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The Australasian Beekeeper,

WITH WHICH IS INCORPORATED THE

Commonwealth Beekeeper

AND

The Australian Bee Bulletin.

A Journal devoted entirely to Bees and the Beekeepers' Interests.
Published by PENDER BROS., LIMITED, AT WEST MAITLAND, NSW.

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PRIZE COMPETITION.

HANDLING SUPERS OF HONEY.

(First Prize).

In the handling of supers of honey much depends on the weather, honey flow, and general conditions, as what is preferred to day may be out of place next week; also the number of supers on a hive would make a difference. The different method each beekeeper uses in tiering up supers necessitates different handling. No. 1 uses one full depth super; No. 2 uses two full depth supers; No. 3 tiers up quite a number of half supers. I have tried all these different methods, and this has been my experience: No. 1, not quite sufficient for populous hives; No. 2 acts well in very populous hives; No. 3 I found a nuisance as the burr and brace combs made them difficult to handle, as the bees would not leave them on account of the dripping honey, and often the top bar of frames would pull out instead of the frame lifting. I now use one full-depth and one half-depth super on all except the extra populous hives, and these I give two full-depth supers. Should the queen lay in these supers they can be easily exchanged into the brood chamber. In removing the supers from the hives and having all appliances at hand, such as wheelbarrow, trays, tin strainer, stool, hive tool, brush, smoker, and super of empty frames, place the smoker well lighted with the barrel upright and it will not go out. Set the stool, which is made of 1½in. x 3in. battens for legs with 6 x 1 boards nailed round the sides at the top, projecting an inch or so higher than the legs made to take a tray same size as a super, the tray rests on the top of the legs while the projecting board keeps it from slipping. If the ground is uneven, make the legs different lengths so you can turn it round until it stands level, in height about equal to top of brood case. The trays of which I use several are made of tin plate, same as honey tins are made of; turn the edges up and nail ⅞in. x 3in deal boards all round, leaving an inch or so of wood below the tin for protection (made the same size as supers). Place one of these trays on the top of the stool alongside the hive, loosen the cover and drive in a fair blast of smoke right across the tops of frames while lifting the lid, and follow the bees with another blast of smoke, and they will make a stampede downwards; then lift the supers on to the tray, run the hive tool along the top bars of frames of the brood case (at the same time using a little smoke to keep the bees down) to remove the burr combs, putting them into the tin strainer, which is made like a large cake tin with movable strainer to fit inside reaching half way down. The honey goes to the

bottom and the bees (if any) can crawl out. Place the super of empty frames on top of the brood chamber and put the lid back on. There will be a few bees in supers taken off. These I shake in front of the hive by removing each frame, placing the clean frames in an empty super on another tray on the barrow, and wheel them to the honey house and place the full supers on another tray, taking back an extracted super on the barrow ready for the next hive. This is the method I use, and if done quickly, bees don't have time to boil over, and it saves a lot of crushing of bees, and does away with a lot of smoking, and the hives, not being open long, and the bees, not being disturbed a great deal, are at work again and don't sulk so much as if they had been half smothered with smoke every time a frame is lifted or a case removed. No drips of honey to harbour ants or bees, either in the apiary or honey house, as all dripping supers are resting on a tray. No bees taken inside so any one afraid of bees can work inside in comfort. If an apiary is affected by any infectious disease, of course it would be folly to distribute supers; but if I had any diseased stock I would either cure or destroy them. Bee escapes for general use in a honey flow to me were a failure as I don't use honey boards, and there is always the chance of brood being above and burr combs made them a nuisance; but I have had great benefit from them in a dearth when robbers were bad. At such a time I would not put dripping supers back till sundown.

WILLIAM REDMAN,
Dungog, N.S.W.

(Second Prize).

The operation of removing honey from supers varies in accordance with the circumstances under which it has to be done, such as the occurrence of robber bees, a light flow of honey, an abundant flow of it, a large number of supers from which the honey has to be taken, and from only a few.

I will describe my way of doing the work during a fair honey flow, and give my reasons. I use a wheel-barrow for conveying the honey from the apiary right into my extracting room to the place where the extracting is done. On the barrow I use a long box made to hold 20 frames of honey comb. Over the box I use a cloth cover to keep out bees. A strip of wood is tacked on each end of it to handle it by and to keep the cloth from blowing off by wind or otherwise.

The reason I use this box is because I usually find when extracting that some supers are full with combs fairly well capped; others about half full, and some with only 2 or 3 combs sufficiently capped. It is just these fairly capped combs that I extract.

I do not remove the supers, but just remove the combs, shake and brush the bees off them, and place them in the box, which, when full, I wheel into the honey room, and when the honey is extracted from them I replace each emptied comb into the hive from which it has been taken.

Another reason why I prefer this way is that there is much less risk in spreading disease (should there be any). Again, less bees are killed or injured. It is almost impossible to prevent bees being crushed when replacing supers, and it is well known that crushed and injured bees in a hive make bees savage.

My bees have suffered from no disease for many years; possibly my way of removing the honey may have had something to do with it.

It takes very little time to take out and replace combs from my hives as I am not troubled with burr or brace combs. ,,

I do not like lifting supers off and on. About 95 per cent. of my hives have on them only one honey super, which, when full, contains about 60 lbs. of honey and I am saisfied when my bees refill them on an average once a fortnight. Only the unusually strong colonies have more than one

super, and it is necessary to remove the upper supers to take out the combs of honey from the lower ones.

In apiaries where most of the hives have on them several supers, what a lot of lifting has to be done when extracting honey. Well, I don't like it. No more honey is stored by bees having small supers than those having large ones.

I prefer one large super on eacn hive and extract the honey from it when it is full and ready. And, to ascertain that I have simply to lift the lid of the hive and not supers.

Of course, when a lot of honey has to be extracted, and only a short time to do it in, a more laborious, though more expeditious method has to be adopted, and little notice taken in the matter of a few bees injured or killed.

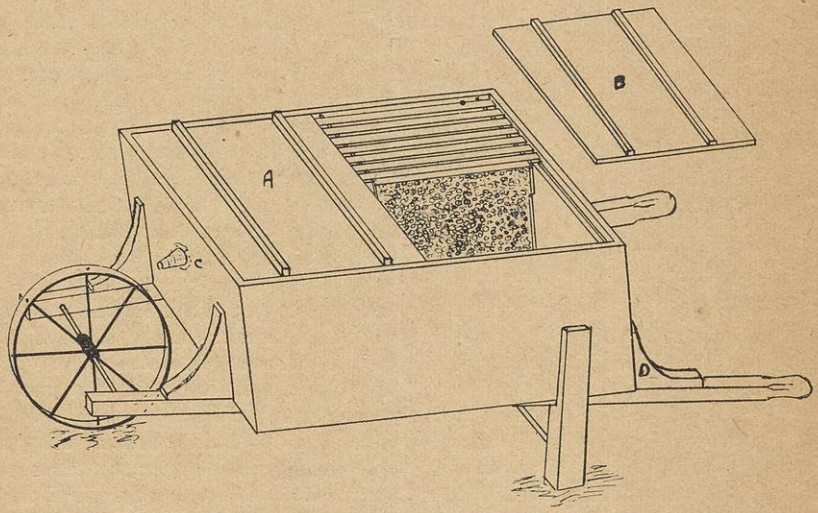
J. F. MUNDAY.

