction is the short course offered to any one desiring to attend. Dr. Gates tells me that ten people registered from outside the regular enrollment of the college, and this would indicate that people at large are not too busy to give two weeks for practical instruction in this fascinating occupation. This is only the second year that the course has been offered, and the outlook for future development in this department is promising.

Since the course is short, only the most practical phases of beekeeping are taken up. A part of each day is devoted to lectures given by various members of the college faculty, and the remainder of the day is given over to laboratory work at the apiary building and actual manipulations of bees in the hive. This includes instruction in controlling swarming, treating bee diseases, getting the greatest total production of commercial honey. Study is also made of the wild flowers offering abundant nectar supply to bees. Of course, the natural range of nectar-gathering workers being so wide (often three miles) the

beekeeper can not hope to control to any little extent even the source of the nectar which his bees gather.

The equipment of the beekeeping department at the agricultural college is probably the best in the country, connected with instruction work. The offices of the department are at present under the same roof with the Department of Entomology. In the same building is a large well-fitted laboratory and paint-shop where the practical indoor work is given. The most complete library of ancient and modern books on beekeeping is owned by the department. Several French and English works on the subject, bearing the printer's date of the seventeenth century, are to be found in this library. In addition there is a museum of objects of interest to beekeepers; hives and appliances of old and of the newest manufacture; a series of hives showing the development of the modern hive, and special tools as well as hives for observation of bees at work.

On the whole the convention was considered a great success. It showed the awakening interest that the people of Massachusetts are taking in beekeeping; and the work done at the convention is sure to kindle new enthusiasm in those who have, for some reason or other, partly fallen by the wayside.

THE SUMMER MEETING OF THE SOUTHERN IDAHO AND EASTERN OREGON BEE-KEEPERS' ASSOCIATION

BY J. E. LYON, VICE-PRES.

One of the most pleasant as well as profitable gatherings of those who devote their lifework to the management of bees and the production of honey was the second annual field meeting and picnic of the Southern Idaho and Eastern Oregon Beekeepers' Association. The summer assembly is a comparatively new feature of the association's work, and was held at the apiary of C. E. Dibble, of Payette, Idaho, July 15. The purpose of this yearly gathering is to bring the apiarists of the State together during the time when the busy bees are gathering their harvest of honey for a good time socially, and afford a suitable opportunity for the discussion of timely topics in apiculture.

Between 35 and 40 of the leading beekeepers of the State were in attendance with their families. They came from such points as Boise, Meridian, Caldwell, Weiser, Payette, New Plymouth, Nyssa, Notus, and Ontario. They represent about 10,000 colonies of bees. Situated in the very heart



The "bee closet" open. The colony and brood-chamber is above the shelf, the surplus combs being below.



"Bee closet" at the apicultural museum, Massachusetts Agricultural College.

of a rich honey-belt of Southern Idaho, and with an apiary of 500 stands near at hand, the beautiful country home of Mr. Dibble was well suited for such a meeting, with its natural beauty and welcome shade.

A most sumptuous old-fashioned family picnic dinner was served out under the trees. The rustic tables were loaded with every thing conceivable to eat, with the hum of bees to be heard in the distance.

The president, W. H. Pennington, acting as toastmaster of the occasion, called the meeting to order. Mr. Dibble, as host, extended a cordial welcome to the assembled beekeepers. In a short talk, A. I. McClanahan, of Payette, expressed his belief in a large crop of honey this year. The editor of the *Gem State Rural*, A. E. Gipson, spoke upon the subject, "Our Sister Beekeepers." Mr. Gipson has been with the association since its organization, and has the utmost confidence in the bee industry.

Professor Wilson, of the Oregon Agri-



The entrance of the "bee closet" through the wall.

cultural College, delivered a practical address to the beekeepers. At Corvallis, where the college is located, Professor Wilson has a large class in beekeeping, a course covering a year's work. He has traveled through various parts of the United States, becoming acquainted with honey-producers. The most important element in the beekeeping industry, he said, is co-operation among the producers, which enables the buyer to secure a higher grade of honey, and the apiarist a greater compensation for his product.

An interesting discussion then followed concerning the relative merits of the single and double tier shipping-case and the best ways to grade honey. Practically all the beekeepers in Idaho use the single-tier case. As to grading honey, general opinion favored the eastern grading rules. All recognized the expediency of a plan by which representative producers and buyers could mutually agree upon a set of rules. A motion was carried for the appointment of a committee to confer and recommend to the winter meeting of the association the best style of shipping, and a uniform

set of grading rules. Crop conditions in Idaho, and the sale of honey were subjects then taken up. The beekeepers of Idaho recognize the folly of cutting prices. They realize that honey will be more carefully graded, and better prices secured, when they do not undersell, and especially when they market their honey through one medium. This concluded the formal part of the program.

BEE PARALYSIS PREVALENT IN SOUTHERN IDAHO.

A subject receiving perhaps more attention than any other, and informally discussed, was that of bee paralysis. This menacing disease is widespread throughout Southern Idaho. Not excepting foul brood it is, perhaps, the greatest enemy to apiculture in this State. It makes its

appearance most noticeably between the first and second alfalfa flows; but it may attack an apiary at any time during the summer. It has been known to destroy the complete working force of an apiary. A shortage in crop can many times be traced to the harmful effects of this disease.

There were almost as many remedies offered as there were beekeepers present. Many apiarists described various methods for treating each hive separately. Most of these methods have failed. The reason for this, we believe, lies in the fact that in Idaho the whole apiary is infected if one hive shows symptoms of it. Such has been our own experience. Bees by the thousand will be found crawling from the hive into the grass to die. But these can be seen only during early morning or on very cool days, which explains how the strength of an apiary can be diminished before the apiarist is aware of it. When attacked by this disease, the abdomen of the bee is greatly swollen, and black and shiny. There is a fluttery motion about the wings. If a personal reference may be pardoned, the most effective way to deal with this disease,



J. M. Lewis' method of packing bees for winter. The colonies are placed under the shed in the fall, thin boards placed in front, and leaves or straw packed tightly around the hives.

judging from extensive experiments made with bee paralysis, is through the agency of salt water, sulphur, and carbolic acid. These remedies have been recommended many times. But the difference of opinion arises as to how they should be administered. Again, referring to our own experience, we have found that in treating paralysis immediate results must be secured. Any such method as requeening when practically the whole apiary is infected is out of question. To prevent is wiser than to cure this disease.

Despite the prevalence of bee paralysis and foul brood, beekeeping in Idaho is a growing industry. While only in its infancy, its future is assured. Idaho is pre-eminent in two industries—agriculture and fruit-raising; and it is altogether probable that, from year to year, orchards whose fertilization is best secured by the bee will continue to be cultivated, while a great abundance of alfalfa, our main honey plant, will be produced. The demand is for specialists, men who thoroughly understand apiculture, so that they may intel-



Summer meeting of the Southern Idaho and Eastern Oregon Beekeepers' Association at the home of C. E. Dibble, Payette, Idaho.



Field meet of the Canterbury Beekeepers' Association, held at the apiary of the president, A. Ireland, Brookside, N. Z.

lignently cope with existing conditions. The men who engage in beekeeping in Idaho are a splendid class of citizens. They are building up an industry of which the State may justly feel proud. They are broad-minded and progressive. They adopt the latest methods in beekeeping, as the scientific farmer does in agriculture. Brought into constant relation with one of the most interesting subjects in all science, engaged in a calling which, next to agriculture, is perhaps the most ancient, they respect the rights of their fellow beekeepers. They do not infringe upon another's territory.

It is safe to say that the beekeeping industry will play an important part in the Gem State in building up a great agricultural commonwealth.

Boise, Idaho.

FIELD DAY OF NEW ZEALAND BEEKEEPERS

BY E. G. WARD

I am sending you a photograph taken at our last field day. The members of the Canterbury association, with their friends, went by coach to Brookside, on March 17, to the apiary of the president, Mr. A. Ireland, for their annual field day. The situation is an ideal one, having a large

belt of trees on the south which protects it from the cold winds. There are acres of white clover within one-fourth mile, and plenty of willows. The company was kept in the best of humor by the Scotch jokes and stories told by Rev. Mr. Jackson, of Southbridge. The season in this part of New Zealand has been the worst for 20 years; but we all look forward to a bumper crop next year.

St. Albans, Christchurch, N. Z.

SHED FOR PROTECTION

BY J. M. LEWIS

The photograph of one of my sheds shows how I protect my bees during the winter. The plan has proven very successful in Southern Massachusetts, where we have long cold winters. My method is very simple and inexpensive. I put thin boards on the front and back of the hives, first placing the hives a foot apart, and on a straight line, leaving a space sufficient for the packing. After placing a board above the entrances to allow the bees to leave and enter the hives during weather when they make their winter flights, I pack straw or leaves tightly around the hives. I put on an empty super with a super

cover between the brood-chamber and super with a hole made sufficiently large to take a feeding jar so the bees can be fed at any time when necessary.

The packing on top can be taken off and replaced in a moment, and the condition of the bees determined at any time. My covers are all made with glass in them, so by simply removing the straw on top of the hive and lifting off the hive-cover the bees can be seen and the jar can be filled with syrup without exposing the bees to the temperature outside the hive. When the weather is such that there is no danger of the bees leaving the hive I set up a board in front to protect the entrance from cold winds blowing into the hives.

I have tried several methods of wintering my bees, but like the method described above the best of all.

North Westport, Mass.

A COMBINED HONEY-HOUSE AND HIVE-SHED

BY L. H. COBB

In designing my building I had especially in mind an inexpensive combination of honey-house, hive-shed for shade, and winter protection, an overhead track for handling hives and supers, and cement hive stands. The diagrams are almost self-explanatory, but I will give a few details.

