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West Maitland, N.S.W.: E. Tipper, March 31, 1910

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

Published by E. TIPPER, West Maitland

Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

VOL. 18. No 12.

MARCH 31, 1910.

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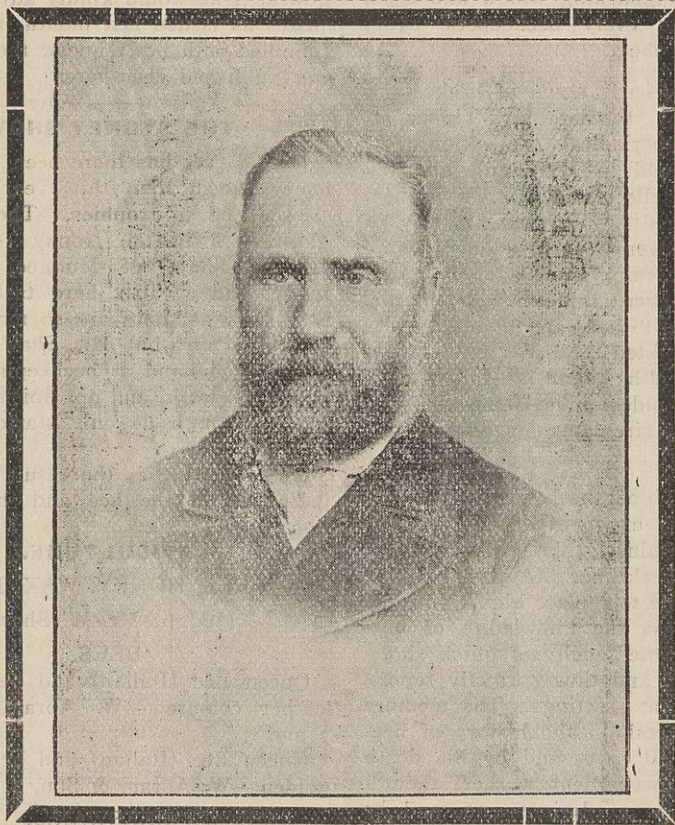
A Monthly Journal devoted to Beekeeping.

Circulated throughout the Commonwealth of Australia,—New Zealand & Cape of Good Hope.

Published by : E. TIPPER, West Maitland, N.S.W. Aus.

Editor : W. ABRAM, Beecroft.

MAITLAND, N.S.W.—MARCH 31, 1910.



It has pleased our Lord God over Life and Death to take our dear

MR. EDWIN TIPPER,

on the 2nd. of March, 1910. He has been ailing for a considerable time, and at

the time of his death was in his 76th year; a native of Bath, England, born on June 18th, 1835. When he came to the Maitland district many years ago, he became foreman of the composing

staff of the "Maitland Ensign," which paper he took over in 1867, and carried on for some years; but then discontinued its publication, and commenced a job-printing business. He also published the "Weekly Post." Energetic and industrious in all his undertakings, honest and truthful in his dealings, he brought his business to a successful issue, and retired some years ago, the business being taken over by his son William Tipper, by whom it is carried on now. The late Mr. Tipper was twice married, and leaves a mourning widow and eight children; and every beekeepers' sympathy is with them.

At the very early stage of beekeeping in this colony, the late Mr. Tipper attended the periodical convention (the first being held in Maitland), and his ever keen intellect and interest in bee-culture induced him to see his way to open a new avenue of assistance to the industry by issuing the now well known "Australian Bee Bulletin," a journal solely devoted to bees and their interest; and he also edited the paper until lately, when his health began to fail. This paper is the oldest in existence in Australia, and it circulates far beyond this continent.

In friend Tipper beekeepers have lost a very strong exponent of anything affecting the industry, he himself being a practical beekeeper. And as editor, it is impossible to replace him. Not only did he possess the knowledge of beekeeping, but the faculty of quick shorthand writing, and thus correctly reporting speeches at meetings. His memory will remain fresh in the history of beekeeping for all time, and by his death we lose a most ardent worker, though his career was a glorious one, and he reached a very good age.

Departed—but not Forgotten.

W.A.

EDITORIAL.

Owing to the busy time at the Sydney Show, several matters have to be left in abeyance.

After a splendid honey flow, continuous rain for over a week entirely spoiled the further flow, at least for the time being. There is, however, a fair chance for more to come, if the weather suits. Altogether the honey crop is not a very big one, though some did very well.

I asked Mr. W. Niven, Senr., Eugowra, if he would kindly adjudicate the prizes as issued last month, and he has complied with my request, the result being published elsewhere.

THE SYDNEY SHOW.

Hardly ever has there been any lighter honey shown than this year, both in classes and in trophies. There were 3 competitors in the trophy competition. Mr. W. Shaw, of Mudgee, was sole judge, and a fairly hard task he must have had, as there are so many classes to adjudicate; but Mr. Shaw is an old experienced hand at beekeeping, and he knows his work, and got finished in good time, although he only started at after 12 p.m.

The following is the result of the adjudication in the bee and honey section:—

APICULTURE.

BEES, HONEY, WAX, ETC.

(Judge: Mr. W. Shaw.)

BEES.

Queen Bee (Italian) and her progeny, leather coloured.—W. Abram & Son, 1, 2 and 3.

Queen Bee (Italian) and her progeny, golden.—W. Abram & Son, 1, 2, and 3.

BEESWAX.

Natural Yellow.—Walter T. Seabrook, 1; W. Abram & Son, 2.

Natural White.—Walter T. Seabrook, 1; W. Abram & Son, 2.

HONEY—EXTRACTED (LIQUID).

Dozen Jars, Light.—A. J. Pankhurst, 1 and 2; Walter T. Seabrook, 3; H. R. Roberts, v.h.c.

Dozen Jars, dark colour, golden.—Abram & Son, 1; Walter T. Seabrook, 2; H. R. Roberts, 3; Abram & Son, v.h.c.

Dozen Jars, dark.—Abram & Son, 1 and 2; Walter T. Seabrook, 3.

Dozen Jars (tops, fine grain).—Abram & Son, 1 and 3; Walter T. Seabrook, 2.

Dozen Jars (coarse grain).—H. R. Roberts, 1; Walter T. Seabrook, 2; Abram & Son, 3.

COMB HONEY.

Dozen Sections (light honey).—Abram and Son, 1 and 3; Walter T. Seabrook, 2 and h.c.

Dozen Sections (dark honey).—Abram and Son, 1 and 2; Walter T. Seabrook, 3.

Frame of Comb Honey (100 inches).—Abram & Son, 1; Walter T. Seabrook, 2 and 3.

Frame of Comb Honey (50 inches).—Walter T. Seabrook, 1 and 2; Abram & Son, 3.

CHAMPION PRIZES.

Collection and display of Products in the Apiary in Trophy Form.—W. Abram & Son, 1; Walter T. Seabrook, 2; H. R. Roberts, 3.

Favoured with excellent weather in Agricultural products, the show is perhaps the best all round that has ever been seen in Sydney, or for that matter, in Australia. There is everything represented, be that horses, cattle, etc., or grain, fruit, machinery of all descriptions, and anyone interested in the products of the land has something to specially interest him, be that in poultry even, or dogs. Everything is good, and the judges must have considerable difficulties to decide for the best of so much really good exhibits.

In this conjunction it may be mentioned that the R.A.S. took over £22,000 during the last year, yet the prize money is only a little over £4,000, a very small sum in comparison to the gross takings, inasmuch as the membership, space and entry fees pay for the prizes offered. But nevertheless the show ground is getting too small for accommodation of the ever increasing demand for space, and it is to be hoped that the Society will succeed to obtain more ground for expansion.

THE EDITOR.

Result of PRIZE COMPETITION—February Issue.

"The Swarming Impulse," by "C," First Prize. Won by Miss Penglase, c/o Mrs. Gelder, Bushy Park, Victoria.

"Handling Bees During Swarming Season," by Thos., Second Prize. Won by Thos. Armour, Fernbank, Victoria.