Iona, Woodville, N.S.W.

(Second Prize.)

How would I, or do I, handle supers ? As little as I can, and depends on many things. As a general rule I follow two plans: For half frames I generally shake the bees off in front of the hive and carry the super in without disturbing the frames; and if there are no robbers carry them out as soon as a batch is done. If robbers are likely to get in any work, I do not put out until nightfall, as the bees during the night clean them up, and no trouble is experienced with robbers. To carry in full supers is too laborious, and to shake the bees out is out of the question. I have carried them in—bees and all—with a good honey house this may be done. The only danger is, a queen may be carried in too. The bees scarcely give any bother as they make for the window straight away. I have done a lot this way and never had any trouble.

The method I now follow with regard to full frames as a rule, and sometimes with half frames, is to take them out of the super, shake the bees off and transfer to my wheelbarrow, described below, and wheel into honey house. As fast as honey is extracted I wheel the barrow out and simply exchange full frames for empty. My barrow is so constructed



that I have little trouble with robbers, and it will carry either large or small frames.

The above is a rough sketch of my barrow. It is 40 inches long by 18½ wide, by 10½ deep. It carries 26 full frames, more or less according to are about very few combs need be excape (c) away from the handles. At the front is a box (d) to carry smoker, tools, or fuel. The bottom is made

of zinc or tin, with a cup and screw plug to let out the drippings of honey. The cover is of two pieces, which are interchangeable so that if robbers are about very few combs need beexposed they drop in on top of frames and are bee-proof. The cover (a) is on the cover, (b) is lifted to show a few frames; in practice it is laid on these frames if robbers are about. If no robbers it is laid aside and as soon as that section of barrow is full, (a) takes place of (b), and when the other section is full (b) is put on the barrow, and it may be wheeled in. If there is much honey and no robbers, I sometimes put a super on top and fill up or even combs. The whole thing is very light and the sketch will explain itself.

ELLIOT J. RIEN,
Wyee, N.S.W.

THE PRODUCTION OF SECTION COMB HONEY.

By W. S. Pender.

Who Should produce Sections ?

Certainly the beekeeper who is at a considerable distance from market by rail, steamer, or team is at a so very considerable disadvantage in getting his sections on a market that he neglects to produce section honey; that is, the man who could produce the best and most sections and at the cheapest price, is unable to market them because he cannot reasonably expect to land them, nor even a fair per centage of them, in a decent state of soundness owing to their fragile nature and the rough handling they receive in transit. Of the three methods of transit enumerated above that of the team is really the safest for the cases containing them are not rolled and pitched about, and not subjected to sudden bumps. Paddy said: "It is not the fall that hurts a man, but the sudden stoppage." So with sections it is the sudden stoppage of the case every time it is rolled or tumbled that breaks sections. One section broken destroys all others near it by daubing with honey. To get a good market for comb honey it **must** have a good appearance; this damp or daubed sections cannot have. As there is no inducement for the backblocker to produce section honey the production of sections must be left in the hands of the man who is close to market and is able to see them placed on the market himself. Very few beekeepers so placed have the forage that produces the quantity of flow and quality of honey suitable for sections. None but the best light honey should go into sections. Dark honey produces a dark unattractive section—this does not appeal to the eye of the consumer.

Kind of Section Required.

Before putting section boxes on the hive the beekeeper should know, from climate and appearance of honey secreting plants if there is a good promise of a good and rapid secretion of nectar by those plants. Good sections, or any quantity cannot be produced when there is not a rapid flow of honey and if there is not a promise of a flow of honey of sufficient duration to complete at least one case of sections per hive, them. There are many seasons when a fair crop of extracted honey could be taken, yet it would not produce any good section honey. Remember bees have to build comb rapidly when producing sections for which a good honey flow is necessary. Unless the honey flow is good the comb built in the sections is of a starved appearance , not drawn out fully and evenly and unattached at the bottom, and probably partly at the sides. Unless the season is good and favourable for rapid comb building, the honey of a light colour, and the colonies strong in bees—unless you have all these, my advice is **don't attempt** to produce sections or you will be disapponited. The same quantity or crop

My advice is **don't attempt** to produce sections

of comb honey cannot be taken as extracted. In an indifferent season I should place comb honey at about a quarter of an extracted honey crop whereas in a very good season quite three-quarters of an extracted honey crop would be taken in section comb honey. So before going into section honey production largely, study your locality and the season you are likely to have.

Preparation of Bees for Comb Honey Production.

To produce the best comb honey, it is necessary to study the individual hives in the apiary. Some colonies are good at starting sections; they take to them quickly, and will have combs built out before others are induced to start; in fact, some colonies require a great deal of inducement to start sections. We should note these colonies and give good starting colonies plenty to start on and then transfer them to those slow at starting. Though a colony may start sections readily, they may be poor at finishing them off. You will be sure to find some colonies that excel at finishing. They will do it quicker and better than others—make use of these by giving them as many full supers to finish off as they can finish. This is the way to get first-class section honey, and it pays to do this extra manipulation, not only in the enhanced value of the product, but also in the increased quantity produced. The qualities of a first class section are even flat surface, white appearance of capping, comb built out to wood all round, no unsealed cells. The greasy appearance produced by some bees gives the comb a very rich appearance owing to the caps of the cells being in contact with the honey, a feature of the honey produced by all the yellow varieties of bees, whereas the black bees leave an air space under the caps which gives the sections a more crystal white appearance. It is a matter of taste of the individual beekeeper as to which appearance he prefers. Good sections should be free from all stains. During a first part of the season at section honey production the beekeeper has to find out the qualities of the individual colonies by trial. He can then run the apiary to the best advantage by shifting supers about to obtain the best results. Good sections cannot be produced unless each hive is crowded with bees. This crowding in the first part of the season frequently leads to swarming; and the early addition of section cases to the hives is not advisable, for during an early flow bees will not do much work in sections, even if forced to work in them; but if given an extracting super, will continue to work with a vim and show no signs of swarming; so give them a super of combs, and if they want to put brood in the super combs, induce them to do so. You are thus building up a working force which you can take advantage of afterwards. At the same time have all your section cases in readiness to put on as soon as the flow proper starts.

Preparation of Section Cases.

