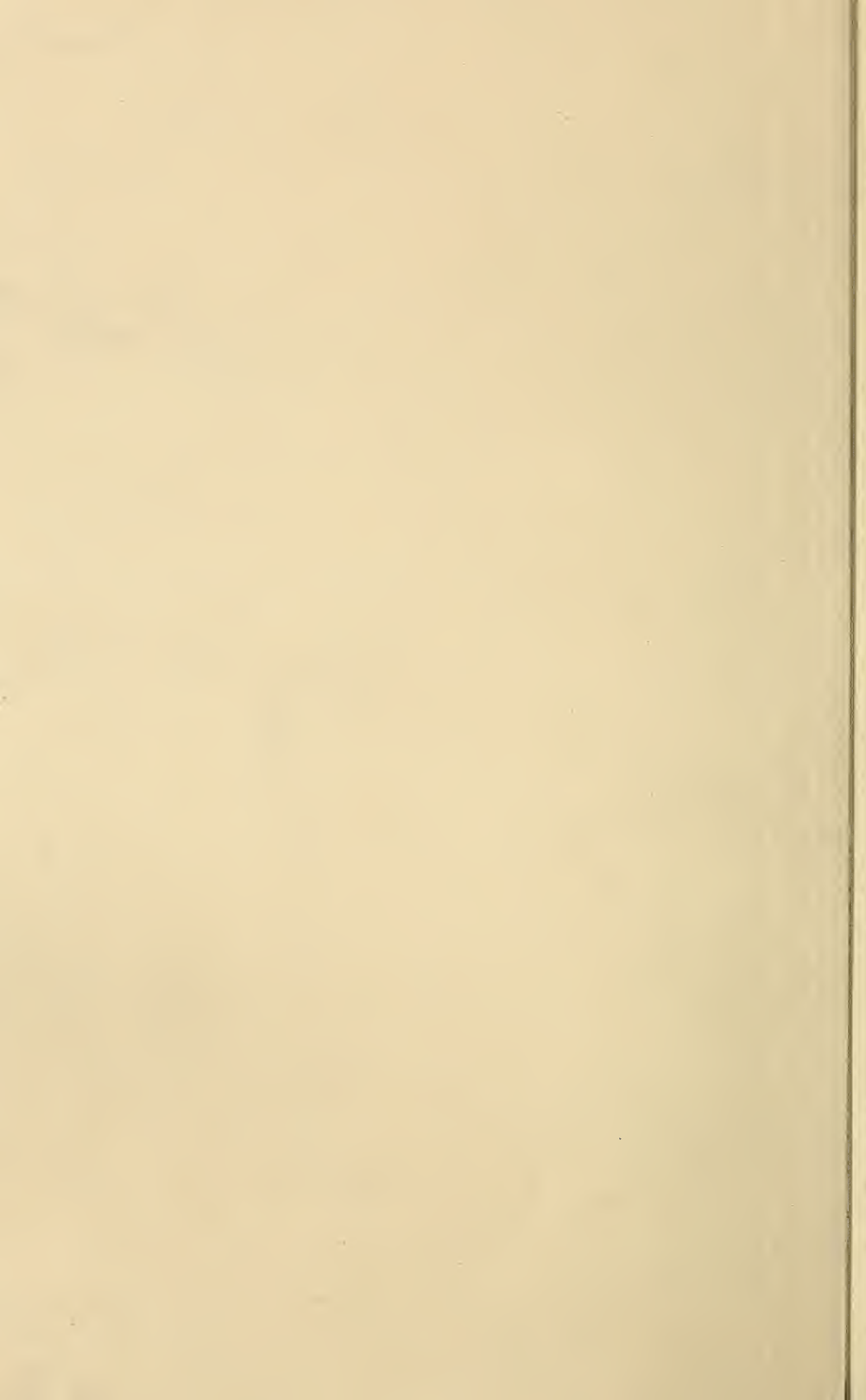


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CLEANINGS

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

BEE CULTURE

ILLUSTRATED SEMI-MONTHLY

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RAMBLER SUGGESTS (p. 469) that it was the odor of the dinner that brought to the ground those bees I batted at the out-apiary. Hadn't thought of that. Might be. Sort of intoxicated with the delightful odor of strawberries, and fell in a faint—or a feint.

A. I. ROOT enumerates (p. 477) the various pockets in which he keeps clean handkerchief, dirty handkerchief, toothpick, etc., but forgets to say that he keeps his nightcap in his overcoat pocket, and always puts it in my overcoat pocket when we sleep together.

THE DIRECTOR of the School of Horticulture at Villorde, France, placed a colony of bees at the disposal of his peach-trees, under glass, at the time of blooming in February. The crop, previously scant, was now unreasonably heavy. —*Le Progres Apicole*. [So on it goes. The proof piles up.—ED.]

TO URGE bees into supers, and to prevent swarming, a French bee-keeper closes the regular entrance and gives the bees for 18 days an entrance through the super. Six colonies thus treated filled their supers, while the rest of the apiary preferred to swarm. Editor Bertrand thinks the plan worth trying. [So think I. Suppose, doctor, you try it.—ED.]

JUNE 19. Oceans of white clover, but not a drop of honey in supers yet. [Too early yet for your locality, or at least I hope so. Elsewhere you speak of the lateness of your strawberry season as compared with ours; but at this writing I am beginning to fear, from reports that have come in, that clover is not going to amount to very much, notwithstanding the splendid show in many localities.—ED.]

I HAVE BEES in two of the Draper barns. The first queen didn't take kindly to the deep frames, and for several days wouldn't touch one of them—just stayed on the shallow frame of brood I gave. But there was no flood of honey. [We have several of the Draper barns in use, but they are so very large that our

eight-frame colonies will do well if they even fill the brood nests this season, to say nothing about filling the supers.—ED.]

THE TESTIMONY of one man who saw Smith commit murder outweighs the testimony of ten men who didn't see him. Messrs. Taylor, Hutchinson, and Brice say they can't raise good queens by taking away the queen. W. W. Somerford (p. 465) says he *has* raised them. The only thing for T., H., and B. is to impeach the character of the witness. Does W. W. S. know enough to tell what a good queen is?

MRS. BARBER, I'm by no means a "big man," and you needn't be afraid to talk back to me. But my bees are not like yours in one thing—they don't fill the bait section and leave the others untouched "usually." If there is almost no honey coming, they'll do as you say; but if honey is coming they'll go right on with the other sections. But if you want that amount of extracted honey, then the shallow super is the best thing to put on first.

STRAWBERRIES were mostly picked at Medina June 13, and were selling by the half-bushel at 4 cts. a quart (p. 481). At Marengo the picking has only fairly commenced, June 20, and strawberries sell at 10 cts. a quart by the case. Sometimes it's better to be late than early. Three or four weeks ago we had strawberries from the South at 5 cts. a quart. [This shows that our locality must be considerably ahead of yours in its seasons, and it only goes to show that, while we may be half through with our honey-flow, yours, perhaps, may have only just begun.—ED.]

I DON'T QUITE SEE any thing in the testimony of B. F. Onderdonk, 464, to show that one should produce both comb and extracted. If I could get the prices he does for extracted, I don't believe I'd fool with comb. [Are you sure, doctor, you could not get his price for extracted if you produced a twelve-pound-to-gallon fancy article? If you try the Dan White plan I am not sure but you would be quite an extracted-honey fiend. In these days of adulteration, consumers, if they *know* the producer, and know that the goods come direct from that producer, will pay fancy prices

for what they are sure is real honey. It is the distrust consumers have as to the purity of Chicago extracted that keeps down the price.—ED.]

PLEASE WATCH what bees do when the queen is taken away, and see if they make the mistake of choosing larvæ more than three days old, for queen-rearing. I'm watching, and so far they have chosen only young larvæ. Here's what I *think*: That bees will never select larvæ too old if those of proper age are present, but queenless bees are not satisfied to stop with what they first start, and afterward, for want of better, use larvæ that are too old for good queens. [If I were not so very much crowded just now in the revision of our ABC book I would watch; so I shall have to let the other fellows do it this summer.—ED.]

FOR END-SPACERS for brood-frames, I thought nails driven in slanting would be better than staples, because the slanting nails would make the frames slide into place automatically. For more than a year I've given both kinds a thorough trial, and the staples are away ahead. It's true, the nails let the frame slide into place automatically, but they also let it slide out of place automatically, and it's a nuisance to have the end of the top-bar drop down inside, which it can't do with staples. [Your experience, doctor, is about the same as mine, and that is the reason we adopted staples in preference to a nail driven in slanting, *a la* Boomhower.—ED.]

HERE'S THE THING to try, Mr. Editor. On half your colonies put supers with at least one bait section in each. On the other half put shallow supers and follow with sections after your plan. After the bees are well at work in these last sections, compare the work with that in the other lot. If they're ahead on your plan, and if one extracting-super will work for six colonies, then I want to use your plan. [No, you try it, doctor. I can not do it this season. We have had such a rush of orders for queens and bees, owing to the heavy losses in wintering over the country, that we have had to turn almost our entire apiary into a mammoth queen-rearing yard—just *had* to do it—and let all notions of comb-honey production this season go to the winds. For all that, I am stealing a few colonies in Draper barns, and will have them in the basswood apiary by to-night.—ED.]

MR. EDITOR, you owe Niver an apology for saying (p. 473), "when he gets his tongue balanced." Niver doesn't have to *get* his tongue balanced. It's always balanced. I slept in the same room with him at the Buffalo convention, and, no matter what time in the night Niver woke up, his tongue was always on balance. You can't tell how Niver talks by seeing what he says in print. There's a charm in the way he says a thing that the cold types can't show. [That is true; but I had one of our men snap a kodak on Niver while he was in an animated discussion, his hand keeping time with his "balanced tongue," his eyes fairly twinkling with enthusiasm. Yes, and the picture took in your humble servant at the same time. Well, in

our next issue I will try to give you a view of Niver and me in one of those "delightful confabs;" for we had lots of 'em.—ED.]

I NOTICE that, in his article in this issue, J. M. Hambaugh speaks of Live covers as "lids." Some little time ago S. T. Pettit argued in favor of short expressive terms, and asked what objection there was to the use of the word "floors" instead of the long term "bottom-boards." Personally I like both of the short names, and would not object to having such terms used in GLEANINGS. Why not "lids" for "covers"? why not "supers" for "surplus-honey receptacles"? and why not "floors" for "bottom-boards"? Such changes as these would save the use of more type than the short spelling adopted by the *American Bee Journal*, and yet would offend the taste of none. GLEANINGS is in favor of the short spellings, but does not yet see its way clear to adopt them; but it can see no objection to the use of "lids," "floors," "unqueen" or "dequeen," and other short expressive terms.

FRUIT-TREES, especially apple-trees, make fine shade for bees. But orchards, especially in some parts of the West, are rather short-lived, and forest-trees are better. I visited one of Adam Grimm's apiaries that was in a clump of young lindens, and it was fine. I'm not sure but I like better a clump of bur-oaks in which my Hastings apiary is located. It's just about ideal. [While you were about it, doctor, why didn't you say that your preference was for trees instead of shade-boards? Although you have never stated your preference, yet from the very fact that two of your apiaries that I saw were located among shade-trees I am led to believe this is your belief and practice. I spoke of fruit-trees, especially apple-trees, because there is usually a grove of them near or in the rear of most homes. At our basswood apiary the hives are shaded by lindens. But in any case I would not care to have the trees too large; for when swarms come out they are liable to get on the topmost branches beyond the reach of ladder or climber. In such cases, all one can do is to let them go or try the efficacy of a shotgun, *a la* W. F. Marks.—ED.]

G. M. DOOLITTLE says, in *American Bee Journal*, "I never saw a single worker-bee from an imported queen that had any yellow on it at all. The color was always a maroon, chestnut, or leather color, not yellow." My imported queens, or those that I bought for imported, have always had workers that I called yellow. Now the question is, Have I been swindled, or has some one been working off maroon bees instead of yellow on Doolittle? I don't believe I ever saw a dozen imported Italian queens, and I doubt whether Doolittle has seen many more than I, for I've been buying since he thought no more importations were needed, and at Medina you've had perhaps more imported queens than at any other place. Please tell us, are the workers of an imported Italian queen yellow or maroon? [I do not know where friend Doolittle gets his notion of colors; but if he will consult his good wife I feel sure he will have to revise his idea some-

what. I do not think I am boasting when I say that I have seen perhaps fifty imported queens where Doolittle or yourself have seen one; for we import from 50 to 75 every year. Years ago, as you say, Doolittle went on record as saying that he believed further importation was unnecessary, so I take it he has not seen an imported queen for some time. The color-bands, both on bees and queens, are what are generally called "leather" color. I never saw one queen or bee direct from Italy that had bands that were either chestnut or maroon. Maroon? my, oh my! what's the matter with Doolittle's eyes? To my notion these colors are the same as those given in the Standard Dictionary, the latest and best in the English language, under the heading of "Spectrum." Strictly speaking, the yellow on the Italians is not exactly yellow, but leather-colored; but when we use the term "yellow" we usually mean it in the broadest sense, and that may mean from a leather color to a lemon yellow. To say that Italian queens and bees do not have any yellow on them is to pervert the word from its ordinarily accepted meaning. We say that the sun rises in the morning. While the statement is not correct, the phrase has an accepted meaning; in the same way, yellow, when applied to Italians, conveys an impression to the average person that is not misleading.—ED.]



"Bring out your guns, all you that has 'em.
And blaze away with enthusiasm!
The ba-swoods now their nectar ooze."
Says Drone, "and we have not an hour to lose."

BEE-KEEPERS' REVIEW.

Dr. C. C. Miller corrects himself by saying the "Adel" bees are a strain of Carniolans instead of Italians.

In cases of dysentery among bees, Dr. Miller says he has found a temperature of 60 or 80 degrees in the cellar productive of no bad results. The bees make a loud roaring, but settle down quietly afterward.

C. Davenport says: "Empty hives should be kept in a cool place at swarming-time, but not in a cellar unless it is very dry." "To have bees contented, so they will work freely, and not attempt to desert, they should be given plenty of room when they are hived."

Dr. Mason says he has paid big prices for queens from noted queen-breeders, but never bought one that was as good as his own rearing by the dequeening method; but for good queens, easily reared, he prefers Mr. Doolittle's method of artificial cells furnished with royal jelly having a newly hatched larva placed in it.

Mr. Hutchinson is inclined to adhere in the main to the common spelling. He says: "So long as a system is radically wrong, we gain very little by tinkering with minor results." Further down he says, touching the fashions, "Girls' plaid shirt-waists must be laid aside for stripped ones." "Stripped" — how so, Mr. H.?