The honey-house, shown in Fig. 1, is 12 feet square, and the extracting platform, shown in *a*, Fig. 1, is 4½ feet wide and 7

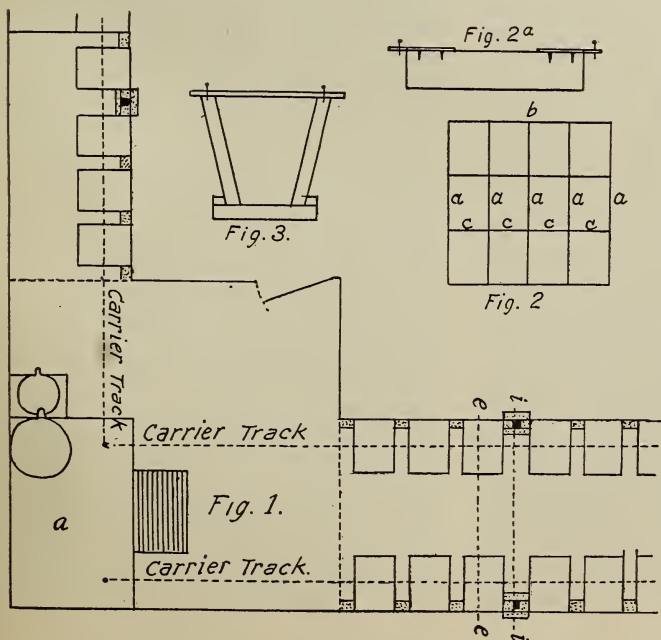
feet long. Either screens or doors may be provided between honey-house and hive-sheds if desired.

In this diagram the hive-shed *b* is 7 feet wide, and may be made any length, allowing 6 feet and 6 inches between posts for every three stands. This shed extends south, and takes two rows of hives. The hive-shed *c* extends east, and another may be extended west.

The upper sections of the side of the hive-sheds are hinged so they may be extended at will, and the lower sections are removable. Both of these sections are made in 6½-foot lengths, extending from center to center of posts, one foot square. *d* in each figure shows the track for the ordinary barndoor hanger. Figures 2 and 3 show forms for the cement stands. At Fig. 2 *a*, a dozen may be made at once. For this form I cut five pieces of 1 x 2, 6 feet and 2 inches long for pieces *a*; two pieces 6 feet 5 inches long for pieces *b*, and eight pieces 18 inches long for pieces *c*. On the upper edge of pieces *c* I nail two pieces of narrow galvanized iron, allowing it to extend over the end one inch, as shown in Fig. 2 *a*. A tack can be driven through these ends into pieces *a*, thus holding the short pieces in place. I nail pieces *b* on the ends of pieces *a* so the spaces will be just 18 x 24 inches. The concrete mixture I prefer is one part cement to two parts sand and two parts cinder. If these are made on the cement floor of the honey-room the floor should be oiled or soaped thoroughly first.

Fig. 3 shows the form for the base of the hive-stand. This form should be made of two-inch material. It should be four inches at the bottom, six at the top, and eight deep inside. It should be six feet long, and should have one end movable. The base for the front of the hive-stands is also the base of the side walls of the hive-shed, and should be just long enough to fit snugly between the square cement-post foundations, or 5½ feet. For the back bases I use partitions of the form, making three blocks 18 inches long.

The houses and sheds may be covered with roofing felt, and cheap lumber used for the frame.



Bee-escapes should be provided where needed, and windows as desired.

This makes a compact arrangement for a medium-sized apiary, and one as convenient as we can conceive of, with protection from sun and bees while working, where there are no boards on the ground to rot, where no toads or mice can find harbors. In hot weather I remove the bottom-boards and put blocks under the corners of the hives to reduce the swarming tendency. I open the sides for shade and ventilation, or close them for protection from the cold. A little heat in the honey-house will keep the temperature above the killing-point during the coldest weather.

Basehor, Kan.

A WINTER'S WORK IN MAKING HIVES

BY A. H. BELL

There is one thing which ought to interest a great many readers of GLEANINGS; and that is, the range of work required of one man in connection with the bees and the apiary, such as making hives, supers, frames, nailing up and wiring frames, fastening in foundation, etc.

The past winter I began to make preparation for this year's crop and increase. I make my own hives, supers, frames, etc., just because lumber here is cheap and I can make just as good hives and fixtures as I have ever been able to buy. Jan. 1 I started my combination saw, which is run by a five-horse-power gasoline-engine, and finished up May 1. During that time I hauled all my lumber from Roundup, 11 miles distant, and cut out 135 ten-frame hives, corners halved to nail both ways. I made telescope covers having tar-paper on top, with inside cover and reversible bottom for about 400 ten-frame shallow supers $5\frac{5}{8}$ in. deep, halved at corners, and all hives and supers handholed. I also made 4000 shallow extracting frames and 1500 Hoffman brood-frames, all pierced for wire.

As soon as I had every thing sawed out I moved out the saw to make room; then I began nailing hives first and then supers. Then came the frames, nailing both brood-frames, and extracting at the rate of 800 a day. While wiring I wired 700 extracting frames with two wires each and 600 brood-frames with three wires each. In these frames I put full sheets of foundation, using 400 pounds. I found this somewhat slower work. The best I could do in an hour was to put 80 sheets in the shallow frames. But the whole job ran only 600

sheets per day, while with the brood-frames I averaged 350 per day. This includes imbedding the wire with a spur imbedder, and placing frames in the hives and supers.

The difference in number between extracting and brood frames is due to the fact that I fastened the foundation in extracting-frames with melted wax and a Vandusen wax-fastener, while my brood-frames were quarter-sawed. I used the quarter strip to nail in the foundation. This is a very good way to hold the foundation, but it is a good deal slower.

I then painted every thing three coats of white lead. All this work was done by myself, and May 1 found me ready for a crop of 30,000 pounds of honey.

All the sawing was done on a saw-table of my own make, which is a combination of every thing I could think of.

Elso, Mont.

THE WINTERING PROBLEM

Guesses vs. Facts; the Need of More Complete Data on which to Base Conclusions

BY ARTHUR C. MILLER

The symposium on wintering in GLEANINGS for September 1 is interesting, particularly in its graphic illustration of the careless "rule-o'-thumb" method of reaching conclusions prevalent among people not trained to the precise methods of the scientists. Just so long as deductions are made from the faulty, imperfect, and incomplete observations as recorded there, just so long will the practices based thereon fail to bring any thing like uniform results.

Citations of some of the factors not noted by the writers will serve to illustrate the imperfection of the data. One will fail to state thickness of packing or material used; another, the nature of the outer case, whether it is of thick or thin stock, and is virtually air-tight or the contrary, is or is not covered with a water-proof paper; the color, etc. Another, stating one or the other of these, fails to say whether tight covers are over the brood-nest or cushions, and whether the bees have a passage over tops of frames under these or not. A few other items may be enumerated, such as frames side or end to entrance; size of the latter; direction it faces; direction of prevailing winds; any gales or unusual atmospheric conditions; size of colonies (average variable in different years); queens old or young; breeding stop early or late; pollen stores, large or small; na-

ture of stores and abundance; whether bees were overhauled, and frames changed at all after final stores were gathered or supplied; whether the location is subject to thaws or fogs, or the contrary; whether snow on ground was above or below normal most of the winter.

Every one of the foregoing has its bearing on the results; and how few of even the more important ones have been mentioned by the writers! One person attributes his success chiefly to one factor, while the next man lays emphasis on quite a different one; yet as a matter of fact the favorable results are quite as likely to be in *spite* of either item which these men deem so important.

In taking temperature of the interior of the hive, the methods recorded are most imperfect. Putting a thermometer on top of the frames over the cluster gives only one item—namely, the temperature *near* the upper side of the cluster; and *how* near the writers fail to state. Was the cluster close to the top of the frames or even up over them? Or were the bees one, two, or three inches below inch-thick top-bars? Was the cushion laid on the thermometer and frames, or was there an air-space? Was the thermometer read through a pane of glass, or was it taken out? There is but one accurate way to get hive temperatures, and that is to use special thermometers with long stems, placing enough of them in the hive so the temperature of the air near the floor, half way up and at top, both near and distant from cluster, may be secured. Also, temperature of cluster and air directly above it should be obtained. In addition, if chaff or other packing is used, temperature of this over the top of the cluster, and distant from it, is desirable.

The special thermometers are made so the scale to be read is above the hive, and readings can be made without removing the thermometer or disturbing the bees. The readings should be made hourly, both night and day, at least in the fall and spring, while in the really cold weather six times in the twenty-four hours may do.

The "curves" plotted from these readings in hives differently protected can be compared with "curves" from similar data taken in unprotected hives; and with the outdoor temperature a real basis for work will be reached.

Mr. Britton cites his results with glass-topped hives from which he removed the top packing and later substituted black tarred paper. The disastrous results could have been foretold without need of demon-

strating. Moisture was bound to collect on the cold glass, and drop back on to the bees. With an entrance as small as stated, and with eight to twelve inches of packing around the hives, no other result could be secured. The black paper could afford no material relief under such circumstances. His citation of results of colonies in his attic serves to call attention to the fact that bees so placed have their hives surrounded by a temperature of about 50 degrees F. all winter.

As examples of how bees thrive under conditions as opposite as possible to the warm-packing theories, the following may be cited. These I have perhaps referred to before, but they are worth repeating. In the western part of New York two colonies were left to their own devices after having been set, early in the season, inside of large cupboard-like structures which served only to shut off the sun. Four or five entrances about three by twelve inches gave ample circulation of air through the cupboards. The floor of these was 18 inches above the ground. The bees were in ten-frame Langstroth hives set on three-inch rims, and without cover of any sort. When I saw them in March there were visible several fins of comb built above the top-bars, and the bees were sticking up on these and hanging below the frames, just rousing big colonies—plenty of air, to be sure, but no dampness.

The other example is more in Mr. Britton's line. A ten-frame Langstroth hive made of glass, and having a top of wire cloth, was placed on a slat stand about two feet above the ground. Over the hive was placed a box nearly a foot larger each way than the hive. The front end of this box, except for a narrow board at the top, was knocked out. There was no bottom to it. In this hive was a good colony of bees. Shaded on all sides except the front, free circulation of air around it, with cold glass sides and ends, an entrance 14 by one-half inch, and wire-cloth top allowing free draft through it, that colony thrived for three summers and winters until put into another hive. This was in Rhode Island, twenty-eight miles from Mr. Britton's.