To induce bees to enter section cases quickly it is advisable to use a few bait sections; i. e., sections in which comb has been built. These may have been kept over from the previous season or, if none on hand, a piece of white comb cut from a large comb could be inserted. One or two of these bait sections in each super is sufficient. The position of these in the super opens up a subject for debate, but I think they are best placed in the centre of the super. The bees start more quickly in the centre than on the octside, and our object is to get a quick start. The outside rows can be easily removed to the middle after a start is made if the bees show a disposition to neglect them. All the other sections should be filled with extra-thin surplus foundation comb, usnig a quarter inch strip on the bottom and a large piece from the top, coming to about a quarter inch from the bottom starter, but

not touching it. This space allows for stretching of the foundation and prevents buckling, and the communication the bees have between each side of the comb induces them to work out both sides at once. The foundation should not fit tight edgewise. I prefer about an eighth space from the edge of the foundation to the wood. This keeps the foundation in place better, for, when folded, the sections assume, more or less, a diamond shape which is not altered until they are wedged up in the supers. Separators should be used between each row of sections to prevent the comb being built out beyond the edge of the wood and make them easy to pack. This also causes the sections to be of a uniform weight.

Putting Sections on the Hives.

When the honey flow proper has started and the one-and-a-half or two-story hives are crowded with bees, then is the time to put on sections. Some hives will be ready before others. Give each of the ready hives one prepared super of sections, removing the super of combs at the same time and shaking all the bees into the hive. Distribute the brood in these supers among weaker hives to make them strong, and use as much as you require for increase. If it is suspected that too much honey is left in the brood chamber of any hive, it may be examined and combs of brood substituted for combs of honey. These bees will now rush work in the supers and in a few days, if bait sections are required for other supers, they can be removed from those supers well started. When the bees have three parts filled one case of sections give them the another underneath, and so on, taking care not to give too much room at any time. I have had as many as four cases of sections on a hive at once. This is quite enough for any colony . Remove the cases of sections as soon as completed to preserve their fresh appearance, using a Porter bee scape to remove the bees. If there is a disposition on the part of some colonies to leave the sections unsealed, now is the time to shift them to other colonies that have proved themselves good at sealing. remove the super bees and all, or exchange partly filled supers for those quite full, but not sealed. It may be when removing extracting supers you found more brood than you could use. There is a good way to dispose of it, for no brood should be destroyed. Strengthen comb-honey hives with it. Prepare a board the full size of the hive, tack a cleat ⅜ deep all round and at one end cut a hole through the board about two inches square; cover this with queen excluding zinc. Place this board over a super of sections on a hive. Put on a hive body and fill with combs of brood. As the brood emerges the bees join those in the hive and help to strengthen it.

Care of Sections.

As the cases of sections are emptied of bees over the bee escape, remove them to the honey house. Turn the case upside down on a table and press them through. Remove the section holders and separators and place them in the super. Now examine each super, scrape off any propolis with a blunt knife, and if the section is perfect, pack it at once into shipping cases for market. If section is not quite complete, return it to the super, which, when full from other cases, can be placed on a hive for completing. All supers as emptied can be refilled with sections and placed on the hives. Now is the time to grade the sections. Those that are finished but are not perfect from any cause, should be packed in a separate shipping case and sold separately from the best. Any sections damaged while cleaning should be returned to the hives for repairs. A leaky section will spoil a dozen. The shipping cases filled with sections should be stored in a warm dry room, preferably kept dark until marketed. If the honey is of a good keeping quality without granulating, sections can be stored for some months, but if it granulates quickly, they should be disposed of at once.

NEW ZEALAND NOTES.

By R. BLACK.

It is interesting to notice just now that it takes about four pounds of our best clover honey to buy one pound of factory butter. While the latter is being retailed at 1/3 to 1/5 per lb., clover honey is listed by grocers at 11/- per dozen 2-lb. tins, or, after allowing for the cost of tins and labels, about four pence a pound. In one instance dark honey is being sold at 7/11 a dozen, the producer probably receiving less than 6/- after paying freights, etc., to the city. Just think of it, sixpence a tin, fully half of which goes in cash for tins, labels and freight. The men who work for three half-pence a pound would be much more profitably employed at any other calling, when it is considered that sixty pounds is the average produced by each colony. Only the men who love to "work for nothing and board themselves" can see a profit in beekeeping at these prices. There is comfort, however, in knowing that our up-to-date beekeepers, who have also a business instinct, are being paid for their labour. In Southland honey is put up in a different style from the methods adopted in other parts of the Dominion. The honey is run into boxes and allowed to granulate hard, when it is cut into one pound "pats" with wires, and then wrapped up in parafin paper just the same as butter. It is then packed in 56lb. boxes, exactly the same as those used by the butter factories. Much smaller boxes can be used than for round tins containing the same weight, while the paper, even when printed, is a mere fraction of the cost of tin. The pat turns out in an attarctive manner which appeals to the appetite, when placed on a plate on the dining table, while the same honey dug out of a tin would make a sorry contrast. Consumers show their appreciation of this way of putting up honey for the table, by paying eight pence (8d.) per pound for it when retailed in the shops, the beekeeper netting up to sixpence a pound at the apiary. Any honey which will granulate hard can be put up this way, but no other kind of honey should be tried or failure will be the result.

Bees which were fixed up for winter last April with plenty of stores, have come through in good shape, and are stronger at this Spring overhaul than for many years past.. The experiment of leaving more winter stores than what was considered sufficient, on the hives in my apiary, was tried this season with good results. The amount left was 40lbs. instead of 30 to 35, as formerly, and the bees have at this date used from 5 to 10 lbs. less than usual. It is well known that Italian bees, if worked right, will work with greater energy when they have a good store of honey in the hive, and it also seems to be the case that the more winter stores they have the less they will consume.

If the method of selling produce, adopted by the various dairy companies, was followed by beekeepers, there would be little to complain about in our calling. This is how the directors of the dairy companies do it. During August they notify all merchants and others interested that they will meet on Sept. 1st to consider offers for the coming season's output. When the offers come in they wire to the other companies in surrounding districts, according to arrangement, advising them of the best offers received. The companies then work in conjunction for the top price. This season they were three days negotiating, the final being that the output of first grade cheese was sold at a uniform price of 6 1-16d. per lb. Had individual producers been working alone, none of them would have got anything like this, and some would have accepted the first offer of 5d., which sale would, in turn, have been used to pull down the price of others. Beekeepers are

still using the selling methods by which the dairyman of forty years ago, got rid of his produce. Then each dairyman looked upon the other fellow as a bitter rival whom he had to undersell to make a living. To-day he looks upon him as a brother shareholder who helps to carry their mutual burden with the happiest results. If any readers thinks that this paragraph relating to dairymen has no interest to beekeepers, let him carefully read it over again and think it over, for there's money in it. In this country united action among producers is growing fast, and the day when all our beekeepers will sell at a uniform price, is not far distant. Our clover honey always sells at a good price in Great Britain, and New Zealanders should only be allowed to eat good honey at the price of the London market, less freight and commissions. Any way, is the way the dairymen do business.

