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VOL. II.

NO. 5.

THE WESTERN APIARIAN.

AN ILLUSTRATED MONTHLY MAGAZINE.

McCallum Bros. Publishers.

Placerville,

APRIL,

California.

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Ashby, - - - - - Mass.

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Tested Carniolan Queens.

we have just purchased all the tested Carniolan queens John Andrews, of the firm of Andrews & Lockhart, has now wintering in his 100 colonies. These queens are to produce no bees showing yellow bands, and are to be shipped in N. Y. Anyone in want of a fine breeding Carniolan queen early in the season should address:

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MECHANICS FALLS, MAINE.

If you want job
Work, send to the Api-
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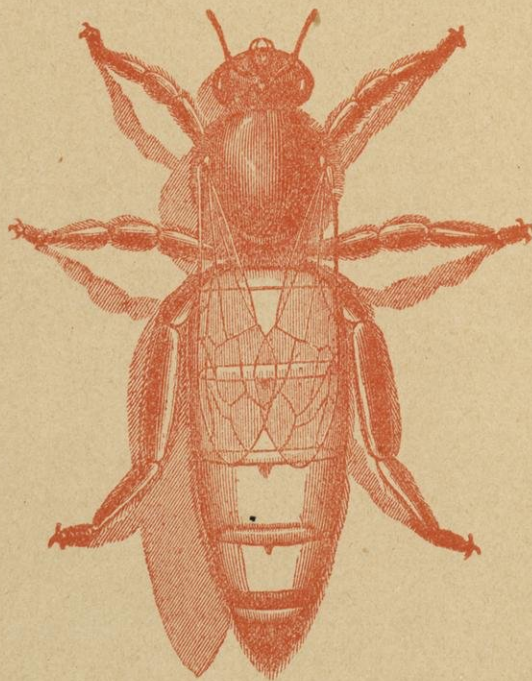
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Try honey and hot-cakes for breakfast.

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San Buena Ventura, Cal.

The Western Apiarian,

✧ AND ✧

Queen Breeders Journal

◇ PLACERVILLE, APRIL, CALIFORNIA. ◇



Editorial Bee Lines.

Many of our beekeepers do not seem to understand the real worth of the perforated zinc honey-board in swarming season. It may be placed on top of a box hive, and when the bees have clustered, they may be shaken on it. The bees will go down into the box, leaving queen and drones on top. The queen can be easily caught, as she will raise her wings from the abdomen in trying to get through.

If a colony of bees become queenless especially if they have no larvae, they are liable to go to fighting among themselves, and their war will be one of extermination. If a frame containing

A 32-PAGE MONTHLY.

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Advertising rates on application.

eggs and brood is placed in the hive it will stop all this.

Some of our readers have been enquiring for a reliable work on queen-rearing. We recommend "Doolittle on Queen rearing" as perfectly reliable and a book for practical work. It is for sale by most all dealers, or we will send it from this office on receipt of price, \$1.00.

It does not pay to use hives after they have contained bees affected with foul brood; they may be cleaned so as to be free from infection, but there is always a risk in it and, if time is of any value, it will cost more, in most instances, than it would to replace with new hives.

How often we hear the question, "Will it pay the average farmer to keep a few stands of bees?"

In attempting an answer there are many things to be considered. "Circumstances always alter cases." There will, in many instances, be a complexity of circumstances that will greatly modify the directness of any answer that may be given.

If a farmer is in the region of large tracts of clover, alfalfa, sage, manzanita, or in fact, any of the higher grades of honey plants; if he is near a spring or flowing stream of water, if he has some spare time (by which we mean time not used in other important work on the farm); if he has a liking for the busy workers; if he has natural inclinations for the study of natural history, especially the instincts and characteristics of the honey bee; if he has patience to endure disappointment and losses, bravely hoping for future gains and successes when he shall have

mastered the complex problems that will present themselves, and conquered the discouraging difficulties that will meet him at every turn until he shall have become a practical beekeeper; he may safely purchase a few stands of bees and expect to get as much profit and pleasure during the few hours he may spend in his apiary, as from any other work he may do on the farm.

But let not the "double minded man," who is "unstable in all his ways," think that he shall obtain either satisfaction or benefit from the honey-gatherer. Vigilance unceasing is the price of success in the apiary, and the unseeing day-dreamer, who lives in an aerial land beyond the clouds, or the slow, unthinking, and unplanning plodder, who lives with the mole and the gopher in the earth, need not expect any very great degree of pleasure from his apiary.

There is growing in great abundance all over the southern part of the Gulf States, a weed, that, in the estimation of many, is a nuisance; but which is of great value to the beekeepers. The honey will compare favorably with any honey of the same district; and in fact with the highest grade of honey in the Northern States. It is in bloom for about 20 days, and yields honey in the greatest abundance.

Never feed sour honey to bees, as it will almost certainly give them dysentery. It may be scalded and, provided it is not scorched, fed like any other. Reserve it however until the weather is warm.

Subscribe for the
WESTERN APIARIAN

There is a difference of opinion as to the benefit of painting beehives. In California it would seem that there is no room for any difference, inasmuch as our climate is such that the winter problem never enters into the calculations of the apiarist.

Not only is it more in keeping with the general appearance of things in this thrifty well kept, sunny, happy, flower land, to have the hives well painted; but it is also an economy of no small importance. Hives will last so much longer when well painted, that we are astonished sometimes to see in the midst of every evidence of thrift and prudent pains taking in other things, the bee-hives weatherstained and warped, the empty ones carelessly heaped in the corner of the fence; everything around speaking of general neglect, and in fact every appearance advertising the fact that bee-keeping is a secondary pursuit, and not considered of sufficient importance to receive any great amount of attention.

It is hardly to be questioned that Americans lead the world in scientific queen rearing.

A cross between the Carniolans and Italian will give splendid results when working for comb honey.

Carniolans are seldom or never robbers, and we know of no race that will defend their hive so successfully as they.

See that your drone hive is fully up to the mark. It is as important as the queen hive.

Do not hesitate to take any step that leads in the direction of better conveniences for the apiary.

Bees will amply repay their owner for time and money spent in improvements, provided he restrict himself within the limits of the practical.

It will not, of course, do for him to buy a "right" to every newfangled improvement presented for his inspection, neither will it do for him to substitute for the simple methods (the simpler the better) that have brought success, the more complicated and consequently more expensive and laborious methods so often advocated by men who are seldom able to prove the efficiency of their own systems and implements, by an appeal to their own individual successes.

The fact remains, however, that the apiarist may advance rapidly, and yet tread on the certain ground of the fully tested; and make use of implements and methods that are but of yesterday, that have taken their place among the necessities of the modern apiary.

All implements for the apiary ought to be in perfect order before the honey flow begins.

When the bees are busy with the nectar, and the frames are full and ready to be extracted, is a poor time to be fitting up the extractor; and when the tiering up keeps the apiarist on the jump, is a poor time to be making hives and frames.

Have everything prepared and pla-

ced in as as convenient a position as possible: do every thing systematical-ly and as nearly as possible at the mo-ment of the demand. Nowhere else are system and expedition and promptness more essential than in the apiary.

There are many benefits that result from organization, and the advantages of such organizations among all classes of workmen and producers is becoming more and more evident.

We do not think there should be combinations for the mere purpose of cornering the market in any staple article; or of putting a fictitious value on any commodity; and yet within certain well-defined limits, organization has a legitimate part in all business where a large number of persons depend upon the specialty for their support.