William Niven, Sen., Judge

Selling for cash or on Commission; a Word of Caution to the Uninitiated.

For the benefit of our newer readers we find it necessary about this time to put in a word of caution about selling honey to irresponsible persons, or selling to commission houses which, in times past, have treated some of their patrons unfairly, not to say dishonestly.

As a general thing, we consider reliable those who quote prices regularly in our Honey Column. It sometimes happens that a new commission man will get hold of your name and make you a private quotation far above the general market, saying he will give you prompt service, and guarantee you a large commission.

Look out for such a party. He may be honest. If he is not, and once gets your consignment, he may write back

and tell you that the honey was badly broken in shipping, and that the best he can do will be to give you about half the original quotation. You have no means of knowing whether the honey is broken or not, and if it is not smashed or damaged, and you accept his statement, he can sell the honey at as high a price as he please, and give you only half price, or less than that, as he will take out his commission.

Another fact that it is well to bear in mind is that, if you sell your honey outright, be sure that the buyer is responsible. If he is not, you practically have no resource in law. Better sell on commission to such person, because you can then compel him to make some sort of return. If he keeps both your honey and your money he is liable for embezzlement.

If, on the other hand, you contract to sell him outright at a certain figure, and he makes a sale to a third party, and fails to make returns, there is nothing you can do if he is not responsible. If he is collectable you can bring suit, but that will cost more than the value of the honey if the shipment is small.

So whatever you do, be careful with whom you are dealing. If the party is not responsible, or if you can not find out anything about him, send the honey to yourself at the point of destination, and the bill of lading to some bank with instructions to turn over the bill of lading to consignee as soon as he pays for the honey. Where a firm is known to be responsible, and has a fair reputation for square dealing, such procedure is not necessary.

In a general way we would say it is more satisfactory to sell for cash, although it sometimes happens that an honest firm will really secure a higher price when it takes honey on commission. In that case the producer shares the risk of the price not going up, or, worse yet, going down; while if the

honey is sold outright at a definite figure the buyer takes all the chances of possible advance or slump in price.—“Gleanings.”

PRIZE COMPETITION.

The Publisher of the “Australian Bee Bulletin” offers Prizes for competitive contributions on subjects appertaining to Beekeeping, under the following conditions:—

1. The prizes are:—1st, 7/6; 2nd, 5/0; 3rd, 2/6.

2. Competitive articles to be addressed to Mr. W. Abram, Editor A.B.B., Beecroft, headed “For Competition.” Write full name and address, but also affix a sign or mark, as it is intended to omit full name on publication, but to publish name of all competitors first issue after judging.

3. Entries for each month close on the 20th. Any subject may be chosen.

4. One judge will be appointed by the Editor, to act as single judge, but each month there will be a different judge, and his name will be published together with the results. The judge’s decision is final.

5. Postal notes will be sent to winners on receipt of the judge’s decision.

Our aim is to encourage juniors and amateurs to exercise their skill in beekeeping and in writing, thereby assisting one another. (The editor’s son does not compete.) The most efficient beekeepers will be selected to act as judges. A copy of the A.B.B. will be sent to the one selected each month, and the results published next issue. Competition starts now, and prizes will be offered for your work. Who will win?

N.B.—This is a money prize competition—not a disposal of queens.

* * * *

QUEEN CELL TALK.

(By “C.”)

A matter often discussed by beekeepers

is how to raise the very best of queen cells? Some apiarists will not breed queens from cells built by bees under the swarming impulse. Others are emphatic that no cells raised by artificial means can equal the swarming cell. You will find beekeepers of very good authority who work on both of the above rules. To decide which beekeeper is right is a matter which requires careful consideration. Although I find no queens superior to those raised under the swarming impulse, I do not say that every swarming cell is a suitable one to raise your young queens from. First let me say that I consider a hive that swarms occasionally superior to colonies that are entirely non-swarming. Again, bees that are excessive swarmers are worse than either of the above two classes. Therefore, the queen cells from an excessive swarming colony should not, under any consideration, be utilised for breeding purposes. Further, it is a bad policy to raise queens from others than purely mated mothers. But a queen raised from a swarming cell of a fine pure colony of good honey-gatherers is a queen equal to the best in the world. Now there are other times in the history of a colony of bees when equally fine cells will be raised, and that is when the colony is superceding their old mother. A bee-man that can find a good colony of bees in the act of superceding their queen just when he requires a few good queen cells, is a lucky man, indeed, for, all that requires to be done is cut out the cells just before they hatch, give them a nuclei, and your queens will be fit for the most particular apiarist that ever kept bees. In this way a very large number of excellent queen cells may be cut out of one colony. The foregoing are the two best queen cells obtainable, but the trouble is being able to get just such cells when they are required. I have often destroyed a lot of ripe queen cells from beautiful queens just because I had nowhere to put them.

There are several artificial methods of raising good queen cells, among which are the alley method, which is simply giving strips of worker comb containing eggs or very young larval to queenless and broodless bees. Provided conditions are favourable for queen rearing, highly satisfactory queens can be produced by this method. There are several other ways of producing good queen cells by artificial means, the most popular method being known as the "Doolittle" method.

This method of cell raising is really the wholesale queen-breeders' method, and while very good results are obtained by amateurs, I would recommend the alley method owing to its simplicity. When raising cells, by either method, a good knowledge of queen-rearing will be necessary. The more you study the matter the better will be the results attained. Yes! For an all round good queen, give me one raised from a swarming cell of a real good colony. If you require to raise more queens than you can get in this manner, be sure and never try to raise good queens when conditions are adverse to your business. The conditions suited for queen-rearing are, (1) a honey flow; (2) a humid atmosphere; (3) abundance of pollen; (4) warm nights; (5) prosperity among bees generally. These conditions to hand and your attempts will be rewarded by success.

* * * *

The Great Loss of Bees in Australia During the past Three Years.

(By Thos.)

No greater calamity ever befell the beekeeping industry in Victoria than the recent outbreak of a dreadful malady known as the "Disappearing Trick." Strange to say, in some of our finest bee country in the Stawell district, and in the Grampians, the loss has been appalling. Some well established apiaries being wiped out almost altogether.

Mr. T. Bolton, of Glen Isla, who is one of the largest honey producers as well as one of the most up-to-date beekeepers in Victoria, lost very heavily. This dreadful malady, I might mention, was not confined entirely to the western portion of the State, but was equally destructive in certain portions of the central and eastern districts. In north Gippsland one apiarist lost 200 colonies, and knows no more about how and where the bees died than that they were gone. The hives were partly full of capped honey and brood. The queen and a few young bees were huddled in one corner of a brood comb, disheartened and forsaken. In a day or two they would swarm out, and no matter how treated, would desert and mix with other hives. No other disease known among honey bees has proved so destructive in such a short time. An apiary of 160 fine colonies which I had under my management last spring, was on Oct. 1st in normal condition, but by the end of that month only about 60 colonies could be counted among the living. What awful conditions could bring such destruction as this. It was not starvation as there was plenty of honey in every hive. The red box trees in the bee range were white with bloom and yielding honey well. The atmospheric conditions were dry and cool—a prolonged drought. Pollen producing flora was very scarce, but most good honey districts have pollen famines without this ruinous results.* One time in my experience bees were gathering wet paint off newly painted fences, and yet the bees did not disappear. In the morning the field bees would go from their hives in search of stores, but never returned. I have searched the bush all round and have not been successful in finding the remains of a single bee.** They appear to vanish, leaving no more to prove their whereabouts than the missing liner "Waratah."

The blame by some was put on bee-

eating birds, but it cannot be birds, for why does some strains of bees resist the destruction and hold their former normal condition. Again, birds could be located and caught in the act; but birds were as scarce as they ever were. Then suspicions were roused on poison of some kind. A plant producing poisonous nectar would certainly produce conditions such as these; but even on this theory how can we account for the colonies that remain normal among such rank poison? And there would be a certain amount of poison honey carried home by the bees which would kill the bees in the hive. But no such results were noticeable. I fed the honey from the "defunct" hives to healthy ones without evil results.