Waimana, Bay of Plenty, N.Z.

VICTORIAN APIARISTS' ASSOCIATION.

Since our last report matters pertaining to the Association and the beekeeping industry generally have been steadily progressing. With the departure from Victoria of the late Governor, Sir Thomas Gibson-Carmichael, K.C.M.G., we, of course lost him as a patron to the Society; but we are pleased to say that his successor, Sir John Fuller, K.C.M.G., has kindly acceded to our request that he should succeed the late Governor in that respect, and has instructed, through his private secretary, that he will be pleased to grant his patronage to the Association. During the past month, the Stawell Apiarists' Association held their annual meeting, at which our President, Mr. R Beuhne, represented this body. On his return he reported that the meeting had been very successful, and in his capacity of Government Inspector, he had visited as many apiaries in that district as the time at his disposal would allow. Mr. Beuhne is giving fortnightly lectures to the public at the Government Experimental Gardens at Burnley on beekeeping. There is always a good attendance of the public, and judging from the questions asked at the conclusion of each lecture and the general interest shown in the subject, it would appear as if this branch of rural industries was to a very large extent engaging the attention of those who contemplate going on the land in the near future. The action of the Department in thus supplying information of a thoroughly practical nature is much appreciated by those concerned.

Mr. A. G. Genders, of Messrs. W. & G. Genders, Launceston, Tasmania, called at the office of the Association this week. Mr. Genders, who is on a visit to Victoria, is an enthusiastic beekeeper, and although a very busy man in another line of business in Tasmania, he has found time to establish a small apiary about 3 miles out of Launceston, where he has all the latest appliances and up-to-date machinery. However, as to some extent our members in Tasmania are isolated from Victorian beekeepers, Mr. Genders would be pleased to meet any of our members who may visit that State as he is very desirous of having practical talk on the subject, and also field demonstrations. Members may, therefore, take this intimation as an invitation to call and see their fellow Tasmanian members. Messrs. Genders & Bingham, the former's address being Cameron st., Launceston, and the latter, Spalford, Tasmania. It is yet too early to predict what the Victorian season is going to be, more especially as the weather for the past month has not been of the usual settled spring character. However, probably the end of November we shall be better able to judge respecting the prospective honey returns.

W. M. WIGNALL.

The Rialto, Collins St.,
Melbourne, Nov. 10, '11.

THREE GOOD ARTICLES ON QUEEN REARING AND IMPROVEMENT IN BEES.

KEEP BETTER BEES.

Dr. C. C. Miller.

A good slogan was that of the late W. Z. Hutchison, "Keep More Bees." Perhaps a better one is, "Keep Better Bees." Crtainly it is of more general application. For some it is not advisable to keep more bees; for some impossible. But for every one who keeps bees, whether he has one colony or a thousand, it is both possible and advisable to keep better bees.

I am glad to see that the Canadian Bee Journal is earnestly committed in favour of improvement of bees, and shall be glad if any word of mine shall help to stir up some one to do at least a little toward raising the standard of his bees, who so far has left the matter entirely to them. The general mistake is to think that improvement of bees is something solely for the specialist or for the queen-breeder. On the contrary, it is a matter for everyone. So long as fertilization is beyond control—and it probably always will be—you are more or less dependent on every beekeeper whose drones may reach your queens. Reciprocally, your neighbours efforts at improvement may be thwarted by your scrub bees. So for the sake of others as well as for himself, each one should keep better bees. These are the days of reciprocity.

Many a one will answer, "But I can't go through that fuss of getting queens reared in artificial cups, and I don't believe it would pay." Well, you don't need to do everything an expert queen-breeder does; there's more than one way you can do. If you have very poor stock you could buy a queen of good stock, and that would make at least a little improvement. If some colonies in the apiary are better than others, you can rear queens from one or more of the best. And don't forget the drones. They play half the part; some think more than half. Encourage drones in a few of the best colonies. In the rest either cut out the drone comb, or else keep the heads shaved off the drone brood before it hatches out.

If you breed from the best, of course you must know which is best. Each time you take honey from a colony, put down in black and white just how much you take. Do that this season, and you will know which colonies to breed from next season.

Seeing you're afraid of that cup business, let me tell you something easier, and between you and me, just as good. As soon as weather is warm and bees are gathering lively, perhaps on clover, take an empty brood frame and put in it one or two small starters, two or three inches wide and about twice as deep. Now go to your best colony, take out half or more than half of the brood (if you take out only one frame you may get nothing built but drone comb), and put in your prepared frame. In a week or less you ought to find the frame more than half filled with new comb containing eggs and brood. Trim away the eggs, and put the frame in the middle of a strong colony from which you have removed the queen. All the better if the colony is prepared for swarming, only destroy all cells already started. In 10 days you will have a lot of fine queen cells ready for use. One or two cells may be started on the old combs, but the bees greatly prefer the tender new comb, with plenty of room at the margin.

If you don't want to take even that much trouble, always allowing the bees to swarm, here's something easier still. Try to have your best colony swarm first, giving it brood or bees from other colonies early to strengthen it. When it swarms, set the swarm on the old stand, removing the old colony, which we will call A, to the stand of another strong colony, and putting this last in a new place. When A swarms again, set the swarm in place of A, and set A in

place of another strong colony. Continue this as many times as A swarms and each time you will have a good swarm having a queen of A's stock. As a rule any swarm after the first, and especially after the second, is likely to be a weakling, but in this case they are not weak, for when the depleted hive is set on the stand of a strong colony all the field bees of the strong colony enter the depleted hive, strengthening it.

Even if you have only two colonies, and both in box hives, you can do something. Have the two hives sitting close together in spring. About the first of May move B, the poorer colony. to a place 8 or 10 feet away. The field force of B will return to the old place and join A, the better colony, making it swarm first. Each time A swarms set the swarm in place of A, and set A in place of B, setting B in a new place. Begin now keeping tally of what each colony yields each season.—The Canadian Bee Journal.

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IMPROVEMENT IN BEES BY SELECTION & LINE BREEDING.

J. E. Hand.

The improvement in bees by selection in breeding is claiming the attention of wide awake and progressive bee-keepers. Perhaps no branch of our beloved pursuit is more fascinating or offers greater inducements to the up-to-date bee-keeper than the improvement of bees by careful selection and judicious breeding along certain lines. Viewing the subject from the standpoint of the practical beekeeper the development of an improved strain of bees is not a difficult matter. It is true that we cannot mate our queens with drones with the same degree of certainty that surrounds the breeding of other domestic animals, and yet the queen-breeder who is able to control the flight of drones within a radius of three miles can mate his queens with sufficient accuracy to enable him to establish fixed characteristics, such as gentleness, industry, and uniformity of markings, all of which are indications of well-bred stock.