But not considering these advantages from protection to prices and better methods of marketing honey that would most certainly accrue from an organization of the beekeepers of Cali-fornia, there are many pleasures and profits that will of necessity come from such concentrated effort. The discus-sion of topics; the introduction of new methods; the contact of man with man; the mutual helpfulness that will always be given by the beekeepers, the sup-port of the weak by the strong; and a score of other benefits that might be cited, each one of which would seem to be sufficient to show the advantage of an organization.

California should lead the world in the production of honey, but we proph-esy that she never will until her bee-men are thoroughly organized and thus brought into closer relationships and deeper sympathy, the one with the oth-er.

We are thinkinking of adding a hom-e department to the WESTERN APIARIAN, thinking it would meet the approval of bee-keepers.

Agricultural papers are all made jour-nals for the home, and no small propor-tion of their contents is for the enter-tainment of the various members of the family; and we see no good reason why an apicultural journal should not be made of equal interst in the home circle

Of course such a departure means to us a large additional expenditure, but we will at present make no addition to the price.

This journal is run in the interests of the bee keepers of the west and south, and we think should receive a liberal patronage. We have invested large sums of money in it and have placed the price very low for its grade.

The numbers for a year will contain over 400 pages, which would seem to be a good investment for 75 cents.

We show this month, a few samples of honey labels, printed in colors. This is simply to give you an idea of our work. We can get up any style and size of label, and at the very lowest prices.

Our labels are all printed on the fin-est of enamelled paper, gummed or un-gummed as desired. We use any color of ink that may be desired, and follow any model presented. Give us a chance to estimate on labels, or any other print-ing you may desire. We guarantee satisfaction and can save you a large percentage on your money.

Look out for the May number of the WESTERN APIARIAN.

The beekeeper should never lose sight of the fact that it is largely the appearance of honey that sells it. Never send out a crate that is leaky as it will daub the sections and make them very untidy in appearance. A good plan is to pack the crates and let them stand a few days before shipping and then if they leak you can unpack and stop the leakage before sending. Pack weak combs between strong ones and turn them bottom upward. It would be a good idea to dispose of all such in the home market and not attempt to ship them.

It is much better to number than to name your hives. The apiary to be systematically conducted must be systematically arranged, and systematic arrangement demands some kind of nomenclature. Naming by locations is too clumsy, as to say, "the hive under the apple tree," or "the colony nearest to the summer house," requires too much time in speaking and very much too much time in making the records of each colony. A numerical nomenclature is very much more simple and efficient.

Strong colonies early in the spring to take advantage of the first of the honey flow and keep it up throughout the entire season, is the thing to be most desired by the bee-men.

Here in California, the season opens so early that it is not an easy matter to have our colonies strong in time for the early honey, and yet many of our bee-men, who are wide-awake are able to secure very large quantities from the earliest bloom.

The bottle tree of Australia, of which we give an illustration on page 41, is one of the most curious of the vegetable kingdom. Its trunk is all out of proportion to its branches; and sometimes when it grows in rocky soil, the trunk will bulge in the middle and become contracted at the root and at the top, just below the branches, presenting a very bottle-like appearance. The branches grow out of the top as if from the mouth of a bottle and is one of the peculiar features giving the tree its name. We do not know just what its commercial value is, but it undoubtedly fills an important place in the plans of The Great Designer. It is a native of Australia.

REPORT.

SEASON OF 1889.

FOR THE WESTERN APIARIAN.

By S. B. HITCHCOCK,
Troy, - - - - - Vermont.

- 1st. How many colonies of bees have you?—15.
- 2nd. How many have been added to your stock during the year?—12.
- 3rd. How many colonies died?—0.
- 4th. How many swarms escaped? One.
- 5th. Do you use the natural method or do you divide?—Natural.
- 6th. What was the total yield of honey from your apiary (a) comb, (b) extracted?—(a) 1200 pounds, (b) None.
- 7th. What was the largest yield of any one colony?—140 pounds.
- 8th. What was the largest increase of any one colony?—1½.



Henry M. Stanley

Henry M. Stanley, whose picture heads this article, is justly considered the greatest traveller, and the most indefatigable, conscientious, and daring explorer of his times.

He has thrown a flood of light on "The Dark Continent," and has cleared up many of its mysteries, that had puzzled the world since the dawn of

the historic centuries.

His recent expedition into "Darkest Africa" which occupied only two years, but if measured by its eventfulness, would mean at least a quarter of a century, has attracted the attention and is receiving the applause of the whole world.

The winter season now is o'er,
 The hills are clothed with living
 green,
 And now the beemen in our land
 Are looking for a well-bred queen;
 and the best way to find one is to sub-
 scribe for the "W. A. & Q. B. J."
 and read the advertisements.

The honey season opens with a pros-
 pect of great returns. The abundant
 rains of the winter have been followed
 by warm weather, and the result is an
 extraordinary amount of bloom.

Here, at Placerville, the bees are do-
 ing wonders, piling in honey at a rate
 that makes happy our beekeepers. Mr.
 T. Eversult told me yesterday that he
 hived a swarm on Sunday and on
 Thursday he found that they had
 filled all the frames with honey.

Bees are a great help in a country
 where much fruit is raised, especially
 where the orange crop is a staple.
 They carry the pollen into the bloom as
 soon as it opens, causing a more com-
 plete fertilization than would be with-
 out them. This is of the greatest im-
 portance inasmuch as it is true that
 when the bloom first opens all its na-
 ture is complete and ought to receive the
 fertilizing pollen at once.

Bees carry the pollen into thousands
 of flowers that are pendant, and in all
 likelihood would not be reached by the
 pollen otherwise, or at best only by
 floating particles which would be in-
 sufficient to fully fertilize. The conse-
 quence is an increase both in the quan-
 tity and quality of the fruit. It has
 been remarked that in orange groves
 near which bees have been kept, dur-
 ing the last season, the fruit was evenly
 distributed and the crop good; while in

the groves not having the bees the
 fruit is not so evenly distributed and
 not nearly so good a crop. What is
 true of the orange is also true in a great-
 er or less degree of all fruits.

The time will come when fruit grow-
 ers will be only too glad to have bees
 kept in large numbers in the near vi-
 cinity of their orchards.

It is with pleasure that we announce
 to the many readers of our journal, that
 we have secured a number of very in-
 teresting articles for our May edition,
 that will prove of considerable impor-
 tance to the beekeepers of this country.

We purpose using every endeavor to
 raise our journal to the highest stand-
 ard of excellence that can be reached
 in apicultural literature, and trust that
 the beemen of this country, particularly
 the West, will do their utmost to aid us
 in this endeavor.

Many, in sowing buckwheat, place
 two kinds very near each other and
 then are very much astonished that
 neither kind is pure. The fact is, bees
 will mix the pollen and when the seed
 is next sown, it will very clearly show
 its hybrid origin.

Buckwheat is a valuable bee pasture
 and the Japanese variety is especially
 desirable. When mixed with the other
 varieties however, by the carelessness
 of the grower it loses much of its
 value. Sow it in a separate field where
 bees will not mix it with any other and
 you will soon be convinced of its su-
 periority.

Subscribe for the
WESTERN APIARIAN

We are frequently asked: "Does beekeeping really pay in the majority of cases?"