The exponents of heavy packing are asked to explain how the bees in these two instances could live, to say nothing of being exceptionally strong and healthy. It is to be hoped that they will not all speak at once. Also, they are requested not to remark that "one swallow does not make a summer," for there were three in this case, and one of them made three summers and—winters.

Four items are pretty definitely shown, however, by the symposium on wintering; namely, the need of dryness, the advantage of some means of preventing condensation above the cluster, the necessity for wind-breaks, and that several hives grouped close together and packed in some "non-conductor" do accumulate heat in the packing above and near the hives. But—yes, *but!* Does the value of the packing lie in keeping the bees warm in *winter*, or in the fall and spring? In the fall, when they are putting the finishing touches on their supplies, and in the spring when breeding? Think twice, please, before you answer. That protection is of advantage from *early* spring until late fall has been pretty conclusively demonstrated; but *what* amount of protection is as yet in dispute. Some want the whole hive, including supers, inside of packed walls; others want merely double walls, and still others think protection about the supers suffices.

Results suggest that colonies in hives wholly protected, even if only by a deep telescope cover or thin outer case, do better from spring until fall than those having only the supers protected. If this is correct, then it is fair to believe that results from fall until spring ("wintering" we call it) are much dependent on fall and spring protection. In other words, safe "wintering" lies more in keeping the bees warm when they are getting ready for cold weather, and when they are getting ready for the harvest, than it does in trying to keep them warm in winter itself.

To summarize: We as yet have only a little and fragmentary knowledge of the real conditions which exist within the hive from fall until spring inclusive. Until we know more about those conditions we can not intelligently devise apparatus to assist the bees. Until we know those facts we are as likely to make and use unnecessary apparatus, costly to construct and costly in labor to use, as we are to omit important assistance. Or, to put it in the language of modernism, without exact knowledge we can not get down to a rational dollar-and-cent basis of beekeeping.

If our experiment stations will use their means and apparatus in obtaining the desired knowledge, they will help us far more than they have yet done. Such research work is in their line, and they can do it much better than the commercial beekeeper, even though the latter has the necessary training. To ask them to abandon their random experimenting and find out facts for us is what we should now do.

Providence, R. I., Sept. 12.

PRODUCERS URGED TO ORGANIZE FOR SELLING THE CROP

BY C. W. POWELL

The price of honey must be governed by the price of other things, p. 478, Aug. 1. Although the bees work for nothing and board themselves, the beekeeper must pay for his feed and other necessities too. Of course, honey at ten cents a pound will sell fast, especially when other things are a hundred per cent higher. When honey and butter both sold for ten cents it was all right; but when butter is forty cents and honey ten, honey and bread will be eaten without butter mostly. I fully agree with Mr. Lathrop, that honey should be sold at home when possible; but the law of supply and demand can not be divorced from the question of distribution, because all the honey and other things can not be produced where consumed nor consumed by the producer. Hence the necessity for distribution, which involves distributors, which cost the consumers of farm products in New York city last year 62 per cent of the retail price of such products. Think of it! The producer and the carrier got only 38 per cent of the price paid by the consumer.

Well, what can be done about it? Just this: Let the producers undertake to distribute for themselves. How? By mutual organization establish agencies in all market centers. Place agents in charge, and put them under bond to guard against loss from dishonesty. Now ship to such agents for distribution on his orders, and he will soon learn just what his market will need, and there will be no overstocking by duplicate ordering and then a scarcity because no one ordered. Let him sell at a price insuring a profit on production after deducting for transportation and distribution.

All kinds of stuff can be sold at a price that will at once double the consumption on account of placing it in the hands of consumers at a price they can afford. Bro. Lathrop's idea about the cheap price of honey making a greater demand for it is like the clothing dealer who could sell his clothing at less than cost because he sold so much of it. To sell honey at ten cents per pound when butter is forty cents would bankrupt any one except a clothing dealer. I have been in a position for over twenty years where I could study the question of distribution, and it is at present the biggest farce on the world's stage. In a certain case Texas farmers offered cabbage on board at shipping point for

40 cts. per hundred—transportation 40 cts. At my door I paid \$2.00 for it (2 cts. per pound). Think of it! Eighty cents to produce and deliver on our tracks, and \$1.20 to take from the car and deliver to my door! Yes, but some say there is a great loss in such stuff. But the loss is principally on account of having to hold the stuff too long in order to get a high price for it. The price is low enough, and with a perfect system of ordering and shipping, it would not be long on our hands. There will be fifteen or twenty cars of watermelons on the track at one time, when the daily demand is perhaps two cars or less, and they stand on the track and rot down in the hot sun, and the shipper not only loses his melons but the freight also. Then perhaps there will be days when there are none in the market at all. Now several dealers order them or they are shipped without orders, and each dealer must depend on guessing what his competitors are going to do, and so miss it badly at times. The producers are advised the market was overstocked, which accounts for the loss to them. The market was overstocked only by a poor system of ordering, and making the price so high that people who want them can't pay the price. We have to pay anywhere from 25 to 50 cents for a good watermelon. Who can afford to keep a family on them at such prices? A land indeed flowing with milk and honey! But who can afford to drink milk at ten cents a quart, or eat honey at 25 to 30 cents per pound, except the rich, and they are few in comparison with those who are not.

A shipment of eight bushels of plums was received in this market by a dealer who wanted three dollars per bushel; but the grocers could not handle them at that price, and six bushels at least were dumped, a dead loss to the *producer* and *consumer*, besides paying freight. All manner of fruits and vegetables are dumped rotten, not because everybody had all he wanted, by any manner of means, but the price was prohibitive.

Producers' associations are formed to increase prices to better the conditions of the producers, without a thought of the consumer who must use their products or there can be no profit. Starving the consumer by taking all his money for one melon when the same money would buy two, and give a good profit to the producer too, is a sin. There are two, and only two, who are vitally concerned—the producer and the consumer, and they are mutually interested, for each must depend on the other. If they will look out for

themselves the question of high cost of living is solved.

The 1911 apple crop is reported the largest ever grown in this country; yet the price never was so high. Why? Do the producer and the consumer know why? *They should.* It would lower the price fifty per cent to consumer, and yet pay a good profit above freight and distribution. Lowering the price of such things would increase the demand correspondingly. Every one should have all the fruits and vegetables he wants, though it be melons, peaches, pears, plums, etc., which are really luxuries. Then there would be a demand for more farmers, fruit-growers, etc., and the nation's blood would be stimulated anew.

Farm products are not the only ones which are manipulated to pay undue profits. You buy a piano. The dealer keeps at least one hundred dollars of your money. A rocking-chair you pay \$5.00 for cost the dealer \$1.50. As staple a thing as carpets are sold at a profit of fifty per cent above the invoice. I have been thinking over this thing for a long time, and am sure that a producers' agency will be much more satisfactory than a buyers' union, because everybody will be reached, whether he wants to or not; and the fewer you have to organize, the better.

I hope you will give this article a place in your pages at an early date, for it seems to me to be of vital present interest to the whole country and all people.

RIPENING HONEY ARTIFICIALLY

The Plan, while Possible under Certain Conditions,
is Not to be Advised Generally

BY W. B. BRAY

I was pleased to see the remarks made by Mr. Ireland, president of the Canterbury Beekeepers' Association, in your issue of May 1, regarding the artificial ripening of honey, and wish to confirm what he says. Mr. Hopkins has had a great deal of experience, and has done much good for the beekeeping industry in this country; but in this one thing I do not think his experience is conclusive. There is more than Mr. Hopkins' reputation as a beekeeper depending on a proper understanding of this subject, and I trust he will not be offended if I help to throw a little further light on the conditions prevailing in New Zealand. For close on to three years I was permanently engaged as a government apiary inspector, and my work took me into every part of New Zealand.

In his article on page 632, Oct. 15, 1911, Mr. Hopkins admits the possibility of another factor in the ripening process than evaporation—namely, a chemical change in the sugars. This would be the continuation of the process of inversion commenced by the bees, by which the proportion of sucrose is gradually reduced. For this reason alone it would be desirable to leave the honey on the hive till later in the season. Though it may be merely a matter of taste, the editor is right when he says that the honey which has the finest aroma is that which is extracted from well-sealed combs. It can be called flavor, aroma, bouquet, body, bite, or any thing else, but the quality is there. I remember extracting some honey which had been on the hive all the winter, and entering it in the show which was held too early for new season's honey to be entered. The judges said that mine was the only sample that had a good flavor.

But it is in the process of evaporation that a good honey can most easily be spoiled if it is attempted artificially, as then it depends entirely on the state of the atmosphere. Every one knows that a certain amount of water is held in suspension in the air. The amount will depend on the nearness to the sea, the nature of the soil, the configuration of the country, the temperature, and the variation between night and day temperature. For instance, in the hottest weather in my own locality the nights are cool and even cold, so that the moisture evaporated during the day is precipitated. A wind off the sea will lose its moisture in crossing a high range of mountains, and become a dry wind. A very rainy district does not necessarily have a humid atmosphere. It will depend, then, on the temperature of the air. In a warm climate, near the sea, and over low-lying land, the air is heavily laden with moisture. The humidity in any one locality may or may not be fairly constant, as a good deal will depend on the lay of the country and the direction of the prevailing winds. In the South Island of New Zealand the air is comparatively dry, and I have known cases where thin honey has been extracted and successfully ripened in tanks. In the North Island, however, the conditions are very humid, particularly in Taranaki and Auckland provinces, on the west and northern coasts respectively.

The evaporation of the surplus moisture of an unripened honey will take place if the humidity of the air is low enough to allow it to absorb more moisture. On the other hand, honey will readily absorb mois-

ture from an overlaid atmosphere. Each beekeeper can test the humidity in his own district by keeping a jar of already well-ripened honey exposed to the air, and watching for the surface to become thin and watery. If a hydrometer is used to test the specific gravity the honey should be well stirred before testing. The beekeeper can then judge for himself as to whether it is safe for him to expose his honey to the air at all. In the humid climate we have in Taranaki and Auckland provinces, I would advise that nothing but well-sealed honey be extracted, and that it be put in air-tight vessels the same day. If it is necessary to store it in a tank, the top should be very close fitting. For the reason given in the second paragraph of this article, I would not advise any one to extract any but fully or three parts sealed combs if he wishes to do justice to his honey and his customers. Honey that is unsealed at the end of the season, and that has been on the hives for some time, is ripe enough to extract.