Some beekeepers blamed grey box honey for the malady; others red box; but the outbreak of the trouble in districts remote from either upset this theory. Mr. R. Beuhne, in a private letter the other day, stated that to get a good bee site in Victoria now, without the risk of the "disappearing trick" is out of the question. A recent examination of bees from the Stawell district, revealed the presence of a "bacillis," and by many, for this reason, the cause of the trouble is put down to an infectious "germ" disease. Personally, I am adverse to this idea for the following reasons: I noticed that when the drought broke and rain came in abundance, producing lots of rich pollen, the trouble ceased and bees did well again. Again, if this was an infectious disease of the mature insect, how did none at all die in their hives. Surely some would perish in the night, and would be found on the bottom board of the hive. Probably a preventative of the malady could be found by introducing more good pollen-producing plants to the bee range. Cape weed, perhaps, has no equal for spring pollen, and flat weed, known by many as curdy's weed, for the summer. Where these will not grow, Rape, mustard, tree lucerne, dandelion,

"butter cup weed," sorrell, all legumes, and dozens of shrubs, the names of which I do not know.

After ten years' experience I am confident that if the average beekeeper located in forest country was to introduce or cultivate a number of pollen bearing plants and trees, instead of wasting time and money experimenting with artificial pollen such as pea meal, etc., they would be much better paid for their trouble. For example, how little trouble it would be to propagate a row of black wattles round the boundary of your property. There is probably no more valuable tree in our forests at the present time than the black wattle, and apart from its value as a pollen producer in November, it would be no mean asset in six years' time for bark. The same applies to many fodder plants, such as flat weed, cape weed, and many other ground flowering plants, which have another value besides supplying good rich pollen, which always means good strong colonies of bees, capable of gathering a six tin flow.

[*Even where pollen is plentiful, either in the combs or fresh gathered, the loss is just the same.—ED.]

[**Look again.—ED.]

HONEY VERSUS CANE SUGAR.

MRS. V. R. WINSLOW IN "GLEANINGS."

A child's craving for sweets of some kind shows a real need of the system in that direction; but, unfortunately, the sweets at hand and usually given to supply this need are not wholesome, and serve no better purpose than to please the child's taste. In fact, the work of changing the cane sugar into grape sugar so that it may be assimilated is often too great a tax upon the child's stomach, and sickness results. This, however, is not the case with honey. The bees have fully prepared it for immediate

assimilation, and it is ready to be taken into the system without taxing stomach or kidneys. Doctors frequently order honey for those whose digestive organs are too weak to convert cane sugar into grape sugar properly. The wholesomeness of honey, however, is not disputed by those who know any thing about the product of the hive. The principal difficulty in the way of its substitution for the sweets usually craved by children is the apparent limitation of its use. The child has an inordinate longing for cakes and candy, and that is not always satisfied by bread and honey; therefore, to take the place of cane sugar, honey must be prepared in the same manner as cane sugar. It must be made into cakes and candies and other dainties dear to the children. The object of this article is to supply housekeepers who desire to substitute honey for cane sugar, in the diet of their children, with a few simple recipes, obtained from practical experience, for making this wholesome sweet into a variety of pleasing confections.

A few suggestions on the care of honey may be of benefit to those who are so situated that it is cheaper to buy in quantities. The worst place to store honey, or even to keep it for a short time, is in the cellar or any damp cool place. Honey, when extracted from the comb, readily absorbs moisture, becoming thin, and (in time) sour. The very best place to store honey is in the attic, up next to the roof, where it is hot. During cold weather, honey that is kept any length of time has a tendency to granulate, turning to a white, semi-solid granular condition. This is called "candied honey," and it frequently "candies" so solid that it must be dug out of the bucket with a knife. It is a simple matter, however, to restore it to its former condition. Place it in hot water, never over 160 deg., and let it stay until it has liquefied. It may take an hour or it may take a whole day.

In the following recipes quantities are given in pints and pounds because the success of honey recipes depends upon the right proportion of the ingredients. All cups are not the same size, and do not hold the same quantity of material, therefore it is best to use a standard measure.

The simplest honey cake is the honey ginger-snap.

One pint of honey; $\frac{3}{4}$ lb butter, 2 teaspoonfuls ginger.

Boil together for a few minutes, and allow it to get nearly cool. Add enough flour to make a stiff dough, and roll out thin; cut into round cakes and bake quickly.

Another simple cake is the honey cooky. The recipe is given for a large quantity because they will keep indefinitely, and they are nice to have in the house all the time for the children to eat between meals. If they are wanted in smaller quantities the recipe can be reduced a half or even one quarter.

One pint honey; 1 quart sour milk; 1 teaspoonful soda.

Mix well together and add sufficient flour to make a soft dough. Roll moderately thin and cut into round cakes. Bake in a slow oven to prevent burning.

A richer cookey is made by the addition of butter and eggs. One pint honey; $\frac{1}{2}$ pound butter; 4 eggs; $\frac{1}{2}$ pint buttermilk or clabbered cream; 1 quart flour; 1 teaspoonful soda.

Mix the honey and the butter and the eggs well and add the buttermilk. Sift in the flour and soda, and mix well. Mix in enough flour in addition to the quart to make a cookey dough that will roll out well without sticking; cut in round cakes and bake in a slow oven.

In the line of confections, some sugar must be used to make the honey "candy;" but the home-made honey caramel has the advantage of being pure.

One pint honey; 1 lb. sugar; scant gill of cream.

Boil until it makes a soft ball when dropped into water. Stir in a teaspoonful of vanilla, and pour it into a shallow buttered pan to the depth of about half an inch. When cool enough to prevent its sticking to the knife, cut into inch squares. If chocolate caramels are desired, use a tablespoonful of melted chocolate instead of the vanilla, stirring it in just before pouring into the buttered pan.

To make honey popcorn balls, boil a pint of honey in an iron frying-pan until it is quite thick, and then stir in the popped corn. When cool, mold into balls.

As a substitute for tea or coffee for children there is nothing better than honey tea—a very simple tea made by adding a tablespoonful of honey to a cup of hot water. If not sweet enough to suit the taste of the child, add more honey.—"Gleanings."

HONEY.—

Choice quality continues scarce and is selling at $3\frac{1}{4}$ d., with an occasional lot at $3\frac{1}{2}$ d. lb. Medium quality is worth $2\frac{1}{2}$ d., to 3d. per lb.

BEESWAX.—

Fair demand. Best bright is selling at $1\frac{1}{2}$ to $1\frac{1}{3}$ lb., and dark at $1\frac{1}{2}$ to $1\frac{1}{4}$ per lb.

Highest market prices obtained for

Honey and Beeswax by

PRESCOTT LIMITED.

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—SYDNEY—

TAKING OFF COMB HONEY.

"Mr. Doolittle, I want to know if it is best to wait till the end of the season, and then take off all the comb honey at once, or take off all sections as soon as half a super of them, or such a matter, are sealed over."

"That depends very largely on the time you have at your disposal, Mr. Jones. If you have plenty of time, then it will undoubtedly pay you to take off the sections when fifteen or twenty in any super are finished, for by so doing such sections will not have their nice white cappings soiled in the least."

"But how shall I proceed?"

"You will want a lighted smoker and a wheelbarrow, and on the wheelbarrow a lot of sections which are filled with foundation ready to go in the place of those you will take off. Remove the cover over the sections and blow smoke down between the ranges of them till the bees have quite well gone below, when you can see about how many are finished. If from fifteen to twenty, unkey the super and take these out, putting those from your wheelbarrow in their places. If you do not see as many as ten or twelve which are finished, I should not bother to take any out. In this way you can go over all the hives. If the flow of nectar is good you can go over the yard again in a week, or at least that is about the way I did when I took off sections often so as to have all the combs nice and white."

"Is there no other way to do this?"