The answer we usually give is one containing many "ifs." It will not do to quote the instances, many though they be, where men have succeeded in a phenomenal degree; nor is it exactly fair to take the other extreme and cite the many instances of complete or comparative failure. For instance: Mr. E. D. Nichols of Montrose, Colorado, last year increased from 3 to 10 colonies, and took 350 pounds of comb honey in one-pound sections. This we consider a good showing, and yet it is not phenomenal. It would not be a fair statement of the bee business, however, to speak of this as an average case. While some will give a better showing, the great majority will go much below it. The only safe test for any neighborhood is to secure one or two hives and find the ratio therefore by actual returns, and then take into consideration the weather, etc. for the year and decide whether or not it is an average year, and then a fair idea can be obtained whether or not beekeeping can be made to pay in that locality.

While the bee industry of this country is advancing with prodigious strides we are glad to learn, that the local demand for honey is increasing in an equal rate, and as the people learn the fact that honey is one of the most healthful of foods, there is no doubt that the demand will keep in advance of the supply, and although the foreign markets are anxious to secure any surplus that we produce, it is always desirable to cultivate the home trade. This can be done by using care in putting up

the honey and also in using an attractive label with the producer's name, and then, if his article is up to the standard, he soon secures a reputation which is very advantageous to him.

Party politics is all very well, but when a man gets imbued with Republicanism to such an extent that he won't keep a hive of bees because they are ruled by a queen, he has more pol. on board than common sense.

We sincerely hope that Claviceps Apium, the new bee disease, will not be permitted to destroy whole apiaries and discourage many beekeepers in the future as it did during the past year. We gave last month a remedy by Wm. Styan of San Mateo, which will at least materially check its ravages. We will keep track of this subject of bee diseases, especially those peculiar to the West and South, and make a specialty of the prevention and remedy of the same. Many of our beemen have succeeded in checking the disease and we would be glad if they would make their methods public property, and confer a boon upon the beekeepers where this and other troubles are frequent.

It is not at all likely that the new bee disease will show up at all this year, as it has its origin in atmospheric conditions that seem to have periodic recurrence. In this section it is undoubtedly caused by a fungoid growth in the juice of fruits, which fungoid growth, however, seldom occurs. When the first symptoms of the disease show themselves, take immediate and decisive steps for its prevention and cure.

The columns of the "Western Apian" are open to all for any article on this or kindred subjects.



THE BOTTLE-TREE OF AUSTRALIA. SEE PAGE 37.

HONEY LABELS.

Many Advantages.

OPINIONS OF PROMINENT
BEE-KEEPERS, EAST and WEST.

FOR THE WESTERN APIARIAN.

By FRANK McCALLUM.

The advantage of neat and appropriate labels for honey cans and jars as well as small, well printed labels for sections, does not appear to be well understood by many of our beekeepers. Nearly every article to be found on the shelves of the grocer is put up in an attractive manner and placed where it will attract attention. The well arranged packages on the shelves of the successful grocer present, with their variety of labels, an appearance of careful preparation, which in itself causes a strong inclination to buy.

I have seen honey cans on the counters of some grocery men that attracted attention, it is true, but only because of their slovenly and ill-prepared appearance. They would remain on the counter unsold until the grocer would state to the beekeeper that there was no demand for honey and that he would not attempt to sell them or any other that might be brought. The honey might be of the highest grade, yet the appearance of the package in which it was put up would kill the market, and after such a death the beeman must wait a long time for a resurrection.

A good market can be obtained and maintained in every town in the United States and Canada, by putting up good honey, fully guaranteed, in neat packages with attractive labels.

Allow me to give, as an addendum to this article, the opinion of some of America's leading beekeepers on this important subject of honey labels.

H. R. Boardman: "I use a medium size plain label."

A. E. Manum: "A large label, well printed, with directions how to bring the honey back to a liquid state when granulated."

C. C. Miller: "On glass, a small label, on tin, the larger the better."

R. Wilkin: "A large label, giving a number of brief points of information in reference to our occupation."

C. F. Muth: "The label should be in proportion to the package."

P. L. Viallon: "A neat and attractive label, and one that suits the package."

Dadant & Son: "Large labels, explaining that granulation is the best proof of its purity, and how to liquify granulated honey."

P. H. Elwood: "A neat and fair-sized label, in proportion to size of package, would be better than too much display."

A. B. Mason: "If the package is large, use a large label; if small, use a small one. If tin is used, cover with a neat label; if glass is used, use such a label as will allow the honey to be seen."

J. A. Green: "The label for a glass package should be small. For a tin package it should cover the entire surface as far as possible."

James Heddon: "Use a small label on glass, so the contents will show off well. If I used tin I should prefer to label it all over."

Rambler: "For a 5-pound pail, a plain label, to go about half way around—the same sized label used on all of our tins. For glass, a small, fancy lithograph label."

THE OLD LADY BEEKEEPER.

"I'm going to keep bees," the old lady said,
 As she pulled on her night cap and jumped into bed.
 "I'm going to keep bees, and I trust that I can
 Capture more money than my old man.
 You see he won't work—oh, no! not he—
 He'd rather go poking and loafing around—
 And I find that from debt we will never be free
 Till some other method of working is found.
 And there's daughter Susan—poor girl! it's a shame—
 She can't have a new dress, at least once a year;
 While father does nothing but loaf all the day,
 And the little he earns he spends mostly in beer;
 And I'm getting heartsick with sorrow and shame,
 But I think I will tackle the bees all the same."
 And the old lady was as good as her word,
 And began with a dozen of hives;
 And Susan soon learned to help her—
 you know—
 Luck smiles on the ones that most strive.

They subscribed for this journal, and read it all too
 —As all the good beemen in this country do—
 And it taught them of methods they stood most in need,
 How the beemen who write for this journal succeed.
 Some money they made from the very first start;
 It made Susan smile, gave the old lady heart;
 And as they both worked on so faithful and true
 Prosperity came, as it always will do,
 And now they are free from all harassing debt,
 And are free from all trouble and care,
 With Susan rigged out just as neat as a pin,
 And they still have a little to spare.

* * * * *

MORAL.

Do the best that you can in the battle of life;
 Be honest and loyal and true;
 And send us six bits to this office, dear friends,
 And we'll send this journal to you.

It seems to be an acknowledged fact, that the honey resources of California are almost illimitable, and as the industry develops we learn that method and system are essential to success, and the best way to learn this fact is by organization and a careful reading of the bee literature of this state.

CARNIOLANS.

—
 Their Superiority Over All Others.

—
 FOR THE WESTERN APIARIAN.

—
 By Wm. STYAN.
 —

These bees are natives of Carniola in Austra, a very cold climate, consequently they are very hardy. They are the gentlest bees to handle we have ever had when the race is pure, but crossed with Italians or any other kind of bee they become, like most other hybrids, very cross. As honey gatherers they are equal to any bees brought to this country. They make the nicest and whitest section honey of any bees, as they gather little or no proplis. They work from morning til night in wet, dry cool, or warm weather, not caring for either. We have never found them robbing, like Italians blacks or hybrids. The queens are generally very large and prolific, we find them in different colors, ranging from light straw color to nearly the same color as common blacks, but they all produce the typical kind of workers.

The fine bred workers should show no yellow bands, but upon the first segment of the abdomen is generally found a brownish colored band and then follow extremely broad white bands, giving the bees a very beautiful appearance. These bees are becoming very popular in the Eastern States and in Europe, in England especially they are favourites at the present time. It seems they are destined to supersede the Italians. We are so much in favo

of these bees that we have decided to sell off our whole stock of Italians and hybrid queens and breed no other variety but the Carniolans in our apiary at San Mateo, and if we continue Italian queen rearing, it will be in a yard near San Francisco, twenty one miles away.