Mr. Adrian Getaz, of Knoxville, Tenn., says he has no doubt that really strong colonies, sufficiently packed, could be wintered successfully out of doors, anywhere this side of the Klondike; but he is equally satisfied that small colonies would die out, no matter how protected, if the cold weather is of long duration. He thinks a cellar is necessary for small colonies.

Dr. Miller very pertinently asks the editor: "As a matter of curiosity would you be willing to explain why Mr. Taylor pays so little attention to the errors in the *Review* compared with that of other bee-journals? Surely an error in the *Review* will do more harm to its readers than one in a paper they never see. And he can find errors in the *Review* if he wants to see them." Good! let's have these errors "stripped" and exposed. Mr. Hutchinson says he has often asked Mr. Taylor to criticise the *Review*. Perhaps too many of us are doing it now. I make my criticisms to Mr. H. by letter.

I am sure all will be filled with a sense of deep pleasure to learn that Mrs. Hutchinson's physical health is quite good, and that her mind is becoming stronger and clearer. For the last six months she has had charge of the books at the library of the asylum, and has permission to go where she pleases. Mr. H. has put up a pair of type-cases in one corner of the library, and here Mrs. H. sets some three pages of the *Review* every week. He goes to see her every Saturday, and keeps her at home over Sunday, carrying the type back and forth. Her conduct is entirely normal, not even the doctors being able to detect any thing that would indicate mental aberration. Such news is a source of great joy to all of Mr. Hutchinson's friends.

Mr. R. L. Taylor's department is unusually interesting this month. Some time ago I asked why hives can not be discussed as calmly as the weather. Mr. Taylor says it is because I said the Standard Dictionary is the latest and by far the best of its kind ever printed. I'm ready to be corrected on that point if Mr. Taylor will mention the name; but still the wrangle and ill temper about hives began long before I mentioned dictionaries, and hence I fail to see the force of his reasoning. He laments the great amount of space occupied in GLEANINGS by Dr. Miller on grammar. If am not wrong, it was Mr. Taylor himself who pulled the leg from under the table when the crockery came down on his own head and the hot tea down his back. Does Mr. Taylor still object to the word

"boil," meaning the act of boiling? Still, there is danger, as Mr. Taylor suggests, that bee-journals may be open to the criticism that the boarder had against the butter: "If, madam, there were a little less grease in it, it would be very good salt." Likewise we should not print grammars with a little apiculture in them. I'm about through "dabbling" in it, Mr. Taylor. But you musn't say, "Some time since GLEANINGS eschewed grammar." Why is the wrong word *since* instead of *ago* used in such cases? There, I'm dabbling again.



AMERICAN BEE JOURNAL.

The following is clipped from the *Chicagoan* of May 27: "A rare treat was given to the eighth-grade pupils of the McPherson school last Thursday, when Mr. G. W. York, editor of the *American Bee Journal*, gave them an illustrated lecture on bees. The pupils were delighted, and the way Mr. York described the simple animal was truly wonderful." Mr. York says his reason for copying the item was to suggest that bee-keepers in other cities will find the schoolchildren greatly interested in a talk on bees if given a chance. He had a Langstroth frame of bees in a glass hive, and gave therefrom a practical illustration of the work of bees in the hive. That is a grand idea, and ought to be carried out wherever possible. Mr. York deserves the thanks of all for taking the initiative step. The children were to take notes and print them in their little school-paper. "A chiel's amang ye, takin' notes; an', faith, he'll prent it."

THE BEST HIVE FOR EXTRACTING.

Location an Important Factor; the Dadant-Quinby Hive for One Locality, the Langstroth for Another.

BY J. M. HAMBAUGH.

As a preface to this article I will say that my conclusions herein enumerated are based on an experience of nearly 20 years in honey production; and while I am taking a standpoint for Southern California, in most instances they will be equally applicable to the Eastern States.

In order to achieve the best results in honey production, all points considered, both financially and in satisfaction to yourself and customers, I would advise running largely to extracting; and in order to reach the maximum results with a minimum amount of labor I'd look at the situation about thus:

1. *Location*.—You must know that the location is a desirable one, and be assured that the end will justify the means.

2. When you are satisfied on this point, the second consideration will be—a *suitable hive*. It must be composed of as few parts as possible to meet all requirements of cheapness and utility, and it must have the features of expansion and contraction to meet the needs of the smallest or the largest colonies at the option of the apiarist. There are times when a colony of bees snugly tucked up in small apartments on three or four combs can utilize

their heat, and fare much better than they would in more roomy apartments; hence the necessity of the contracting feature; and, likewise, when the season advances, and the queen reaches her maximum of fertility, laying 3000 eggs daily, the expansion feature becomes an absolute necessity, and room must be given the queen to lay, and workers to store honey in proportion to their strength numerically, if the swarming fever is to be averted, and the best results obtained in honey production, when ample room is thus provided it seems that the energy of the bees is turned to honey, and the swarming-fever averted largely, and very often entirely, for the season. It is almost the universal rule that the non-swarming colonies are the largest honey-producers, hence the need of expansion to the requirements of the strongest colonies.

The practical hive must also be easily utilized when increase is wanted by division.

Now we come to the consideration of the proper size of frame. When I was a honey-producer in Illinois I made some experiments along this line which did not work out to my entire satisfaction. When the crusade was started against the old primitive style of bee-keeping I was imbued with the idea of adopting the standard Langstroth frame for comb-honey production; and the consequence was, I soon found myself in possession of an apiary equipped with the (then) modern modes of honey production in one and two pound sections. A visit to the Dadants in the first years of the '80's resulted in my trying their large Dadant-Quinby hives, and a change of modes from comb to extracting—a change that I have never regretted; neither did I regret the visit, notwithstanding it installed two different-sized frames in my bee-yards, the importance of which I realized later on. In course of time my bees were all equipped for the production of extracted honey, and the equipments for comb honey were stored away in the attic of my shop. Time and experience pointed out very plainly that, if I could adopt one size of frame for all the yards, it would save many vexatious experiences where the bees are away from home and main storage places. I was already using the same frame for surplus as brood on the Simplicity; but the wintering problem was a feature not to be ignored; and as the large Dadants invariably wintered with less loss, breeding up faster and more satisfactorily in the spring, I could not think of discarding them for the sake of the one frame feature. I determined to try the same size of body and frames for surplus on the Dadant hive, and my experience was quite satisfactory during a heavy honey-flow, but entirely too roomy when the flow relaxed and the colony became less populous. I found them quite unwieldy, and too heavy for the average man to handle, when a case of 11 of these large combs filled with honey had to be carried into the extracting-room. There was also more breakage of combs during the handling in and out of the extractor, hence I abandoned this feature. I am not sure, but it has always seemed to me that the Dadant surplus-case is a little too small; but, to return.

In starting anew here in California, with no wintering problem to solve, in the adoption of a frame that meets the requirements both of the bees and of the apiarist, I have adopted the regular standard Langstroth, and a hive to accommodate ten, and my reasons are:

1. Its convenience in handling, and being nearest universal.
2. Its size is as large as we dare to combine the feature of surplus and brood.
3. Its best adaptation to combs when transferring.
4. A case of ten combs filled with honey is sufficient for the average man to lift, which is quite an item during the extracting season.

Let us now consider the hive in all its practical features as regards the best results from the queen, as well as the convenience of the apiarist. In order to reap the best results from a good fertile queen she must at all times have laying room with as few impediments in the way of horizontal bars and bee-spaces as possible; and in many instances I have found that her majesty will go upstairs to ply her vocation, and I do not believe in fencing her below, especially in this country, where the harvest usually lasts several months. We should have uninterrupted passageways for the working force from the brood-chamber to the surplus-apartments. All bodies of hives and frames should be made interchangeable, as brood-chambers or surplus-apartments. And now let me say, to obviate future trouble, this class of work should be cut by machinery, as the most painstaking carpenter can not cut to the line as accurately as machinery prepared for the work. All lids and platforms should likewise be of a uniform pattern, and made interchangeable. All brood-frames should be wired with three strands of No. 30 tinned wire, horizontally divided nearly or quite evenly, and full sheets of foundation used where drawn combs are not to be had.

Escondido, Cal., May 31.

[J. M. Hambaugh has been for many years a neighbor of the Dadants—that is, he has lived in their vicinity. He has used the large Dadant-Quinby hive, and in the past has been a warm advocate of it, and would doubtless be such still at his old home. But now that he is in a new locality, new conditions have arisen, and it is a little bit of surprise that he has adopted the standard Langstroth ten-frame hive. Usually, when one has become accustomed to a certain system and to a certain hive and to a certain frame, it takes more than the mere matter of locality to change his preference. Facts show this. But Mr. Hambaugh shows his candor by adopting and speaking in favor of the Langstroth hive in the State of his adoption.]

If here is just one case of a bee-keeper who has used a big hive largely, and now discards it, does it not behoove us to study over very carefully our locality to determine whether a large frame or one of moderate size like the Langstroth is the best, all things considered? In the A B C of Bee Culture, under "Hives," I very strongly urged the majority to stick to the Langstroth dimensions; notwithstanding,

I have set forth as fairly as I could all the points in favor of other hives like the Danzenbaker, the Heddon, and the Dadant-Quinby.—Ed.]

QUEEN-EXCLUDERS.

Indispensable for Extracting, but not Necessary for Comb Honey.

BY C. A. HATCH.

There seems to be a disposition in some quarters to underrate the value of excluders, or even declare them worthless as an adjunct to the hive for extracting purposes. For comb-honey production we are willing to admit all the objectors have to say against them; but for extracted honey the case becomes quite different, and there is no part of the complement of tools and appliances we think of more value in its special province than good queen-excluders.

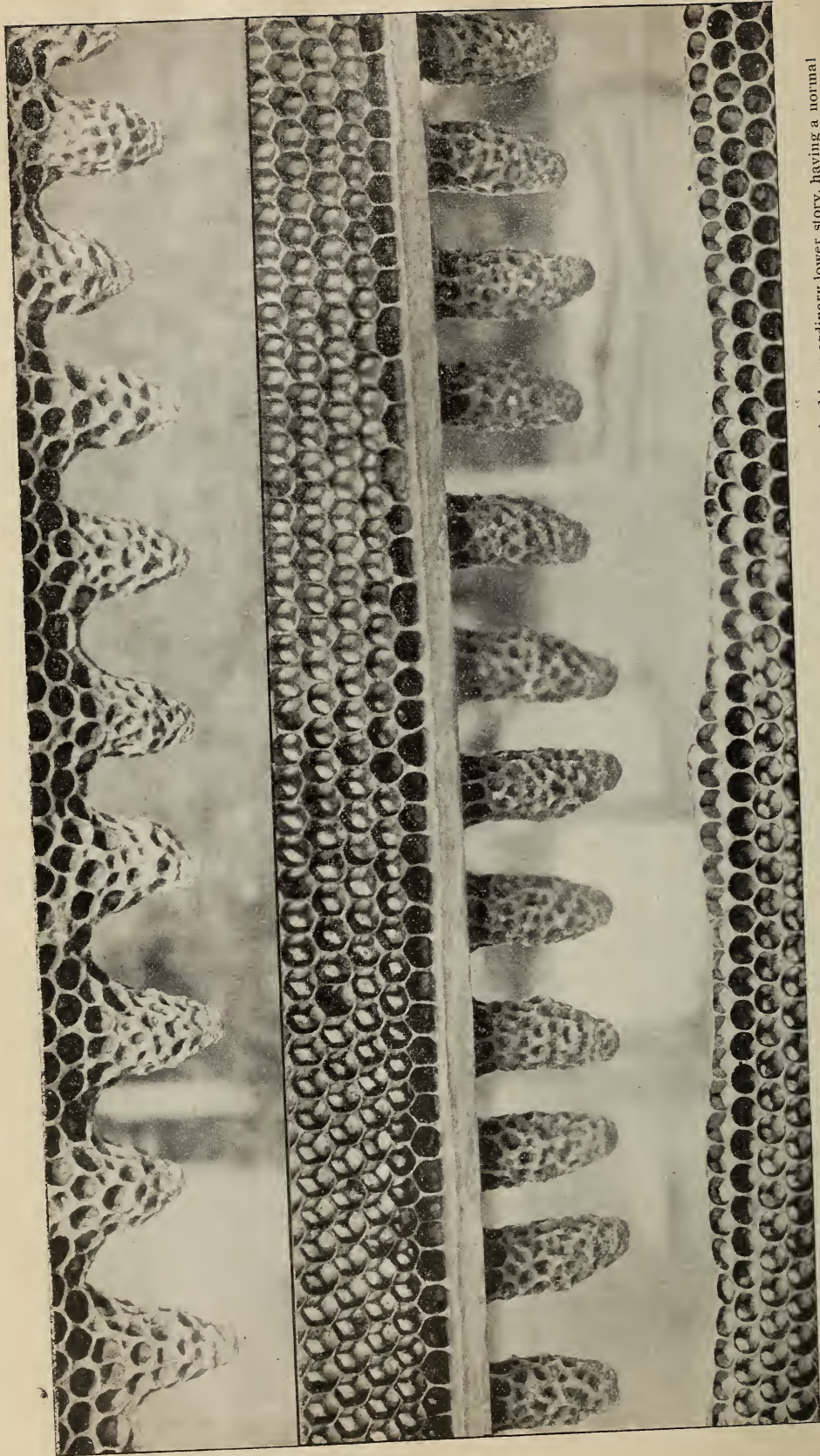
TO EXCLUDE THE QUEEN.

This is, of course, the first function of its use, and the results of this are, first, the whole set of combs in the supers are reserved for honey storage only, thereby adding at least 30 per cent to their capacity, and therefore to their value. In other words, 100 supers of comb, used with excluders, are as good as 130 would be if used without excluders. The extra 30 thus gained, are, at a moderate estimate, worth \$30.00; cost of excluders, say, \$20.00; difference \$10.00 in one year on combs.

Second, be ever so careful in extracting from combs where the queen has access to them, and more or less brood will be thrown out, and with it some larval food, which is not advantageous to the flavor of the honey, to say nothing of the young larvæ floating around in it. Quality is every thing in honey, and flavor is a prime factor in quality; so let us look carefully to all points by which this is effected.

Third, Many more combs must be handled where no excluders are used, to get a given amount of honey, from the fact that much of the storage room in the combs is occupied with brood and pollen. To lessen cost of production is to diminish cost, and thereby increase profits. All labor saved is money earned; so, remember this item.