Mr. Hopkins says he successfully ripened a large crop in tanks in 1883; but I think the conditions must have been exceptional for that locality for that year, or else it was an exceptional locality in the Auckland province. In a government bulletin he has advocated the artificial process of ripening, and numbers of beekeepers have taken it up. The result has been that a lot of soured and fermented honey has gone on the market. The use of the hydrometer will not correct the fault of excessive humidity in the air. The ripest honey (and it is very seldom that all green honey is being extracted) settles in the bottom of the tank; and when a sample is drawn off to be tested with the hydrometer it gives a fairly high specific gravity. Even if the hydrometer is put into the tank, it does not give a proper test, as the thin watery honey is in a layer at the top. It is the last to be drawn off and the first to ferment. Many beekeepers have not bothered to use the hydrometer, thinking it quite sufficient to leave the honey in the tank a week or two, often regardless of the condition it was in when extracted. It is this ignorance of the conditions governing the case that has caused a great deal of the harm done in this country by Mr. Hopkins' advocacy of the artificial method.

In 1910 I acted as judge at the Warkato show (Auckland), and the Hawera show (Taranaki). At the former show I found several entries fermented. The same occurred at the Hawera show; and out of 17 entries in the granulated class only four

were properly ripened. I had to advise the beekeepers to discontinue the artificial method. The conference of beekeepers' associations in 1910 protested against the method being advised in Bulletin No. 18. In the Auckland salesrooms I have seen honey running out of the tins.

It is possible to ripen honey artificially where the conditions are favorable; but it is questionable whether there is any advantage gained. The late E. W. Alexander was in a favorable locality, and kept 700 colonies in one apiary. He was thus able to keep the extractor going as fast as the new honey came in, and it saved the necessity of providing extra supers. The beekeeper with one apiary can get along well enough with a couple of supers, and extracting only the sealed combs. The beekeeper with out-apiaries would prefer to provide the extra supers, and attend more to the putting-on of supers while the honey-flow lasted. The extracting is done afterward, and the one job is made of it at each yard. During the honey-flow the bees secrete wax in abundance, and are more contented if able to use it up in sealing the combs. The work of evaporation is carried on all night, and all together it is doubtful whether the amount of the crop is increased at all by extracting the green honey.

Salt is a substance which readily absorbs moisture, and it is safe to say that, where salt becomes damp, honey will do the same. I have had no experience with sections; but I should say that a good plan to prevent them from "weeping" would be to place a box of unslaked lime in the room where they are stored. It would keep the air dry.

Devauchelles Bay, N. Z.

stand a few minutes with a damp cloth over it. It will begin to harden, and must then be broken up and kneaded until soft. It then will keep indefinitely in a stone jar with a damp cloth over the top.

Two teaspoonfuls of cream of tartar can be used in place of glucose, but it makes an inferior article.

The cover is put on the kettle to be sure that the steam dissolves every grain of sugar; as a single grain, or changing the spatula from another batch, if you are stirring two, will make it granulate instead of creaming. A sudden jar to the kettle will sometimes have the same effect. Do not stir while boiling.

Commercial glucose is the article. Corn syrup is an adulterated glucose. Glucose comes in two forms—heavy and light, the first in ten-gallon kegs, the latter in barrels, and can not be bought here in the East in less quantities unless you know some confectioner who will let you have it.

While the fondant is warm it can be pressed into a frame and hung directly in the hive.

I do not believe in feeding in any but the Doolittle way (full combs of honey), but have had in New Hampshire frames filled with comb as the fondant was eaten away in the winter time in the cellar. Cane sugar is absolutely essential. If your fondant fails to cream properly you may know you have got more or less beet sugar.

I am not a confectioner, but have made candy for home consumption, buying glucose in original packages and sugar by the barrel; chocolate, 100 lbs. a year, etc. I spoiled 100 lbs. of fondant before I found out the last wrinkle, and a confectioner's supply house put me on to that.

Woburn, Mass., Sept. 5.

THE NEW CAGE CANDY CALLED "FONDANT" BY CANDY-MAKERS

BY E. C. NEWELL

The candy for bee-cages is nothing but fondant that is used in high-grade candies. The best recipe is this: Granulated sugar, 10 lbs.; glucose, 2½ lbs.; water, 2½ quarts.

Put the water in the kettle; add the sugar. When it boils put a cover on for five minutes; then remove and put thermometer in the kettle. Heat the glucose; and when the boiling sugar reaches 235, add the glucose and cook to 242 in winter, 245 in summer. When cool enough to put the finger in, it must be creamed by stirring with a spatula. When creamed let it

Plain Sections Easy to Handle

It has been stated that plain sections are harder to handle than the beeway; but I can not agree to that, for I have taken off over 1500 of them, and not one of them is bruised. I used beeway sections for over thirty years without separators, and I consider them much harder to handle, and also much harder to clean. I will use only plain sections in the future.

WIRING DANZENBAKER BROOD-FRAMES.

When wiring Danzenbaker brood-frames I cut the wire in exact lengths, which is easily done if some one else holds the end and throws it in the box after it coils up. In this shape the wire seldom gets tangled if one is careful to pick them up right. I drive the rivet back a little, put the wire around it, give a couple of twists, run it through the hole, then up to the hole next to the top-bar, finally finishing at the rivet on the other end-bar. With a small pair of pliers I hold the end, draw on the wire as though cording an old-fashioned bed, and when tight I wrap it around the rivet and drive both rivets back into place.

Clear Springs, Md.

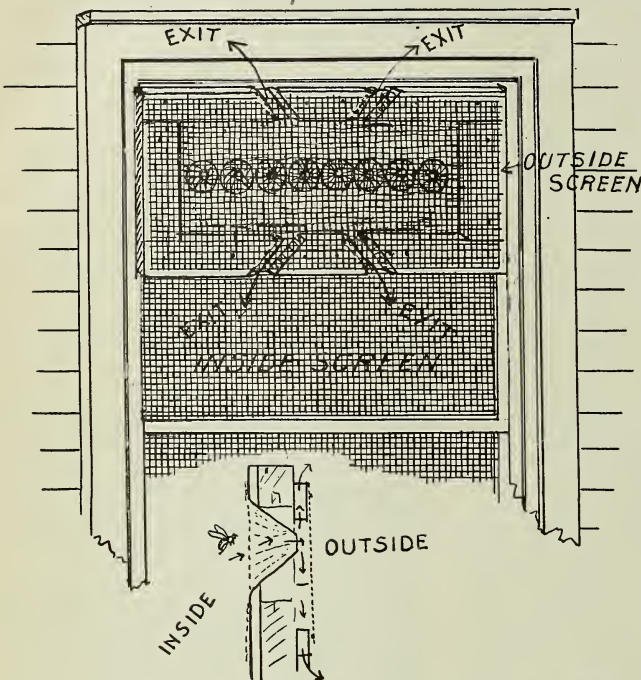
C. M. HICKS.

Heads of Grain from Different Fields

Honey-house Bee-escape

I have a honey-house bee-escape that has never failed us. It is made up of a series of wire-cloth cones inserted in a 1½-inch space on top of the window-screen, with a double set of flat wooden escapes on the outside, which is covered with wire cloth. I have yet to see the first bee that has returned by the way it came out, and it lets them out by the droves.

J. E. THOMPSON.
Halfway Tree, Jamaica, B. W. I.



[This looks as though it might be a good honey-house bee-escape. The additional screen over the top of the cones would prevent the bees from going back. The only objection we can see to it is that it is complicated to make.—Ed.]

Honey from Second Crop of Clovers

At present bees are working on the second crop of red, white, and alsike clover, and goldenrod. They are giving more trouble about swarming than at any time this season, although I have put supers on every colony.

NEWLY INTRODUCED QUEEN LAYS AMONG QUEEN-CELLS.

I let a laying queen run into a colony for fun, with queen-cells ready to hatch, and found her next day laying on combs among the queen-cells.

Derby, Vt., Aug. 25. NEWELL H. WILSON.

[The second crop of red clover has yielded more this year than for some seasons back. It should be remembered that the corolla tubes of the second crop of red clover are much shorter than those of the first crop, provided it has not been too dry when it comes into bloom.

Letting loose a laying queen into a hive having queen-cells sealed over, would, in our opinion, nine times out of ten—yes, ninety-nine times out of a hundred, prove a failure. That it worked in your case was the exception that proved the rule. The hardest colony, in our experience, to introduce a queen to is one that has queen-cells pretty well advanced—especially those that are ripe and ready to give off a virgin.—Ed.]

Eggs Hatching by Artificial Heat

I think Dr. Miller, page 301, May 15, will find that the eggs of bees, if kept continuously warm, will hatch without the presence of the bees. I very well remember removing from the supers a number of sections in which the queen had started to lay. For want of a better place they were carried into the kitchen temporarily. At that time we were sweltering in the midst of a hot wave. A few days later, in removing the sections I was surprised to find very young worker and drone larvæ instead of the eggs.

J. FORD SEMPERS.

Aikin, Md.

[We have had other reports from beekeepers who find that eggs of queens, if the temperature is right, will hatch without the presence of bees.—Ed.]