Messrs. J C Mason and Son, editors of the Bee keepers Advance, say of the Carniolans: First, they are the gentlest bees we have ever seen, They can be handled without smoke at all times, and under all circumstance. We have never been stung by them. Second, they gather no proplis, as other bees do, but use wax instead. This leaves their frames and sections all clean. Third, they they defend their hives as well as any bees we have ever seen. Fourth, they cap their honey the whitest of any bees we have ever had and the queens are the most prolific."

Messrs Pratt Bros, late editors of the Queen Breeders Journal, say: "pure Carniolan bees cannot be beaten for hardiness, gentility, and honey gathering. They can show more surplus comb honey in a given season than any other race of bees on the face of this earth."

The Bee Keepers Review, edited and published by W. L. Hutchison is one of our most valued exchanges; it is always full of the practical, and will be found a great help to all bee keepers.

Do not place your bee hives near a pig sty, as bees strongly object to the smell of whey, sour milk etc.

Very often when the bees are cross the cause may be traced to some objectionable odor in their vicinity.

Do Bees Injure Grapes?

Farmers and Fruit-growers Need
Not Fear the Bee.

FOR THE WESTERN APIARIAN.

By "A LOVER OF FRUIT."

Many — no, some is the word we want — farmers and fruit-growers have an idea that bees are destructive to fruit, and are consequently hostile to beekeeping, and try to make things disagreeable for the beekeeper. No greater mistake could possibly be made. The bee is a positive benefit in the majority of instances, and ought to be considered the fruit-growers best friend. Bees seldom work upon fruit that has not already been rendered unfit for market or for use, by being allowed to over-ripen, or in some way receive injury sufficient to break the skin.

We present the following from the *Indiana Farmer*, as a case in point on the grape question.

"In the summer of 1887 it was quite dry in this section, during the time of ripening our grapes; so much so that bees were not working any. I had some 40 colonies of bees, mostly setting in the shade of grape vines — all near them, and the grapes matured without a single instance of the bees disturbing them that was seen. Then in 1888 the same thing was repeated — only the bees were starving for something to eat, the hives being nearly empty — some being absolutely so, so far as could see. I thought I would have to feed or lose all. Again we had a most beautiful crop of grapes;

in many instances ripened on the hive, some bunches remaining until the grapes dropped off, and not on a single grape did I see bees working, and I observed them carefully

If bees will not work on grapes at such a time, when will they?

There is one or two things true in my opinion, grapes either crack, or some other insect opens them before the bees will disturb them, just as they do the apple, and some other fruits.

After being opened, they will likely work on them, but if not opened, I think they will starve first, not because they will not, but because they cannot break the skin.

In handling bees be sure not to crush them under the cover etc. There is nothing that will call forth their resentment quicker.

Bee-keeping in Missouri.

Spanish Needle and Smartweed.

FOR THE WESTERN APIARIAN.

By Wm. GLENNON.

In compliance with your request I send this article, hoping it will be read with interest by Pacific coast apiarists.

Here in Clark Co., situated in the north-eastern part of the state, beekeeping by the masses has been much neglected. We find many who have abandoned keeping bees because they were unprofitable; and the only reason we can assign for it is inability on the part of the apiarist, being unacquainted with the nature and instincts of the

bee. They naturally supposed the only necessity was a few hives of bees to be set in the orchard or some secluded place and left to care for themselves until autumn, when the good-natured keeper would call for his surplus of honey, but to his surprise none would be on hand. How absurd! What other stock that the farmer has, if treated the same way, would yield him an income? How much care is given to the feeding and comfort of the other stock? But ask him about his bees.

"Well, I don't know how they are. They are such terrible things to sting I can hardly do anything with them. They are all right unless the moths have got into them."

This is the answer from many of the old foggy and know-it-all beekeepers who have never seen a book on bees or a modern bee journal, and who believe such to be "catch-pennies" to get their money.

We must study the nature or instinct of the bee as we do the nature or disposition of our horses and cattle, if we would master them; and if we do not, the longer we keep them the greater will be our losses.

We have many in this county who make beekeeping profitable, and who display common sense in their management, who thus show themselves to be masters of the pursuit. We have one who makes beekeeping a specialty, and is therefore making their culture a source of profit as well as pleasure.

I believe this to be an excellent locality for a few good apiaries. We have maple, willow, and hazel to furnish pollen in early spring, followed by fruit bloom for early honey. Of white

clover we have an abundance, blooming in June, while there is some linden. Our great honey dearth comes the last of July and in August. Then comes Spanish needle and smart-weed bloom for fall honey.

Our main honey crops are two: white clover and Spanish needle. While we have many other honey-producing plants, these are our main stand-by.

The bees generally kept are the Italians and German or black bees, in all forms of hives from the sectional log gum to the modern frame or improved Langstroth hive, which is generally used.

I am situated within some thirty miles of the renowned honey producers and comb foundation manufacturers, Chas. Dadant & Son, who are beyond doubt the largest manufacturers of foundation in the world, having manufactured and sold last season over 59,000 pounds. They work for extracted honey alone and have over 400 colonies in their apiaries. They are located in Hamilton, three miles north-east of this county, across the "Father of Waters," in Hancock county, Ill., opposite Keokuk, Iowa.

George H. Beard is one of the largest honey producers in the county. He runs an apiary of one hundred colonies and upwards for comb honey, and produced last season about 9,000 pounds of honey, comb and extracted.

My apiary is yet rather small, owing to the severity of the winter of 1885-6. I will not boast of my success, as I am more of a student than a practical apiarist. I can only feel proud of my apicultural library, which I hope will soon be among the best in the land.

TRANSFERRING.*By a Practical Man.*

FOR THE WESTERN APIARIAN.

By S. L. WATKINS.

As the willows, manzanitas, and fruit trees are in bloom, now is the time to transfer all your colonies that are in box hives. My method of transferring is as follows:

I go to the colony that I wish to transfer, blow a few whiffs of smoke in at the entrance, and then tip the hive up. Giving them a little smoke all the while, cut the comb loose on all sides of the hive and then remove one side (best to remove a side where the combs run lengthwise, as it greatly facilitates transferring). Have a good square surface to lay the comb and frame on, and then cut the comb to fit the frame. I next incline the new hive and place the frame containing the comb in it with two short sticks the height of the frame from the bottom board. I next place two more sticks on the opposite side of the comb and am thus ready for another frame. I continue from time to time to shake the bees into the new hive until all the combs are fitted into frames. In three days—if the weather continues favorable—you can remove all the sticks and level the hive up. I have tried several methods of transferring, but I never found any that would equal this one, all things considered.

This month is the time to transfer because the hives next month will contain too much honey, and it would be an exceedingly difficult job to say nothing at all of the comb breaking down, drowning the bees, etc. I have made a success of transferring bees in the winter time when the colony had considerable honey, but I had to proceed pretty slowly. I have frequently taken bees from trees in the winter time, sometimes when there is considerable snow on the ground. On the Baltic Ridge in El Dorado county, we cut a sugar pine tree containing bees when the snow was six feet deep. The bees were pretty badly waked up when the tree fell and they flew around considerably, but we managed to save them. In January, 1887, we cut a bee tree, not far from that one, which had enough brood to fill five Langstroth frames. The day we cut the tree they were working on alder bloom, this too, at an elevation of 6000 feet.