Labor saved in the fall is another item in favor of excluders. The brood being all below, the honey for winter is stored there, and so no feeding is needed; and, there being no brood in supers, they are removed with half the labor required for those having no excluders; also labor during extracting is economized. Before using excluders, when extracting, much of my time was spent in lifting off supers and putting brood and queen below, all of which had to be done over again, may be, the very next time of extracting. Now, unless for swarming or to correct something wrong in the brood-nest, the super and excluder are never touched until removed in the fall, after the honey harvest is over. See the advantage you have added to your comb capaci-



Fair samples of Doolittle queen-cells—life size—as they are now, being raised at Medina in our own apiary. Both sets were raised in an ordinary lower story, having a normal laying queen. The upper set was raised during cool chilly weather in April, on the bottom edge of the comb. See editorials.

ty, also to your labor capacity, and will not that pay?

The objectors may claim that bees will not work as readily through them as without. I have used as many as three piled together, and could not see any difference. I have used them on part of an apiary only, and could see no material difference. I have used from 50 to over 500 in one season; have used them in California, Arizona, and Wisconsin, so please do not apply that worn-out chestnut, "location makes the difference," for it does not. The only difference I could ever discover in the yield between those having zincs on and not, being that, toward the close of the summer, when the weather became cooler, those having excluders on were inclined to store more honey in the brood-nest than those having freer communication. Perhaps in some situations where all the honey came in the fall, like buckwheat, for example, this might be a serious objection, but I think not.

HOW TO USE THEM.

As with most good things, there is a right and a wrong way to use them. They should never be put on at the time of first putting on the super; but let the bees get well started in the combs, and even let the queen lay upstairs if she wants to; and if you have eight-frame hives she will usually want to; but after the bees are well begun in the supers, put queen and brood all below, and a queen-excluder between; or if there is not room below for all the brood, put sealed brood *only* above.

KIND TO USE.

After using wood and zinc in alternate strips, and a thick rim to give bee-space, zinc bound with wood having bee-space, and simply plain zinc strips, I am decidedly in favor of plain zinc sheets; but whether this sheet should be cut so as to go inside the hive and rest directly on the frames, or cut larger so as to rest on the hive, I am not so sure. I have used both kinds with good results, and each has its advantages. As to bee-spaces, let them regulate themselves. If the zinc warps in taking off, it will soon straighten out on the hive, and be all right.

Rambler may have his wood-zinc-bee-space excluders if he likes; they may do to run a bee-ranch on the bachelor plan; but for one who wants to live up to his convictions on the plan that "it is not good for man to dwell alone," the Wilkin plan of plain zincs is best. Richland Center, Wis., April 6.

APIS DORSATA.

A Note of Warning.

BY J. M. CUTTS.

It now seems there is but little prospect of *Apis dorsata* being imported to this country. I for one do not want them. I find bee-keeping with modern hives and Italian bees a profitable business, and am satisfied without dorsata. For the benefit of any who may want them imported I should like to call attention

to some experiments that have been made with other things.

When left to herself, Nature takes good care of her own. Out of her infinite resources she gives each form of animal and vegetable life its appropriate place and rank. The importation of foreign species is contrary to Nature's intention, and often results disastrously. The English sparrow thrives at the expense of our other birds. When this sparrow was first imported into Boston it was for the purpose of destroying the mealy caterpillars that were injuring the trees on the Common. The fact soon came out, however, that he decidedly preferred grain to caterpillars. The English seem to think it strange that we ever imported such a nuisance.

The imported elm-leaf beetle is working havoc throughout the Middle and Eastern States, threatening the existence of the hardy and graceful trees which, until then, had no dangerous foe.

The gypsy moth was imported some years ago by an entomologist residing near Boston. Several of the captives escaped from custody, and the State has spent \$450,000 in the last four years in an attempt to exterminate their descendants. It is now estimated that at least \$1,575,000 will be required, and that the appropriation for five years to come should be \$200,000 per annum. On the other hand, a perpetual appropriation of \$100,000 a year would serve to confine the moths to the district in which they are found.

In Florida several rivers have recently become choked by the rapid growth of water hyacinths imported a few years ago, and considerable expenditure will be required to keep the streams open for navigation. Truly these are costly experiments.

Let us not make any such mistakes. We are doing well enough; and the man who can not make a living and some money in the bee business is either in the wrong business or in the wrong country.

But if dorsata is carefully tested in its native country I hardly think it will be brought here. Chambers, Ala., Feb. 13.

[I can not bring myself to believe that these bees would bring any train of evils into this country. The English sparrow was a pest in England. It was a pest before it was brought here; and that is true of some of the other things that Mr. Cutts refers to. But *Apis dorsata* is not a pest in India and the Philippines, if I have a right understanding of the matter. Indeed, it is difficult to propagate the race. The number of colonies found in India is few in comparison with the bees of other races; and unless our climate should offer them exceptional advantages, which hardly seems probable, I can not see how they could *possibly* run out other bees. They do not do it in India, and why should they here? It may be somewhat distressing to our correspondent to know that a shipment of *Apis dorsata* is probably on the way. We received notice from the transportation company that there was a package from Bombay, India, on the way for us, and we can not imagine what

it is unless it is one or more queens of the giant race. One thing is certain: If we get them here alive they will be clipped; and if the bees get away they will not have the means of reproducing their kind. If they do not know enough to come back to their queen they will have to go—that is, providing we can not catch them.—ED.]

GENUS APIS.

The Various Bees of the World Compared.

BY F. W. L. SLADEN.

It seems strange that the subject of the near relatives of our domestic honey-bee — their number, distribution, habits, and the points in which they differ from our bees, should be so

partially explored? The habits and instincts of the sister-species of our domestic honey-bee should give us some idea of its parentage, and of the successive phases through which it has passed to make it the wonderfully interesting and useful insect we find it to-day. Any information that can be collected should prove of great service in making attempts at improving the races of honey-bees now generally cultivated in America and Europe. For this reason this subject is, to my mind, one of great importance and interest to every bee-keeper.

The genus *Apis*, to which our honey-bee belongs, is now known to contain at least two different and quite distinct species, besides *Apis mellifica*, our common domestic honey-bee. These are *Apis dorsata*, Fab., and *Apis florea*, Fab. These two species are closely allied to one another, and together they consti-



A NATIVE NEPAULESE BEE-KEEPER OF THE EASTERN HIMALAYAS WITH A FRAME OF HIMALAYAN BEES. PHOTOGRAPHED BY F. W. L. SLADEN.

little known as it is at the present day, and should claim so small a share of interest among bee-keepers generally, especially as it ought to throw an important and independent side-light on the whole question of bee-keeping. No one will surely deny that an advantage would be gained by the introduction of a superior breed of bees into our hives, if one should ever be discovered, and who is to say there is no superior race while the field remains to-day only

tute a section of the genus *Apis* which is quite separate from *A. mellifica*. They resemble *A. mellifica* by living in colonies which consist of one queen, or perfect female; many drones, or males; and very many workers, or sterile females, and they build a perpendicular comb of wax consisting of hexagonal cells formed on either side of a central mid-rib. Many details in their domestic economy are probably very much the same as those of *A. mellifica*.

But these two species differ from any known variety of *A. mellifica* in that the nest consists of a single slab of comb only, which is built out in the open air from the horizontal branch of a tree or bush.

The geographical distribution of each of these species is about the same. It extends over the Indian Peninsular and the East Indian Archipelago. In any part of this area where the climatic and other conditions suit them, both these species are common, frequently abundant, so there is no fear at present of their becoming extinct.

An essential condition in the climate is tropical heat; and even in their native country these bees can not stand the cooler temperature of only slight elevations, though these elevations are often more generally favorable to bee-life on account of the more varied and abundant flora they produce.

APIS DORSATA, FAB

Apis dorsata may be distinguished roughly from *A. florea* by its much larger size and by its smoky wings. It builds a comb 3 to 6 feet long, 1 to 2 feet deep, and 2 to 3 inches thick, from the horizontal branches of forest-trees in the Indian jungles, sometimes from projecting ledges in rocks on the banks of rivers, etc. The colonies are generally gregarious. There are several varieties—some entirely black, others more or less yellow. The typical form has the base of the abdomen yellow. *Apis dorsata* is the largest honey-bee known. It is lazy and bad-tempered. It gathers very little honey, but secretes a great deal of wax for its comb, and this is collected and sold by the natives. This honey-bee has not been domesticated.

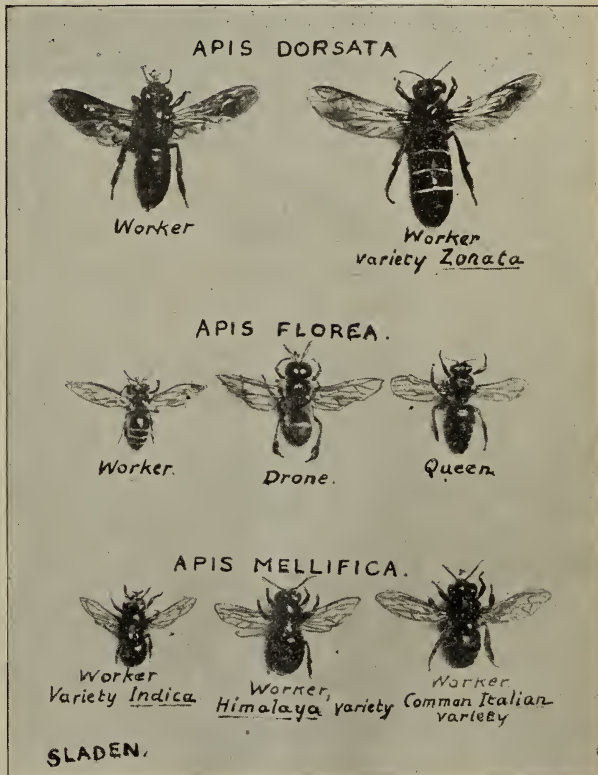
APIS FLOREA, FAB.

Apis florea is the smallest honey-bee known. The comb is 4 to 6 inches long and 3 or 4 inches deep, and is generally built in low bushes. The wax is nearly black, and of no value. This is a very beautiful little bee; the pale bands on the abdomen are of a richer orange color than in the Italian bee, and the narrow belts of white felt at the base of each segment are unbroken and conspicuous. This bee can not sting one's hand except on the back where the skin is thin. It has not been kept in hives. A quite black variety is common in the valleys of the Himalayas. The drone of this species has an extraordinary appendage to the metatarsi of the posterior legs. When first discovered it was named *Apis loba-*

ta, by F. Smith, on account of this appendage, and it was not until some years later that its relation to the workers of *A. florea* was established. I found the drone, here shown, in a queenless colony, in January, before the new drones had hatched out. Notice how large the queen is, compared to the worker.

APIS MELLIFICA, LINN.

Our domestic *Apis mellifica* runs into a great many varieties or races (not true species) in different localities of the Old World. Italians, Carniolans, Cyprians, Tunisians, are the names of some of these. In India varieties are found that are quite different from those here named. One of these is called *Apis In-*



SPECIMENS OF DIFFERENT BEES (LIFE SIZE). PHOTOGRAPHED BY F. W. L. SLADEN.

dica. This is much smaller than any of the European varieties mentioned above. Its commonest form is much yellower than the yellowest Italians, the hinder part of the thorax and almost the whole of the abdomen being pale yellow. The queens are said to be exceedingly prolific.

At Darjeeling, in the Eastern Himalayas, they have a variety of *Apis mellifica* rather like our western bees. When I was in India, two years ago, I visited an apiary of these

bees, consisting of about 60 hives kept at the jail, Darjeeling. I had the privilege of making the acquaintance of the native Nepaulese apiarist, with whom I opened one of the hives. No smoke was used in operating on these bees. After the operation was over the bees became very troublesome around my head, not stinging, but buzzing and crawling about one's face and neck in a very unpleasant manner, and I had to take off my hat and veil and spend a quarter of an hour whisking them off with a bunch of leaves, in which task I was kindly assisted by my worthy Asiatic friend whose portrait is here given (probably we should not have had this trouble if smoke had been used), with a frame of comb in his hand. The comb is held in the frame by means of four wooden sticks. The body of these bees is quite soft; the ventral segments of the abdomen are almost membranous. These bees build a cell with a diameter $\frac{1}{2}$ that of our bees, and would use our ordinary worker comb for raising drones.

Another variety of *Apis mellifica* found in Ceylon looks like a cross between variety *Indica* and the Himalaya bee.

The actual sizes of these bees in the photo may be estimated by comparing them with the Italian bee shown in the right-hand bottom corner.

Ripple Court, Dover, England, June 5.

[Only incidentally Mr. Sladen mentions the fact that he made a tour through India, looking up these different races or varieties of bees. I have known for some time that he had a technical knowledge of the different bees, but had forgotten to call upon him.

Of *Apis dorsata* he says they are lazy and bad-tempered. Our Mr. Rambo found them quiet and easily handled. Is it possible that there are distinctive differences between these bees of the same kind so far as temper is concerned? Mr. Benton also, I believe, claims that they are quiet-tempered.

I had the photo showing the different varieties enlarged, so the different specimens would show up to be actual life size. This will enable the reader to form a relative comparison between the different bees shown.

In the plate under the heading of *Apis dorsata*, the worker marked "*Apis zonata*" appears very much larger than the other one also supposed to be marked "worker." The specimens of *dorsata* that we have in alcohol are pointed at the end of the abdomen the same as Italians, and look more like the *dorsata* on the left. As to size, those we have are about the length of the *zonata* shown.—Ed.]

SWEET CLOVER.

A Revelation in Road-making.

BY C. H. DIBBERN.

We all know how desirable it is to have good roads, and how miserably we generally fail in getting them. The colossal ignorance of the average "highwayman" is astonish-

ing; but he seems to plod along, year after year, in the same old way.

Usually, as soon as the roads become dry and reasonably good in early summer, he commences with plow and scraper, and soon has a lot of "soft stuff" in the center, to be ground up into dust or mud as the weather may determine. Perhaps in October he will repeat the operation, with the same result, and will, perhaps, congratulate himself on work well done. Oh, yes! if there is any sweet clover growing in the fence-corners it must be carefully cut down, although the jimson, rag-weeds, and thistles may go to seed. Perhaps he will do a good deal of swearing at the bee-men, who, he imagines, walk around nights sowing the seed for his especial benefit. Likely enough the farmers will do the swearing the rest of the year about the bad roads.

Last July, while driving in a distant township I struck a piece of road that was a pleasant surprise and a revelation to me. Evidently some bee-keeper must be road commissioner, or else he had learned something. Here, as in so many places in Illinois, the sweet clover was growing luxuriantly on both sides of the road. By running a mower up and down the road several times during the summer it had been kept from encroaching on the driveway. Not only that, but the cut clover had been thrown into the middle of the road; and how springy and delightful it all was! There was no dust, and the pleasant perfume of sweet clover filled the air. Some cattle in an adjacent pasture were reaching through the wire fence and feeding on the clover within reach; and the bees were on hand by thousands, carrying away the nectar and filling the air with their contented hum. Soon I passed into another township; and, though the sweet clover had extended for miles further, it had all been cut and burned in the road, leaving a scene of desolation; and, oh how dusty it was!