"Yes, you can use bee-escape boards, as at the end of the season, thus running all of the bees down below, off from all the sections whether finished or not."

"Then what will be done with the unfinished ones?"

"After you have the supers free from bees they are to be wheeled into the honey-room, where all are taken out,

the finished and the unfinished, piling the finished ones away, while those not finished are put in the supers, filling each super full, so that they may be put on the hive again for finishing."

"But does this not cause a break of one or two days with the bees?"

"It is supposed that other supers will be on the hives, so that the bees can be at work in them while you are taking the others off and sorting them; but the bees seem to be broken up much more by this way of procedure than they do by the other way, so that when I take off any but full supers I generally adopt the plan first spoken of."

"Then you take off only full or nearly full supers, of late years?"

"That is what I have done mostly for the past twenty years; but during the twenty years before, I took off tons of honey the other way."

"With full supers how do you proceed?"

"There are various ways advocated by different apiarists, such as smoking the most of the bees below, then carrying the supers to the honey-room, and by bee-escapes at the windows allowing the bees still in the supers to come out to the window and then crawl out through the escape. Others pile up these partially beeless supers in a pile in the apiary, with an empty super on top, over which is spread a cloth, on which the bees collect, when the cloth is turned a few times, thus ridding the sections of bees. If at a time when so much nectar is being gathered that the bees are not disposed to rob, the supers can be set near the entrance of the hive, or on top, immediately over the entrance, when the bees will all run out into the hive below. But after having tried all of these I prefer to use the escape-board."

"Tell me how to put it on so the bees will promptly go out of the supers."

"If at the height of the season, when more supers are to put on to take the place of the full ones taken off, there is no better way than to lift the full super from the hive, arrange the others as you wish them, when the board, with the escape in place, is put on top of them, the full super over this, and, lastly, the cover over the whole. At times when the bees are inclined to rob, great care must be taken to see that there is no place or crack big enough to admit a bee, for there will be no bees in this full super to defend it after they begin to run out. Several have reported all the nice sections in a full super spoiled by some little hole found by robber bees where they went in and carried off all of the honey, or enough from each section so as to spoil their sale. But with this caution you should have no trouble about this."

"How long does it take for the bees to get out?"

"With the Porter bee-escape, most of them will go out in from four to eight hours; but at the home apiary I generally put on the escapes during the forenoon, and take off the supers free from bees the next morning before the bees begin to fly much."

"But suppose it is at the end of the season, and you want to take all the supers off at once. How do you proceed then?"

"Take your smoker, a good stout chisel, and a wooden wedge, together with the escape-board. Set the board down by the hive, and the smoker on it. Now insert the point of the chisel between the supers and top of the hive, and pry down on the handle till you can get the point of the wedge in the crack, which should not be large enough to allow a bee to come out. Now blow some smoke through the crack, which will drive the bees away; raise the supers with the chisel; push the wedge in half way, and blow in more smoke.

Now grasp the escape-board with one hand and the handhole in the lower super with the other, and raise the supers as far as possible and not have them slide off the hive, when the escape-board may be pushed in as far as it will go, and the supers lowered on to it. Now by the help of the chisel bring the supers squarely over the board and the board squarely over the hive."

BEE ESCAPES.

Elmer Hutchinson, in the July number of the "Beekeepers' Review," gives his method of using bee-escapes. He writes: "We take the hive-cover off, give the bees a few hard puffs from the smoker, the combs of honey being all sealed over, and no open cells of honey for the bees to stick their bills in; half or more of the bees will at once rush down out of the super; when the one using the smoker pries the super loose, the other man lifts it up, and the one with the smoker slips an escape-board in place under the top super. We never put more than one super above an escape-board at a time."

So far as I know, the above method is about the best way of using the bee-escape; and there is no doubt that, to those who are in towns and cities, and to those who object to even an occasional sting, and to such as have limited experience in robbing time at least, the bee-escape is a boon. But it seems to me it is a great waste of time to such men as Hutchinson to put a bee-escape under a super such as he describes, and I could with the same help, almost, have the super of capped honey off the hive while he is getting the bee-escape board under. Then think of making another visit to the hive for every super on it, and think (or shall I say let us forget to think?) of warming the honey artificially and breathing the foul air from coal-oil stoves during extracting,

tending to run a person down at a time when he is already under a good deal of physical strain! It just seems to me I should like to run a race with a man who uses bee-escapes. Mind, I am now discussing the advisability or inadvisability of men using bee-escapes who are not surrounded by dwelling-houses, who know all kinks to prevent robbing, even in robbing time, and who will not make thoughtless slips which may demoralize the whole apiary. During the time that bees would rob we recently extracted, in a building no better than a barn, 5600 lbs. in one day of nine hours, and gave no trouble to the people with whom the apiary was located.—“Gleanings.”

SIX HUNDRED COLONIES SHIPPED BY RAIL IN HOT WEATHER.

**Although Many of the Combs were
New, Few were broken; queens
Reared on the Journey.**

BY WARREN C. DYER.

In an issue of the April number of “Gleanings” you asked for a communication from any one who had had experience in shipping bees by rail. As we have just returned from Arkansas with 600 colonies of bees, we will give you the benefit of our experience.

We made screens of 13-16 x 1½ inch lumber, the size of the hive. The wire was then placed on these frames, and half-inch strips nailed on each side, and quarter-inch strips at each end. We placed one on the top and bottom of each hive with four six-penny nails to each screen. We also bored a three-quarter-inch hole in the end of each hive. This work was finished June 4. That night we put corks in the holes bored in the ends of the hive, loaded them into lumber wagons (no springs), sent them to the station four miles from

the yard, and loaded them in cattle-cars.

In the car we made three rows on each side with an aisle in the centre, and another aisle across the car at the door.

We had no hand-hold cleats on the hives, and this fact allowed us to pack them so they could not move a particle with the bumping of the cars. We finished loading June 5 at 2 p.m., and pulled out of Broughton, Ark., at 6 that evening.

The weather on the 5th, 6th, and 7th was extremely warm, and there was no breeze except what the train made. We gave the bees water twice and sometimes three times a day. On the 6th we were laid out about five hours in the heat of the day at Ozark, Ark., on account of a wreck ahead of us; and as it was very hot and clear, with no air stirring, we were fearful that we might lose some of the colonies, and what little loss we did have occurred at that point.

We arrived at Wichita, Kansas, at about 8 p.m. on the 7th, and that night it stormed pretty hard. The next day was cloudy and cool, and not extremely warm the rest of the way. We arrived at Boulder, Col., at 2 p.m. on the 10th; unloaded that afternoon, hauling the hives in wagons with no springs about three-fourths of a mile; turned the bees loose that evening, having been closed up for exactly six days. Our total loss consisted of three colonies that smothered. We tried to divide up all large stocks into two boxes, but these three must have been missed, and I think they died at Ozark, as, the next day after we were laid out, there was a smell of dead bees inside the car.

I was surprised at one thing, and that is, I could not see that the brood was hurt a particle in the shipping, and the colonies that we had to divide up on account of being so heavy in brood raised queens and took care of these cells on

the train. Five days after we arrived I saw twelve queens hatched from one colony in less than twenty minutes, and I could not see but they were perfect queens. Nearly every hive that had no queen raised queen-cells, and we saw none that were not hatched or had live queens in the cells. We did not leave over ten pounds of honey in any one hive. Half of the colonies were shipped on new combs or on full sheets of medium brood foundation in wired frames.

Our breakage in the 600 colonies did not amount to one dozen combs, and none of the foundation was hurt a particle. In my opinion, however, combs built in Arkansas are much heavier and tougher than those built in Colorado, and will stand much harder usage.—
“Gleanings.”

THE COLOR SENSE OF THE HONEY BEE.

**Some Original Work Showing how the
Bees Seem to Favour Blue.**

BY JOHN H. LOVELL.

It has been well established by experiment that the honey-bee can distinguish between colours. Instead of describing the experiment as performed by Lord Avebury (Lubbock), let me give some that I conducted along the same plan, and, I am glad to say, with even more conclusive results.