The home market for honey, especially for the comparatively small beekeeper, is always the best, and every care should be taken to prevent anything from, in any way, working against it.

There are many ways of injuring the sale of honey in your immediate locality, just as there are many ways of causing steady growth in the local demand. To place before your customers an inferior article, put up in a careless manner, and palmed off upon them because not fit for shipping, means speedy destruction of the home market.

BEE-HUNTING.

 FOR THE WESTERN APIARIAN.

 By ALFRED A. MORRILL.


 Concluded from last month.

Sometimes, in peculiar cases, bees are found going in at the roots of trees and even in logs lying on the ground.

Sometimes the tree is found some distance off the line, for they often fly nearly past the tree, thirty or forty feet to one side, and then opposite the tree square off and enter the cavity which serves them as a door.

Now, for hunting bees later on in the season you will have to have a bee-hunting box. The one I use is 4 inches wide by 9 inches long and 4 inches high, divided in the centre by a partition. In the apartment in one end I carry a piece of old comb, in the other end I carry the bees I have caught. For convenience I will call the cageing end No. 1. and the feeding end No. 2. Each end is provided with a sliding cover. In the cover of No. 1. is a hole 1 inch in diameter closed by means of a slide. Fitted into the under side of the cover and in the end of the box under the slide is a window 1½ inches in diameter, covered with fine wire or glass. On the outside of the end is arranged a piece of wood large enough to cover the window and screwed to the end board with a small screw. In one end the screw should be driven in until

it will let the piece move pretty tight and retain its position. In the partition between Nos. 1. and 2. is a hole one inch in diameter closed by means of a slide, the end of which extends through the side of the box. In the top of No. 2 is a hole glazed with glass or fine wire and provided on the top of the cover with a piece of wood just like that which covers the window in the end of No. 1. In the end of No. 2 is a half-inch hole covered in the same manner. This last hole is used when you want to let out only one bee. No. 2 is divided midway between the bottom board and the cover with a slide. For catching bees I use a pepper box with the cover removed and a small hole in the bottom to admit light and a small paddle. When you see a bee with his head in a flower, with the paddle in your left hand and cup in your right, you can, after a little practice, catch him nearly every time. Your box should be set near at hand with the little slide in the top of No. 1 drawn nearly out and the blind slid over from the window in the end. Now rest the paddle on the protruding end of the little slide in the end of the cover. Carefully slide the pepper box containing the imprisoned bee over the hole in the cover. Now with your finger darken the hole in the end of the pepper box, when the bee, seeing the light in the box below will quickly go down. Now close the slide in the cover and you have your bee all safe. Now take the cover off of No. 2 and draw the slide that is just above the comb nearly out.

For feed I use sugar syrup made very thin or extracted honey diluted

with water until quite thin. Thick honey is not so good, for it takes the longer to load up and is more apt to daub them. Take your bottle of feed and pour on the comb enough to fill several cells, slide the top back into place, but leave the lower side nearly out. Draw the blind back from the window in cover of No. 2, close the hole in the end, and draw back the slide which closes the hole in the partition between Nos. 1 and 2. Now close the window in No. 1 and the bee will go to the light in No. 2. When you see him buzzing against the window close the blind and the hole in the partition, and he will very soon settle down on the comb and go to feeding. When he has stopped buzzing around you will know that he is feeding. Now draw out the top slide of No. 2 very quietly without jarring the box and he will soon load up and go to his tree.

You can go right on catching more bees until you have a good lot of them working.

When you want to move your stand wait till there are several bees on the comb, then slide in the top slide carefully. Now thump on the box, when the bees will leave the comb and go up. Now push in the lower slide. It is always best to leave some feed on a small piece of comb at the old stand. At new stand draw lower slide nearly out, uncover window in top, for sometimes they will not stop at the new stand, but go back to the first one. Never take up the first stand till you have them well at work on two more.

When you have satisfied yourself which tree the bees are in the next thing is to cut the tree and transfer the bees and brood to the hive and get

them home.

Choose a warm, sunny day and cut the tree about noon. It is a common mistake with beginners to suppose that bees are less inclined to sting on a wet cold day than a warm one. The fact is well known to all who are used to handling the honey bee that they are never better natured than when honey is coming in fast. When ready to cut your tree provide yourself with buckets to hold the honey if there should be any, take an empty hive and a lot of narrow tape to tie the comb to the frames and a large spoon to dip the bees with. Fell the tree so as not to smash it any more than can be avoided. Wait a few minutes after the tree is down to let the bees settle a little, and then give them a little smoke. Blow in a little at a time for five or ten minutes, then stop up the hole and proceed to cut into the cavity so you can get at comb. Sometimes the tree splits open in falling, so everything is laid bare. Set your hive so that the entrance is near the largest cluster, when, with a little smoke you can soon drive the most of them in. Keep a sharp lookout for the queen. Now cut your tape in pieces that will just go around one of your frames the narrow way leaving enough to tie. Lay strips of tape on a suitable board about three inches apart and then lay on one of your frames and cut the brood comb in suitable pieces to fit the frame. When the frame is filled with comb tie the ends of tape together over the top, key up under each piece so it is pressed up against the top bar, hang the frame in the hive and fill another and so on until you have all the brood in the frames.

Be careful not to daub the honey around any more than you can help. Put the cover on the hive and leave the entrance open full width and be sure the queen is in the hive. Leave it until nearly dark, when all of the bees will go in. When it is dark bring the hive home and set it where it is to remain and your work is nearly done. In two or three days the bees will have sealed the pieces of comb to the frames. You can then take the tape off the frames.

I would put in one or two frames of comb containing honey with the brood. I advise Italianizing as soon as convenient. In conclusion I would say that, when working with your bees, handle them with care. Don't jar or irritate them, and you will have little trouble with their stinging.

EYES OF THE BEE.

Structures Whose Complexity
Is Difficult of
Comprehension.

Anyone who will take the trouble to examine with a lens the head of a bee will see on either side the large, rounded compound eye, and on the forehead or vertex three bright little simple eyes. The latter are, as their name implies, comparatively simple in structure, each with a single lens. But the compound eyes have a complex structure. Externally the surface is seen to be divided up into a great number of hexagonal areas, each of which is called a facet, and forms a little lens. Of these the queen bee has on each side nearly 5,000,

the worker some 6,000 and the drone upward of 12,000. Beneath each facet is a crystalline cone, a so-called nerve rod, and other structures, too complex to be here described, which pass inward toward the brain. It will be seen, then, that the so-called compound eye with its thousands of facets, its thousands of "nerve rods" and other elements, is a structure of no little complexity. The question now arises: Is it one structure or many? Is it an eye or an aggregate of eyes? To this question the older naturalists answer confidently—an aggregate. And a simple experiment seems to warrant this conclusion. Pucket, quoted in Goldsmith's "Animated Nature," adapted the facets of the eye of a fly—pardon me, fair reader, of a aphanipterous insect of the genus *Pulex*—so as to see objects through it under the microscope. "A soldier who was thus seen appeared like an army of pigmies, for while it multiplied it also diminished the object; the arch of a bridge exhibited a spectacle more magnificent than human skill could perform, and the flame of a candle seemed the illumination of thousands of lamps." Although Cheshire, in his book on the bee, adopts this view and supports it by reference to a similar experiment, it numbers today but few supporters. One is tempted to marvel at the ability of the drone to co-ordinate 24,000 separate images into a single distinct object. Picture the confusion of images of one who had sipped too freely of the sweet but delusive dregs of the punch bowl! Under similar circumstances human

folk are reported to see double. Think of the appalling condition of an inebriate drone! Those who believe the faceted eye to be one organ with many parts, contend that each facet and its underlying structures give, not a complete image of the external object as a whole, but the image of a single point of that object. Thus there is formed, by the juxtaposition of contiguous points, a strippled image or an image in mosaic. Hence this view is known as Muller's mosaic hypothesis. Lowne has experimented with fine glass threads arranged like the cones and nerve rods of the bee's eye, and finds that (even when they are not surrounded by pigment, as are the elements in an insect's eye) all oblique rays are got rid of by numerous reflections and the interference due to the different lengths of the rays. Some modification of the mosaic hypothesis is now generally adopted, and Dr. Hickson has recently worked out with great care the structure of the optic tract which lies between the crystalline cones and the brain.—*Murray's Magazine*.