Again I passed over this road in October. I had been wallowing through the mud, and was weary enough, when I again experienced the pleasant sensation of my sweet-clover road. Instead of mud there was that springy road-bed, without mud or dust. Upon further investigation I found the sweet clover had all been cut when about done blooming, and carefully piled in the road where the sun had soon wilted it, and the wagon-wheels had crushed and mixed it with the soil. Though this road ran through a level mucky country it was the best road there was anywhere. The millions of decaying roots in the ground on either side seemed to provide a sort of natural drainage that seemed to carry off all surplus water. It appeared that no work with plow or grader had been done on it for several years, and only the intelligent care of the clover had done the business.

Now, is it not possible that, aside from bee-keeping, as so often happens, we have been making war on our best friend? Surely the suggestions I have mentioned are worth investigating. Sweet clover has come to stay; and, whether we are bee-keepers or not, had we not better turn it to some account?

Milan, Ill.

[Well, well, friend Dibbern, you have given us something refreshing in several ways. Since you speak of it, I can readily imagine that sweet clover is just the thing. We have places in our neighborhood where it grows higher than the fences, and clear from the wagon-track clear up to the fences. Then to think of sweet clover being ruled out as a noxious weed! As you say, it seems a little funny to think so many have been making war on their best friend; and recent communications on the subject remind us how many different uses we can find for things that are scattered all about us—even the weeds in the fence-corners if we all set about looking the matter up. I will forward a copy of this to the *L. A. W. Good Roads Bulletin*.—A. I. R.]

ALSIKE CLOVER FOR BEES AND STOCK.

BY F. A. SNELL.

There is no crop I think that will, in the Northern States, pay the bee-keeper or farmer better to raise than does alsike clover. It blooms profusely, and the blossoms are rich in the secretion of honey—just what the apiarist most desires. The period for the building-up of colonies and their increase in numbers also comes at the time this plant blooms. With frequent rains this bloom will yield honey for six weeks, and a heavy flow for a full month when all conditions are favorable. It is a heavy bloom of honey-yielding plants that gives a big crop of surplus. It matters not if there is a good deal of white clover growing. The farmer bee-keeper should grow this clover so far as he can reasonably do so. More surplus honey will be secured in one month with a heavy bloom than in three or four months with only a fair bloom, other things being equal. I have many times found this proven true as stated above. There is never too good a bloom when we do our best to secure it by generous sowing of seeds producing honey; hence we should sow the alsike, and then with white clover we may have a generous honey harvest from the clovers, which is of finest quality.

As a crop for stock, after an experience of over thirty years I can say that the hay from alsike is much superior to that from any other clover I know of, and, of course, is far ahead of timothy hay. The quality is very high. Stock prefer the alsike for pasture or hay to any thing else in the line of hay. The stalks are fine, and the hay is all eaten—no woody stubs left, as with the coarser clovers. If not wanted for seed it is well to sow a little timothy with it, as it then stands up better. Under favorable conditions, with rich land I have had it grow four feet in length of stalk—usually two to three feet. Its hardness is a strong feature in its favor. It has with me repeatedly wintered well, when red clover has been killed out almost entirely. I have never known it to winter-kill. It has proven to be entirely reliable.

This clover seeds at the first blooming. It may be cut when just nicely in bloom, and

then it will bloom later on in the season, giving nice fall feed for stock and bees.

Alsike will thrive on land quite moist, and give good crops, where the red clovers will not grow. If this clover is cut and cured a little early, or when nicely out in bloom, it is much relished by hogs; and when fed in winter, in addition to other foods, it contributes materially to the health of the animals, which is a matter that receives far too little attention from farmers in general. The farmer who keeps both bees and stock has a double interest in the matter of growing alsike clover—for the honey and for good feed for the stock upon his farm.

I have secured a good stand of this clover by sowing the seed on the grain stubble soon after harvest, when we had seasonable rains that would start its growing. A few acres should be at least tried on every farm. I do not know how far south it will do well; but in Northern Illinois, and north of that, it does well, and is much grown in some sections.

Milledgeville, Ill.

CUBA.

Some Plain Facts about Havana; Something of Interest to Bee-keepers.

BY THE AMERICAN TRAMP.

I am in a liberal mood to-day; so to those who have an eye on Cuba, I will give advice and what I see here free of all charges. This is more than others will do. Here in Cuba the rule is, charge everybody for any thing and every thing possible. I've been living in Havana the last six weeks, so will tell you of some of the differences between a Cuban city and a northern one. In the first place, I would advise all those who intend coming here to practice rigorously tight-rope walking for a few months in order to be able to keep on the sidewalks of a Cuban city. On the Broadway of Havana (Obispo St.) the sidewalks run from ten to thirty inches in width. At certain intervals some benighted Spaniard of the 14th century has a small awning stuck out from his shop window, just high enough to catch one in the neck while balancing along on the curbstone. The only way to get along with the sidewalks here is to walk in the gutter.

The outside appearance of the houses here is very poor, while the inside forms quite a contrast, being gotten up quite gaudily with colored glass, fancy tiling, marble, etc. The houses being built of mortar, stone, and cement, with very thick walls and high ceilings, it makes it very cool and comfortable inside. The outside doors are all built thick and solid, while the windows, in place of glass, have iron bars with solid inside blinds. To a stranger the houses, with their iron gratings, appear like so many prisons; and the people looking out of them are like so many prisoners. Then, again, the houses here are not located, as with us up north, a certain class to each neighborhood. Here you look into one house. There lives a rich Spaniard. Every

thing inside indicates wealth and luxury. The next house may be a cow-stable, with a dozen or more cows in it; the next a tin-shop; the next a house full of niggers, and so on all along the street. No house, from the outside, indicates what's inside.

There are several nice parks in Havana where one can enjoy the music from the different bands several nights in the week, and there is one nice walk here, the Prado. Here one can see the beauty and wealth of Havana driving about or promenading. The boasted Spanish or Havanese beauties are scarce. The ladies here all have beautiful eyes and hair, and this is all. You can see more beautiful women in any large northern city in one hour than you could see here in a week—that is, to the taste of the writer. Of course, tastes differ. They also have a custom of powdering so thick that they all look as if their heads just came out of a flour-barrel; then they put the perfume on so thick that you can smell them coming long before you can see them. But I'll stop now or I may get myself into trouble. There is hardly any of what we would call children here. They are either babies or grown. Up to five or six years they are babies; from ten years up the boys are mashers, and the girls are dressed and powdered up, and trotted about by their parents just as their elder sisters are. This is one of the queer customs they have. They never let a girl go out or sit alone with a man. A girl's beau has to court her with her father or mother sitting facing him. I hope this is because it is an old custom rather than from a distrust of man or woman.

The most of the laboring class are nearly all unmarried men, and they use up in a restaurant what they can earn. They seem to regard marriage as a luxury out of their reach; and with the habits of both men and women here I think it is. There is not a single savings bank in Havana. Some years ago one was started, but it proved a flat failure. The natives will spend their last cent in hack fares before they will walk ten blocks. I saw a laborer, who was working in the sewers here for 83 cents a day, hire a hack to ride eight blocks to have a pickax exchanged. This was spending 20 cents in riding while earning four cents for the same length of time.

I will not say any thing about bee-keeping, as you have a more able writer here writing you an article.

Havana, Cuba, May 15, 1899.

A CASE OF BEE-FEVER.

BY E. W. BROWN.

A few years ago I was taken with an acute attack of bee-fever. I was totally unable to cure myself. Even hypodermic injections had no permanent effect; and, being too bashful and miserly to consult a physician, I gradually grew worse until my case became chronic. By exercising my best judgment I kept my fever from assuming a malignant form, although some of my friends thought I would

eventually have to be sent to an asylum for the insane. I may wind up there yet, but somehow nobody seems to worry about it any more.

You can, perhaps, imagine how "powerful bad off" I was when I say that I gave up a good job as inspector for the Chicago Telephone Co.; mortgaged my suburban home for \$400; packed my eight colonies of bees and household goods into a car, and moved 500 miles with a family of wife and three children, in spite of the fact that there were hundreds of acres of sweet clover growing in the vicinity of my home, and a crop failure was unknown. My wife and I were born in the East; and after seven years' absence we longed to go back. This is one of the reasons why we took the leap in the dark.

Before leaving Chicago I read an Indiana bee-keeper's advertisement in a bee-paper, offering for sale colonies of Italian bees on wired frames at \$4.00. I ordered 14 colonies to be sent here (New York). I thought they would be sent by freight; but when I had to pay \$27.50 express charges I became aware of the fact that small lots of bees are sent only by express. For \$60.00 I could have had a whole carload of bees sent by freight, and received free railroad fare for one person. However, I was prepared, for the shipper wrote me in advance, telling just what train the bees would arrive on. I happened to know something about express rates, so I made a guess on the weight of the bees, and estimated that the charges would be about \$28.00 before I went to the station after them. When I arrived I found the express agent in a nervous state of mind. There was a big pile of ten-frame hives with covers removed and wire cloth nailed over the tops. The 14 covers were crated by themselves. Every thing was in good order, and packed well enough for a journey to California. When I told the agent I had come for the bees he said, with an anxious look, "The express charges are \$27.50."

"Is that all? I thought it would be more," I answered.

I was pleased to learn that the charges were no higher than I expected, and he could see that I did not feel bad. When I drove away he stood staring at me. Perhaps he was thinking of Josh Billings when he said people were of two classes—"phools and damphools."

I was well pleased with the bees. All the combs were built on wired foundation in what I should call closed-end Hoffman frames. They would interchange nicely with ordinary Hoffman frames.

That season proved to be so rainy that the larger part of the nectar went to waste; but I obtained 66 lbs. per colony—a total of about 1450 lbs. This includes fall honey—mostly comb.

When it came time to pack the bees for winter I found that the closed-end frames were the only ones that contained brood in every case where I had put both kinds of frames in one hive, with two or more closed-end frames together. If there were two or three closed-end frames on the north side of the brood-chamber, there is where I would surely find

the queen and brood, while the other part of the brood-chamber, filled with open-end or Hoffman frames, would be filled with honey.

This impressed me greatly; so I sent in a rush order to my supply-dealer for 80 boards, 14×8½ inches, and $\frac{3}{16}$ inch thick. By using a strong leather strap I turned my ten-frame hives upside down; removed the bottom, and inserted one of these thin boards between the end-bars and the end of the hive at each end. Before putting these boards in I folded three layers of burlap over them in such a way that it would be impossible for the bees to glue them in fast. In removing one of these boards the burlap or other cloth would peel off the end-bars as easily as pulling a quilt off top-bars. So you see I went into winter quarters with my 41 colonies on closed-end combs. One colony was allowed to go into winter confinement queenless. It wintered well, and was strong enough in bees in March, when it allowed itself to be robbed, joined the bandits, and went home with them loaded with their own honey. The 40 other colonies wintered nicely on the summer stands, with cork-dusted cushions in the supers.

As I did not make money enough the first year to pay my rent and support my family I went to Buffalo to get work for the winter. The only work I was able to get was that of a street-car conductor. Every thing went along smoothly till spring was approaching. When I took the job I made up my mind that I should have to banish bees from my thoughts for a few months or I should get into trouble; and I actually did succeed in keeping my fever under control for three or four months, and then I began to figure on bee-supplies for the coming season, and then it was that every thing on my car began to go wrong. I cut up all sorts of capers. Sometimes I would pull the wrong rope when I wanted to ring the bell. Instead of ringing the bell to go ahead I would pull the trolley down off the wire, absent-mindedly; and one day I punched a transfer for a passenger, gave him my punch, and put the transfer into my pocket. These things were bad enough; but one day I received a letter from home, saying that the bees were so strong in numbers, and there were so many apple-trees in blossom, that the bees were liable to swarm any day. This was too much. After that I did not know whether I was conductor or passenger. A passenger boarded my car, and I forgot to collect his fare. To pay for this I had to work three days without pay. Well, I soon gave the job up, and returned home just in time to get my supers ready for the white-clover flow.

Eden, N. Y., March 31.

To be continued.

RAMBLE 170.

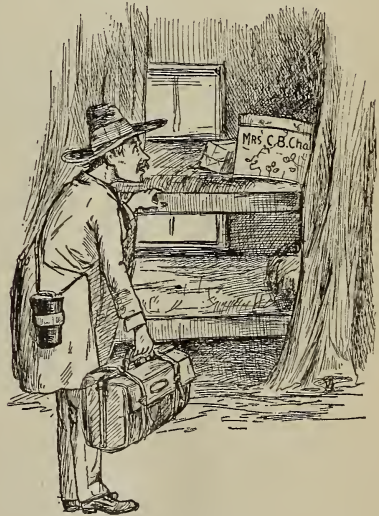
BY RAMBLER.

While in Seattle I came near having the Klondike fever. Miners were coming in from that new mining country, and it was not unusual to meet them upon the street in their

picturesque garb of furs. Tales of fabulous wealth were rife (tales, by the way, never applied to bee-keepers); then there were stories of hardship and death. Of the latter the half has never been told. In the mad scramble for gold the dead are soon forgotten, and the rich strikes are the only features that are published abroad.

To a person who has been basking in the sunshine of Southern California for several years those furry garments suggested a temperature for which I was little fitted, and I concluded to purchase a ticket for San Francisco and defer my visit until a more auspicious season. I expected, of course, to have a cabin mate upon the trip, and wondered with what kind of a genus *homo* my lot would be cast. I went aboard the steamer early in the morning, and one of the polite attendants showed me my state room. My *companion de voyage* had evidently been there before me, and deposited a large bandbox. I dropped my grip, and proceeded to examine this suspicious-looking box; for who ever heard of a man carrying a bandbox? and, sure enough, there plainly written upon the top were these words, "Mrs. C B Chapman, state room 118."

You can but faintly imagine how embarrassed I felt in the presence of the very name of that married woman. The cold chills chased each other up and down my spinal column. I critically examined the box again, and there



was no denying the fact that my room mate was a "Mrs.," and, sitting down, I pondered the subject, wondering what I had done to merit such a fate as this; and here I was alone in a far country, with no friend to hold out a protecting hand. I felt so nervous that I stepped out of the state room, and, leaning upon the railing, looked down into the green waters of the harbor. All was peace below the surface. It was a wicked thought, but I was almost persuaded to cast that miserable bandbox overboard; but wishing to do no injustice to any person I calmed down several

degrees. I am inclined to cross bridges before I get to them, and to imagine all sorts of evils. I finally walked boldly to the purser's cabin and presented the case to him, and he proved to be both a gentleman and a friend, and promptly gave the lady another room. But I felt all the same that I had escaped a great embarrassment.