On a pleasant September morning I accustomed a yellow (Italian) bee to visit a strip of blue paper three inches long by one inch wide. To prevent the paper from blowing away or becoming soiled it was covered with a transparent glass slide of the same dimensions, upon the centre of which a small quantity of honey was placed. These slides are used for mounting microscopic objects, and may be obtained of any dealer in optical instruments for a trifling sum.

After the bee had made a number of visits to the blue paper, a red slide of the same dimensions, and prepared as

described above, was placed six inches to the right of it. An equal quantity of honey was also placed upon the centre of this slide. When the bee returned from the hive it alighted on the blue slide, which still remained in its original position.

On the departure of the bee for the hive the slides were transposed, i. e., the red put in the place of the blue and the blue where the red had been. When the bee returned, and no longer found the blue paper in its usual position, it flew back and forth, examining both slides, paused for a second or two on the red, then resumed its flight, but finally settled on the blue. A little later it flew up into the air, but soon returned to the blue; then it flew across to the red, where it remained for the rest of its visit. The change in the position of the blue, and the discovery of a differently coloured slide also bearing honey, evidently disturbed the bee; and its frequent flights showed that it was endeavoring to orient itself to these new conditions. As will now appear it did not find it necessary to repeat this course of reconnoitering.

While the bee was away I transposed the slides for a second time, the distance apart being as before—six inches. The bee returned directly to the blue. Twice it left the blue for a few moments, but each time returned to it.

When the bee left for the hive, I again transposed the slides; then the bee returned to the blue. The bee left for the hive, and I transposed the slides. It returned to the blue.

While the bee was away I transposed the slides for the fifth time. The bee returned to the blue. Then it left the blue slide, flew across to the red, but at once returned to the blue.

The bee left for the hive and I transposed the slides. On its return it circled about as though in doubt and presently disappeared from view; but a

little later it returned and settled on the blue. While taking up its load of honey it left the blue three times, but in each instance returned.

The bee left for the hive and I transposed the slides. It returned to the blue.

The bee left for the hive and I transposed the slides for the eighth time. On returning the bee hovered close to the red, and then went to the blue.

As soon as the bee returned to the hive, I transposed the slides for the ninth and last time. When the bee came back, it alighted after a little hesitation on the blue. It left once and flew across to the red, but soon returned to the blue. Left a second time but soon returned. Then it flew into the room, and on being released went back to the hive.

There can be no question that in this experiment the honey-bee was able to distinguish the blue colour from the red. I repeated the experiment many times and varied it in many different ways, but the bee always showed its ability to distinguish between different colours. Only one bee should be employed, for if there are two or three they will conflict and to some extent produce confusion.

Lubbock also endeavoured to show that blue is the favourite colour of the honey-bee; but his results are unsatisfactory, and his method of exposition is obscure, and does not give sufficient details. Says Cowan in his book on the honey-bee, "The experiments of Sir John Lubbock are not at all conclusive that bees have a preference for any particular colour." On the other hand, Hermann Muller, who was the greatest authority the world has ever produced on the mutual relations of insects and flowers, declared, after innumerable observations, that blue is more agreeable to the honey-bee than any other colour. In his experiments he used flower-pet-

als of different colours placed under glass slides, and he arranged the different colours in the following series according to the preference of the honey-bee; violet, blue, red, white, pale yellow, pure green, glaring red, and glaring yellow. Within the past ten years, however, Prof. Felix Plateau, of the University of Ghent, Belgium, has published many papers, in which he asserts that Muller was misled by a too vivid imagination.

Now, does the honey-bee prefer blue to every other colour or not? Is Muller or Plateau right? During the past summer, for the purpose of answering these questions I made many experiments with slips of coloured paper and floral leaves, but the results were inconclusive. Apparently there is no doubt that a person dressed in black will receive a greater number of stings than one wearing white clothing. Do the bees see the black more readily than the white? Or does black excite them in the same way that red enrages the bull or the turkey-gobbler? Strictly speaking, of course neither black nor white is a colour.

I am now devising some new experiments to be tried another season, in the hope of deciding the matter one way or the other. I should like to ask the readers of "Gleanings" two questions. 1. Have you ever observed any evidence to prove that the honey-bee prefers one colour (as blue) to another? 2. Can you suggest an experiment that will help in the solution of this problem? In either case will you kindly write and give me the benefit of your observations and suggestions? Let us remember that, in the multitude of counselors, there is wisdom.—"Gleanings."

When you want Honey Labels send for Samples to the "Bee Bulletin" Office.

GREASY SECTIONS.**Their Cause and Cure; Killing the Goose that Lays the Golden Egg.**

BY W. M. WHITNEY.

Mr. Editor:—The matter of greasy or watery sections, like Banquo's ghost, bobs up at regular intervals to haunt beekeepers. At this time the apparition has travelled across the Pacific from New Zealand, as appears in Feb. 1st "Gleanings," p. 87. I know of no one but myself having so far taken the pains to experiment along this line for the purpose of discovering if possible the real cause of greasy-looking cappings. Watery cappings, as they are sometimes called, are as far from the real condition as can be imagined, for water has been so thoroughly evaporated from the honey that I doubt if it would be possible to cause the honey to granulate.

It hurts me dreadfully to hear old beekeepers and writers condemn a queen whose workers produce, perchance, such finished product. From my knowledge of the facts, gained from actual experience, I am led to believe that all such conclusions are jumped to (so to speak) simply because such colony happens to be an exception among many others in the apiary. Has anybody ever known of an instance where greasy-appearing sections occur, when the hive was not overflowing with bees? at any rate, I never have. Isn't it a fact that we are seeking queens with just such laying qualities to stock our apiaries? Now, from what I know of the matter I'd just as soon go out to the poultry-yard and wring the neck of the best pullet "laying an egg each working day and two on Sunday," when eggs were bringing 40 cts. a dozen, as to pinch the head of such a queen. Really, it's like killing the goose that lays the golden egg.

Now for the report of my experiment. But allow me to premise by saying that my beekeeping has been largely a past-time; and when reading any matter having, as I believed, an element of doubt attending it, I have tried to satisfy myself of its truth or falsity by making the best test I could, and this matter of greasy sections was one of the doubtful ones. I could not understand how it could be possible that the queen was the direct cause of such a state or condition of the sections. A number of years ago, after reading this matter, and noticing all sorts of bad things said about the queen of such a colony, I determined to make an experiment, having an impression that a very different cause existed, and that it might be worth looking for.

I selected one of my best colonies having a splendid queen. When the proper time came, a case of sections was put over the brood-chamber; and as the honey-flow was then well under way, in a few days the sections were pretty well drawn out and were being filled. This case was raised and another put under, as has been my custom in such cases. A short time thereafter, as nice a case of honey was taken off as one would wish to see. At the same time, the lower case was raised and another put under; and a cushion was put over the upper case of sections, and tucked down snug so as to prevent circulation of air. The hives used are what is known as the double-walled, having an air-space of about two inches around the entire case of sections, in which the bees are permitted to cluster. The queen, being an exceptionally good one, filled this hive, including the air-space, to overflowing with bees. In due time a case of greasy-looking sections was taken off, looking as though they had been varnished. The lower case was raised, the cushion removed, and another case put under. After a time the third case

was removed, showing a few sections through the middle with greasy markings, the outside ones having none.

Now, why should that queen's workers produce white-capped sections at one time, then change to greasy ones, then back to white ones again? What is the conclusion one is forced to after such a test? It is this: That it is not the queen at all, but the excessive heat and lack of proper ventilation of the hive. That such a colony is not a suitable one for the production of comb honey is a fallacy; for, with proper ventilation, such a colony will do better work than a weaker one, for the very good reason that it will do its work much more rapidly. Such a colony is just right for any work desired, if properly manipulated.