Bees a Feature of the Hamilton County Fair

The Hamilton County Agricultural Fair at the Carriage fairgrounds was a success in every detail to all concerned. The horse races, fine poultry, hogs, cattle, the bees, and balloon ascension drew big crowds the four days of its duration. The weather was fine, which accounted for the large attendance of city and country folk alike. City folk appreciate the country fairs more from year to year. They realize that the farm and suburban gardens must go hand in hand with the manufacturing interests. Electric cars and automobiles bring the city and country nearer to each other than in former years when people relied mostly on omnibuses and road wagons. In no line of rural production has science done more than in the keeping of the honeybee. "There is nothing at a county fair that the visitors are more interested in than in live bees in observatory hives." This is the opinion of Mr. J. G. Creighton, who had charge of the bees, honey, wax, honey vinegar, and bee-supplies at the Hamilton Co. fair. Mr. Creighton received a first prize on the four first-named articles; Mr. Charles H. Weber first prize on bee-supplies; Mr. Wm. Schmees second prize on live bees. Mr. John J. Leonard won a second prize on comb and extracted honey. Mr. Creighton is quite an enthusiast on county fairs. He resides at Harrison, O. Mr. Charles H. Weber and Mr. Wm. Schmees are from Cincinnati. Mr. Leonard makes his home in Elmwood, O.

HENRY REDDERT, Sec.

Too High a Price Makes Honey a Luxury

I heartily agree with Harry Lathrop, Aug. 1, p. 478. I have followed the same plan of selling honey direct to users, at a low price, with the idea of making it a popular food. Working for a higher price strikes me as a class luxury. I do not know that it can generally be done until there are more beekeepers.

Bergville, Minn.

A. B. WHITE.

Large Number of Swarms Caught in Boxes

On p. 466, Aug. 1, A. I. Root stated that there must have been a terrible stampede of runaway swarms in this part of the section. Now, though I have been here only since April 4 I have seen more than 75 swarms captured in the same way, and I also know of an old gentleman who caught over a hundred in boxes in this part of the section.

Whittier, Cal.

H. D. H.

A Few More Instances of Chickens Eating Live Worker Bees

We had one chicken about five or six years ago that we found eating bees from our hives more than once, picking them up in a hurry—live bees, too. However, it seems to be a rare occurrence. Tazewell, Tenn. HENRY B. SOUTHERN, JR.

I live in the city, and have bees and chickens together on one lot. I discovered one of my largest Plymouth Rock hens eating live bees off the alighting-board, and I watched her to be sure. Well, she did not eat any more. Lima, Ohio. MRS. J. A. MOONEY.

I have kept bees for 30 years and chickens for a longer time, but have never kept both in the same yard; but the fowls were liberated each day for a run in the beeyard to eat grass. In 1897 I had a half-grown grade cockerel that would rush to the hives as soon as liberated, and eat live worker bees with as much relish as he would eat corn; but, like Mr. Gray's early riser, he died young, and that is the only case of which I have positive knowledge.

A Dayton friend, who kept both in the same yard, had two first-prize cocks stung to death last year.

The trouble that I would fear would be their eating young queens that are out getting their location before making their mating flight. Dayton, O. J. W. NICHOLS.

I had two stands of bees in my poultry lot last summer, and they were almost ruined by the poultry. The chickens would stand by the hive and watch the bees, and pick them up as fast as they appeared. They were watching for bees all the time. Finally I separated the bees from the chickens; then the bees soon became strong. This year I have increased my apiary from 2 to 8 colonies. The poultry-yard is about 4 ft. to the rear of the bees; and I noticed yesterday, as soon as a bee crossed the poultry-yard the chickens were right after it. I saw them catch half a dozen or more. I think the reason for the hens eating the bees is this: Where poultry have but a small yard they are not able to get many insects, and unless you feed them plenty of meat they begin to catch drones, eat the head of crippled bees, and finally they develop an appetite for bees, the same as a man does for tobacco. After I penned the poultry from the bees they would just stand up close to the fence and watch the bees. You may think I am exaggerating; but I shall be pleased to prove it to any one who will take the trouble to call on me. I am satisfied that, if you will pen 40 or 50 chickens in a small lot with two stands of bees, the chickens will eventually ruin them. Columbus, O., Sept. 14. S. S. SNYDER.

For a dozen years I have had bees and chickens occupying the same territory in an apple orchard. Two years ago in the spring, during fruit bloom, I noticed a Wyandot hen busy at the entrance of a hive picking up, killing, and then swallowing bees. When I would scare her from one hive she would go to another, and kept on eating bees until she had her fill. The next day she was at it again, when I caught her and sent her to market.

A few days later I found another one doing the same thing; then I began to take notice. I found the combs crowded with brood. We were having some real chilly nights. Each morning the bees would bring out some chilled brood that was white and tender and drop some of it around the entrances. This made a sweet morsel for the hen. She soon learned where to find it; and while looking for this, bees loaded with pollen would alight right there where she was picking up "grub," and she turned her attention to them. By close and persistent watching I found that the chickens ate no bees except those loaded with pollen. Except this one time, chickens have never bothered my bees.

"LOSING" LAYING WORKERS.

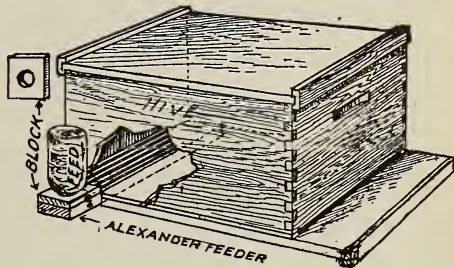
I had a very bad case of laying workers a few weeks ago. When I discovered it some of the combs were nearly full of capped drone brood, and there were hundreds of little insignificant drones

in the hive. Many cells had half a dozen or more eggs in them. After failing to introduce a queen, and having some queen-cells torn down, the following plan succeeded admirably: I took out one comb and placed it in an empty hive. I then shook off every bee into this hive, and placed the combs back in the old hive after shaving off the heads of the unhatched drones. Then I placed the hive with the bees about 40 feet away, and left it until next morning. By this time most of the bees had returned to the old stand. I shook off the remaining bees, closed that hive, and returned the one comb to its original place, and introduced a queen by the usual candy route, which was readily accepted. The layers and most of the drones failed to find their way back, while the workers all came back home. Liberty, Tenn., Aug. 28. W. P. BANKS.

The One-hole Feeder Applied to the Alexander Feeder

The drawing shows my method of stimulative feeding with a one-hole feeder. Should I care to feed for drawing out comb, or perhaps making up for a shortage of stores in the fall, I remove the one-hole feeder, putting on the regular block, and use the feeder in the regular way.

The first day I use the one-hole feeder I pour some syrup in the Alexander feeder, and then put



on the one-hole feeder at once. Of course, I move the piece of screen and also the cleat, which is nailed near the end.

This feeder is an improvement over either the Boardman or pepper-can feeder in more ways than one. It works perfectly, and prevents robbing entirely. I feed $\frac{1}{2}$ pint daily (two parts water and one part sugar).

St. Louis, Mo., May 6. HARRISON FISBECH.

[An arrangement of this kind can be used where it is desired to practice slow feeding with the Alexander feeder. If one has already attached to his hives such feeders, or the Boardman, one or two holes can be used in connection very nicely. In our own practice we prefer the regular entrance Boardman feeder, and have little or no trouble from robbing, particularly when the bees are not allowed to take the feed any faster than they can take it from one or two holes.—Ed.]

The Way I Make a Success with Bees

Since Walter S. Poudler has opened the subject along the line of beekeeping that I have practiced, page 378, June 15, it has encouraged me to tell how I have made a little money out of a few bees I keep. It is all right to talk about keeping bees for the pleasure there is in it; but how many of us can afford to do so when we have a family to support? We all love a little recreation; but how nicer it is when we get some returns from it too!

In the first place, I get my bees to the swarming point about the time the honey-flow begins, then I proceed as follows. I take an empty hive body with inch starters; select two frames with brood in all stages, making sure that I do not have the queen on either one; place the queen-excluding board on the hive, then put the empty body on top with the two combs of brood in it and one frame with an inch starter between. By this change the bees get into the upper story immediately; and as the two frames are spread apart the bees will cluster between them and begin comb-building at once. In a few days I spread the

brood again, putting another frame with an inch starter between. I find that I can produce much more honey this way, as the more the bees are divided the less comb they can build. This gives them the entire hive body to cluster in, and prevents swarming to a great extent.

The honey is just as good as that which is secured in sections, and so far as the disposing of it is concerned I find it easier than selling section honey. For instance, I cut out about two and a half pounds, put it in a bucket, and then pour over it enough extracted honey to make five pounds.

When I ask a customer if she wants some honey she may say that she gets it from the grocer on the corner. I always insist, however, that she get a spoon and taste the honey. It does taste "just like that we used to get on the farm years ago," and she takes a bucket. I can dispose of all the honey I produce, and much more; and the joke of it all is that I get 25 cents a pound while my neighbors get only 20 cents for their section honey.

I will admit that this plan will not work where one has no home market; but I can see no place in the central part of the United States where one can not build up a home trade for all he can produce. Sometimes a beekeeper thinks it necessary to ship his honey away to a large market, when, if he would only try, he could dispose of it all at home.
Indianapolis, Ind. E. S. HUDSON.

The Advantage of Blending Different Kinds of Honey for Market

I find that properly blended honey gives much better satisfaction than most kinds alone. Even our very fine sourwood honey gets more body by blending with honey from winter huckleberry, or with that from cotton or coreopsis, either of which is nearly as clear as water. The two latter do not have quite enough of the distinctive honey flavor. Our early honeys here in Northwest Georgia are nearly all dark and strong, with the distinctive honey flavor; but that from persimmon bloom, and from the hickory honey-dew, are of a dead sweet. Blending properly brings them right.

We have also a bitter honey from the bitter oak. This is thick and rich, and blends well with a thin honey, and some strong kind, using about one-fourth of the bitter honey. Poplar is given more honey flavor by a mixture of other kinds.

I find that many people when tasting honey expect the flavor that the honey had that they used to get out of grandfather's gums; and if they don't they think that it is manufactured honey. If they can get a little of the old taste they are satisfied. Many do not know that there are as many kinds of honey as there are kinds of flowers and sources of honey-dew that it comes from. The kind that they know is the kind that is produced in their locality at a certain time, and taken out at the only time that grandfather used to "rob" his beegums.

For my own use I like to keep a few kinds as nearly pure as practicable; but I find that, for the market, it pays to blend almost any kind with something else. I have lately been selling honey for the principal honey dealer of Chattanooga, and he was quick to see the advantages of my blending.
Kensington, Ga., July 22. C. W. LUDLOW.