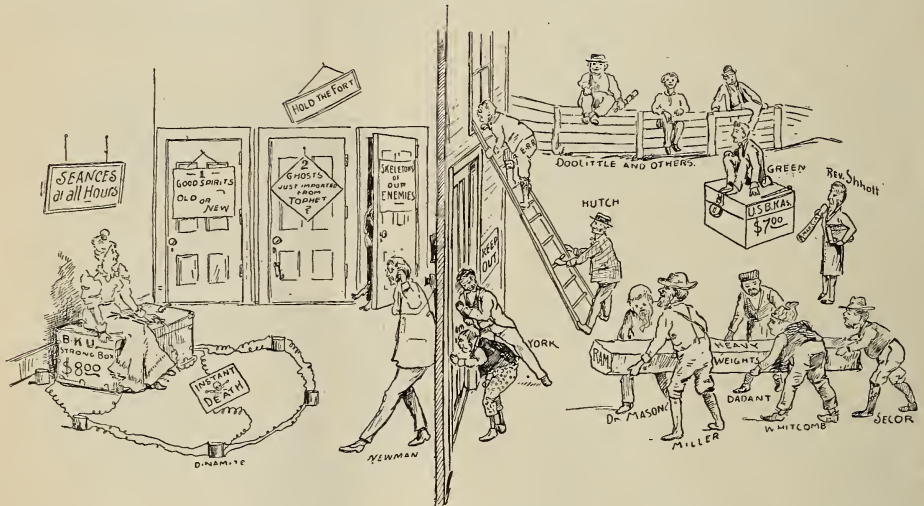
From eight o'clock until two that day our steamer cleit the waters of Puget Sound. Our journey was still to the north; and the day being bright we had a fair view of this vast body of water, which, with its many indentations and islands, is more worthy to be called an inland sea. We touched at a few ports, and finally tied up to the wharf at Victoria, British Columbia. We had several hours here, and nearly all of the passengers improved the opportunity to see the town. The chief noticeable features were the fine government buildings and the numerous Chinamen. I should think fully a third of the 25,000 population of the town were of that race.

At Victoria I met my cabin mate, and he was a young man just from the Klondike country. He was returning much poorer than when he went north, and he felt quite elated to think that he had gotten back with the breath of life in his body.

dred pounds, and it readily sold for beeswax, and it certainly was beeswax, and the mine was soon exhausted. No one knows how the wax was deposited there, but it is supposed that a vessel with a large amount of wax on board was wrecked there. A beeswax mine would indeed be a bonanza to the finder.

After arrival in San Francisco I found my way across the bay to Oakland, and paid my compliments to Mr. W. A. Pryal, and found him up to his ears in real-estate and insurance business; but still he finds a little time for recreation in his apiary of about 40 colonies, in which he is still interested. I think it is a fact that no one who has ever managed bees, and having a love for the bees aside from the dollars-and-cents point, ever wholly gives up the pursuit. Mr. Pryal a few years ago turned his attention to queen-rearing, and has an idea of working his bees in that direction again. We have no queen-breeders in California, and the State should boast of at least one.

Mr. Pryal and I visited San Francisco, and we proceeded to hunt up Harry Jones, the gas-man; but we found that our genial friend had at last, after several years' vowing and threatening, left the hard pavements and the brick avenues, the rattle and tear of the city,



After our good ship had passed out upon the broad ocean that night, the storm again commenced; and for two days our ship was pelted with rain, and buffeted with the winds and waves; and, though three-quarters of the passengers were seasick, I escaped the disagreeable experience.

You would scarcely think there would be any thing to interest bee-keepers off the coast of Oregon, but there is. I saw some time ago an account of a wax-mine off this coast; and while in Oregon I made inquiries in relation thereto, and found it to be a fact. Parties who found the wax out a little distance from the shore supposed they had struck a vein of some kind of mineral wax that closely resembled beeswax. They fished up several hun-

and had become a *bona-fide* bee-rancher near Santa Rosa. As it was only a little matter of about sixty miles, Mr. Pryal and I thought we would take a little turn out there and see him; but the morning we appointed to make the start came in with a gentle rain, and the journey was postponed indefinitely. Our friend will probably appreciate the miss we made.

I felt as though it would not do to pass through the city without shaking the hand of that staunch friend of the bee-keeping fraternity, Mr. Thos. G. Newman, and Mr. Pryal chaperoned me a long walk up Market Street, to his place of business.

Mr. Newman gave us a cordial greeting, but we were pained to find him in delicate health. When Mr. Newman first came to

California he found an abiding-place in the extreme south, at San Diego. We were in hopes for a time that Los Angeles would become his permanent home, and there is not the least doubt in my mind but this city would have been the more healthful for him; but business matters necessitated the change to his present quarters.

Mr. Newman is an eminent spiritualist, publishes the *Philosophical Journal*, and but a few moments' conversation with him will demonstrate that he is a man who desires to benefit and elevate his fellow-men. He has been a faithful worker in the interests of beekeepers, and there is no use to refer to the firmness of his backbone in reference to the affairs of the B. K. Union, and especially when considering the marriage of the Union with the newer association.

There are several points that are not taken into account when considering this nuptial affair. The members of the Union never gather in an annual meeting, like the U. S. B. K. Association. If it did hold annual meetings, and both associations would meet at the same time and place, there is no doubt the wedding-feast could be amicably spread.

As the case now stands, Mr. Newman is the only visible head to the Union, and he gets all the blame for standing so strenuously against the wiles of the new association; but there is a power behind Mr. Newman in the membership of the Union. He has his ear to the telephone, and the majority are shouting to him to keep the door shut, and he is faithfully obeying orders. From Mr. Newman's standpoint I sum the situation up in the attached cartoon.



FEW UNFINISHED SECTIONS IN THE FALL.

Question.—Do you not think that we are liable to overdo the thing of tiering up sections so as to secure a large yield of honey, this causing too many unfinished combs in the fall? I have followed the advice given in our bee-papers, of giving room every time the bees seemed somewhat crowded, and the result has been that I have many unfinished sections in the fall—many more than it seems an advantage to have.

Answer.—How to manage our bees so as to secure the greatest yield of comb honey is a question of great importance to all those who are engaged in producing such honey for market; hence we have many articles on this topic, giving us instructions regarding how we should proceed. But comb honey is of little value unless pretty nearly or fully sealed over, so that "how to manage our bees so as to have few uncapped sections in the fall" is a question of nearly as much importance to us as the first. For years I was troubled by having from one-fourth to one-third of the

combs in the sections not fully sealed at the close of the honey harvest, which were salable only at a reduced price; but of late I do not have nearly so many as formerly. After experimenting for some years in this matter I became convinced that the cause of the trouble was in giving the bees too many sections; and especially conducive to this was the plan of tiering up sections late in the season. Many and many a time, years ago, I spoiled a promise of an abundant yield of comb honey by tiering up four or five days before the honey harvest closed. To tier up sections profitably requires considerable tact, and especially do we want a thorough knowledge of the honey resources of the field we occupy.

I think there has been too much injudicious talk during the past regarding not allowing the bees under any circumstances to cluster on the outside of the hive, the idea being generally conveyed that, when bees thus cluster out, they need more room. Now, it depends on when this clustering-out occurs, whether more room is needed or not; and hence I say "injudicious talk." If the clustering-out occurs at the commencement or in the height of the honey-harvest, then more room should be given; while if at the latter part of the honey harvest, or in a time of honey dearth, no more is needed, for more room at this time results in the one case in many unfinished sections, and in the other in an absolute waste of time used in enlarging the hive. To illustrate:

During some seasons we have but very few days of honey secretion, and that often after the flowers which produce the nectar are rather past their prime. At such times we often do not have on the hive more than one-half the capacity which we would use in a good season; and for this reason the bees begin to be crowded out. Hoping that the weather may be good during the rest of the time that the flowers are in bloom, we double the room for our colonies, only to have it turn bad weather again, thus giving us only partially filled sections in the fall; while had we left them as they were, and not been stampered at the sight of a few bees hanging out on the front of the hive, all would have been finished.

I well recollect one such season when, in time of basswood bloom, we had bad weather up to the middle of the same. At this time I had on the hives about one-half of the surplus room generally used, when, all at once, the yield of honey became abundant, and the bees began to be crowded out. Hoping that the weather might be good for some time, I doubled the capacity on a few hives. The result was that the bees immediately took possession of the empty sections, while the weather turned unfavorable again; and when the season was over I did not secure half as many finished sections from these hives as I did from those which were allowed to remain as they were.

Again, very often after basswood bloom has failed there comes on very hot weather when not a bit of nectar can be obtained; and the result is that the fronts of the hives are black with bees. According to the advice above

alluded to, more room should be given; and if the bees then persist in clustering out, some have gone so far as to tell us to take a smoker and smoke them in, continuing this smoking till they stay in the hive. Any one can see at a glance that this would be of no use, for at such times the bees are doing just as much for the benefit of the apiarist by hanging on the outside of the hive as anywhere. My plan of securing nearly all completed combs of honey in the sections is as follows:

When the bees show, by building little bits of new comb here and there about the hive, that they are ready for the sections, I put on the smallest amount of surplus room that the hive will allow of, and leave it thus till the bees are well at work, when I give about the same amount more; and when this room is fully occupied I give the same amount again, if we have not passed the middle of what is our usual honey-flow. By the time the bees fully occupy the last room given, the first on will be ready to come off; and when this is taken, if more room is needed it is put above the sections the bees are already at work in, so that they may not be forced into these last sections only as they have all those filled below. If the yield continues I keep taking off the filled sections next the hive and putting the empty on top of those the bees are already at work in until the season begins to draw to a close, when, as fast as the full sections are taken out, the others are lowered down till the space is contracted to the original capacity that was first put on. In this way the bees are given all the space they really need, while the chance for many unfinished sections in the fall is quite small.

Such items as these are well worth looking after and studying upon; for he who understands the most about all of these little kinks of practical bee-keeping is the one who will make the greatest success in our chosen pursuit, apiculture.



A BUNCH OF QUESTIONS.

1. If two queens, one of which would lay 1500 and the other 2500 a day, during a good summer honey-flow, be put, after the flow, in eight-frame Langstroth hives full of comb, and containing 25 lbs. of honey each, and enough bees to keep the hives warm, will the 2500-a-day queen lay more eggs during the two following months than the other?

2. About how much honey should a colony of bees in a hive of the above size have between the summer and fall flows if it is 55 days from the close of the one to the opening of the other?

3. All my six queens were reared from eggs laid by the same mother, but were impregnated by drones of another mother. If, next year, I should rear queens from the best one of

these, and the young queens should be fertilized by drones reared in my own apiary, and this should be repeated for a number of years, will the queens or the bees reared from them lose any of their valuable qualities?

4. In wintering my bees on summer stands, should the hive be contracted with a dummy to the space they would occupy when the temperature is at 30°, or should they be given more room?

5. Will a honey-plant fail to produce any honey for two years in succession, or is a failure usually followed by a good flow the following year?

6. About how many spaces should an average-sized colony in an eight-frame Langstroth hive occupy wholly on a cool day in autumn?

7. Will bees that hatch two months before a fall flow be able to gather as much honey as if they hatched three weeks before, there being no honey for them to gather before the fall flow?

J. C. CARMICHAEL.

Eber, Tenn., May 27.

[1. Shortly after the honey-flow, queens, as a rule, curtail their laying very considerably, and I should not expect that, after that time, there would be a great deal of difference in the number of eggs laid by either queen.

2. From 10 to 15 pounds.

3. I would not recommend such inbreeding. It would be better to renew your stock oftener.

4. Contract the hives down to the space that the cluster will occupy at such times.

5. As a rule, we do not expect to have two poor seasons for any one honey-plant in succession. As a general thing, a good flow from any honey-plant is liable to be followed by a poor one; but there are so many exceptions to either one of these cases that I do not know that we should set down any rules.

6. The colony ought to occupy about two-thirds of the space, but it might take only a half. By "spaces" I suppose you mean the intervening spaces between the brood-frames.

7. Probably not.—ED.]

BEEES WITH DIRTY AND TAINTED FEET.

We notice that there are several ideas regarding the cause of so-called travel-stain on comb honey. Some can't think it possible that bees should be so untidy as to have dirty feet, and then run over the honey. The question was brought to my mind yesterday when I was called upon to help pull a cow out of a quagmire. When I got to the place I found the cow had lain there so long that the flies had done their work, and the animal was almost covered with a mass of squirming wriggling maggots, and the bees were there also by hundreds, helping themselves. I don't know whether they wiped their feet or not before entering their home; but if they did not, would it not stain as well as taint honey to have those bees walking over it? But is the stain on the honey caused by the bees running over it? Is it not possible that it may be something similar to mildew?

Mannville, Fla.

M. W. SHEPHERD.



THERE is something that possibly may interest you on page 491.

THE HONEY SEASON FOR 1899.

So far reports are very meager, and such as have already come in do not indicate any very great show of surplus for most localities. There will be more of a crop than last year, but even then probably below the average. The season seems to be late everywhere, and basswoods are only just beginning to open in many places. So far reports seem to indicate that Colorado will more than hold her own. In California there will be a very light crop—less than a quarter. We have received letters from Wisconsin, Iowa, and Tennessee, indicating no honey; but for Wisconsin, at least, it is a little early to forecast the crop. In New York, reports indicate that there will be a fair crop of clover and basswood, which will, no doubt, be followed by the usual flow from buckwheat. From Michigan we have some bad reports as well as good ones. N. E. Doane, of Breckenridge, Mich., writes that willow-herb has "about had its run," and this is usually one of the unailing sources of honey. Byron Walker, of Evart, Mich., writes much more encouragingly. The nectar flow in and about Medina, while better than last year, will be rather light. Mr. Burt will get a super of comb honey from each one of his 300 colonies.

The conditions in the latter part of May and early part of June, while very favorable, have been rather unfavorable during the last two weeks of June. We have had quite hot weather followed by too many cool days and nights, and there is not liable to be a nectar secretion in cool weather; although this morning, June 30, when the temperature was as low as 55 by a tested thermometer, the bees were working lively on the basswoods in front of my house. At this writing, bees are gathering honey from both clover and basswood, and if they only *hang on* we shall have nothing to complain of.

A COLONY BETWEEN THE WALLS OF A DWELLING-HOUSE; HOW TO GET THEM OUT.

