



# **The Australian bee bulletin. Vol. 7, no. 80**

## **November 28, 1898**

West Maitland, N.S.W.: E. Tipper, November 28, 1898

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# THE AUSTRALIAN BEE BULLETIN,

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 7. No 80.

NOVEMBER 28, 1898.

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## PENDER HIVE TOOL

as I consider it the handiest tool a man could have in the apiary.”—W.H.G., Barona Apiary Narrabri.

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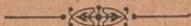
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New Cyprian Queens just arrived from America. Young queens ready the first week in December. Foundation while it lasts 5lbs 1/9; 10lb 1/8; 20lbs or over, 1/6

**R. H. JERVIS,**

**WREKIN APIARY,**

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P.S.—Golden Queens not ready till October 7th to 14th.

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## DRUMFIN APIARY. ITALIAN QUEENS & BEES.

Our strain of Italians leads. We have as fine a lot of bees as can be got together in Drumfin Apiary and are now prepared to receive orders. Young queens ready after October 7th.

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| Untested Queen ..   | ..  | ..    | 5/-  | 13/6 |
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A very choice assortment of CITRUS TREES, including the Washington Navel, Mediterranean, Sweet, Yabba, Homassia, Velencta (late), Common Orange, Lisbon Lemon, Villa Franca Lemon, Emperor, Thorney and Beauty of Glen Retreat Mandarin.

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W. & S. FAGAN,

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## NOTICE

SHOULD any beekeeper have a doubt of the genuineness of any honey sold in his neighbourhood, send a sample to the Chairman Board of Health, Sydney, who will cause it to be analysed, and take proceedings if necessary.

## Beekeepers! Attention.

Pamphlet on How to Refine Beeswax, and Obtain Top Market Price.

BY LOYALSTONE, PRICE 5/-, POST FREE.

THIS is a cheap and inexpensive way for Beekeepers, large and small, to refine their wax. Read the following extract from a letter of that well known beekeeper Mr. A. A. Roberts, of Muswellbrook, N. S. W. Referring to my wax he says, "It is really a splendid sample of wax and a credit to yourself and a method of refining it. It is the best sample of wax that I have seen and I have shown it to several and they consider you are a champion at refining wax." Note the address:—

Wax treated by my method gained 1st prize Welling-ton, 1896, and Two 1st Prizes, Muswellbrook, 1898—only times shown. Are you troubled with ants in your apiaries? Then try Loyalstone's Ant Destroyer, price 1s 3d per pot, post free. Guaranteed to banish all ants about a homestead or apiary. Full directions with each pot. Beekeepers! Try one and be convinced. One pot is enough for each apiary.

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LOYALSTONE, LYNDHURST,  
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2lb. HONEY TINS, 15/- PER GROSS.

4lb. " 24/- "

9lb. " 33/- "

14lb. " 6/- PER DOZEN.

28lb. " 7/- "

60lb. " 8/- "

All the above sizes are fitted with Patent Lever Tops, and are Well and Strongly Made.

## HONEY EXTRACTORS.

1 FRAME SLINGERS, 5/- EACH.

2 FRAME NOVICE, 30/- EACH.

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2 FRAME COWAN'S (with 130lbs capacity) 45/- EACH.

These Extractors are made from the strongest sheet tin, are filled with Root's Best American Bevel Side Geering and 1½ Honey Gates.

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500lb. capacity under basket, wire gauze dish shaped strainers, 1½ honey gates and covers. Price, 26/-

NOTE—When Extractors or Tanks are sent by rail or steamer they are crated at an extra charge of 2/- each.

Mr. A. AYLING, Dubbo, writes: "Have very much pleasure in telling you that I have given the Cowan's Reversible 2-frame Extractor supplied by you a fair trial and am delighted with it. It runs very easily and smoothly and does its work perfectly, throwing out the honey to the last drop and breaking no combs."

:o:

**WILLIAM HOGAN,**  
TINSMITH, &C.,  
HIGH-ST., WEST MAITLAND.

# The Australian Bee Bulletin.

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—NOV. 28, 1898.