While perhaps all will agree as to the desirability of improvement in bees, there is a diversity of opinion as to the best method of accomplishing the desired result. For more than a quarter century the writer has been devoting his best energies to the improvement of bees and bee-keeping methods; while we do not claim to have the best bees in the world, we believe we have made some progress along the line of establshing uniform traits that by persistent effort have become fixed to such an extent as to be transmitted to future posterity.

It may be interesting to some to know how we have developed and maintained a strain of bees that are noted for uniformity of habits as well as uniformity of markings, which are indications of well bred stock. It is one thing to find a queen whose bees possess traits of a highly desirable nature, and quite another thing to find one that will unerringly transmit those traits. The object of this article is to tell the readers of this journal how, and to what extent, we have been successful along this line.

Line Breeding.

When we laid the foundation for our present strain of bees we procured queens from some of the most noted queen-breeders in the country. These were carefully tested in our apiary, and from the lot we seleced a breeding queen. This particular queen was chosen because her bees were very gentle and industrious as well as being beautifully and uniformly marked. Besides, this queen had the power to duplicate herself in her queen progeny, a thing that not one in a thousand will do. This queen was used as a breeder of both queens and drones; by supplying the colony with abundance of drone comb, and by stimulative feeding we were able to produce thousands of choice drones, and no others were permitted to fly in the neighbourhood. There being no other bees in the vicinity we were able to

mate the young queens with a tolerable degree of certainty, and we stocked every colony in the yard with a queen reared from this particular breeder. The next season every queen in the yard was again superseded by a young queen from the same original breeder, all of which were their half brothers.

Not being able to find another queen that would duplicate herself in her queen progeny with an equal degree of certainty the old one was used as a breeder of both queens and drones as long as she lived. As our colonies increased we were ever on the alert to discover a colony that displayed unusual qualities along some particular, chosen line; such colonies were marked for further inspection and closer observation, and if the desirable traits continue under adverse conditions, that queen was used as a breeder of queens and drones.

Thus by beginning with a single individual having the desirable traits that we wished to develop and establish, and by practising a rigid system of line breeding we have been able to develop a strain of bees of approximately uniform marking and habits, a thing that can scarcely be accomplished by miscellaneous selection and cross breeding.

Having thus laid the foundation for a strain of bees that would transmit uniform traits we have ever been cautious about introducing new blood that might undo the work of years. While we occasionally introduce new blood from the most noted queen breeders no queen is allowed to rear drones in our yard until her progeny have been thoroughly tested. We believe we have made some progress along the line of establishing fixed characteristics, and by carefully weeding out undesirable queens and breeding from the best we hope to be able still further to improve our bees.

Concerning the theory of eliminating the swarming instinct of bees by selection in breeding, we are willing to accept it as a theory until it has passed the theoretical stage, which from all outward appearances, will not transpire in the near future. We believe we can devote our time and talent to better purpose by practising methods that will enable us to control the swarming instinct of bees. Personally, swarming has lost its terrors for us, and we have little use for a non-swarming strain of bees. However, if some of the advocates of the non-swarming theory will show me a non-swraming colony of bees I will agree to establish a non-swarming strain of bees. —"Canadian Bee Journal."

* * * *

RAISING GOOD QUEENS IN A POOR HONEY FLOW.

W. A. Chrysler.

The honey flow for this season has been small, and as to raising queens by artificial methods, it seemed to be out of the question without resorting to feeding, etc.

Having two out-yards that I wish to re-queen, and so far apart that I cannot visit them conveniently very often, I hit upon a plan which I like very much and by means of which I have raised excellent queens, without feeding, and without having many details to keep track of. It is, I consider, the simplest plan for a beekeeper who has had little or no experience in queen rearing or re-queening his apiary.

Our provincial apiarist, Mr. Pettit, has expressed himself that there will be and is at present a great demand for Italian queens, owing principally to the fact that European foul brood is cured, or rather is conquered by the introduction of Italian queens.

I have had no experience with European foul brood, but I feel confident that the manner of re-queening which I have practised this season would rid European foul brood and improve the race of bees.

My plan is as follows: Find the queens you wish to replace; pinch off their heads and in about five days go to those colonies whose queens have been removed, examine closely for queen cells and remove the larvae

from the same. In five days there will be some cells capped. These should be entirely torn down and only those saved that were not capped and that contained the largest quantities of royal jelly. Cells that were found to be nearly ready to cap were shortened. Next, go to the hive of your choice queen, remove a frame that has eggs or newly hatched larvae, and with a transferring instrument, or tooth-pick, remove the larvae from your choice queen into as many of the choice cells that are seen to be well filled with royal jelly in the queenless colony.

Eggs may be "grafted" in the same manner as the larvae, although I cannot speak very positively as to the results, but the larvae grafting may prove to be more desirable in that they may be removed much easier by an inexperienced person.

This grafting on to a large quantity of royal jelly, being performed while the larvae are so young, more perfectly developed queens are the result. It is desirable also not to rear any more than two or three cells in a colony in order to get the best that can be procured under the circumstances. If this plan is followed out during a poor honey flow, there will be no danger of swarming when the queens hatch. If cells are not wanted for other colonies, care must be taken when grafting not to overlook any cells that were produced from the queen that was destroyed.

While practising this re-queening at my out-yards I have made my visits five days apart and after doing the other necessary work at the yards, would pinch the heads off a certain number of queens. The next five days distribute some cells if the occasion requires, pinch off some more, regraft the ones that were pinched off five days previous. It is not advisable to do too many in one day es pecially where the honey flow is poor, as bees will start robbing unless a tent is used.

I consider this plan of queen rearing not the most economical as regards time and labour for the experienced queen-breeder, but I do claim it is the easiest and surest for the inexperienced, as I have very seldom, if ever, found a transferred larva not accepted, and it has been, with me, always a success under adverse circumstances that have occurred. I regret very much that it is so late this season for others to try this plan of re-queening, but I trust that next year the readers of the C.B.J. who have not hitherto practised re-queening of their apiaries, will give the plan described a trial.—"Canadian Bee Journal."

DIFFERENCE IN BEES WHEN INTRODUCING.

I want to tell how I use the candy plan to introduce queens without loss, into colonies full of open brood. Just at dusk I go to a colony that I wish to requeen, and kill the reigning queen, putting the new one at once in a cage. I take one frame from the middle and put the cage with wire cloth next to the comb on the bottom-bar, being sure that the candy end of the cage touches the brood-comb. The queen thus detects the comb odour of hatching, and she is on the brood-comb at once when released by the bees.

As queen-cells are always nearer the bottom of the combs, I have found this the best way to introduce queens. With this method the bees hardly realise their loss, and very seldom build cells. Blacks are the worst, for they will do things that one does not like. Carniolans and Banats are the best, as their queens are accepted more quickly than those of any other races I know of. I never find a cell started in colonies where I have put them.—S. J. MORRISON in "Gleanings in Bee Culture."