THE question is often raised, how to get colonies of bees out from between the clapboards and the plaster of a house. A correspondent, Mr. A. D. Hopps, of La Moille, Ill., tells how he succeeded in getting bees out of the dead-air space between the two walls of a brick house. With a small syringe he says he threw in carbolized water all through the sides; and as carbolic acid is very obnoxious to bees, in a short time they came out, when he hived them. A cloth dampened with carbolized water is reported to have been placed over supers filled with sealed honey, to drive the bees out, and I believe I have seen it stated that the fumes of the acid will drive all the bees, in the course of a few minutes, out of the super into the brood-nest. I have

never tried the plan; but I do know that, years ago, when we sprayed our combs with a carbolized solution, it was difficult to get the bees to go on them again, as they dislike the stuff as a dog does the smell of ammonia.

APIS DORSATA HERE AT MEDINA AT LAST; GIANT BEES FOR SALE.

YES, we have them, and great big beauties they are. Talk about golden Italians—they are noway to be compared with these beautiful giant bees. Yellow? Well, I hardly know whether Doolittle would call them yellow, orange, maroon, or what not; but to my notion they are the handsomest yellow bees I ever saw. Why, they look like great big yellow Italian queens, and might almost be sold for such. They came by express all the way from Bombay—not a bee missing, and evidently they are in just as good order as they were the day they left our missionary friend Mr. W. E. Rambo.

No doubt a good many of our subscribers would like to get these bees; and as our supply is limited we are going to make arrangements so that at least a few can have them. No, we are not going to sell *queens*, but we'll sell bees put up just as Mr. Rambo sent them, and charge 10 cts. apiece. Can't help it if you do want more; and in order to make the supply hold out we can let only one bee go to a customer. How shall we put them up? Exactly as Mr. Rambo has put up our supply. They will not be sent in a queen-cage, but will be placed in a little vial of alcohol, packed in a mailing-block.

Lest some of you may have inadvertently gotten a wrong impression (through no fault of mine), I will state that the shipment was not an aggregation of *live* bees, but dead ones put up in a bottle of alcohol—perhaps two or three hundred. This is the package of which I spoke on page 499, and which I thought *might* be live bees.

These bees are about the size of those shown on page 501, only they appear to be more pointed. The half-tone does not give a fair representation of these beautiful bees.

THE A B C OF BEE CULTURE IN THE PRESS, AND ITS REVISION.

THIS work, comprising some 475 pages (the last edition being entirely exhausted a few weeks ago), is receiving a very thorough and comprehensive revision. The work is more than half revised, and already 150 pages have been entirely rewritten. If the revision continues at the present rate, the work will be largely rewritten by the time we expect to have it out, some time in September. The subjects of "Apiaries" and "House-apiaries" have been recast. "Crimson Clover" is a new subject. The subject of "Bees" has been enlarged to take in *Apis dorsata* and other races of bees. "Comb Honey," as well as "Comb Foundation," has been rewritten from beginning to end, besides considerably more being added. The subject of "Hive-making" is entirely recast. In the former editions, only one hive was described in detail. This was followed with matter showing how to

make hives, sections, etc., by *power* machinery. No particular hive is now described in "Hive-making," and the matter is slimmered down to the processes of cutting up stuff on foot-power and ligh -power machinery. As to dimensions, the readers is advised to send to some manufacturer for a sample standard hive in flat, and from the parts of this secure his measurements. "Hives," an entirely new subject, contains a description of all the best ones. Among them may be seen the old style Langstroth, the Simplicity, the Dovetailed Langstroth in its various forms; the Danzenbaker, the Heddon, the Dadant, and, under this head, large and small hives. This is followed by a discussion on double-walled or winter hives. Various principles are illustrated, all the way from the loose to the closed-end frame. This is a rather new departure in the A B C of Bee Culture; but as I went over the field I felt that *principles* should be discussed, showing some of the best samples of those principles, leaving the reader of the book to make his own selection. The subject of "Hives" is followed by three more new subjects, "Honey as a Food," "Honey Cooking-recipes," and "Honey-peddling."

PRODUCING QUEEN-CELLS BY THE DOZEN A LA DOOLITTLE IN THE LOWER STORY, ALONGSIDE OF A NORMAL LAYING QUEEN; HOW IT IS DONE.

HERETOFORE Doolittle cells were produced either in the upper story or in the lower one where the bees were about to supersede the queen; but our Mr. Wardell can now get the bees to accept and build out Doolittle cell-cups in the single story of any colony having a *normal* queen. There may be nothing new about it; but so far I have not yet known of the practice being carried on in the manner stated, in the lower story, or brood-nest. Our apiarist makes use of the same general principle as when cells are produced in the upper story separated from the lower one by a queen-excluding honey-board.

Early this spring many of our colonies were weak, owing to the severe winter, and it was not practicable to rear queen-cells in the upper story. Accordingly, Mr. Wardell had queen-excluding division-boards constructed so that he could divide off any brood-nest in the yard into three divisions. The two outer divisions he leaves to the queen, and the middle one he devotes to the raising of cells, while the bees, of course, have access to all three parts. He prefers to have the central space (shut off on either side with perforated zinc) wide enough to take in three frames. In this case the middle frame is the one that has the cell-cups. The frame on each side of this should have young larvæ, as he thinks they draw the nurse bees. When he opens the hive to take away ripe cells and put in their place cell-cups, he puts the queen now on one side and then on the other side of the central portion devoted to the raising of cells. This way the whole hive is kept in a normal condition. At no time is the colony queenless, and yet it is raising cells by the dozen.

He prepares cell cups in the usual manner, and inserts the royal food and a young larva in each cell. Twelve of these cell-cups are fastened to the bottom edge of a comb, or to what I believe he now prefers, a horizontal stick mounted in the center of the frame. This frame is then put into that portion of the brood-nest from which the queen is excluded. The hive is then closed up, and left for several days. Strange as it may seem, even though a colony is not particularly strong, having only, perhaps, four or five frames, and even though the weather is so cool at night that there is danger of frost, those cell-cups will be drawn out and capped over.

But there is one very important requisite; viz., stimulating feeding, or the bees will do nothing, and right here is where many have failed. It does not matter whether cells are reared in the upper story or in the lower one, there must be stimulative feeding going on, *providing* honey is not coming in. When such feeding is intelligently practiced, we are successful in producing cells, even though the weather has been too cool for the bees to fly; but of course the bees have to be warmly packed in chaff. The upper row of cells shown in the illustration on page 498 was produced in a seven-frame colony during the month of April when many of the days were so cool that the bees could not fly. One portion of this nucleus contained a laying queen that was performing her regular functions; and the other portion, separated by a perforated zinc-board, contained a frame of cells.

The lower row of cells was built during warm weather, in a single brood-nest—the other conditions, such as stimulative feeding, etc., being the same.

Cells that are built on a stick show off better, doubtless, for the reason that there is less wax to use; under these conditions the bees use no more material than is absolutely required to make the necessary inclosure of their royal mothers to be. When cell-cups are fastened on the bottom edge of a comb, bees have a tendency to work in a good deal more wax, as will be seen by the upper illustration.

There are some colonies that, instead of building round, shapely, blunt cells, like those shown in the lower row on page 498, build pointed ones; but we have never been able to discover that the queens from such cells were not as good as those that look more shapely to the eye, the kind that remind one strongly of the "big double-jointed California peanuts."

The question has often been asked, "How much royal jelly is required for each cell?" Doolittle says, enough to make up the equivalent bulk of a double-B shot. Mr. Wardell says he may use more or he may use less; but if any thing he would make the supply as liberal as possible. One ordinary natural queen-cell of two or three days' growth, we will say, should contain enough royal jelly for half a dozen cells, and sometimes enough for a whole dozen. The royal jelly fed should be of about the right age. It would not do to have it too thick and stiff—but about the age, when the cell is about three days old.



After bidding good-by to my good friends at Norfolk, Va., I started "on to Richmond," and I greatly enjoyed the trip along the borders or through the edge of the Dismal Swamp. Some of the friends may remember how often Harriet Beecher Stowe referred to this locality. After getting away from Norfolk the truck-gardening gradually began to give way, and then we had miles and miles of unbroken forest and dense swamps, the undergrowth so thick that a man could scarcely squeeze his way through; and along the sides of the railroad were some of the most beautiful wild flowers, or perhaps I should say the most beautiful *flowers* I have ever seen anywhere, in cultivation or out of it. I was especially attracted by a bush growing five or ten feet high, covered with purple flowers, some of them almost as large as roses. These seemed to grow in the greatest profusion. No effort seems to have been made to reclaim this swamp, so far as I could see along the railroad. Perhaps there is a difficulty in getting the water out of the way. Occasionally we saw little patches indicating an attempt at gardening around the stations; but we passed through many miles of country where no attempt seemed to have been made in the direction of agriculture. Of course, when we reached a large town we found nice gardens in the suburbs for a mile or two out. Especially was this the case as we neared Richmond.

I visited Richmond solely for the purpose of going over the strawberry-farm of Thompson's Sons, of Rio Vista, which is located only a few miles out of Richmond. In fact, the street-car line is extended within two miles of the place. When I wrote that part of the tomato-book entitled "How to Support a Family on a Quarter of an Acre," I directed that the land be located at a four corners, if practicable, so as to have a wagon-road on at least two sides. Then I said that a neat and pretty sign or bulletin-board should advertise the plants, etc., that were for sale, and finally that the plants themselves should be clear up to the roadway, and that those fronting the roadway should be so choice that they would be a standing advertisement of the business. Therefore I was greatly pleased to find that the Thompsons had such a location, and one of the handsomest bulletin-boards one often sees in a country place, reading as follows:

C. H. THOMPSON.

I can sell you trees for half what you pay when you send "away off." Apple, peach, pear, plum; ornamental hedge-plants; roses for yards, cemeteries, etc. Strawberry-plants; raspberry, blackberry, gooseberry, currant, asparagus roots; rhubarb, cabbage, tomato, egg-plants, lettuce, sweet potatoes, etc. I plant orchards, vineyards, lay out lawns, pleasure-grounds, parks; furnish trees, etc. Parties who wish their yards and lawns cared for apply to me. All kinds of cut flowers in their season.

Then right up by the road, and down in the valley below the road, there are beautiful

flowers. Some of the finest sweet peas I ever saw anywhere were there; and although flowers do not enter very much into the business of Thompson's Sons they have enough of them scattered around to make the place very attractive.

Another thing that brought joy to my heart was the sight of a great lot of men, women, and children scattered around near the buildings, for it was just a little past dinner-time. The younger ones were flitting around, evidently playing games much as they do around a country schoolhouse. These were his strawberry-pickers and the people employed in various avocations over the grounds. By the way, they were remarkably well dressed and well behaved for colored people engaged in such work. I do not know whether friend Thompson has any thing to do with this or not. One thing spoiled the beauty of the place — at least the grounds away off over the hills — and that was a long-continued drouth that was just then prevalent around Rio Vista. It gave us an opportunity, however, of seeing what varieties of berries were best able to stand drouth. And, by the way, the Thompsons have over 100 varieties of strawberries on their test-grounds. I think they have almost every thing that has been written or talked about, and a good many others. I tell you it is a task to look over and study the desirable as well as the undesirable peculiarities of 100 different kinds of strawberries. I was more or less familiar with a good many of them. To give you an idea of the magnitude of their business in plants, let me tell you that I saw a letter from the railroad company concerning a single shipment which seemed to be lost, valued at \$120.

The price of berries at Rio Vista was very low, just as it was at Norfolk; but in order to meet these low prices, the Thompsons were paying the pickers only a *cent a quart* instead of two cents. The pickers did not seem to feel very badly about it, so far as I could see, and there was no indication of a strike; on the contrary, they all seemed to be very glad of the privilege of picking whenever more berries were wanted. I think some of the fruit was actually sold as low as three cents a quart by the bushel.

I was especially anxious to see the Darling and Earliest on the grounds of the originator; and I was pleased to see quite a good quantity of fruit still remaining on the Darling, notwithstanding the drouth. When almost every other berry had succumbed more or less, the Darling seemed to be holding its own, both in size of fruit and quantity of berries; and they told me they had picked more from the Darling and Earliest than from almost any thing else. Of course, the berries are not as large as some of the later varieties, neither are they as firm for shipment; but, all things considered, they fill a place among the very earliest, to an extent that it seems every strawberry-grower should give them at least a trial. By the way, I think I never saw such great heaps of berries around a single plant before as I saw at friend Thompson's; but the drouth was such that just acres of them will probably

never be worth picking. In fact, if rain had come the very day I was there it is very doubtful whether many of them would have been saved. Perhaps one of the finest large berries that were fine and large in spite of the drouth was our old friend Sharpless. Of course, it did not bear as many quarts of fruit as some of the newer ones. I find in my notebook that I have the Howell marked as being a variety that held its own remarkably when all the rest were giving up to the dry weather.

One little plot of flowers near the house, that attracted my attention especially, was a bed of mixed sweet-williams. I am told they are very easily raised; and if so much bewildering beauty can be produced by a bed of late improved sweet-williams, I do not see why every family does not have one.

This little industry, made so attractive on a public road, was turning out just as I should expect it would. Vehicles were stopping every little while to purchase flowers. Their attention was first called to the beauty of the display down in the little valley just below the road, and then the sign I have spoken about informed the passers-by that, furthermore, all these things were *for sale*. People stopped to buy flowers, stopped to buy berries, and stopped for vegetable-plants. In fact, there was something somebody wanted almost every day. Mr. M. T. Thompson, the father, has been almost all his life testing new varieties of strawberries as they are brought out, and giving the world many of his own originating. Perhaps I might say that he introduced the Haverland; also the Carrie, a seedling of the Haverland; also the Rio, named after the locality, Rio Vista, and quite a good many others that are pretty well disseminated.

In order to reach home before Sunday I was obliged to make my stay quite short; but I got a lot of pointers in regard to strawberries and strawberry-growing that I expect to give to our friends all along as they come to mind.

Permit me to say a word about agriculture generally, north, south, east, and west. In Florida we have many wonderful illustrations of the amount of stuff that can grow on a small piece of ground; for instance, orange or other fruit-trees. One wonders where the tree could gather fertility for its enormous load of fruit. But these great growths in Florida and California are exceptions. Only very small tracts, comparatively, are under *successful* cultivation. I have heard it stated that not one acre in ten, either in California or Florida, is of any use at all to anybody; and in some localities there does not seem to be one acre in a hundred that is devoted to growing crops. In a recent trip through Virginia it made me feel lonesome to see so much waste land or wild land—thousands of acres with not even a fence around them. In localities where the ground is brought up to a high state of fertility, as it is around Norfolk, this fertility is mostly maintained by the use of commercial fertilizers. They do not plow green crops under as we do here in the North. By the way, I am always looking out for clover-fields, no matter where I travel; and I have always succeeded in finding clover—at least a field or two—wherever I

go; and you can rest assured, friends, that when a field once produces a heavy growth of red clover, it can be kept right on producing valuable crops year after year.