It will not be a sufficient reply to say that other colonies in the same yard, equally populous, do not produce greasy sections. It is scarcely possible to find two colonies working under exactly the same conditions. I think it will be admitted that there is scarcely another occupation where the difference in results is so manifest from slight changes in conditions or manipulations as in beekeeping. One colony may be more exposed to the sun's rays in the middle of the day, and be capping sections at the critical time; but had there been a slight favourable change of weather the crisis would have passed; or one has less ventilation because of clustering of bees in front of the hive, which is a very common thing; or the hive may have been located in a part of the yard less exposed to currents of air than many others. Of two colonies, apparently equally populous to-day, on examination a week hence we find one maintaining its force while the other has fallen off perceptibly. So we might continue to point out differences ad infinitum, caused by differences in conditions and manipulations.

I feel certain that a careful examination of any normal colony as it goes into winter quarters will reveal more or less combs of honey with cappings looking as though they had been varnished. The finest comb imaginable, taken from the side and put into or near the centre of the hive at such a time, will soon have this appearance from the heat of the cluster of bees. The cause is the same as in the case of section honey. Shall we, then, as is recommended in the other case, without further ceremony, proceed to lynch all the best queens in the apiary? Why it is that old experienced beekeepers cling to the fallacious idea that the queen is the cause of all this mischief they complain of seems strange to me. It is true, however, that we are inclined to hold on to old ideas and practices, often, without being able to give a single reason for so doing. "It's so if mother says so, whether it's so or not."

If I could feel that I had been the means of dissipating this bugaboo from the minds of beekeepers I should feel satisfied, even if I never accomplish anything more in the way of improved beekeeping.

A few years ago, after having made the experiment above described, and reading the advice given through the "American Bee Journal," to pinch such a queen's head and requeen the colony, this matter was discussed, and I earnestly requested those who had such queens, instead of pinching their heads, to mail all such Italian queens to me. I'd pay for them, as I wished to stock my apiary with just such bees. I've yet to receive the first invoice. The case reported from New Zealand—that of a hot dry season and a populous colony—supports my contention that it's not the queen at all.

When you want Honey Labels send for Samples to the "Bee Bulletin" Office.

HONEY PLANTS.

The loganberry, which is now being grown with success in the Wandin district, has been suggested in California as a honey plant, but it is not classed as of the same value as certain other berry bearing plants. In a recent issue of "Gleanings," Mr. W. A. Pryal, of Oakland, California, writes:—

I have been familiar with the loganberry quite a number of years; but I have never noticed that it is sought by the bees any more than is the red raspberry. The loganberry is not as extensively planted as it was some years ago, owing mainly to the fact that the public has not fallen in love with it. Unless real ripe when picked, the berry is quite acid; but when mixed with raspberries and blackberries it produces a jam that is excellent.

If there is any berry in California that deserves culture by the apiarist more than any other it is the Himalaya blackberry, which is of rather recent introduction. It secretes nectar at a time when other berries are on the wane, and it continues well into the fall. The fruit is borne in large bunches, as many as twenty or more being in a cluster. The flowers are possibly a little larger than those of the common blackberry, and are slightly tinted with a pink or purplish tinge. The fruit is not as large as that of the common varieties, but it is borne in far greater abundance, and its flavour, when fully ripe, is delicious. The vines grow from 10 to 20 feet long, and have a rambling habit, so that cultivation they must be trained on fence or trellis. I believe the plant will not stand the rigor of the eastern mate.

The first favorable notice I ever saw of the Lippia as a honey plant was in "Gleanings." It was then restricted to one or two small sections of this State, but it is now more largely distributed,

owing mostly to the fact that it is being used for lawns. It is remarkable the number of bees that will get to business right down to the ground, I might say, in their eagerness to collect the nectar from the tiny blossoms of this plant. I should judge that the plant spreads by means of the seed, although the writer of a paragraph in one of our California nursery catalogues states that it does not grow from seed.

Some twenty-five years ago there was no botanical name for the California sages. The first person, to my knowledge, to throw any light on the real botanical name as then understood was Professor A. J. Cook, in the "California Apiculturist," who placed them in the genus *Audibertia*. To this genus they have been assigned by nearly all botanical works until lately. When I received the last edition of the "ABC and XYZ of Bee Culture," however, about the first thing that arrested my attention was the article on our California honey sages. It is the same as the article in the two previous editions, except the opening line, which reads, "Sage (*Ramona stachoides* and *palmeri*—Sargent)." This was new to me, and I thereupon consulted all the works at my command at home, but none of them recorded any change. I then referred to the last edition of Professor Cook's "Bee Guide," and saw that he now uses *Ramona*. I therefore wrote to Professor E. J. Wickson, director of the Agricultural Experiment Station, and Professor of Horticulture of the University of California, and he referred my inquiry to Dr. Hall, of the Botany department of the university. The doctor's reply follows:—

"Mr. W. A. Pryal. Professor Wickson has asked that a reply to your inquiry concerning the botanical name of our honey sages. I am sorry to report that there is much diversity of opinion among botanists as to the genus to which these plants should

Honey Plants, Continued in next issue.



Eugowra.

To the Editor "A.B.B."

Dear Sir,—Things are reversed now. In the past we got our living from the bees; this season the bees got their living from us. We have been feeding since spring at different periods, up to the present time. Most of the hives are without honey now. We have just had a good fall of rain and are waiting for a few days to see if things will improve; if not, we will have to get honey from Sydney to feed the bees for winter. From 400 hives we have taken 14 60-lb tins of honey since Dec., 1908, and fed to the bees 50 60-lb tins. As far as I can hear the honey crop has been a failure in the west this season. It is impossible for a bee-farmer to keep up a regular supply. Good honey should never be sold cheaper than quoted at present. Hope all beekeepers that have good honey will get a good price this winter.

I wish to pay my tribute of respect to our departed brother beekeeper, E. Tipper. He has done his best in the interests of the beekeeping industry and beekeepers.

Yours &c.,
W. NIVEN.

[Mr. Niven speaks to the point. If beekeepers will be guided by it they will do themselves and others good. It is to be hoped that the late rain will help matters along, and at least provide winter stores.—Ed]

Botany.

Mr. Branch.

Dear Sir,—I find, during my absence up country, you sent me an invitation to an Executive Meeting, of the Beekeepers' Union; but owing to my moving about a lot, my letters were not forward-

ed. I am sorry to be so long in acknowledging your note. If I am at home during Easter I shall visit the Show; but at present my stay in Sydney is uncertain. Trusting the Union is making satisfactory progress.

Believe me,
Yours sincerely,
JOHN RICHARDSON.

CARPENTRY FOR BEEKEEPERS.

F. DUNDAS TODD IN "GLEANINGS."

Planes.

In order to handle a plane intelligently it is essential to know something about its construction. This fact was brought home to me very emphatically when I invested in my first outfit of tools. Somehow the plane did not seem to work perfectly, so I decided it needed sharpening. I removed the cutting blade, released the cap-iron, or chip-breaker, and carefully proceeded to sharpen this. Then I put the combination back into place upside down and tried to plane a board with the chip-breaker. When it came to handling tools I was the biggest duffer in the whole of Uncle Sam's immense territory, even if in some other lines a few people thought I was real smart. One thing I do deserve credit for: I generally know that I don't know, and on such occasions I dig right out for information.

Take a plane and lay it beside you and I will try to teach you what I learned at that time.

The plane-body is made either of wood or iron. In front is a knob on which the left hand rests; at the end is a handle the right hand grasps when the plane is in use. Anybody could guess that much. Extending from the bottom of the plane to above the handle is the cutting blade, which is clamped in position by means of an iron lever which is made up of two parts—the lever proper and a

movable thumbpiece at the upper end. To get out the cutter we must first remove the lever, and this is done by lifting up the thumbpiece, then withdrawing the lever from position. We can now see that the lever is held in place by means of a screw set in the body of the plane, also that this screw is really the fulcrum of the lever. In the practical working of the plane this screw deserves more attention than it ordinarily gets, because by it we are enabled to regulate the pressure required for the best working of the plane, as by driving it in we increase the pressure; by withdrawing we ease it. As we shall see later on, much depends on the nature of the wood, whether hard or soft.