Scored Cylinder of Gasoline-engine

After standing for some time idle in a warm place I started my gasoline-engine without cleaning the cylinder. The piston and cylinder cut on the under side, but not so as to cause a leak. What shall I do to stop this cutting? SUBSCRIBER.

[Your trouble must be due to a poor grade of cylinder oil. If you use a good oil the piston should not cut the cylinder, no matter how long you leave it in a warm place without cleaning it. Of course, if it were left a year or more in a damp place, and the cylinder had not been thoroughly oiled at the time it was laid away, rusting might set in so that you would have to take the piston out and thoroughly clean it and the cylinder with kerosene, then supply plenty of lubrication when you put it back. Be sure not to use any thing but the highest grade of gas-engine cylinder oil. Do not use steam-cylinder oil. If your piston keeps on cutting, there may be some foreign matter, such

as dust or grit, in the cylinder, or your lubricating oil may not be good. Possibly the wrist-pin has worked loose, and is scoring the cylinder.—ED.]

Outside Cases for One and Two Hives

As my bees have not wintered well in my basement, which is too warm, I thought to try it outdoors; so I have made the following arrangements, and I should like to hear through the columns of GLEANINGS what yourself and some of those who have wintered outdoors think of my chances of wintering the way I am going to. I have made the case of lap siding, four boards in height, and large enough to hold four inches of planer shavings on each side, and three inches on the front, with about six or eight inches on top; then I have made a cap of inch lumber and covered it with two-ply roofing. This telescopes over the case two inches. I have made 40 cases to hold one hive each, and 50 to hold two hives each. For the entrance I have entrance blocks out of 1x3 by cutting out a piece $\frac{3}{8}$ x5 on the flat side of the 1x3, the same to lie down on the entrance on the flat side. My bee-yard is well protected from all cold winds. I have a nice beecellar under the residence, but it is too warm. I have a hot-water plant in the basement, and the beecellar is partitioned off with stone from the rest; but there are two sets of radiator pipes that go through the wall into the beecellar. I have had a window under the porch wide open all winter, but could not keep it cool enough. I am going to try 25 colonies in the basement, and the rest outdoors.

Mora, Minn., Sept. 4.

C. H. HARLAN.

[It will doubtless depend a good deal upon the winter as to whether your colonies will do best outside or in the cellar, although if you have trouble in keeping the temperature of your cellar low enough we presume the colonies would winter out of doors better.

You have gone to considerable expense, probably, in making these cases. You could have saved somewhat by making your cases to hold four colonies, and also conserved the heat by so doing. When outside cases are built in this fashion it is customary to put in four colonies rather than two or only one.—ED.]

Full Sheets of Foundation in Sections no Longer Wanted

For some time I have been experimenting with starters in sections; and instead of full sheets or short starters at top and bottom I have found that a certain shape of top starter with a bottom starter (*a la* Miller), and side starters similar to bottom ones, have given the best results.

In over 500 sections, not one comb was fastened in the least to the fence, as is so often the case with full sheets. I never used a split section. I have one section with every cell except three filled and capped all around next to the wood, and only one pop-hole in it, and this was when there was plenty of room above for storage. I am done with full sheets.
Springfield, O. J. WARREN ARTHUR.

A Way to Catch Skunks without Endangering Other Animals

A few years ago my attention was attracted by the ground being smooth in front of a few of my hives; and after looking closely I satisfied myself that it was a skunk's work, by an occasional track in the fresh dirt. The next thing was to find how I could catch him and not catch my neighbor's cat or dog. Well, I took a small barrel, drove a nail on each side near the center, and hung it by the nails resting in notches in two stakes in the ground. Then I dug out the ground between the stakes, so the barrel could swing down in an upright position. I tipped the barrel over endwise, and put some old scraps of meat or honey in the back end.

When the skunk walks into the barrel it will tip up, and he can not get out. In the morning the barrel can be carried away and tipped down. The skunk will walk out slowly, and you can shoot him or drown him. Skunks will make no smell in the barrel unless molested. I have caught several in this way.

Campbell, N. Y.

F. D. LOOK.

Our Homes

A. I. ROOT

Grieve not the Holy Spirit of God, whereby ye are sealed unto the day of redemption.—EPH. 4:30.

There is a way which seemeth right unto a man; but the end thereof are the ways of death.—PROV. 14:12.

Strait is the gate, and narrow is the way, which leadeth unto life; and few there be which find it.—MATT. 7:14.

About thirty years ago we planned and built a commodious two-story brick house; and this comparatively good-sized brick house was all needed for Mrs. Root and myself and the five children. But one by one the children were married, and now all have homes of their own; and therefore the responsibility devolved on Mrs. Root to look after and care for that domicile with its many rooms upstairs and downstairs. We could not well rent a part of it to somebody else, because it was not planned nor built with that end in view; and when people get to be past threescore and ten they usually get to be a little tenacious about their own ways, and places of leaving things. We have always devoutly believed in having "a place for every thing, and having every thing in its place;" and this is easily managed when there is nobody else on the premises to misplace and disturb the order of things. Myself and the children have suggested to Mrs. Root to lock up the rooms she does not need, and thus make our home a small one; but the good woman declares she can not do that—that is, so long as she occupies the premises and is responsible, there must be a regular house-cleaning every spring and fall, from cellar to garret, and then from garret to cellar; and I guess she is not far from right. This periodical house-cleaning brings to light things misplaced or forgotten, and enables us to hand over the things we no longer need to some of the good neighbors as well as relatives who would be very glad of them. And while I think of it, let me urge elderly people like ourselves to look over their effects; and as they come across these things they no longer need, distribute them among the younger friends who *do* need them—children's toys, for instance. What is the use of preserving them after the children are grown up and gone? If the grandchildren have more modern playthings, make the children of poor families happy by presenting them the out-of-date relics of childhood. Get rid of stuff stowed away, without waiting until you are dead and gone.

Well, Mrs. Root talked much about a little home that she could easily look after, such as we are just now planning. She

thinks a modern bungalow would suit her best, because she is tired of climbing up and down stairs, which she has done thousands and thousands of times during her life. Just think of a little home with every thing on one floor, with a little kitchen just large enough, and no more; likewise a dining-room and pantry, and a bedroom not far away, with modern bathroom, closets, etc., making it easy to take the daily sponge bath I have talked so much about.

In our town at present we have gas for fuel that is even cheaper than wood or coal, to say nothing of leaving no ashes, heavy wood to bring in, kindlings, etc. Of course we want an open fireplace; but this is also easily managed by the modern gas people. We have our own electric plant, so there is no more fussing with lamps and chimneys. We want a good up-to-date cistern, and want it well down in the ground so as to keep the water cool. Perhaps you will catch on to the idea that Mrs. Root is planning to do her own work, without the assistance of a hired girl (or anybody else) as long as possible. I do not mean to be disrespectful to the *good* girls and women who help others in their homes; but we all recognize, or should do so, that elderly people have their own ways and habits, and therefore, if I mistake not, they are usually happier to have a great part of the day to themselves. But please do not understand that Mrs. Root is ever annoyed by the good children and almost a dozen grandchildren who trip in and out at almost all hours of the day. The grandchildren especially are the delight and joy of her life.

Now, I am thus going into details because there are many elderly people who are reading these Home papers; and I frequently get letters of late from those who have followed me in *Our Homes* for almost forty years. By the way, when the Holy Spirit called me to open this department in our journal, and to head it "*Our Homes*," I can not recall just *why* I chose that title. At any rate, it is quite fitting that I should take up the matter, in this department of a "home" built of wood and brick and cement. We want the roof of this bungalow made of slate in order that we may have the purest and best drinking water. As we are now using gas instead of coal in our factory, there will be less smoke to settle on the roof and spoil the rain water. I have several times discussed

sanitary cisterns in times past, and I may take it up again before I get through "building our bungalow."

You may wonder what all the above has to do with the three texts I have chosen. Well, we are just getting around to it. In planning our new little home we decided, or at least I did, that we wanted it very near to the five homes where our children have *their* homes near each other. The most available site was where a tenement house has stood for something over twenty years. This house was built on the old-fashioned plan of having it close up to the street. Were it not for this, Mrs. Root thought that the old house fixed over would do very well, say during the remainder of our lives. But the young folks all put in a big protest. First, they would not consent that their father and mother should live in any such "domicil," even when fixed over; secondly, they are planning a nice street, and this one little house would spoil the effect of all the other houses on that street, and so the house in question would have to be moved back or moved away entirely. The three other dwellings already on this street are all back a uniform distance, with nice green lawns in front, and therefore this house *must* be moved back. I said if it were to be moved back it should be moved further away, and have our bungalow take its place, located back on a line with the three other homes. Now, let me digress a little right here.

The past month or six weeks have been one of the *happiest* periods of my life; and as I have said several times before, this was because it was one of the *busiest* times of my life. In planning for the bungalow there were errands innumerable back and forth from the factory to the new building. With my little electric automobile which I have before mentioned, I can get around almost anywhere, and go with the speed of the wind, or even faster, when I am in a hurry. It will go backward or forward, turn about in a narrow space, and, with the practice I have had with it, it seems almost like bringing to pass the dreams pictured in that old book the Arabian Nights. Mrs. Root tells all the children to call on me any time, for nothing makes me happier than running on errands with the little auto. With it I can bring quite a little load of cement, doors, windows, small bundles of lumber, etc.

Well, another thing that has made me particularly happy is the presence of the Holy Spirit; and my constant prayer, both night and day, has been, to use the language of that beautiful text, "Grieve not

the Holy Spirit." I wonder how many of the world know what a precious thing it is to feel the *presence* of that Holy Spirit every day of their lives; or, in other words, to feel, even through the busy rush of business, the words, "Well done, thou good and faithful servant." In an establishment like ours, where there are usually two hundred hands or more employed, a lot of them outdoors as well as indoors, there are frequent misunderstandings. Somebody's feelings have been hurt by foolish gossip. Another one has been reproved when he was not at fault. Somebody has not had his wages advanced when they ought to have been; and somebody occasionally, on the other hand, idles away his time instead of attending to his own proper task. Well, when I am feeling real well, as I do now, it is a pleasure to me to listen to their particular trials and to help right little wrongs. When I can get some one to take up his task with renewed courage, say with a *glad* heart instead of a *sad* one, then I feel that voice of the Holy Spirit.