It always does me good to see a country where the land is *all* occupied. On my way home I could not but notice the contrast along the valley of the Susquehanna River. The Pennsylvania Railroad runs for miles and miles through some of the most fertile valleys I have ever seen anywhere; and for long distances these valleys slope gradually down to the river, so the passengers on the train can have a full view of miles of the richest agricultural country I have ever seen. Every bit of the land is fenced in—sometimes away up the mountain-sides, and every acre is producing a luxuriant crop of *something*. The land has been so well farmed that bare ground is seen for only a very short space of time. Something green and growing seems to be everywhere. I never before had passed over this route in May, and it was especially delightful to me. From that beautiful observation-car (see another column) I had a magnificent view of the farming country on both sides of the track; and along in the vicinity of Horseshoe Bend it seemed to me I had never seen anything so beautiful. Riding in a common car, and looking out of the small-sized windows, one can hardly take in the whole wonderful feat of engineering performed in getting up the mountain-side by these graceful curves that almost bewilder one as he takes a sweep around to almost where he was a mile or two back, only a little higher up. The observation-car has a rear platform with seats. Here the view is unobstructed. Then there are arrangements to protect the passengers from dust so far as possible. Perhaps I may add that, inside of the car, a stenographer and typewriter are at the service of all the passengers, *free of charge*; and when it gets to be dark, the latest and most improved system of electric lighting makes it easy to see to read or write, or do whatever you choose. Besides this, the car runs so still that one can write without a bit of trouble. I tell you, it is worth paying a little extra to see what is possible in the way of modern conveniences and inventions to make travel easy and delightful.



We that are strong ought to bear the infirmities of the weak, and not to please ourselves.—ROM. 15:1.

While I was in California several years ago, in company with several bee-keepers, we found it necessary to stop over night at a country hotel. Somebody said there was a revival meeting going on at the church a little way off, and I rather urged the crowd to go with me to church. I did not know what denomination the church was, and, for that matter, I did not care, or I thought I didn't. The text was

from John 13:14, in regard to washing feet. The preacher occupied the whole evening in quoting the Bible from beginning to end, to prove that every follower of Christ ought to obey *literally* the command. In fact, he seemed to think it of more importance than any other command that Jesus ever gave his disciples. His sermon was long, and my bee-keeping friends were not at all edified or profited; and I almost made up my mind that I would not urge people again to go to church as I did that evening. Now, I am not reflecting on that people or on that denomination, mind you. I have learned by inquiry and observation that they are a most exemplary set of folks. They pay their debts, attend to their own business, take care of their poor, and set a grand example of Christian living for many of the other denominations; but I do think they do make a great mistake, first, in singling out just *one* of Christ's commands; and, second, in insisting so strenuously that it be taken literally. The little story I am going to tell you illustrates, perhaps feebly, something that I think the text includes also.

I think the Savior chose this little object-lesson because his disciples greatly needed to be taught a lesson in humility. They were getting to be proud. He wanted to teach them gentleness, meekness, and forbearance. He even went so far as to wash the feet of Judas—that is, if I have a correct understanding of the matter. I rather think that John himself, who told us about it, rebelled somewhat at the act. Perhaps he and some of the other disciples said to themselves, "Why, is he going to condescend to wash the feet of that miserable lying hypocrite?" Peter, you remember, at first refused outright; but he afterward changed his mind. Now for my story.

In my recent trip east, in coming home I got on the train at Washington, supposing there would be no change of cars between there and Pittsburg; therefore, as we approached Harrisburg, when the conductor announced that we would change cars for a great string of places, I paid very little attention to the matter, and did not even notice that he mentioned *Pittsburg*; so when the other passengers were leaving the train at Harrisburg I sat still; but when I saw *everybody* was leaving I began to ask questions. Then I began to fear that the Pittsburg train would start before I found where it was. I asked an official which way I should go to find the Pittsburg train. He motioned me to a train just getting ready to start. Now, I have had some experience in making mistakes, and in making people understand just what I wanted to ask when there wasn't a minute to spare; therefore I have for years past made it a point to have my ticket in my fingers, and before I get aboard I always ask somebody who ought to know if this is *my* train. In this way they can look at the ticket and simply answer yes or no.

As I discovered I had very little time I approached the colored porter near a Pullman car, held up my ticket as usual, and asked if that was my train. He said it was. But I told him I wanted a common coach, and not a

Pullman car. He told me to get right on, as the train was about ready to start, and that he would fix me all right. But I still demurred in getting aboard of the Pullman car, when he grabbed my satchel before I knew it, and told me to follow him and he would "fix" me all straight. I supposed he was going to tell me to walk back to the common coaches; but after we got aboard he said there were no common coaches on that train, but still it was all right. Now, when I came home from Bermuda I rode on a fast train, all Pullman cars, from New York to Cleveland, and that, too, without paying anything extra. They do this with a limited number of passengers rather than run an extra train. I supposed that perhaps some such arrangement had been made to carry me from Harrisburg to Pittsburg. This colored porter seemed very bright, and master of his business. I have admired these fellows before, and I admired this one. His speech was clear and distinct, and he had the air of a man who knew what he was doing, and withal he had a way of making himself very pleasant and agreeable to everybody. After we had ridden a little way he informed us there was a beautiful smoking-car in front and a fine observation-car in the rear; that we could ride in either one of them without any extra expense, leaving our baggage just where it was. Now, I did not care for the smoker, you may be sure; but I did want to ride in that observation-car, for we were soon going to pass Horseshoe Bend, and I knew the scenery was very beautiful along there at any season of the year—much more in spring. But I had some sort of presentiment that there was going to be a hitch before I got through; but I concluded, under the circumstances, to pay a little extra for my blunder, if need be.

After a while I became absorbed in taking in the beautiful scenery through that great big plate-glass window, and was aroused only when the conductor said, "Tickets, gentlemen!" Mine was in my fingers as usual. I presented it. He looked at it very attentively quite a spell, then said, without removing his eye from the ticket:

"You read this ticket over when you purchased it, did you?"

"Yes, I read it through once at least, shortly after I received it."

"That being so, why did you board this train?"

I explained the circumstances, and told him just how I came to be aboard of the train. But he began to look angry, and said something like this:

"You admit you read your ticket over, and no doubt noticed that it says, in heavy black type, in a paragraph by itself, that the ticket can not be used on the Pennsylvania Limited, or any trains of that sort."

"My dear sir, I did read the ticket over, as I told you, but the part you refer to I did not pay any particular attention to, because I had no thought of riding on any train besides the one I was expected to take. Neither did I know until this minute that this train is what you call the Pennsylvania Limited. I am very sorry that I have broken any rules, and I

am ready to make good any thing that is not right. The porter is responsible for my being here, as I have explained to you. In fact, when he took my satchel out of my hand I was *obliged* to follow, and the car started just as soon as we were inside. I will get off at the first stopping-place, or pay the difference."

He still seemed to be angry, and accused me of a deliberate attempt to cheat the company, and said he would have to take up my ticket, which would have to be forfeited, and that I would have to pay the regular fare. But I was not disturbed nor angry, for I have learned by experience that one who is trying to do right seldom has reason to be troubled. I told him I would pay whatever was fair or right, but that I was *not* willing to be accused of trying to swindle anybody—not even a railroad company. I showed him my name and address, and told him that I could easily satisfy him I had always paid for whatever I wanted, and had never been guilty of trying to steal any thing from any individual person or company. He finally asked me if I could identify the porter who said the ticket was all right for that train. I replied that I could, most assuredly. He went off with my ticket, and I looked at the scenery all the same, feeling sure I could maintain and prove my innocence. About a quarter of an hour after, the Pullman conductor, a much more gentlemanly-appearing man, came to me and said the conductor insisted I had been trying to work a little game on them, but he did not believe it himself. Said he:

"If I am correct, Mr. Root, you are quite willing to pay the extra fare of \$2.50 for riding on this train from Harrisburg to Pittsburg."

I replied that I was, most assuredly. Then he added, "Would you object to stepping out on the platform at Altoona just a minute to present your case to Mr. —, the general agent, who adjusts all such matters?"

I assured him that I was willing to do any thing or pay whatever amount was deemed proper, but that I was *not* willing any imputation should rest on me of an attempt to defraud, or *sneak* my way anywhere.

As the train approached Altoona I found the porter and spoke to him about it, and to my great astonishment he denied having seen any ticket at all. He declared emphatically, and stuck to it, that I simply asked him if that train went to Pittsburg, and he said it did, and took my satchel and valise. Then I discovered for the first time that the porter, in order to save himself, had told a falsehood. At first I was indignant, and was going to denounce him; but before I had spoken, a better spirit whispered to me something like this:

"This poor fellow is in much greater trouble than you are. If you denounce him for telling a falsehood in order to cover his mistake, he will probably lose his position, which will be much more *to him* than ten dollars or such a matter *to you*."

But if I screened him from the consequences of his mistake and falsehood I should have to admit to the railroad officials that I really *had* been trying to pass a ticket that I knew was

not good for that train. I talked pleasantly with him about the matter, but he was so positive and important that I began to fear he was not going to own up at all. By talking to him very plainly, and telling him he must come up before the officers of the company and hear my statement, he finally backed down enough to admit he did see I had a green ticket in my fingers, but that he did not examine it enough to see that it was an excursion ticket sold at a low price. To tell the truth, at the time I proposed to get off at the next station I did not know the Pennsylvania Limited stopped only once or twice on the whole route. I asked the porter to come along up to the conference with the railroad officials; but his bright and manly demeanor had all left him. He hung his head down, and said he was sure they would not need him. I met the three gentlemen discussing the matter on the platform—the regular conductor, the Pullman conductor, and the general manager. These officials were all very much better dressed than myself. I note this incidentally. The general manager said at once that they had no discretion in the matter. According to the rules my ticket would have to be surrendered, and I would have to pay my fare. I confess, in *one* respect I rather enjoyed the situation. I enjoyed it because I had heard of many cases of injustice in matters of this kind, and I was anxious to see whether I should be able to convince them of my honesty or not. I began to smile a little before I spoke, and I rather think this helped my cause. What I said was something like this:

"Gentlemen, I admit I have been stupid; but I never can admit that there has been any purpose of wrong in my heart. I am always ready to pay my way, and I am ready to pay now what you say is right and proper; but I still insist that I am an innocent party in this transaction. Your porter is a very nice fellow, and I hope you will not be hard on him. I believe him to be a very capable and trustworthy man; but I am very sorry to say that in this case he has not told the exact truth. I had my thumb on my ticket when I approached the train, like this" (making a motion); "I held it before him, he took a good look at it, and declared the ticket was all right for this train. Let him come up here, and say if I have not stated it correctly."

I turned to look for him, but the poor fellow sat on the lower step of the car, with his face between his hands. Then I had to laugh again. Then the general manager laughed too, and then the Pullman conductor laughed. The manager said, "Mr. Root, you get on to the train, and go on to Pittsburg, and we will all of us learn to manage better next time."

The regular conductor still looked cross about it, and ventured to suggest again that I admitted having read my ticket, and then afterward used it in trying to ride on that fast train.

Now, I learned several lessons from this little transaction: First, when you purchase a ticket, especially one at reduced rates, read it over carefully, and note the conditions under which it is accepted. Second, when you get

on a train, ask the conductor when he calls for your ticket if there is any change of cars before you reach destination, so you may not be taken by surprise as I was. Last, but by no means least, I learned that it is not always best to show up a man who has tried to injure you by telling a falsehood. Some travelers, as I happen to know by experience, would have denounced this man as a "lying nigger," and probably done all they could to get him discharged. I confess it pains me to even put the disagreeable words in print; but I have heard them used so often when I was sure they were entirely uncalled for that I feel glad to say a word in defense of the colored man, even if he *was* tempted to do wrong. When it comes to a matter of truth between a colored man and a white man, I fear that it is too *often* true the colored man stands no chance. But, dear brothers and sisters, this ought not to be so. Because a man's or a woman's complexion is darker than your own, is that any reason why that person should not have a fair chance with you in matters of *truth and right*? God forbid that we should take advantage of any man's misfortunes. There are lots of generous people in this world. It is an easy matter to be generous where it is a matter of dollars and cents; but when it comes to the question as to who told the truth, you or somebody else, how many can afford to be generous when even keeping still may leave the impression that *you* have been untruthful? As a rule, I believe it is right and proper to rebuke falsehood—to let the truth come out; but are we always ready to rebuke and reprove with gentleness? People under temptation often yield to the inclination to get out of trouble by resorting to falsehood. Such an act may be a *lie*, but it may not be; and even if it is, would it not be better to use some softer word in trying to lead the guilty one to repent and confess?

Another thing: When we have the advantage of our opponent, say by wealth or position, may be by the *color of our skin*, does it not behoove us as Christians to be *very* careful how we take advantage of our position in being hard and severe on somebody who is less fortunate? Jesus, as I have said, probably washed the feet of Judas, and no doubt there was a murmuring among the disciples. The Master knew it, and yet he thought it best to humble himself thus before Judas and before every one of that little band of followers. *He* knew Judas better than any other living soul did; and yet he bore with him. He did not call him a thief and a liar as the square-footed John did several times, but he bore with him, and washed his feet, and finally received in meekness and gentleness that cowardly, traitorous kiss. Oh what an example the Master has set for us all! Even John, the beloved disciple, could not put up with Judas. In God's holy word he gives Judas a fling almost every chance he can get; but the Lord and Master bore it all, and *put up* with it all. If any thing in the wide world could have *made* Judas better, it was the loving and forgiving treatment that he received at the hand of his Savior. If it were not that we are told

Judas was the victim of suicide, I do not know but I should even yet hold that he might have died a penitent sinner.

Another thing: Before you are too hard on the conductor, let me say that I have known people again and again to try to cheat a railroad company in this way—people, too, whom I had good reason to believe would be entirely above such a thing. One man I recall who claimed by his talk to be a professing Christian was in a first-class coach, with only a second-class ticket in his pocket; and when the conductor told him he would have to go back in the car where he belonged, he was not only abusive but profane in denouncing railroad companies, conductors, and every one who has any thing to do with the running of trains. While conductors meet so much of this thing, and from men who ought to be ashamed of it, I do not wonder that they become suspicious of humanity. They ought not to get angry, it is true; but sometimes, I have reason to believe, their temptations to be so are very great.



ANOTHER ONE OF MY "HAPPY SURPRISES."