ANSWERS TO QUESTIONS.

Under this heading we will answer questions on practical beekeeping sent to us by those who wish assistance in that way, and will give the questions as well as the answer, and so make this column useful to many—Ed.

TO START BEES IN SUPERS.

Lear Sir,—Will you kindly tell me in the "Australasian Beekeeper," how to get bees to start work in supers ? My bees usually build comb betyeen the top and bottom bars of each box, and make a great mess with burr comb instead of working on the starters.—Yours faithfully, NEW BEGINNER.

[Nearly all beginners have the same difficulty when they use starters in supers. It seems to be the practice of bees to extend from the brood nest rather than leave the brood nest an inch or two and build toward it. You want to make a connecting link between the brood combs and the starters. This is best done by giving a super comb from another hive or removing one or more combs from the brood nest to the super, placing the frames of starters in the brood chamber in their place. The bees will more likely build worker comb on the starters placed in the brood chamber and drone comb on those built in the supers, the former with the object of raising brood, and the latter for honey storage. If you are using a half super on a full depth body and have not a half super frame of comb to put in the super, there are several ways to get over the difficulty. (1) Remove a frame from the brood chamber, and when you put on your super of starters hang this frame in the super over the space in the brood chamber. As soon as the bees get well at work on the starters replace this comb back in its place; you will be sure to find some comb built on the bottom of this frame. It can be cut off and transferred to a shallow frame or used to best advantage otherwise. (2) Transfer a full depth comb into two half depth frames and use them in the super. (3) Place the super of combs under the brood chamber, and when the bees have started to build comb on the starters remove the super to over the brood chamber.—Ed.]

INKY BLACK IN HONEY TINS.

Mr. Editor,—In most of my 60-lb. honey tins, after the honey has been standing some time, there is a black, inky-looking stuff that runs down and stains the honey. I use perfectly clean kerosene tins, and thoroughly wash them with soda.—ANXIOUS.

[When honey and iron are in contact and are exposed to a damp atmosphere, the honey acts on the iron and forms the black compound you are troubled with. You find this black substance on the surface of the honey around the edges wherever the tinned surface of the tin plate is worn or scratched off, exposing the iron. If the top of the tin is removed, this black substance can be skimmed off, and the honey then taken up clean. I do not remember ever seeing any of this black material form while the honey remained liquid; the honey was always granulated. When I used hand-made tins I had frequent trouble from it. In hand-made tins the cut edges of the tin plate were brought in contact with the honey, but in machine-made tins the cut edges are folded in and are away from contact with the honey. Rusty tins will also produce the same effect. New tins should always be used for packing or storing honey in.—Ed.]

WAX WORM.

I was unfortunate (or careless) enough to get the wax worm into about fifty of my good brood combs, some slightly damaged, while others were bad. I prepared a good heap of coals and about half a pound of sulphur and sent them quietly off to sleep. Now that the worms are dead, I know what to do with the bad combs, but what about the ones slightly damaged ? Are they of any use ? If so, will I have to pick the worms out or leave it to the busy little three-banded bees who are better able to poke their heads into the cells than I am ?—I am, Yours etc., HUMPTY DUMPTY, Queensland.

[If you give one, or, at most, two frames of moth-eaten combs to a strong hive of Italian bees, they will not be long in tearing out all the cocoons and wax moth, tearing the combs somewhat in their work. If the combs are not much injured, several combs could be given at a time. If the combs are very bad and are past making into good combs, cut out the comb and melt it into wax. During a honey flow the cleaning of combs can be very safely left to the bees; but don't give too many combs at once—one or two at a time is sufficient. If an odd comb in a super has a moth cocoon or two, the whole super of combs could be placed under the brood chamber of a strong colony for a day or two, and they will clean up the combs perfectly. Combs becoming covered with mildew can be dealt with in the same way. The bees will make them perfectly clean. —ED.]

HOUSE APIARY.

Dear Sir,—Through the columns of the "Australasian Beekeeper," would you kindly give me the following information: What is the best design of a house apiary to hold from 75 to 100 hives? In Tasmania, would it be necessary to have it doubled walled with sawdust between? What would be approximate cost? Thanking you in anticipation.—Yours faithfully, Stoney, Tas. C.C.S.

[House apiaries have been tried in various parts of the world, and do not appear to have given satisfaction. The difficulties are the controlling of temperature, obtaining light for working, flying and crawling bees, &c. Anything of the nature of a house apiary would be an experiment. All those who have used house apiaries have, I believe, given them up. I know of no one, in the Australian States, who has given a house apiary a trial, but if you are prepared to try the experiment, I am prepared to assist you with drawings. The best house apiary that I have heard of or seen is that of Mr. F. A. Salisbury, Syracuse, New York, U.S.A. There are many seeming advantages in using a house apiary, and perhaps in the Australian States there may not be the disadvantages found elsewhere. Compactness of colonies, shade in summer, and ease with which colonies can be fed; possibly in the southern climate of Tasmania the hives could be kept at a regular temperature in winter, and thus have better wintering of bees. I think in our warm climate of N.S.W. one advantage of a house apiary would be in wintering bees—the hives could be kept cooler and more even in temperature, inducing the bees to remain in the hives more, and saving much loss. I would like to hear from you again, with suggestions and reasons why you think you would prefer a house apiary, and possibly something will be evolved from the correspondence. —ED.]

USING DESERTED COMBS—SPIDERS, BEE STINGS.

(1) I had fourteen hives of bees die this Winter, which I put down to starvation, and they have left a lot of good comb in the boxes—about ten large and ten small frames. Is it advisable to put fresh swarms on to them?

(2) If you could find me a piece of foul brood and send it to me, I would be very glad, as I don't know how to tell it.

(3) I went through all my hives and found a lot of black spiders in them. Do you think they do any harm? All the hives have some honey and a couple of frames of brood, but I didn't see any drone bees; and some of them are pretty small swarms Do you think they are all right now?"

(4) Could you tell me a good way for finding out when a hive has lost its queen?

W. Tamworth, N.S.W. C. PRICE.

[(1) If the bees died from starvation the combs will be free from disease, and it will be quite safe to use them again for hiving swarms or any other purpose.

(2) It is not advisable to handle foul brood unless one is compelled to do so, especially a beekeeper who is handling clean bees. When handling

this disease, every precaution should be taken to prevent infecting hives. A week or two ago I had two combs sent me by post, and as soon as I examined them, I committed them and all the packing to the furnace, and immediately disinfected my hands. This is the first sample I had seen for many months. When sending samples by post I think it advisable to put them in an airtight tin box. The smell from the disease in an advanced stage might cause the postal authorities to consider it objectionable; besides there may be cages of queens in the same bag with the diseased specimens, or immediately after, on the return trip. Every precaution should be taken when mailing any kind of disease.