## WORK FOR THE MONTH.

During the past month with us there has been a steady box flow, but strange to say drones have most materially diminished in numbers. And there seems to be very little drone brood in the hives. What does it mean? Have the bees a prophetic instinct of a bad time to come? A letter from Mr. Pankhurst at Duri, tells of the same state of things there. We spoke in our last of superseding bad or inferior queens. We have adopted a plan of finding out the poorest as follows: We go regularly round the apiary, at the first one we come to there may be perhaps one comb of nearly all sealed honey without brood or larvae. We take it (putting an empty one in its place) and make a mark on side of hive 1. Next hive there may be none; we put 0 at side, and so on through apiary. At end of three or four times going round, the figures at side of hives will look like the following: —011, 013, 456, 035, 436, 011 and so on. It gives a good guide which to supersede, and which to breed from.

This should be, under ordinary circumstances, a great time for swarming. With working for extracted honey, giving plenty of room in the way of supers is a great preventative, especially if the added supers be placed underneath. Keep an eye out for queen cells. It is said the swarm goes out with the old queen as soon as the first cell is capped. If you cannot be on hand at such time remove the hive, placing a new hive on stand, in which place the frame with newly capped cells; the field bees will still make it a good swarm. In the removed hive, containing the old queen, you can cut out the other queen

cells, or most probably, it being deprived of the field bees, the swarming fever will have gone off, the queen will destroy them herself. There are drone traps and other devices for catching swarms. The drone trap being placed at entrance, neither the drone or queen can get out of it, but are detained in an upper apartment and can neither return to the hive or go out with the swarm. A swarm issuing not having the queen, will return to the hive. Alley drone traps can be obtained at any of the supply dealers advertising in our pages. The safest method is to cut the queen's wings, two on one side only. When the swarm issues she will be found on the ground surrounded by a small cluster of bees near the hive. She can be picked up, put in a hive and the swarm will immediately gather round her. When we hive a swarm we always get a frame of larvae from a hive and give them. It prevents them leaving again. There are those who say that such is not necessary, but we have always adopted this plan, and see no reason to act otherwise.

In the case of swarms getting away and settling, a Manum swarm-catcher should be on hand. Have hive ready with frames (one with larvae as already spoken of) place swarmer under swarm, shake or brush them into it, then dump them into prepared hive. When well settled in remove to permanent place. A swarm soon after issuing clusters on some convenient place. It should be taken then, otherwise on its second flight it is apt to go a great distance. Many ways are adopted of causing swarms to settle. Sprinkling with water, firing of guns, tin kettling. Noise is said to prevent the bees hearing the peculiar sound of the queen's wings. It is however a doubtful matter. We have most faith in the water sprinkling, making their wings heavy. A green branch, or limb of a tree put in a conspicuous place, we have often found useful in causing them to settle on it. Should you not wish to increase the number of your hives, place the swarm as a super on top

of original hive, either killing one queen yourself, or letting the bees themselves decide the matter. Should you have a doubt which hive a swarm came out of, after they have been hived, take a cupful of the bees, sprinkle them with flour and throw them in the air. Most of them will return to the original hive, which can be detected by the entrance of the flour sprinkled bees.

Chopped garlic is recommended to be put in ants' roads to disgust and turn them aside.

Send to our office for honey leaflets. They will help sell your honey in your home market

Mr. H. L. Jones, Goodna, Queensland, reports bees doing splendidly, and putting up a record.

Some 450 cases honey were brought to Sydney about a month ago. What became of them?

Ask your neighbouring beekeeper if he is a subscriber to the *A. Bee Bulletin*. If not tell him to send for a sample copy.

In our last issue, on page 160, Mr. Ellerton's communication should have read Muscle Creek instead of Musclebrook.

We acknowledge receipt of pamphlet "Statistics of the Seven Colonies of Australasia, 1861 to 1897," compiled from official sources by T. A. Coghlan, Government Statistician of N. S. W.

We always thought the editor of *Gleanings* was one who held a high opinion of ladies in general, but that par on page 682 quite alters it. We cannot think the American race is declining, and there are women in Australia who can hive a swarm of bees, drive a nail, throw a stone if required, and be good wives and mothers as well.