Quite a number of years ago we purchased of Storrs & Harrison a Downing everbearing mulberry-tree; but it did not seem to grow very much. The berries were few and dried up, and I did not think very much of mulberries until I saw a tree at a neighbor's, growing close by a little fountain in his garden. Some of you may remember I told you about it. The berries were large and luscious, and I talked of having our tree grafted with some cions like his tree. But some of our readers suggested that, if our tree had better care, and made a more vigorous growth, it would bear *good* berries *too*. I accordingly spread about a wagonload of old fermented manure all around the tree, a little further out in every direction than the branches extended. That was two years ago. I did not see very much improvement till this year, when the tree seemed to put on new vigor.

Well, to-day, June 20, we are picking the last of our strawberries, and I was wondering what kind of fruit I should find to take their place. I generally get hungry for berries between nine and ten o'clock in the forenoon. Last evening, after supper, I had a wheeleride to see some gas and oil wells about ten miles from my home; and just a little while ago (it is now half-past nine in the morning) I began to feel very hungry for berries, and started out to see how the potatoes and other things had grown since the bountiful thunder-shower of last evening. I happened to pass near the mulberry-tree; and as I looked up into the tree I experienced surprise No. 1. The tree was pretty well dotted with black spots of large rich-looking mulberries half the length of your little finger. I bent a limb down and

tasted them, and that was surprise No. 2. I thought then they were more delicious than strawberries, or berries of any kind. I called Mrs. Root, and she was equally astonished. She hadn't time to eat very many; but I really could not get away from that tree until I had for the first time in my life had just all the mulberries I wanted. After I was pretty well satisfied, I noticed our Minorca rooster was walking around the tree with his followers, and saying something that I understood to be dissatisfaction about something or other. When I looked down at my feet I understood what he said — at least I thought I did. He was saying something like this: "Look here, old fellow; my hens and I have been coming here every morning to gather up the mulberries that lie on the ground at your feet, and we have been wondering for a quarter of an hour past if you were ever going to get enough, and go away so that we could have our share." Then I stooped down and saw the closely mown lawn was also pretty well dotted with mulberries so ripe that the storm of the night before had knocked them off. They really were sweeter than those on the tree. And then I ate a lot more, because it seemed a pity to feed chickens on such delicious fruit. Pretty soon I was admonished by several robins on neighboring trees that they too found my presence somewhat of a hindrance according to their ideas of things. And then Mrs. Root said she had been scaring the robins away for several days, but she supposed the berries were not yet ripe.

Now, that tree is really worth a five dollar bill. It is worth every cent it cost, and ever so much more. There are new shoots on the tree that have grown already this season fully two feet in length; and the only reason why we did not have mulberries years ago is because we did not "feed" the tree. Perhaps I should say that our lawn — in fact, the whole dooryard — was made on yellow barren subsoil. When we graded around the house we scraped off the sod in order to lower that portion of the yard where we wanted it. In consequence some places were made very rich and others very poor. You may remember I gave our Early Harvest apple-tree a heavy manuring before we could get any good apples.

Now, my friends, if you haven't a mulberry-tree in your dooryard you had better get one, and be sure you make the ground rich so the tree will grow. Mulberries need a great deal of water; therefore they ought to have some sort of irrigation, or else the ground should be kept cultivated according to the modern method of growing apples, peaches, and almost every thing else. Stir the soil after every rain, or else have it mulched with something that will keep down weeds and hold the moisture from one rain to another.

BEEES FOR FERTILIZING CUCUMBERS IN A GREENHOUSE, ETC.

Did you ever have any experience with bees in cucumber-greenhouses? I have furnished one man six colonies for the last three falls, but before spring they would dwindle and die out so he would have to put in two or three more colonies in the spring. They will not work with plenty of honey in the hive, so I take

away the most of the honey and then they feed syrup in open feeders in the greenhouse. This gets them to work on the blossoms the best. The ventilators are all screened. The greenhouse is 450 ft. long by 40 wide, heated by steam from cider-mill boilers.

Our town is on a boom this spring, as we are building a cement factory here capable of turning out 15,000 bbls. of marl cement per day. The building, when completed, will cover 7 acres of ground, with marl enough to last 200 years. The mile of side track will be completed inside of a week. Several carloads of heavy machinery are here now; brick and tile, no end to it, as well as lime and cement.

Just tell A. I. Root to call up this fall and see how Southern Michigan looks. He will find fair bicycle-tracks on the old Chicago road.
Quincy, Mich., May 13.

J. S. CLEAVELAND.

I always fertilize my Irish potatoes with cotton seed, not meal, and have never seen a bug on them. I have been very successful in getting large yields, on a small scale, with little labor. Cotton seed is a great fertilizer for this soil. No kind of seed will germinate in the meal, but the meal may be applied after the seeds have come up.

Delray, Tex., June 8.

J. T. ETHEREDGE.

KEEPING FLIES OFF FROM CATTLE WITH THE FAULTLESS SPRAYER.

I have found out that coal oil alone has no effect on our Southern flies. I now use with great success 2 pints coal oil, 7 pints raw linseed oil, ½ gill crude carbolic acid (less of pure white acid).

Gesser, La., June 9.

JAS. I. BURNS.

FAULTLESS SPRAYER FOR FLIES.

I think if A. A. Harrison, page 328, will investigate a little more closely he will find the spray does not kill the flies, even if it does knock them down. He will find that most if not all of them, after rubbing the oil out of their eyes, "come around to be killed again." It's a good thing nevertheless. I like it most for cleansing poultry-houses.

Union Valley, N. Y., May 1.

EMMET B. KIBBE.

Humbugs and Swindles.

ANOTHER COMPLAINT AGAINST H. P. ROBIE.

Mr. A. I. Root.—Some time ago you published a letter from a bee-keeper stating that he had shipped honey to H. P. Robie, of Sioux Falls, S. D., and he had refused to pay and would not answer letters. A year ago last February I shipped four cases (about 100 lbs.) to the same party, and got a letter stating the honey had arrived in good condition. Since then I can get no answer from him. It looks as if he did not intend to pay me. I think the names of those who rob bee-keepers of their hard earnings ought to be published for the benefit of others.

Dona Ana, N. M., May 30.

W. C. GATHRIGHT.

ONE EXPLANATION OF THE SUCCESS OF FAKE REMEDIES.

Mr. Root.—Fully indorsing your recent Home-talk articles on the numerous swindling quacks and "scientists" who, for personal gain, are assuming to cure diseases that so far have baffled the skill of eminent doctors the world over, I want to tell you of a *fake* I ran across while in Cincinnati last fall. Seeing advertised and displayed in several show-windows in the business portion of the town a large box of rings labeled "Magnetic German Rings," I noticed some iron (polished) finger rings, worth at cost about one cent apiece. A placard showed they were sold at \$5.00 apiece, and were guaranteed to "cure rheumatism in 30 days or your money refunded." Now, common sense taught me that a simple finger-ring would not cure an organic disease, so I was puzzled to know how the dealer could expect to do business with such frauds. It made quite an impression on my "gray matter," so, next day in conversation with a prominent man of the town, a confidential friend, I mentioned the matter and inquired where the "fake" part came in. He was posted, fortunately, and solved the riddle. Said he, "The dealer sells the ring and pockets the \$5.00, while the deluded victim goes off with a 30-day return certificate. The dealer has three chances to keep the

\$5.00. In 30 days the wearer may die, lose the ring or certificate, or get well of the disease. The last chance is an occurrence that would have happened anyhow, if no ring had been bought." And he added, "No one but ignorant chaps will bite at such a thing." It looks to me as if some check should be put on thousands of such frauds that are invented to relieve suffering humanity, who, in their bodily distress, will part with their last dollar in seeking after relief.

CHIP HENDERSON.

Murfreesboro, Tenn., Mar. 23.



See how to get GLEANINGS for 6 months for 25 cts., on page 491.

BEEWAX DECLINED AGAIN.

Offerings of beeswax are so plentiful that the market price is declining, and we are obliged to reduce the price we pay to 25 cts. cash, 25 cts. trade, delivered here for average wax.

LADIES' WHEEL, \$15.00.

One \$50.00 ladies' Ajax, almost as good as new, and been used but little; a fine bargain that we offer for only \$15.00 cash. Speak quick if you wish to secure it. Or we will furnish it in trade for \$17.50 worth of honey at market quotations.

OILED COTTON GLOVES FOR HANDLING BEES.

We are prepared to furnish at 50 cts. a pair, postpaid, cotton gloves soaked in linseed oil, and sting-proof. We have them in three sizes—small, medium, and large, corresponding to ladies', gents', and extra large rubber gloves listed in our catalog.

CARLOAD SHIPMENTS.

Since our last report, 8 weeks ago, we have shipped a carload to Buell Lamberson, Portland, Ore.; one to the Abbey-Hardy Co., Grand Junction, Col.; three to L. A. Watkins Mds. Co., Denver, Colo., and are loading another car for the same firm as we go to press. Two cars have gone to our branch at Syracuse; two more to Chicago, and one to St. Paul; one to Walter S. Powder, Indianapolis, Ind., and six cars of goods for export, besides ten cars of lumber, boxes, and bicycle-crates. We still have export orders for some six to eight carloads to ship in the near future.

JAPANESE BUCKWHEAT—ADVANCE IN PRICE.

Greatly to my surprise, this variety of buckwheat has run up so that the best figures we can make at present writing are 35 cts. per peck; 60 cts. per half-bushel; \$1.10 per bushel; 2-bushel bag, \$2.00. At the above price, bag is included. A good-sized pamphlet, giving full directions for growing buckwheat, and articles from buckwheat-growers, north, south, east, and west, will be furnished for 5 cts. each, or sent free to any customer who buys 1 lb. or more of buckwheat. Pounded by mail, postpaid, 15 cts.; 3 lbs., postpaid by mail, 40 cts.

SPECIAL OFFER ON GLEANINGS.

Notice on page 491 the special low offers we are making for GLEANINGS IN BEE CULTURE, with special reference to increasing our list of readers. We urge our present subscribers to call the attention of their bee-keeping friends and neighbors to these very low offers. We shall be pleased to mail sample copies to as many names as you care to send, or will send a bundle for you to distribute where they are likely to interest and secure subscribers. If GLEANINGS is a good thing as many of you believe, help push it along, and we will do our part in trying to make it still better.

HONEY WANTED, BOTH COMB AND EXTRACTED.

We are entirely sold out of both comb and extracted honey of every description, and we are having frequent calls for it. We should like to hear from those who have secured a crop of either as soon as they have any in shape to ship, or who could have it ready after hearing from us. We are interested in only a

choice article, either comb or extracted. If extracted, mail a sample, tell how it is put up for shipment, how much you have to offer, and the price you ask for it. If comb, say how packed, and how much you have to offer, and the price for each grade. We will exchange supplies for honey, or pay cash. Let us hear from you if you have any to offer. We especially desire to secure clover honey.

KIND WORDS FROM OUR CUSTOMERS.

My goods have come to hand, and I am very much pleased with them—not only pleased, but grateful for these grand appliances in bee culture.
Portland, Tenn. DR. W. P. MOORE.

GOOD NEWS FOR THE FAMILY COW.

The sprayer came in good condition, and is O. K. I have used it for spraying the cows. It works nicely, and I am very much pleased with it.
Goose Creek, Ky. W. W. YOUNG.

A CHANCE FOR THOSE OUT OF EMPLOYMENT.

I inclose you two dollars, as I believe you agreed to send GLEANINGS 3 years for this amount, but I don't consider the journal a cheap affair by any means. If you have more young men applicants for work than you have jobs for, just send them out here, as help is scarce, and wages good; also lots of room for men with families, who wish to rent or buy land. I am 30 miles west of Woonsocket, Sanborn Co.
Fauston, S. Dak., Apr. 11. S. B. SHIMP.

I became acquainted with GLEANINGS in 1876, having received the *American Bee Journal* in 1875. This was my first knowledge that bee-keeping was such an extensive business. I also got hold of the *Bee-keeper's Magazine*. By the aid of these three bee-papers I became very successful; but GLEANINGS was my greatest help. I have missed but a few issues since becoming a subscriber; but I have not nearly all the numbers now, as I have given very many away, and thereby secured quite a lot of subscribers,—yes, and I want to give many more away, as there are many who will read it who will never subscribe. Long may GLEANINGS live, and continue doing good.
Garden City, Mo., March 13. G. J. YODER.

JULY ON QUEENS. : : :

Large yellow queens from fine Italian stock, the best of honey-gatherers. Un-
tested, 50c each; \$6.00 per dozen. Tested, \$1.00 each. Orders filled promptly, and satisfaction guaranteed.

J. W. K. Shaw, : : Loreauville, La.

In writing, mention Gleanings.

J. W. BAILEY,
PUBLISHER.

F. L. THOMPSON,
EDITOR.

The Western Bee-keeper

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Small Farm and Apiary for Sale

in the land where ALFALFA is king, and melons, cantaloupes, and tomatoes are staple crops. My lightest yield of honey in the past five years (last season) was about 90 lbs. per stand (spring count). The year before it was 225 lbs. Improved strains are frequently extracted from ten times in our three-months' flow, obtaining 400 and 500 lbs. I do not expect a purchaser without satisfying him of the truth of the above. There is 40 acres land with water-tight, giving you water from the oldest and most reliable ditch in our section 365 days in the year—much more than is needed. Worth \$1800. At the close of the honey season (Sept. 15th), when I will give possession, there will probably be about 200 stands of bees worth \$5 00 per stand. Extracting-supers and appliances will go cheap. Reason for selling is, the altitude is too high for one of my family with heart trouble. I am 5 miles from Rocky Ford, S. E., and 7 miles from La Junta—towns of about 3000 inhabitants.

J. B. COLTON, ROCKY FORD, COLO

A RARE CHANCE

to purchase an apiary of 200 colonies of Italian and Carniolan bees in 10-frame Langstroth and Dovetailed hives. The hives are two-story, with 10 brood and 8 extracting frames in top story, all wired for extracting. Combs are straight, and in fine condition. Last year's crop of honey was over 700 gallons from 150 colonies.

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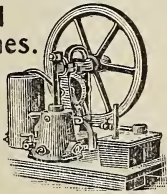
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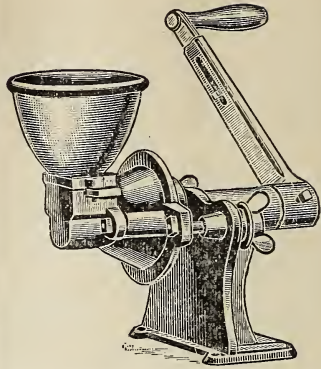
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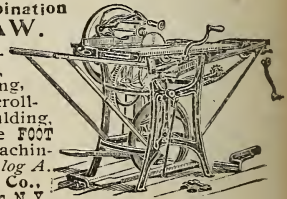
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