SPRING DWINDLING.

A PRACTICAL PLAN OF PREVENTION.

A Northern Queens Method.

FOR THE WESTERN APIARIAN.

By ALFRED A. MORRIS.

I know of nothing more discouraging to the bee-keeper than to have his col-

onies gradually dwindle away to a mere nothing just at the time when he particularly wants to build them up good and strong ready for the honey flow. We often hear some of our best bee-keepers complain of spring dwindling and sometimes they lose nearly all of their bees after wintering them.

It has always seemed to me that it is one of the easiest evils to guard against. Like a good many other things, "an ounce of preventative is worth a pound of cure." It is nearly always caused by an old queen that has almost exhausted her egg-producing powers, and has seized upon the first excuse to stop laying early in the fall, sometimes a month earlier than a younger and more prolific one would. Consequently the colony goes into winter with a lot of old bees that have very little vitality left; then, in February, when a young queen will go to laying, the old one will wait sometimes a month or more, and by the time she has made up her mind to go to laying the bees are too old to nurse the larvae properly. So your old bees are dropping off and no new ones hatching to take their places.

The remedy is self-evident. Replace your old and feeble queens in the summer with young ones and then stimulate them by feeding late in the fall and early in the spring. Just as soon as they begin to fly examine your hives to be sure they have plenty of honey and pollen. If they have no pollen they can rear no young bees, even though the hive is full of honey. Give them flour or meal until they can get pollen in the fields. If you are so unfortunate as to have spring dwindling in earnest, get a pound or so of

young bees and put them in the hives affected and see that they have plenty of stores and they will usually come out alright.

It is difficult to say at just what age a queen should be removed, for some will lay for three summers and do well while others will wear themselves out in two. But I believe that a safe plan is to remove all queens that have been laying two full summers, except perhaps a very valuable one that you are anxious to work just as long as you can. I think that a little foresight exercised in the summer and fall will nearly if not quite do away with spring dwindling.

This is the age of specialties and specialists, and generalization is at a heavy discount. Success in bee-keeping, as in everything else, is the result of concentrated and well directed effort. Many a hard-working and fairly intelligent beeman has made shipwreck of his hopes upon the rock of failure to concentrate effort.

Many of our bee-keepers seem to think that if they take an agricultural paper, and read the occasional column of bee notes, they are receiving sufficient information and direction. Not so. These journals, most excellent many of them, and without question of great benefit for general farm work, are not especially devoted to apiculture, and do not (we almost said cannot) cover the ground with any considerable degree of minuteness and precision.

We believe that each colony of bees in the apiary will pay for the bee-journal, in the increase of returns that will accrue through the increase of information, and consequent increase of well directed, intelligent, concentrated effort.

Ancient Bee-Culture.

FOR THE WESTERN APIARIAN.

By S. L. WATKINS.

CHAPTER II.

Palestine, with its myriads of wild flowers and fruits, was the home of wild bees; they furnished abundant pasturage. The bees constructed their hives in hollow trees, rocks, and any accessible place. The bee keepers of Egypt used to move their bees up and down the Nile to catch the different honey flows. They moved them on-rafts, going a certain distance each day.

De Montfort, a Frenchman who wrote a work on bees about three hundred years ago, estimated that between five and six hundred authors had preceded him, most of the books being written in Latin, and but few have been handed down to us. In 1609, Charles Butler gave to the world a work entitled: "The Feminine Monarchy, or, the History of bees." In 1657 was published in London: "A Theater of Political Flying Insects," by Rev. Samuel Purchas. In 1675, John Geddes wrote a work entitled: "Methods of Bee Houses and Colonies." At the beginning of the eighteenth century, Joseph Warder gave to the world: "The True Amozons, or, the Monarchy of Bees." In 1774, Reamear, a Frenchman, wrote his great

scientific work entitled: "The Natural History of Bees." The principal authors of the eighteenth century were: Thorley, Maxwell, Swammerdan, Mills, Wildman, White, DeBraw, John Keyes, the author of the "Ancient Bee Master's Farewell," Bomer, Isaac, "Linneaus," "the brilliant star of the North," published his "System Naturae" toward the middle of the eighteenth century, "and threw a flood of light on the whole subject of Natural History."

CHAPTER III.

There are several different varieties of *aphis mellica* or domesticated bees. Those worthy of mention are: the German, Italian, Holy Land, Cyprian, Carniolan, Egyptian, Dalmatian, Hungarian, and South African bees. Beside these there are a vast number of wild or uncultivated bees in India, Ceylon, Borneo, Celebes Islands, Australia, and Central America, the bees of the two latter countries being stingless. The bees of East India make annual migrations from one part of the country to the other, and it is doubtful if anyone could ever make a success of bees possessing these peculiar characteristics. They construct their hives on the horizontal limbs of trees, and overhanging cliffs, rocks, etc., their combs sometimes depending to a length of 4 to 6 feet. Their "peculiar migrations" are owing probably to the rainy seasons, hot climate, and dearth of honey secretion at certain intervals of a year. They prefer to build on the limbs of trees, it being cooler on the out-

side than in the inside of trees in that climate. Some varieties of these bees are wonderful honey gatherers. Others possess very irascable tempers, making it almost impossible to take their honey away. These bees are known to entomologists as *aphis indica*, *aphis florea*, and *aphis darsata*.

Sir Samuel W. Baker makes mention in his "Rifle and Hound in Ceylon," a book published forty years ago, of the methods pursued by the natives of Ceylon in hunting and taking the honey from these wild bees. He says: "The principal underwood in the mountainous districts of Ceylon is the millho. This is a perfectly straight stem from twelve to twenty feet in length and about one-and-a-half in diameter, having no branches except a few small arms at the top, which are covered with large leaves. This plant, in proportion to its size, grows as close as corn in a field and forms a dense jungle difficult to penetrate. Every seven years the millho blossoms; the jungles are then neither more or less vast boquets of bright purple and white flowers. The perfume is delicious and swarms of bees migrate from other countries to get their harvest of honey. The quantity collected is extraordinary. The bee-hunters start from the low countries and spend weeks in the jungle collecting the honey and wax. When looking over an immense tract of forest from some elevated point, the thin blue lines of smoke may be seen rising in many directions, marking the sites of the bee-hunters' fires. Their method of taking the honey is simple enough. The bees'


nest hang from the boughs of trees and a man ascends with a torch of green leaves which creates a dense smoke. He approaches the nest and smokes off the colony, which, on quitting the exterior of the comb, exposes a beautiful circular mass of honey and wax, generally about 18 inches in diameter and 6 inches in thickness,

The beehunter being provided with vessels formed from the rind of the gourd attached to ropes now cuts up the comb and fills his chattels, lowering them to his companions below.