A Welsh tradition says bees came from Paradise, leaving the garden when man fell, but with God's blessing, so that wax is necessary in the celebration of the Mass. \* \* \* \* The ancients generally maintained that there was a close connection between bees and the soul. Porphyry speaks of "those souls which the ancients called bees." \* \*

### N. B. K. A.

A meeting of the committee of the above was held at Mr. Trahair's rooms, Strand, Sydney, on Thursday evening, November 17. Present: Messrs. Gale, (in the chair), J. D. Ward (hon. sec.), Trahair, Abram, Seabrook, F. Ward, and E. Tipper.

A letter of apology for absence was read from Mr. G. Packham, Molong.

Mr. Ward said there were several matters arising out of the late Convention. The first was the alteration of the Affiliation Rules, which had been referred to this committee to arrange.

The following resolution was carried, on the motion of Mr. Ward, seconded by Mr. Tipper: "That the resolution adopted at the Convention providing that it is desirable to alter Rule 2 of the Rules of Affiliation by providing for one delegate for every five members be now carried into effect."

Conversation took place on the matter of the honey exhibit at the forthcoming Royal Agricultural Show, and the following resolution was adopted, on the motion of Mr. Ward, seconded by Mr. Tipper: "That the following be appointed a sub-committee to arrange for a honey exhibit at the forthcoming Easter Exhibition: Messrs. Gale, Abram, Seabrook, Roberts, J. D. Ward; three to form a quorum. That the sub-committee be empowered to get all information possible, and also to communicate with and make arrangements with the country associations."

On the motion of Mr. Trahair, seconded by Mr. Seabrook, "That the sub-committee wait on the Minister for Agriculture to secure some Government aid towards the prize fund, or help in any respect that can be obtained for the forthcoming exhibition."

Mr. J. D. Ward proposed and Mr. Trahair seconded "That beekeepers be invited to secure and send to the President specimens of bee enemies."

Mr. Trahair introduced the matter of carelessly started bush fires, and moved

"That the committee bring the matter specially before the Police Department."  
Seconded by Mr. Seabrook.

## THE LONDON HONEY MARKET.

The following communication we received from John Haddon & Co., of London, England, an old and well established firm. We have no doubt it will be perused with interest by many of our readers:—

LONDON,  
November 14, 1898.

E. TIPPER, ESQ.

You will see by the heading of our notepaper that we are Colonial Merchants. On your business card we see that you are interested in Australian honey. We regularly are interested in both Australian wax and honey, so doubtless we may be able to do some business with you in this direction.

We do not know whether you are sending along consignments to this port from time to time or not. If you are, then we hope you will place a trial consignment in our hands, as we feel sure that the result will warrant a continuance of your favours.

As you are doubtless aware, the best time for beeswax to arrive in this market is during the early Spring months, viz., March to June, during which time the Trade buy their necessary requirements for the following months, after which date of course they only buy in small quantities. You can easily imagine therefore, that higher prices are paid during these months, for competition is keen.

Australian wax now is selling fully 20/- per cwt. below what it was a few months back. The recent price obtained for common to good quality was £5 15s to £6 per cwt.

Honey on the other hand has been in good demand, and within the past month we have seen an advance of fully 1/- to 1/6 per cwt. To day we quote 18/- to 30/- per cwt. according to quality.

JOHN HADDON & CO.

## SOUTH AFRICA.

Port Elizabeth,  
Cape Colony, 23/9/98

"Dear Mr. Tipper,—Good morning old friend. Your epistle to hand, and many thanks for the BEE BULLETINS sent me. I am out of the bee line at present. I keep no hives owing to having no suitable grounds for keeping bees, and the restrictions put on beekeepers in the boundaries of the town. Honey is very scarce, quart bottles of honey fetching 2/6 to 3/- per quart bottle, and 1/- to 1/6 in the sections when procurable. No honey flow at present. Have had very cold weather here, and rain. I think beekeepers will have a sweet time of it by December. At present we can only get imported honey in 1 and 2lb tins, 1/- per lb. I have had any amount honey orders if I had any. I intend seeing the news agent here to see if he cannot sell the BEE BULLETIN, as it is the best book for South African beekeepers. If some of your big beekeepers were to exhibit their hives, and implements for bee-keeping, on our coming Grahamstown Exhibition, I think they ought to do well. They could extend their business. I will or hope to be there. I am prepared to take on any agency in that or any other line, or as a traveller to any business house. My address now is No. 18 Havelock Street. I hope you will continue to do well with the BEE BULLETIN. Australian butter sells readily out here. Mutton is very high, also beef, butter 2/6 per lb. Any amount of loose swarms about town. Hoping this will find you in the best of health. I remain yours truly, J. STERLING."