Now, the above would look as if I must be a "pretty good old man," would it not? But I want to quote from my father's favorite text once more: "He knoweth our frame that we are but dust." Notwithstanding what I have been telling you, every little while I am obliged to remember that I *am* but dust after all; and not only that, but at times I am *exceedingly* "dusty."

After the matter had been thrashed over, and Mrs. Root and I had consented to move the house away and not spoil the street, and after the ground had been carefully staked off where the house should be located, so as to be ready to begin on the cellar, some of the younger ones wanted it *further* away; and after we had spent considerable time in surveying and placing the stakes, we pulled them up and set them again; and three good stout men commenced digging out the cellar. After about an hour's work, however, the young folks *again* wanted the location changed. I objected to so much waste of time and labor. One of the boys said, "Why, father, how much does throwing out fifty cents' worth of dirt, and putting it back again, amount to compared with the future appearance of the street?"

Reluctantly I told the men to stop work. Then three of my sons-in-law, with their tapelines and stakes, commenced planning and surveying. I grumbled about having the men stand still, for it always vexes me to have a gang of men, right in the middle

of a nice day, wait for somebody to give orders.

By the way, it just now occurs to me that I want to tell a little story right along in this line. My department has not had much to say about bee culture of late; but this is a *bee* story. You listen and see if you do not agree that it is a "bee story!" Our factory usually shuts down on Saturday afternoons. We have four good stout horses, but they are during the week so busy with the factory work that it upsets them to stop work. Well, I had planned to have some grading done on one particular Saturday afternoon. Four horses and six big stout men were on hand to do the job. Before any thing could be done, a few furrows had to be plowed, and I was hurrying to get the plow started. But a ring in the doubletree broke before the plow team had hardly made a start. I rushed off with my automobile, grabbed a ring out of the toolhouse, and got them started. Then somebody wanted to talk with the driver. Meanwhile the four horses and six men were standing idle, and I was very anxious to get the job done before night. While I was busy on some other errand with my auto, something happened *again*. Two teams and six men were still loafing. I rushed up and inquired, "Why, what is the matter *now*?"

"Yellowjackets," was the reply.

Then they pointed to a pile of deep grass where a big nest was turned out with about a bushel (?) of jackets on the ground and in the air. Some of them laughed, thinking they had got A. I. Root "up a stump" *sure*. I considered the dilemma for about fifteen seconds. Then I stooped down and put my pants inside of my stockings. I had on light low shoes, for it was a warm day. I did not wait for a veil or for a smoker, for I was impatient with the delays we had already endured. I just "waded in." There were some cheers as I stamped those yellowjackets into the soft dirt and piled sods over the nest,* tramp-

* Here is a point you will bear in mind: If you wish to destroy a nest of bumble-bees, hornets, or yellowjackets, break up their home as speedily as possible, and get every particle of the comb containing larvae out of sight and covered up. These insects fight for their children and their young just exactly as a sitting hen fights for her chicks. In fact, a swarm of bees that has got to stinging every thing everywhere may be quieted almost at once by moving their hives away—putting them in the cellar, for instance. They fight to defend their home. When their home is gone or obliterated they have nothing to fight for. They are lost and demoralized; therefore when you are fighting insects get every trace of their loved ones, especially their babies, out of sight as soon as possible. These yellowjackets would gather in great numbers about the smallest scrap of their nest left uncovered; then I got plenty of soft dirt and piled it over every vestige of their domicile, and tramped it down. After this

ing them down and killing the furious insects in the air as fast as I could. I did not get stung at all on my hands or face; but there was a little bit of "zone" where my pants did not reach quite to my shoe-top. The hissing jackets, crazy with rage, discovered this narrow break in my "armor," and planted stings by the dozens or may be hundreds wherever they could reach through my thin stockings and enable their stings to "catch on." I had not been stung enough of late years to be as thoroughly immune to bee-poison as I used to be, and my ankles swelled a little; but they troubled me later on, more by burning and itching rather than by the swelling. In ten minutes the team was started, the men were at work, and the grading was finished before night. The above illustrates why I get impatient when work is "blocked." I will now go on with my story. I dread telling the rest of it; in fact, I have been putting it off as long as I could by talking about something else. Well, here goes:

Three bright young men, clean men in the prime of life, were busy, as I have told you, with tapelines, chalklines, hatchet, and stakes. I pleaded and begged with them to let me go on with my work in my own way. I think, in fact, I told Mrs. Root that very morning I would give a *hundred dollars* if I could have my own way that forenoon instead of being obliged to give up to the ideas of somebody else. I *finally* decided I could not wait any longer, and I tried, pleasantly, to tell my good friends they would have to excuse me if I declined to adopt any more changes. I shall not soon forget the pained look that came into their bright faces as they dropped every thing and went away looking sad and sober. I told the workmen they might go on with their digging, and went over home and said to Mrs. Root, "Sue, for the first time in my life I have been rude with my three sons-in-law."

The words were hardly out of my mouth before Blue Eyes and her good husband came in at the open door laughing. I rather think they overheard my remark; for they both replied in almost the same breath, "Why, no; you have not, father. We will give way, of course; but we are sure you will regret it when you come to think it over more."

The Christian spirit they showed rebuked me again. But I was so sure I was right that I decided to let the men go ahead digging.

all fight was taken out of them, and they were soon scattered and gone.

Here comes in the second one of my texts. For fully two hours Satan kept persuading me I had done exactly the *right* thing by "setting my foot down." We very soon had a board meeting on some other matters, and toward the close of it the matter of the cellar came up again; but I said I preferred not to have any changes made. Meanwhile one of my sons-in-law was making a map of the street; but I was still too headstrong to look at it. It was time for my daily nap just before dinner. Oh, what a boon these refreshing naps are to me just before noon, and again just before sunset! This beautiful little electric automobile, in order to do its work well, and get up speed at the word of command, must have its *storage battery* "charged" at least once or twice every day. If this is neglected, instead of going like the wind, it just "crawls" at a snail's pace. Well, my splendid health is in like manner kept up by these daily naps. I started to go over to the house to lie down, and then discovered it would be of no use. *The Holy Spirit had deserted me.* I had "grieved it away" by being rude to these kind friends of mine. Just as I was crossing the street Ernest (he is not only Ernest in name, but "earnest" in spirit and has always been so) came along and said, "Why, father, they say you have started those men *digging* again. Arthur has made a nice plan of the whole street. You surely will come over and *look* at it, will you not?"

At first I started to tell him I did not wish to look at it, and that I did not want any more changes. But there was no resisting the honest enthusiasm he showed in having me get *exactly right* before I "went ahead." I went over and looked at the drawings. I saw the point the boys were making, clearer than ever before, and then I went back to where the three men had been throwing out dirt; and it seemed to me they had thrown out an *astonishing* lot of it, in just two or three hours. I confess it *was* humiliating to stop them once more, and tell them that, when we got time, the dirt would all have to be put back where it came from. But it was the *only* way—the only road out of the trouble; and that road is described in our concluding text—"Strait is the gate and narrow is the way that leadeth unto life."

You doubtless have heard it said that relations can never agree. Think of the wicked and foolish jokes that have been said about "mothers-in-law"! Now, if you wish to have the "peace of God" constantly with you—that peace which "passeth

all understanding"—let me beg of you to avoid family quarrels; and especially make it the rule of your life to be kind and gentle in all your dealings with the man or woman who married your daughter or your son. *Whatever* you do, avoid difficulties and disagreements of *this* kind.

Let me go over briefly a little story I have told several times before. At one of the York State conventions they were discussing the matter of bees troubling the neighbors. One man got up and said a very rich man moved into his neighborhood, and commenced to put in some extensive improvements. Very soon he decided that the large apiary belonging to the speaker was a nuisance to the neighborhood, and would have to be moved away. Litigation was started, and there was going to be expensive warfare on both sides. The speaker hesitated right here, and when somebody asked him how it came out he replied, "It did not come out. This man had a daughter and I had a son; and while we were planning for a big lawsuit those two 'fool kids' took it into their heads to 'fall in love' with each other. We two fathers stormed and remonstrated; but that only made matters worse. Nothing would pacify the youngsters until we two shook hands across the 'bloody chasm' and dropped all litigation. He finally decided the bees did not make any bother worth mentioning, and I for my part found out that he was a real nice and neighborly man when I came to get really well acquainted with him."

Now, then, friends, one of the morals of my story to-day is that the ties of relationship should be held most sacred.* Let me use the beautiful text I quoted in closing my Home papers in the previous issue:

Let there be no strife between me and thee,
 . . . for we be brethren.

* The place in the land where those men worked so hard on that hot summer day in digging out the cellar has been filled up, and we have tried to put the dirt back where it came from; but in spite of all we can do, the traces remain to disfigure more or less the green landscape; and in a like manner the memory of giving way to an impatient impulse remains. Not only my three relatives but the three men who were digging, and some others who stood around, got a glimpse of A. I. Root that did not exactly accord with his teachings and admonitions on these pages. As I look back I feel as if I would give a big lot if that little incident had never happened, or if I could *forget* it ever happened.

A KIND WORD BRIEFLY EXPRESSED.

If A. I. Root is alive, thank him for his kindly treatment of me 22 years ago.

Seattle, Wash., Aug. 14.

R. Z. FAHS.

[Many thanks, my good friend; and although I can not recall any thing about what you refer to, I am glad to think that I was enabled to lend a helping hand to some child of humanity 22 years ago.]

Temperance

OUR FRIEND DOOLITTLE TURNS THE LIME-LIGHT ON TO ONE PHASE OF THE LIQUOR-TRAFFIC.