When the bloom of millho fails the seed from this is a sweet little kernel with the flavor of a nut. The bees now leave the country and the jungle suddenly swarms as though by magic with pigeons, jungle-fowls, and rats. At length the seed is shed and the millho dies. The jungles then have a curious appearance. The underwood being dead, the forest trees rise from a mass of dry sticks like thin hop-poles. The roots of these plants soon decay and a few weeks of the high wind howling through the forest levels the whole mass, leaving the trees standing free from underwood. The appearance of the ground can now be imagined. The young millho grows rapidly through this, forming a tangled barrier which checks both man and dog."

The aphis melliphona or stingless bees of Central America and Australia do not amount to much as honey gatherers. They are small in size—not much larger than the common house fly—and marked something like yellow jackets. Although the bees are stingless, they are not without means of defense. With their sharp mandibles

they can bite in a manner more "forcible than pleasant." These bees store between one and two quarts of honey in combs constructed of wax, similar to the common honey bee, only the cells are smaller. These bees seem to be very numerous in certain locations. A traveller in Mexico mentions that he found upwards of one hundred swarms in a single day. He says that he counted twenty-five swarms in the root of a single fig tree.

 Continued

HONEY PLANTS.

NO. I The Sensitive Plant.

FOR THE WESTERN APIARIAN.

By FRANK McCALLUM.

Thinking that it would be of interest and perhaps some profit to our readers, we have decided to present, each month, a botanical description of some honey plant of importance in the United States. We will try and popularize these botanical articles, by eliminating from them much that is purely technical, and by presenting them in as simple and readable a style as possible.

I will not, however, evade any important item, simply because it can be best expressed in technical terms; nor refuse to use scientific language when occasion shall seem to require. Believing that the average American beekeeper is the type of as high a grade of intelligence and general culture as is to be found anywhere in this land of broad culture and progressive investigation, I will not hesitate to introduce botani-

cal terms for fear of getting beyond the grasp of the intelligence of my readers. With this much as preface, let us approach the first honey plant that we propose to consider, namely;

THE SENSITIVE PLANT.

The sensitive plant, (*Mimosa*) is a genus of the suborder Mimosae of the order Leguminosae. No family of the vegetable kingdom has a higher claim to the attention of the botanist than the Leguminosae, whether we consider them ornamental or in the variety and scope of their utility. Among the most beautiful of flowering plants are the acacias with their silken streamers, the pride of India, with an all endless list of others which, like the sweet pea, breathe forth the sweetest perfume; while beans, peas, clover, and a host of others convey to our minds the idea of their widespread utility. Among trees, the rosewood and laburnum may be mentioned, the latter furnishing a wood which is exceedingly durable, and the locust of our own country, which is too well known to need any recommendation (if indeed it deserves any, which we are sometimes inclined to doubt).

The above will convey some idea of what is comprehended in the order Leguminosae. It has a total of 467 genera and 6,500 species.

The suborder, Mimosae, to which the genus *mimosa* belongs, has 29 genera, only two of which, however, will come under our observation in the present article.

The true sensitive plants, *Mimosa* (from the Greek; *mimos*, a buffoon, because the leaves seem sporting with the hand when touching them); are perennial herbs and shrubs and are natives

of tropical America.

Perhaps the best type is the *Minosa pudica*, a native of Brazil, in which the irritability of the leaves is very noticeable. It usually grows about a foot high; but occasionally under glass it will grow to a height of three feet. The seed of this species will retain the vital principle for a great length of time. It has been naturalized in Florida though it does not appear to any considerable extent.

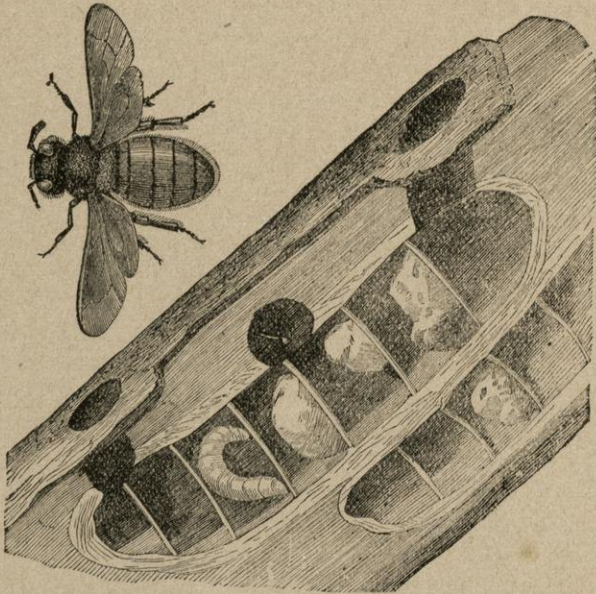
This species presents in a wonderful degree, one of the most startling phenomena of plant life. When placed in bright sunlight left undisturbed, the leaves stand nearly at right angles to the stem; but a slight touch will cause them to droop and fold as if dead.

The temperature seems to have a very decided effect on the sensitiveness of the plant, being the greatest on warm days. If the plant is placed where the wind will blow upon it, its sensitiveness is perceptibly diminished.

Another species of the *Mimosa*, the *M. strigillosa*, which grows from the banks of the Mississippi to Florida. It grows on the banks of rivers, and is prostrate or trailing.

There is a plant found in the Southern States from Virginia to Texas, that belongs to the order Mimosae, but not to the genus *Mimosa*. It is more properly called the sensitive brier, and belongs to the genus *Schrankia*, so called in honor of Francis de Paula Schrank, a German botanist. It has two species *Schrankia uncinata* and *Schrankia angustata*. The foliage is sensitive, but will only shrink under much rougher treatment than the *Mimosa*.

It covers wide stretches of country and



THE CARPENTER BEE.

the trail of the traveler through it can often be traced plainly for a considerable time after he has passed.

The bees seem to be delighted with it, but just what its value as a honey plant is, has not yet been fully determined.

We have some seed of this and of the true sensitive plant, and intend to experiment with them here in California.

The Carpenter Bee.

SEE ILLUSTRATION.

Among the many species of bees, there are many that have little or no economic merit, and perhaps are not worthy of any very great consideration from beekeepers; and yet there is so much of interest connected with them,

that we cannot resist the temptation to present a short sketch for our readers.

Among these curious species, perhaps none presents more striking characteristics than the carpenter bee, a species of British solitary bee.

It works in wood the same as the mason bee does in the clay, selecting posts etc. which have begun to decay.

They do not form colonies, but make about twelve cells, one above the other, in which the eggs are laid. The tunnel of about one half inch in width, and from 12 to 15 inches long, running perpendicular after entering

The cells are separated from one another by partitions made of chips and sometimes of clay. A good idea of the carpenter bee can be obtained from our illustration.

Queen Breeders Journal

Practical Queen-Rearing.

A Simplified Treatise.

FOR THE WESTERN APIARIAN.

By S. L. WATKINS.

CHAPTER I.