The following newspaper extract enclosed in above letter will likely be read with interest:—

### THE GRAHAMSTOWN EXHIBITION.

We are glad to be able to announce that space at the Grahamstown Exhibition is being taken up rapidly, and, as will be noticed in the interview with Mr. W. C. Muirhead, a big demand is being made on behalf of American firms. Canada will be largely represented, and special facilities are to be afforded by the

Dominion authorities for the transport of all goods intended for exhibition, which in all probability will be carried to Capetown free of charge. Other foreign countries are also making arrangements to exhibit on a large scale, and Austria, France, and Germany will be fully represented, considering their share in South African trade. A large number of English firms having branches in South Africa are arranging their exhibits through their South African agencies. Among those making their dispositions from this side are Messrs Callard and Bowser, wholesale confectioners, Duke's Road, W. C.; F. C. Calvert and Co., disinfecting fluids, etc., Australian Avenue, E. C.; the J. C. Nicholson Tool Co., Ltd., London, E. C.; the Glebe Sugar Refining Co., London and Greenock; Eley Bros., Ltd., ammunition manufacturers, Gray's Inn Road, W.C.; H. Rogers, Sons and Co., tool manufacturers, Wolverhampton; Novello and Co., who have published an Ode to be sung at the opening ceremony.

## INTRODUCTION OF BEES.

*Taken from J. Henniker Heaton's "Australian Dictionary of Dates, Sydney, May, 1879.*

"Captain Wallis, of the "Isabella," brought out a number of beehives on his last visit to the colony. Mr. Parr, of George Street, has four of these thickly populated habitations, which seem not to lose any of their forces from a change of climate. A species of this industrious race was introduced into Parramatta some years ago, and lived only a short time. April, 1822."

"Mr. Icely, of Macquarie Place, Sydney, had one of Captain Wallis' original hives, 1823; the honey bee introduced into Tasmania by Dr. Wilson, 1834. Mr. John Hughes, of Sussex Farm, near Bathurst, the first who succeeded in bringing bees alive over the Blue Mountains, 1839; the first person who introduced bees to the Bathurst dis-

trict was the late Thomas Arkell, Esq., of Charlton, Campbells River, who received a hive from the late Nathaniel Payten, of Parramatta, and carried the bees in his gig to Charlton, 1842."

## INVERELL B.K.A.

*Report to be presented to the Third Annual Meeting of the Inverell Beekeepers' Association.*

Gentlemen,—

Your Committee in presenting this, their Third Annual Report, have pleasure in again congratulating its members on the success of the Association during the past year.

The meetings have been well attended and interest maintained, two meetings only lapsing on account of wet weather. The Association has also become affiliated with the National Beekeepers' Association. The Annual meeting of that body was attended by our President, Mr. F. W. Penberthy, as delegate of our union.

Your committee regret to state that an epidemic broke out among the bees of this district in November last, attacking the bees almost simultaneously throughout the district, but we are pleased to add that it disappeared almost as suddenly as it came, in many cases no treatment whatever was used to help the colonies so affected.

The feature of the year was undoubtedly the splendid collection by the Association "in trophy form" of honey at the Inverell P. and A. Society's show, also a very creditable display of individual exhibits of your members at the same show, all competing gaining one or the other of the numerous prizes offered, the judging being entrusted to Mr. E. Tipper of Willow Tree, who kindly visited our show for that purpose, and gave general satisfaction.

Financially the Association close the year with a debit balance of 4/10. It was found necessary to make a special call of 1/3 per member to meet expenses in

connection with 'the show, our income being £7/2/5 and expenditure £7/7/3.