(3) Spiders are enemies of the bees. They prey on them. Some spiders require more than one bee to a meal. The web of the spider is a death trap to bees, and many bees are lost through being entangled in a web, in addition to those used as food by the spiders. Kill off all spiders as soon as you see them, to prevent them becoming numerous. Drones do not appear in a hive until there is some prosperity in the colony. Weak hives, especially early in the season, will have no drones. If your queens are laying well, and the bees are able to obtain sufficient food to force brood-rearing along, your weak colonies will soon become strong..

(4) If a hive has no queen there will be no eggs or brood, according to the time it has been queenless. A hive having young brood, and losing its queen, will start queen cells—so queen cells with an absence of eggs in the cells will indicate queenlessness.—ED.]

SWARMING OUT—BEE STINGS.

Dear Sir,—(1) Can you tell me the reason why my bees (which swarmed out of my own hives), and I hived them into a new hive with hatching brood frames and other frames I had just extracted from—why do they swarm out again the next day? I have got 10 swarms this season and 9 of them swarmed out again the day after I hived them. Of course, I had an Alley Trap on the hives and the bees came back, and went to work, and are doing well now.

(2) Also another peculiar thing happened with one of my swarms. I was cutting a branch down with the swarm on it, and I happened to shake the branch and about half the bees fell off. So I took the bees that were left on the branch and put them all in the hive. While doing so I saw a queen—a nice Italian. I then went back to where the bees had fallen and got them or most of them to hang on to the same branch; so I took this lot and was just going to shake them in when I saw another dark queen in amongst the bees. So I shook them in, queen and all, to let them have it out themselves. I put an Alley Trap in front of the hive with the two queens. I went back, and there were still about two handfulls of bees clustered on a fern. So I cut the fern off and shook it in front of the hive with the trap on and shook the bees on to a piece of paper in front of the hive, and when nearly all the bees went in through the trap, there was another queen trying to go in.

Can you tell me what was the cause of the three queens being in the same swarm (it was an extra large swarm), one Italian and two dark queens. I might state it was not an after swarm, because I knew the colony would swarm one day last week; and as they were good bees, I told the wife to keep a good lookout for a swarm. So they came out of this same hive. (3) I am sorry to add that the wife must have kept a good lookout as she got a sting on the tip of her nose, and when I got home to hive the swarm she was blessing those bees; and her eye was closed up. Is there anything that is good for stings? I have tried a lot but never found any of the cures of much use. They don't bother me much myself, but sometimes visitors will come too close to the bees and start hitting them. It is no use telling them not to hit at the bees, so they get stung and swell up terribly. If you know of anything or sell it I will be obliged if you will let me know.—I remain, yours faithfully, FRANK PIPER, Woy Woy, N.S.W.

[(1). There are many things that may cause a swarm of bees to leave the hive, they were put into, the next day The thing is to find out first, what are the conditions under which they will remain hived, and always put

them under those conditions. It is a hard thing to venture a guess without having some knowledge of the surrounding conditions, and even then the most experienced beekeepers are sometimes perplexed. There is one piece of information you give that may be the cause, and that is, you hived the swarm on combs wet with honey from the extractor. The hive was not just ready for the bees to occupy. The bees had to clean up the combs and put the hive in order. To crawl over the sticky combs would be dangerous to them, for if they became daubed with honey they would be suffocated, and no bees could crawl through wet combs without getting some of the honey on them. If the hive had been standing in the sun previous to the swarm being hived the bees would not remain in it. If there was any foul smell about the hive they may not remain If the swarm were disturbed (especially if a virgin queen were present) after being hived the bees may become discontented. After hiving a swarm it is not advisable to handle them in any way until the queen has been laying a day or two.

(2.) The swarm you refer to here in my opinion had three or more virgin queens. This you will know, by the time you read this, for unless you removed the Alley trap the queen would either become a drone layer or be missing or unmated. With a prime or first swarm, under ordinary conditions the queen (being mated) will lay within two days if combs had been given; whereas it will be about ten days before the queen will lay if a virgin queen were at the head of the swarm. It may be the old queen had become lost, and the swarm issued with the first virgin queens emerging. If the queens, or one of them, were fertile, two or more swarms may have united. I have had a large number of virgin queens accompany a swarm, and have counted over a dozen.

(3.) The best remedy for stings is to withdraw the sting, and squeeze the wound **at once.** If left for a few seconds the poison is circulated around the wound, and swelling results. Carbonate o ammonia is a good thing to neutralise the acid poison of the bee, but the poison is injected under the skin, so an outward application is almost useless, and the ammonia, to be of use, should be injected also. No one is likely to puncture his skin with an hypodermic syringe to neutralise the poison, for the cure is as bad as the disease. The easiest way to squeeze a wound from a sting is to at once press the hollow of a key immediately over the wound, when a drop of the poison will be pressed out. The wound should not be irritated by rubbing or scratching, and in a few minutes the pain will leave. After a person has been stung several times there will be no swelling. He will become immune to this after effect. I have heard people say "after being sung several times there is less pain from a sting." This has not been my experience. The last sting is just as fiery as the first. The amount of pain depends on the part stung, and the quantity of poison injected.—Ed.[

To the Editor.

Sir,—The weather has been very changeable here this spring. There was frost on the 5th and 6th inst. Since then it has been very hot, with westerly winds blowing. There is practically no honey flow in this (the Williams River) district this season; there may be a little surplus further up the River, but I do not know of anything that will bloom after the new year in this locality, unless it is a few scattered box trees. We must have heavy losses here before next Spring. I hope there will be no failure in pollen. As soon as one opens a hive the robbers get to work. I use a brass Corneil smoker and I agree with Mr. Beuhne in saying the sharp points on the hooks often catch in your clothing or skin; but it suits me very well, they being on the back of the smoker. I generally have to put

a few nails in the tin binding of the bellows. I have never been troubled with the grating falling out of a smoker. As there are two different prices quoted for the Hunter River and North Coast honey, can you tell me which of the two includes the Dungog district ? I would also like to know what has become of the "Bee Farmer" (Melbourne). Has it died out, or is the Editor having a rest ? It is more than twelve months since I received my last copy. Yours etc.,

J. KELLY,

Brookfield.

[Hunter River honey will include the Dungog district.—ED.]

PLANTING FOR BEES.

"Will it pay me to plant different things for the bees to forage upon?"

"Unless the desired flora cover the hundreds of acres owned all about the apiary by others you can not meet with the success you otherwise would; for planting and sowing for honey where nature does not provide natural forage in profusion can not make up for what is lacking. It may help somewhat, where the environments keep you in a place where nature does not furnish flowers in profusion.

"There is no subject of more importance to the beekeeper, nor is there one that gives him more pleasure, than the study of the honey-producing flowers in his locality. No matter where they bloom, if bees gather nectar from them they at once become an object of interest. By having the desired flora in our location, and then so manipulating or working our colonies that the maximum number of bees come on the stage of action just at the time when the flora producing the maximum amount of nectar is in bloom, our success is assured."—G. M. DOOLITTLE in "Gleanings in Bee Culture."