"Around the queen centers all there is in beekeeping" is the candid opinion and conclusion of all scientific and practical apiarists. With good, young, prolific queens we have good, strong colonies, and strong colonies and favorable seasons mean plenty of honey; and plenty of honey from each colony is the mark we are aiming at, the goal we are trying to win in the apiarian world. In beekeeping, as in all other pursuits, there are numerous ways to accomplish the desired results.

There are several short cuts to successful queen rearing, and some of these are the ones we are going to outline to your view. I shall speak of nothing but what I have tried and found to be the easiest and simplest methods of queen rearing.

But first let me present to your view some of my early experiences in that line—some of my blunders and mistakes, so that beginners will not fall into the same pitfalls in the queen rearing business that I did. My first colonies were the common brown bees, and desiring to breed a few queens from the best honey gathering colony, I first took the queen from this colony and introduced her into another hive

where I had killed the queen; and after the good queen had been in the hive for a week, I removed her to another colony where I had killed the queen, and continued introducing this good queen until her progeny were in fourteen different colonies.

Of course it took a long time to get the fourteen colonies again re-queened; but I accomplished what I started out to do. Some experienced apiarist may be tempted to smile after reading the above; but that was when I did not know much about bees and their habits.

My next step in advance was to purchase a tested Italian queen, with which the following summer I re-queened my entire apiary. After the Italian colony had built up to a populous colony I removed the queen and placed her in another swarm, already queenless, and in nine days after removing her, I cut out all the queen cells but one in the Italian colony. Previous to this, I had divided all my black bees, and the nucleus hives all contained queen cells. I removed their cells and inserted Italian cells in their place with very good results, only two out of ten being torn down. For grafting the queen cells and holding in place I used a little hot wax, melted in a solar wax extractor.

I practiced this method one summer and by fall had quite a sprinkling of Italian blood in the apiary; also quite a lot of very wicked bees, for, as every apiarist knows, hybrids are not noted


for their gentle dispositions; they do not seek shelter between the combs when the hive is opened, they seek it somewhere else.

For honey gathering this strain of bees was splendid. Some of the hybrid queens were enormously prolific, the bees wonderful workers, and if it had not been for their irritable tempers I would never have wished for a better honey gathering bee.

My next experience in the queen rearing line was to raise queens by the modern nucleus methods. This I accomplished as follows: I generally took four frames, two of brood with adhering bees, and two empty combs. I always gave plenty of bees to my nuclei, believing that one strong one was equal to three weak ones, as they seemed to be more contented and protected their hives better from robber bees. The queen nursery that I used was a frame with eighteen different apartments, each one containing a queen cell, fitting the hive. I had it so arranged that all of the queens would hatch within three days. The frame nursery was placed in the center of a very populous colony, and as fast as the queens would hatch out they were placed in newly framed nuclei. or a fertilized queen removed from a nucleus and a virgin inserted in her place. I raised a great many queens by this method, but it took considerable work, time, and watching, to say nothing at all of the bees that composed the nuclei, bees that I might have had storing honey all the time if I had only

known it.

In my next I will give a detailed account of the best methods of queen rearing.

 Continued.

If you want a good untested Carniolan or Italian queen send to this office. We guarantee safe delivery.

A great deal depends upon the manner of introducing the queen. Many mistakes are made by the beekeeper, by which he fails to successfully introduce the queen, and he feels cross, and sometimes, if he does not know very much about bees, he will buy no more queens. The fault is not with the queen, nor yet with the breeder, nor yet with the bees, but with you who use injudicious methods of introducing. There are many ways of introducing a queen, all of which have their earnest advocates, and all of which are comparatively successful. We do not know which way is the best, but we know which way we prefer.

Never make a colony queenless until you have received and are ready to introduce the queen which is to be substituted.

Take the cover of your hive and place it upon the ground, raising it up so the bees can pass under it. Lay a paper down in front of the cover and shake the bees off the frames onto the paper. Catch or kill the queen as you may desire. The bees will cluster under the cover. Take the cover under which the bees have clustered and give it a knock over the paper and give them a small sprinkle of water. Drop your queen right into the pile. If they pile onto her give them another sprink-

le of water.

Now shake the bees from the cover onto the brood frames, put on your cloth and set the hive where it was before.

We give the above as one of the ways that we do not greatly admire. There is a great deal too much way about it.

Introduce in the Peet cage and let the bees dig her out, is the method we prefer as the simplest.

Perhaps some one will ask: "Why is it there are so many methods of introducing the queen?" The answer may possibly be: because it is not such a difficult matter after all to introduce a queen, and consequently most every beekeeper has his own method which he practices with at least comparative success. If the weather is good and the bees are peaceable and quiet, you can frequently pick the old queen off the combs and put the new one on and all will go well. If your queen is valuable, however, you will do well to take great precautions, as this very direct method is hazardous in the extreme.

Many people are afraid of their bees, and hardly dare open the hive to look at them, and consequently tremble and greatly fear even at the thought of having to introduce a queen; others have met with failure so many times that they are ready to give up in despair, and mournfully declare that their bees are so cross they can do nothing with them.

We think bees can be trained to be good-natured, or can be spoiled by injudicious treatment, just as animals can

We read many treatises on breaking

colts, and training horses, now is it not time we heard something about breaking in and training these busy little servants of ours who provide us with the most delightfull as well as the most healthfull of natures sweets, gathered in purity from the flower bejewelled garments of mother earth.

We believe bees can be bred for gentility as well as for color and honey gathering qualities, and the later would suffer in no degree by a careful regard for the former.

If you wish to be successful in sending queens through the mails, send them in warm weather, warmer the better. Send young bees as attendants and cause them to fill themselves with honey before being caged. Send from twelve to twenty attendants according to the number of days the queen is to be on the road. Arrange the soft candy with which you provision the cage, so that it will not daub the bees.

Color of course is only of consequence as it indicates desirable traits of bee character that fill combs with honey, and the frames with brood.

Too much can hardly be said of the care and discrimination needed in locating an apiary. Frequently a location will be almost worthless; while another within a few miles of it will be all that need be desired. We have not time here to give the various points to be considered in making the selection; but will leave the question open for some of our successful, progressive, and well-located apiarists to give us their ideas of what constitutes the ideal location.



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it reaches the bottom; or has seen the Merced take its marvelous Vernal leap; can ever forget it.

The Yosemite beggars all powers of description.

Standing in the centre of the valley and seeing its towering precipices of smooth rock over which leap the spray falls so characteristic of it, one is impressed with a kind of dreamy mistiness: a certain sense of unreality, that adds a decide charm to these sublime surroundings that must make solemn all who think.

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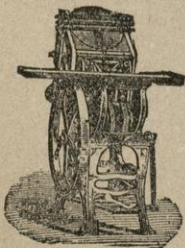
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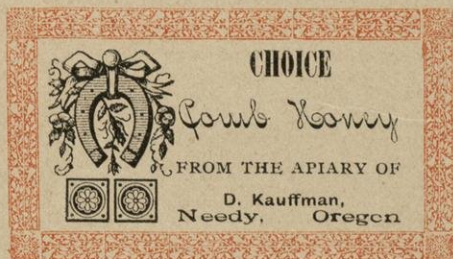
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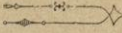
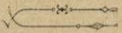
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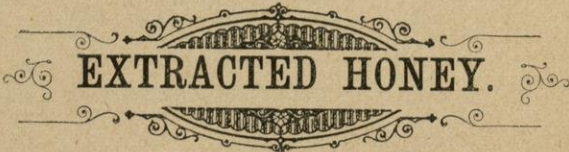

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