Your committee regret that the number of members has not increased and would suggest that an effort be made to induce all who are beekeeping in our district to join.

In conclusion, your committee hope that increased interest will be taken in the welfare of our Association, and hope that in the future our district will take a leading place amongst the honey producing centres of the colony.

(Signed,) F. W. PENBERTHY, Pres.

G. H. ARKINSTALL, SEC.

## IMPROVING STOCK.

W. A. VARIAN, in *American Bee Journal*.

I have been running by the natural-swarm system, commencing with 38 colonies and increasing to 66. I lost seven swarms that I knew of, and some that I did not see go. Before the season was nearly over I saw I should not have hives enough for near all the swarms cast, so I began to double in nearly every case; in two or three cases where the bunches were small I put in three, and even turned the hive on double swarms when I knew where the last one came from; and with all this doubling I have as yet to find a colony that is queenless among them.

What has impressed itself on my mind is the quantity and thoroughness of forced natural selection put through in running an apiary in this fashion. Of course the contests of the queens are but seldom on even terms, so the work done in selection for vigour is not as great as it looks at first. I should expect that where an old queen and a virgin were hived together the young one is killed. But in all cases where two laying queens, or two virgins, are hived together, the most active and strongest is the one that survives.

Then there is the natural selection of wintering (which paralyses weakness.) of course this applies to all apiaries whatever way the bees are managed.

It appears to me that the selection for vigor that goes on in hives under this system must be very great. This safeguard against degeneracy is totally absent in all kinds of artificial increase and non-swarming systems; therefore, some form of artificial selection should be practiced. I suppose that a nucleus is a requisite in nearly every apiary (at least where they de-wing the queens and cut queen cells), and the eggs, brood and bees used in forming the nucleus we can generally count on being taken from some of the stronger colonies, and give part of the improvement or maintenance of vigour, but I do not think to as great an extent as in the natural system, so they ought to be requeened from specially selected stock once in awhile.

I think the improvement caused by natural selection in the stock of some of the old-timers who have, and still follow, the natural-swarming plan is the chief cause of the great crops of honey they sometimes produce. At least that, and being rapid, easy workers in the apiary themselves.

I look on it that the producers of the honey crop should be able to weave into their systems of management, automatic selection for honey crop—or productivity—by rearing all extra queens from those colonies which fill the supers and work the extractor. And that the other selection for vigor will be attained by the better wintering of the stronger, and the occasional doubling of swarms. All special variations, such as colour, length of tongue, size, quietness, and such things, are in the domain of the queen-breeders, and to be introduced by purchase when produced.

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C. J. H. Gravenhorst, the well-known German Beekeeper, died at Wilsnack, Germany, on August 21st, aged 75 years. The biography of this noted German beekeeper is now published by Ed. Freyhoffs, Oranienburg, Berlin. The cost is 5 marks (5s.)

## QUESTIONS.

180.—Which have you had best results from, in spring managements:—Uniting weak colonies; or, strengthening them by frames of unhatching brood from strong colonies?

S. G. FATHERS.

181.—Do queen's wings grow after being clipped? If so, how long does it take to grow?

F. J. M'GEE.

182.—Which is usually regarded as the better quality in candied honey, coarse or fine grain?

183.—Will honey placed in very black old combs become darker by coming in contact with the cocoons left in cells by young bees?

GEO. KELLY.

184.—Which is the best hive for an out apiary.

JAMES SAWYER.

180.—Strengthen them with hatching brood.

181.—No I have never yet known one.

182.—Coarse I should say, by all means.

183.—Has a tendency to darken if left for any length of time.

184.—If regular attendance, cannot excel the ordinary Langstroth.

AUSTRALIAN YANKEE.

180.—Some seasons by uniting, and some years by strengthening them, by adding frames of hatching brood.

181.—No.

182.—Fine grain.

183.—No.

184.—Twelve frame dovetailed hives, two stories high.

E. J. RIEN.

180.—Building up with brood. I think it depends upon the queen as to which is best.

181.—No. I never knew of them growing after bee has come to maturity.