Mr. A. I. Root:—When I read the enclosed, clipped from the Aug. 15th issue of GLEANINGS, I was amazed at your putting the matter up to Woodrow Wilson. You know he can not come out for the annihilation of the liquor traffic any more than can Taft or Roosevelt without having his political head cut off. How can he, and yet remain at the head of a political party which, if it comes into power, becomes a part of the United States government, which now takes \$1.10 tax on every gallon of whisky, and \$1.00 on every barrel of beer made? Now, if, when the government received the taxes on these gallons and barrels, none were sold, that would be the end of the revenue accruing; so in order that it may be sold, the government persuades men to sell it, by making it a *lawful business* by way of a license for which the sellers again give a revenue by paying \$25.00 for the same. Now don't you see that, for the sake of this revenue by way of tax and license, the party in power is pushing the sale of liquor as fast and as hard as it can? And after the seller has paid this tax and license, he in turn pushes the matter so that he can get a profit therefrom, and thus the boys of our country are brought to ruin. Therefore the only way this occurred thing can be stopped is to start at the source. I am sending you "Government by Administration," which I wish you to read carefully as doing me a favor. Then I am daily asking God to give you the light and the needed grace to swing your department in GLEANINGS over as an "upheld banner" for prohibition, where it ought to have been long ago. And may God bless you through the remaining days of this life, and give you "an abundant entrance" into eternal life which comes to you and me through belief in his dear Son.

Borodino, N. Y., Sept. 2. G. M. DOOLITTLE.

Many thanks, old friend, for having given me still another glimpse of the iniquity of the liquor-traffic, especially regarding the licensing of it. I am certainly, heart and soul, and always have been, in favor of Statewide prohibition, and, in fact, for any thing that makes the saloon-keepers squeal and shake in their shoes. Inasmuch as there may be some readers of GLEANINGS who have never seen the Prohibition platform, I submit it below; and I submit, also, to every man, woman, and child who looks it over, if it is not the best and wisest platform before our country or before the world.

THE PROHIBITION PLATFORM.

The Prohibition party in national convention at Atlantic City, New Jersey, July 10, 1912, recognizing God as the source of all governmental authority, makes the following declarations of principles and policies:

1. The alcoholic drink traffic is wrong; is the most serious drain on the wealth and resources of the nation; is detrimental to the general welfare and destructive of the inalienable rights of life, liberty, and the pursuit of happiness. All laws taxing or licensing a traffic which produces crime, poverty, and political corruption, and spreads disease and death, should be repealed. To destroy such a traffic there must be elected to power a political party which will administer the government from the standpoint that the alcoholic-drink traffic is a crime and not a business, and we pledge that the manufacture, importation, exportation, transportation, and sale of alcoholic beverages shall be prohibited.

We favor:

2. Suffrage for women on the same terms as for men.

3. A uniform marriage and divorce law; the ex-

termination of polygamy, and the complete suppression of the traffic in girls.

4. Absolute protection of the rights of labor, without impairment of the rights of capital.

5. The settlement of all international disputes by arbitration.

6. The abolition of child labor in mines, workshops, and factories, with the rigid enforcement of the laws now flagrantly violated.

7. The election of United States Senators by direct vote of the people.

8. Presidential term of six years, and one term only.

9. Court review of postoffice and other departmental decisions and orders; the extension of the postal savings bank system and of rural delivery, and the establishment of an efficient parcels post.

10. The initiative, referendum, and recall.

11. As the tariff is a commercial question, it should be fixed on the scientific basis of accurate knowledge, secured by means of a permanent omnipartisan tariff commission with ample powers.

12. Equitable graduated income and inheritance taxes.

13. Conservation of our forest and mineral reserves, and the reclamation of waste lands. All mineral and timber lands and water powers now owned by the government should be held perpetually, and leased for revenue purposes.

14. Clearly defined laws for the regulation and control of corporations transacting an interstate business.

15. Efficiency and economy in governmental administration.

16. The protection of one day in seven as a day of rest.

To these fundamental principles the national Prohibition party renews its long allegiance, and on these issues invites the co-operation of all good citizens, to the end that the true object of government may be attained, equal and exact justice for all.

WHISKY AS A MEDICINE; DO OUR UP-TO-DATE PHYSICIANS RECOMMEND AND USE IT AS A RULE?

This matter was brought up by a full-page advertisement in the Boston *Globe* of Sept. 10. The full-page sheet was sent to me with the suggestion, "Here is a text for you." The big advertisement is from the James E. Pepper Distilling Co., of Chicago. In big letters we read, "37,814 high-standing physicians endorse this whisky in health or sickness." Toward a hundred brief letters from as many physicians scattered all over the nation are printed in this sheet. These doctors declare they have used (?) or tested the whisky in question, and pronounce it good, and that they also continue to use it in their practice. Now, we very strongly question the statement that these letters are from "high-standing physicians." They are mostly drinkingmen certainly, for they say so. Let us now look into the matter squarely. The railroad companies of our land have decided to have nothing to do with men who use intoxicants. Is it too much to ask that the *physicians* of our land, our family doctors, step up on to the same high plane of total abstinence in their habits, and, as far as possible, in their practice? Suppose the good people of our land should stand up and

declare that they will no longer employ a physician who is not a teetotaler.

But the above, to my mind, only indicates the *desperate* fight the brewers and distillers are making to hold their trade. It is not to be wondered that in the whole United States they have been able to find well toward 40,000 doctors who might accept a gift of some choice whisky, and give three or four lines of testimonial in return. Drowning men, you know, catch at straws.

This reminds me that, during the coming week, the brewers of the United States will hold a great conference in Cleveland, O.; and, saddest of all, the city mayor, Mr. Baker, has consented to give them an address of "welcome" to the chief city of Ohio. Shall we not follow the railroad companies again, and declare that we will never vote for a mayor who consents to give an address of welcome to a conference of brewers?

WOMEN SMOKERS OF CIGARETTES AT THE WHITE HOUSE, WASHINGTON.

It appears that a woman signing herself "Mrs. Wilson Woodrow" has been publicly defending women's rights to smoke cigarettes; and I do not know but I agree with her when she says that a woman has as good a right to smoke cigarettes as men, and I would add, just as good a right to *vote* as men have. Well, this woman's name, "Mrs. Wilson Woodrow," has been confusing the public, as well it might, with the name of Mrs. Woodrow Wilson, the wife of the presidential candidate; and because of this, Mrs. Wilson, for the first time in her life, has come out in a public statement. See the following, which we clip from the *Baltimore Sun* of August 13:

What Mrs. Wilson wished to have fully understood was that, if she becomes the first lady of the land, she will not, as has been said in a widely distributed interview, have packages of cigarettes in her personal desk at the White House, and smoke them with her callers.

Mrs. Wilson was represented as saying that she thought a woman has as much right to a cigarette as a man; that the existing prejudice against women smoking is to the last silly and absurd; that smoking cigarettes is a question of manners, not morals; that it promotes good fellowship; that some women feel that a cigarette calms their nerves and helps their brains into working order, and that she enjoyed a cigarette as she enjoyed afternoon coffee.

It seems from the above (in all a rather lengthy article) that the editor of the *Ohio State Journal* wrote Mrs. Wilson a letter, protesting emphatically, and below is her reply:

Dear Sir:—I have just received a copy of the *Journal* with your editorial entitled "Smoking Women," and I beg leave to deny indignantly the statement that I approve of women smoking cigarettes. The interview upon which your editorial

was based is a pure invention. I intensely dislike the cigarette-smoking habit for women; in fact, so strong is my feeling on the subject that my real danger lies in being unjust and unkind in my judgment of those who differ with me in this respect.

But certainly no woman in our household ever has or ever will smoke. Quite apart from the bad taste of it, I believe with you that it has an extremely injurious effect on the nerves.

ELLEN A. WILSON,
(Mrs. Woodrow Wilson.)

Governor Wilson has also given his indorsement of her letter.

Before dropping this matter let us consider for a minute what was implied in Mrs. Wilson's letter. If it were indeed true that women folks at the White House, or at least *some* of them, have been in the habit of keeping packages of cigarettes in plain sight at the White House, and smoking them with their callers, would it not be about time that we should expect the finger of the Almighty to write on the wall, "Thou art weighed in the balance and found wanting"?

Perhaps it is no more than proper to allude to what has been reported in one way and another. See the following:

TOBACCO ABSTINENCE.

The columns of Our Homes department several times have boasted that Mr. Theodore Roosevelt does not use tobacco; but has the editor noticed how often our daily press contains items wherein it is related that Mrs. Alice Roosevelt Longworth, in an extremely brazen manner, parades to the public the fact that she smokes, and is particularly fond of the cigarette? One might answer this with the argument that the father should not suffer for the daughter's wrong, and under some circumstances he should not. I am, however, enclosing a short clipping, "The Campaign Cigarette," and can not refrain from adding that, from what I can learn of Mr. Roosevelt, he is the "boss," and I do not think that his lieutenants would issue such an article against his wishes.

Lake Roland, Md., July 26.

The clipping referred to above (also from the *Baltimore Sun*) states that Roosevelt's picture is on the packages of "campaign" cigarettes. The question is, does Ex-president Roosevelt know this? and does such a course have his sanction?

THE EARLY JOE APPLE IN NEW ZEALAND.

Regarding the Early Joe apple, Messrs. Thos. Horton, Ltd., nurserymen, of Hastings, N. Z., have the above name in their catalog. Their description is: "Fine little dessert apple; yellow, with red stripes; ripe January [say July with you]; tree a good cropper, and blight proof." Price 25 to 60 cts. each; \$2.50 to \$7.50 per doz., etc. I will try to find room for one sample, in view of its praise in *GLEANINGS*, July 1st, and other issues.

C. R. BELL.

Otaki Railway, New Zealand, Aug. 3.

GOOD READING-MATTER FOR THE HOME, ETC.

My husband and son, G. W. Hammond, who is a subscriber to *GLEANINGS*, are both in the bee business. Both are members of the Baptist Church and I wish to thank you very much for the pure reading-matter you are sending into my home every month, especially the issue of Aug. 15. We are for prohibition. May you prosper.

MRS. E. M. HAMMOND.

Burrage, Mass., Aug. 19.