Now remove the cutter. It is really a chisel of equal thickness throughout, tempered and ground, and sharpened at the lower end. Fastened in front of it is the cap-iron or chip-breaker. It is the business of this iron to give a sharp upward direction to the shavings or chips so as to keep the cutting edge of the plane-blade free, also to prevent splitting or tearing in front of the cutter. The decided curve at its lower end is intended to snap the fibres and divert the course of the shaving as soon as it begins to run up the plane-blade. In other words, the shaving is caught by the cap-iron, and bent and broken before it can be converted into a lever. The chip-breaker must be on the side opposite the bevel of the cutter. Its distance back from the cutting edge depends on the kind of wood that is being worked, and will be dealt with later.

In use, the cutter rests on a casting called the bedplate, which is held in position by means of two screws. In front of this plate is an opening in the bottom of the plane-body called the "throat," through which the cutter projects. The bedplate may be moved forward or backward so as to vary the width of the throat.

There is a mutual relationship between the width of the throat aperture, the distance of the chip-breaker from the cutting edge of the blade, and the firmness of the pressure exerted by the lever upon the cutter, this being determined by the quality of wood that is being worked. Broadly speaking, with coarse work on soft wood set the chip-breaker 1-8 inch back of the cutting edge; set the bedplate well back to insure a wide opening of the throat so that the thick shavings will have free passage, and have medium firm pressure given by the lever on the blade. In the case of fine work set the cap close to the end, 1-32 inch for ordinary work, but as close as 1-64 inch for fine work on hard wood; then narrow the throat by pushing forward the bedplate, and, last of all, drive in the lever-screw. The shavings will be so fine that the plane will really be acting as a scraper.

Behind the bedplate is a brass screw by which it is possible to regulate the thickness of the shaving. With rough work we can save time by taking deep cuts; but in finishing it is wise to make thin shavings.

Under the upper part of the plane-blade, and in front of the handle, is located a lever that works sidewise. By it the cutting edge of the blade can be brought into position exactly square with the bottom of the plane, if it should be out of true when the plane-blade is first clamped down. Again, in the first stage of smoothing a wide rough board it is often advantageous to set the blade awry so as to work in grooves rather than in even cuts, and the lever readily permits the necessary adjustment of the cutter to the desired angle. The final smoothing is, of course, done with the blade square to the bottom surface of the plane.

So much for the construction of the ordinary plane and the possible adjustments of its many parts. The average

beekeeper will be practically limited to soft wood in his carpenter work, and it will pay him well to find out by trial the proper width of throat, the best distance of chip-breaker from the cutting edge, and the tightness of lever pressure for his average work. When a job in hard wood turns up, as it will do sometimes, the necessary changes can, of course, be made, and then the plane can be reset to the former adjustments.

Boards smoothed on all four sides are so common nowadays that the average amateur carpenter has little more use for the plane than to smooth edges. My own carpentry work consists principally in sawing boards into suitable lengths and reducing them to proper widths. Very rarely do I have to smooth a surface or reduce in thickness. From pack-boxes I secure a selection of boards of practically every thickness from 1-8 to 7-8, and it is only once in many moons I can not find in my scrap-heap a board that I can not use by shortening and narrowing.

I have told how to saw to lengths, so I will, therefore, conclude this chapter with a few general remarks about planing to a desired width.

All boards have two faces, two edges, and two ends. In working we must always choose one of each of these as our starting-point—the face, edge, and end to work from, and those so chosen are called the “working face,” “working edge,” and “working end” respectively. Suppose you have a six-inch board that you wish reduced to $4\frac{1}{2}$ inches. You begin by selecting the best finished edge as the one that you are not to touch. This is the working edge, and all measurements should be made from it. Using your set-square, set off $4\frac{1}{2}$ inches from the working edge, marking with a pencil; and if the board is more than a foot long, set off the distance at least three times so as to insure accuracy. Then with a straight-edge (in my case this is

usually a piece of board that I know is straight, tested by squinting along it, or by resting on the bench) join the pencil-marks with a pencil-line. As directed in a previous article, trim close to the line with a sharp hatchet.

Though a board has two ends, there is only one direction in which it should be planed. Very rarely do the fibres run parallel with the edge of the board. They generally run slightly at an angle. If we so place the board in the bench-vice that the fibre runs downward and away from us then the plane blade will tend to tear below the general surface; but if the fibres run upward they will be cut through like stalks of grain. The way the wood splits while trimming readily shows which end should be turned toward us for planing. In the case of undressed lumber one has merely to pass the hand over the face or edge of the board to learn how the fibres run. The plane should travel in the direction that is most pleasant to the hand.

It is when doing rough smoothing that one learns most readily the importance of proper adjustment of the bed-plate and chip-breaker; for if these are not in proper relationship to each other there will be various kinds of trouble. For instance, the shavings may choke up the throat of the plane and stick between the chip-breaker and the blade. This choking is almost certain to occur when one is working against the grain of the wood, and the preventive is to turn the board around. But should the choking happen when planing with the grain, then the cause is either too narrow a throat or the chip-breaker is set too near the cutting edge of the blade. Of course it is assumed that too deep a cut is not being attempted.

We all know that a knife or razor cuts more effectively when it is not held at right angles to the direction of the stroke, but slightly inclined, and, better still, if a sawing motion be imparted to it.

It is impossible with a plane to get motion in more than one direction, but we can considerably incline it to one side, the left. The right forward corner of the plane will, in consequence, always be a trifle ahead of the left, and an examination of the shavings made by inclined and straight-on planing will soon show the advantage of the former.

The force used to push the plane should be largely got from body movement rather than from arm push. In doing rough work, grasp the handle with the right hand and the front knob with the left, and endeavour to press equally with both; but in the fine finishing strokes, where one is desirous of getting a long even surface the left thumb only should rest on the knob while the fingers of the left hand should project downward below the plane, lightly touching the face of the board.

Squareness of edge to the face of the board is, of course, tested by using the try-square, running it from end to end of the board. To test for straightness, squint with one eye along the edge, to ward the light.

To many this will seem quite an unnecessary story to tell about a plane; but it gives but a small part of what I had to learn after I was forty years of age. It took me some months to learn how ignorant I was, and some more to dig out the information. My endeavour is to save the time of many thousands of readers by putting them through both degrees in one initiation and making the ceremony a mighty breif one at that.

POLLEN AND BROOD-REARING.

Sugar Syrup Fed During Pollen Dearth will not Stimulate Brood-Rearing.

Not many months ago "Gleanings" had something to say about turning syrup into bees in late winter and early spring and selling the same bees at the

spring prices. On paper this shows a good profit. I may err, but I recall nothing said about the supply of nitrogenous food in the carrying-out of this enterprise. Were the bees to depend upon their stored-up supply of pollen, or were they to get it from early flowers, or were they to rear brood without pollen?

When the other conditions are right, bees can be forced into heavy brood-rearing by the stimulation of warm sugar syrup. This is true in early spring if the combs contain an abundance of old stores of pollen, or if the weather permits the gathering of ample quantities of new pollen.

In the spring of 1903 I had a single-comb observation colony which I had wintered successfully. This little colony was fed and kept warm through March. The bees were able to gather pollen frequently, and bred up so fast that a swarm was cast on the 11th day of May. The earliest date other than that was the 21st day of May, and all other dates for such a colony to swarm have been in June. Those latter springs were not propitious; and, though warm syrup would start brood-rearing, it would not progress, often stopping with the laying of the eggs. Not till the natural supply of pollen set in would the brood-nest expand rapidly.

The present spring, with its frequent cold winds, furnishes further evidence of the bearing of the pollen supply upon brood-rearing. My let-alone colonies on the hills, with their large well-stocked brood-chambers, are now (May 10) strong enough to swarm, not only covering their nine combs but clustering in the surplus apartment. The home colonies, with their smaller brood-chambers, and manipulated on another plan, have a different story to tell. Many are in the infancy of their strength, and not a few are numerically worse off than in March.