182.—The fine grain. I have noted the coarse grain is liable to ferment.

183.—I am inclined to think it will.

184.—Heddon hive.

A. J. PANKHURST.

180.—From strengthening with sealed brood from strong colonies.

181.—No, are more likely to break, have got queens three years old and I find them so.

182.—Fine I think.

183.—Yes, from my experience I believe so. If I was extracting honey for show, I should like white combs and not black.

F. W. PENBERTHY.

180.—I prefer strengthening by exchanging their young brood for ripe hybrid brood, if I can get it in early spring.

181.—No.

182.—I prefer a medium grain for my own use.

183.—I don't think so, as honey don't saturate like water.

184.—The same sort of hive you are using in your home yard.

J. PENNINGTON.

180.—I have had best results by taking frames of hatching brood from strong colonies and giving them to the weaker ones.

181.—Queen's wings never grow after being clipped, at least I have never known them to.

182.—Fine grain is usually considered the best quality in granulated honey.

184.—I have had no experience with out apiaries. Should I start an out-apiary I would prefer the ten-frame Langstroth hive with two half supers over brood chamber.

R. H. JERVIS.

180.—If in a locality where one has a spring flow don't take brood away from your best colonies, let the weak ones build up. If in a cold district and cold nights take a comb having a lot of young bees on and brush and let them run in at entrance of weak colonies. By that plan one does not lose any brood by being chilled.

181.—No.

182.—Fine.

183.—A little.

J. L. M. SCHOMBERG.

180.—By distributing frames among other colonies, as weak swarms or colonies are not worth bothering about.

181.—My experience of clipped queens is that they very often get lost and grow into full fledged queens.

182.—That is a matter of taste for customers. Can you produce coarse or fine grain.

183.—No. I find honey in the oldest combs the choicest. It is the pollen that darkens honey.

184.—That is a matter of fancy if you want a moveable apiary. I should recommend shallow frames, Heddon hive.

G. PACKHAM.

180.—If very weak I let them rip, as in nine cases out of ten it pays the best. If strong enough to look after a frame of brood, I prefer it to uniting.

181.—Will a dog's tail grow after being cut off? I say no, neither will a queen's wing, or at least I have never known one live long enough to grow.

182.—This question was discussed at the last convention by a sub-committee appointed for the purpose, with the result that regularity of grain was substituted for fineness, it being considered that fine grain may not always be the best honey.

183.—Cannot say for certain, but do not think so.

184.—Don't know.

NOT SIGNED.

179.—Our house, a little time ago, was almost eaten out with white ants, and on making enquiries around the district, I was recommended to use Kerosene Tar. Some old residents said that they had been using it for years and that it had never failed to completely drive them from the house or shed, to which it was applied. If the boards or posts are not completely eaten through the best plan is not to take them down but to paint them thoroughly with the tar, taking care to also paint the remainder of the shed. The tar has such penetrating powers that it quickly soaks through a 4in x 2in post, and instantly kills any ants which come into contact with it. I am trying it on the hive stands and will let you know the result. It may keep away the small black ants which I find are very annoying to the bees. You can obtain a 4 gallon tin of kerosene tar for 4/6 and anyone having an ant eaten house or shed will find a tin worth twice the amount paid for it.

## QUESTIONS NEXT MONTH.

185.—Reply to H. R. L., page 195 ?

186.—What is the best smoker to use ?

JAMES SAWYER.

187.—In pulling down some queen cells, I came across a queen I should imagine about twelve days old, upside down; I mean head at the bottom of the cell, apparently alive and well developed. I should like to know if any readers of the A.B.B. have come across anything of the kind in their experience ?

## LARGE HIVES

C. P. DADANT in *Gleanings*

We use large hives, as do all those who have tried them, because we do not see how we could keep bees in anything smaller, and because our experience shows us, from experiments on a large scale, that they are preferable to small hives. But I must insist, in the beginning, that those who discuss the question, or the most of them, do not take the matter from the same standpoint that we do. Many who object to large hives take the ten-frame Langstroth brood-chamber as their standard for a large

hive, as compared with the eight-frame, which they consider the proper size. With us the ten-frame Langstroth hive is a small one; in fact it is the smallest hive that we have ever tried here; and the hives we use, and advise others to use, are considerably larger.