TO KEEP COMB HONEY.

"Where shall I put my comb honey when off the hive so it will keep best?"

"To keep comb honey perfectly, the temperature should never go below 70 degrees F. From 80 to 95 degrees is what should be aimed at during the day time; and the room in which it is kept should be dry and as airy as possible. A dark room keeps the colour of the combs better. Keeping honey in a warm dry room makes it thicker, richer, and heavier. When thus kept, if there is honey in unsealed cells this honey will become so thick that it will not run out, even if the combs are turned down on their sides. If the room is damp, and the temperature falls lower than 60 degrees, the honey takes on moisture, becomes thin, and eventually sours. Therefore, always store honey in a warm dry room but never in the cellar."—G. M. DOOLITTLE in "Gleanings in Bee Culture."

EDITORIAL.

By W. S. Pender.

The production of a monthly issue of a bee paper is not one of the easiest things imaginable, nor is it a profitable concern. It may seem a money-making business to those who have never attempted to get out a journal regularly. The "Australasian Beekeeper" has been published now for over thirteen years. It has absorbed several other bee journals, including the **"Commonwealth Beekeeper,"** and now the editor has to announce the absorption of the **"Australian Bee**

Bulletin," the oldest bee paper published in Australia. The "A. Bee Bulletin has had a life of twenty and a half years. It has been a regular monthly visitor to the homes of beekeepers, and during its existence has done good work. The "Australasian Beekeeper" takes over all subscribers to the "Bee Bulletin," and will complete the terms for which payment has been made. We trust the supporters of the "A. Bee Bulletin will continue with the amalgamated journal and help to make the ,'Australasian Beekeeper" the mouthpiece and representative of Australian beekeeping. The aim of the "Australasian Beekeeper is to promote the industry and help the beekeeper. All the latest methods and ideas are given, though it is not necessary that these are endorsed by the editor.

How do you uncap your combs? At first sight it may seem as if little can be said on a subject like this, but hardly two beekeepers do the work alike. One lays the combs down and slices the caps off; another stands the combs on end and slices up; another slices down; another slices both sides without turning the combs. One beekeeper prefers a carving knife; others a novice knife, a springy knife, a stiff knife, a long knife, a short knife, a short bevelled knife, a long bevelled knife, a hot knife, a cold knife, a wet knife, a dry knife, &c. One works for speed; another for even combs, &c., &c. I want you to tell in next issue just how you uncap your combs; why you do it that way; what appliances you use, and why. The uncapping of combs is perhaps the slowest operation in producing extracted honey, and there is no reason why great improvements should not be made in this work. So in writing on this subject give each little detail, so beekeepers will need take nothing for granted. Attention to little details makes great savings.

TRADE NOTES.

KEROSENE OIL STOVES.

For some years we have recommended and sold the "blue flame wickless Perfection Oil Stove" for use in the honey house, and especially with the Beuhne Reducer. The makers have now given up the manufacture of this stove and have substituted a new stove that is handier and better in most, if not all respects. It is called the ''New Perfection Stove." We have used this stove for almost all work in heating and cooking, and have found it simpler to work and unvarying in flame. It never increases the flame on a hot day, and is not apt to flare up like the wickless stove. We have sent out many of these stoves with the Beuhne Reducer, and two customers who had been used to the wickless stove, returned the new stove in preference to the former, saying "they did not give so much heat." No other customer has made any complaint, and we have supplied quite 100 of these stoves. It is not our wish to force this new stove on our customers, but, as the old style is no longer obtainable, we have no option but to cease handling the old style. Without a doubt, these stoves are the best, most economical and most reliable on the market. The new perfection stove can be had as illustrated on the last page of this issue, on a stand, with one burner, two burners, or three burners, with or without ovens for cooking. Almost anything that can be cooked in any other stove can be cooked in these, and the cost of using them is a quart of kerosene for eight hours.

QUEENS.

All orders for queens are now filled, so we are able to send queens by return mail. We have exceeded all previous years in the number of queens sent out to date, and are quite a month earlier in having all orders completed. We were never before in a better position to supply queens, and fine ones too. We have largely added to our number of nuclei, and unless extra heavy orders come in together, we will be able to supply all orders for queens promptly.

PRIZE COMPETITION.

PRIZES of select tested queen or ten shillings cash for a first, and a tested queen for a second, are offered for the best and most practical articles on the following subjects:

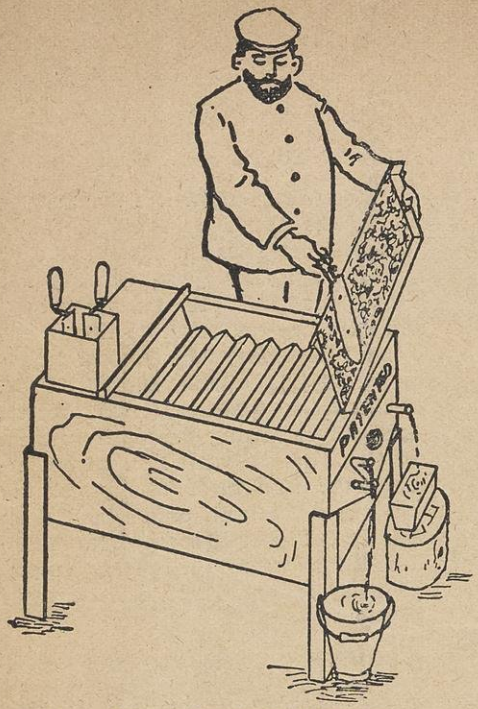
Conditions:—

Papers to reach the editor on or before the 6th of each month for which the prize is offered.

December—Uncapping combs.

January—The Bee's Sting—Its use to the bee—Effects of a sting—Treatment of a person stung.

Two Things every Beekeeper requires—



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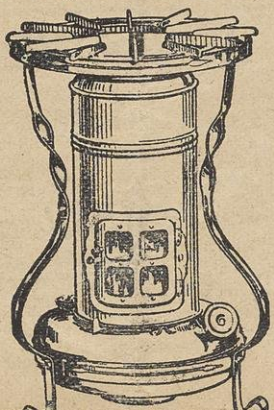
Obtainable direct from our agencies or our factory.

Blue Flame Kerosene Stove, commended for use with Reducer, 17/6.



Perfection Oil Stoves, blue flame.

Every honey house needs a stove of some sort, for the purpose we recommend "Perfection" Oil Stove illustrated, NO SMOKE, NO SMELL, NO WORRY, an even, intensely hot, blue flame, no pumping required, no attention needed, light it in the morning and it will burn without alteration all day, costs only a half-penny per hour, the flame can be regulated to suit temperature required.

The best stove to use with the Beuhne devise, price 17/6 each. For cooking purposes