I glanced at some of these colonies in April, and found combs destitute of

pollen. In many cases heavy breeding in fall had left but a scanty supply, while manipulation in others had changed the natural balance, so that this spring found certain colonies cut off from the rearing of brood because of the lack of the nitrogenous food supply. The minority are reaching swarming strength; the majority can not take advantage of the ample pollen supply because of their present numerical weakness.

This weakness came from the incessant call for pollen in the early days of April. Nearly every day the winds were cutting, apparently coming from distant fields of snow and ice. Much sunshine had brought out numerous flowers, and the bees were out for the pollen. They never came back.

It would be useless and foolish to try to stimulate brood-rearing under these circumstances. No amount of syrup would fill the bill. Better far to check the energies of the bees along that line till pollen-gathering can be carried on with safety. Such checking would conserve the bee-forces and the stores.

The experience of this spring has still further confirmed me in my belief in one or two maxims which have been often reiterated. Abundant stores in the fall, and a good queen, will do all that can be done in the spring. By stores I mean pollen as well as honey. Though I prefer the bees to pass the winter with little pollen uncovered, I want quantities uncovered in early spring.

In a normal colony in this locality the fall finds the following conditions present. A brood-chamber has a spherical portion, near its lower edge, of empty comb. Around this empty-cell sphere, especially back and above, is a concentric ring of fall honey with little pollen underlying it. Around this ring is another which has several pounds of pollen underlying it, which pollen was stored and preserved under honey in the summer days when the queen's prolific-

ness was beginning to decline. Then, last of all, will come more or less clear honey.

Winter uses up the fall honey; and as little pollen is uncovered there is but little brood-rearing. Late in February the bees begin to dip into the ring of pollen, and breeding will go on apace. Soon honey and pollen will be used equally fast. By the time the last ring of honey is reached, the bees will be getting out for new honey and new pollen.

Such is the normal condition in my let-alone hives, as I have verified again and again. These colonies with their undisturbed brood-chambers are, with few exceptions, ahead of my home colonies in early May. I think, therefore, that any scheme to turn syrup into bees in early spring, unless supplemented with some suitable pollen supply, will give discouraging results.—Allen Latham in "Gleanings."

NITROGENOUS FOOD FOR BEES.

Meal as a Substitute for Pollen.

In the April 15th number the editor gives an account of bees annoying neighbours in search of nitrogenous food which they wish to use as a substitute for pollen. Some five years ago one of my renters, who lives some 300 yards from my apiary of 100 colonies, saw fit to feed cotton-seed meal and hulls to his milch cows during the winter; and as the bees fly quite a good deal here during January and February they invaded his cow-troughs and barn, and carried off a good deal of it, I judge, for they worked on the meal for several weeks. This neighbour was a good fellow, and never said a word about it until months afterward, then told me of it. I told him I was sorry for it, and that the bees were in search of the meal to use for pollen. The bees never interfered with his stock.

for he milked at night and in the morning when the bees were at home. I always sweetened this neighbour with several buckets of honey, which kept his temper in proper trim.

This brings to mind another instance in which the bees invaded a barn belonging to a Bohemian. The cause of the bees' invasion was oat and millet meal, with wheat bran added, which he was feeding. On finding the bees swarming around in the barn and all over the feed, the foolish fellow decided to whip the bees out and run them off at the noon hour, when the work stock were in. This rough usage, together with a tendency to rob, so enraged the bees that they fell to stinging everything in sight, and badly stung his stock before he could run them from the lot. As good luck would have it, the bees belonged to the man himself, who promptly sulphured them that night. He knew nothing of bees at all, yet kept six or eight box hives to get honey for his own use. I knew the man, and was told this about two years after it happened.

Since my own experience as above narrated, I have kept a supply of wheat bran in some building accessible to the bees every winter. During this winter I kept a supply of wheat bran in my hive factory within a foot of the saw-table, right at the door, where the bees would have a straight flight to their home. They would swarm over this bran every fine day in January and February, and the first part of March. I would stir up the bran so as to bring the finer parts of it to the surface so the bees could get at it.—“Gleanings.”

USES OF HONEY.

BY D. M. MACDONALD, Banff.

To the “man in the street” only one use is apparent; and to the big proportion of these I fear even the eating part

is a dead letter, a thing unknown from actual experience. How many millions of the human race, from the cradle to the grave, never enjoy a single lick of honey? To many beekeepers even, few or no other uses of honey are known. This is regrettable, because, the case being otherwise, honey would be better known and more highly appreciated. The natural sequence would be a readier sale for our honey, an enhanced price, and a larger quantity could be placed on the market. Let me now point out a few additional uses.

For all kinds of preserves honey is an excellent substitute for sugar. The flavour is very much improved by its use, the keeping prosperity is enhanced and a superior quality is obtained. Currant, gooseberry, strawberry, raspberry jam or jelly, of a most appetising nature, may be obtained in this way.

Honey tea is a favourite drink in Germany, made from boiling hot water, well sweetened with honey, and it is claimed that it is not only a pleasant drink, but that it tends to drive away disease and retain good health. “Milk and honey” is a scriptural phrase, showing that even in early times the mixture was highly appreciated. It has a soothing and sedative effect, and its use should be better and more widely known. Honey lemonade is an excellent summer drink, made like the ordinary article, but sweetened with honey.

Honey has a softening effect on the skin. If a dry, hard skin is rubbed periodically with honey it softens it. Ladies could improve their complexions considerably by a mild application of this cosmetic, which is as safe and successful as any for which they may pay a high figure. Freckles, so troublesome to many, may be induced to disappear by a steady application of thin liquid honey rubbed on the part affected. Chilblains on hands or feet are cured as quickly and as effectively by an application of

honey as any the druggist can supply. Rub the sore before going to bed, and cover during the night with a coating of linen. Chapped Hands, often so troublesome in winter, have been known to be cured by three or four applications, and the same treatment yields good results when administered to sores, cuts, burns, abscesses, carbuncles on the hands, face or neck. It is believed in religiously by many as a sovereign remedy.

To sweeten tea and coffee, honey is better than sugar, and many who cannot use the latter might well use honey in its place, as it has no ill effect on the digestive organs. Many honey cookies, biscuits, jumbles, cakes and drops can be made delightful in taste, and several books supply various recipes for their making. Candy is an excellent food for bees. Why should it not be as good for bairns? And it is! Children have a natural craving for sweets, and honey in any form is agreeable to the younger members of the family. Mothers might make a note of this and benefit the little ones.

Used instead of salt, it preserves meat. I should like that some readers would test this and inform us of results. I am not certain how it should be applied, or how much should be used, but I have read somewhere that the results are good. It can also be tried as a substitute for curing butter. It does its duty well, and keeps the butter fresh and sweet for a long time, if it is cleanly handled and carefully sealed up until it is required for use.

As a medicine it should receive more attention than has obtained in the past.

In the Koran we read that it is a 'thousand times better' than the drugs supplied by the physician. For sore throats and several chest complaints, as well as for coughs, it deserves to be applied more frequently than in the past. It cures insomnia, and induces sleep.

As a food the ancients set a higher value on it than we do, and "the wisest man the world ere saw" advised his son to eat of it as it was good. It has been claimed that the use of honey tends to lengthen life. One centenarian believed he owed his old age to keeping his skin fresh with oil outside and honey within. Honey is an influenza cure.

Mead and Methaglin are drinks too well known to require description, but if a recipe is desired it will be supplied in the issue following the request being expressed.

Now, I think I have treated to-day the most interesting subject ever dealt with in any bee paper, but I have merely touched its fringe. Other writers and readers might give us "some more."

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1. Forest Preservation for Bees and Timber.

For

Against

2. The establishment of Office and Stores for the disposal of Honey.

For

Against

3. Exportation of Honey to oversea Continents.

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