When my father came to the United States, in 1863, he had kept bees many years, but had never seen a movable-frame hive with shallow frames—the Debeauvoys hives, which he used in Europe, having frames nearly square, like those of the American hive of H. A. King. These hives were not large—about the size of the present ten-frame L. hive. The hives mostly used in Europe, or in France at least, at that time, were small straw (or box) hives. The leading writers at that time were Debeauvoys, whose system was ostracised by the practical bee-keeper, because his hive although a movable-frame one, was not practical, for the frames fitted exactly in the box without the indispensable bee-space; and L'Abbe Colin, a box-hive bee-keeper whose great ability as an observer, gave him quite a renown. The hive that he recommended above all others was a round straw hive. Its size was a trifle under 14 inches in diameter, and its height 10 inches and its capacity was about the same as that of a six-frame Langstroth hive.

It was with this hive that bee culture was conducted then, and was apparently successful. An improvement that was recommended by the above-named writer in his book, "Le Guide du Propriétaire d'Abeilles" (The Bee-owners Guide), consisted of ekes, or stories, of the same style—three stories, or ekes, each about 4 inches high, divided by slats, forming one hive of a capacity of 1650 cubic inches or about  $6\frac{2}{3}$  Langstroth combs. It would seem that the size of the hive has something to do with the prolificness of the queen, R. L. Taylor to the contrary notwithstanding; for as Mr. Taylor, in one of his late articles, asserts, not one queen in a hundred will lay 2500 eggs daily, continuously, for a certain period.

In the same manner, L'Abbe Colin, who used still smaller hives, says in his book :

" We cannot estimate at more than 600 the number of eggs that the mother of a strong colony can lay per day during the good season. April, May, and June are, for our countries (Northern France) the good season, the time of the greatest breeding. During these three months laying is not interrupted if there is honey enough in store. . . . A swarm weighing 2500 grams (a little less than 6 lbs.), contains about 23,000 workers; but a swarm of this great weight is rare."

This same writer, speaking of the super, says that is useless to use a super of a capacity of more than 7 kilograms (about 14½ lbs.). His supers also were of straw. This man also speaks of large hives.

" Some apiarists, using neither ekes nor supers, have adopted a hive of *great dimensions* [italics mine] with an interior capacity of 30 to 35 liters [1900 to 2100 cubic inches, about the size of the brood chamber of the eight-frame L. hive]. This hive is not to be disdained; it does not swarm as readily as the others, but, giving larger swarms, it preserves an apiary in better condition than other hives."

Please bear in mind that this writer was a leader in France some 40 years ago—in the very country where they now use hives of a capacity more than double the size he recommended, and which was then thought to be the only rational size. The work I quote from was in its third edition in 1865, and is yet considered an authority on many points, for the writer was as practical as a box-hive bee-keeper could possibly be. But probably he had never tried any thing larger than the hive he recommended; or if he had it was perhaps as a "fad," and, as recommended by Hutchinson, "on a small scale"—too small for any results.

Before I go any further I wish the reader to remember that I am not writing in favour of large hives as a theory. We are using large hives on a large

scale; we have been using them for 30 odd years, and have discarded the small hives only after long and persistent trial of both kinds, in hundreds, and our small hives were the ten-frame Langstroth hives of to-day.

## DRONE MATING.

### AUSTRALIAN YANKEE.

I am afraid that I misunderstood friend Penberthy re the queen bee "throwing out a scent." I understood him to mean that a queen threw out a scent when she was at a desirable distance from the hive, or when a drone to her fancy came near.

But according to his statements on page 155, where he cites the slut, that he means that a virgin queen has a peculiar scent when out on her wedding flight; then a little further on he says, "I hold that when a queen has had a good fly, she opens her vulva which would liberate the scent, drones that cross the trail would follow, etc."

Now, my theory is, that all queens when of a suitable age to go forth on their marriage flight, have a peculiar scent, as almost all female animals have in mating time, and most insects. Now when the queen has reached a place where drones congregate, she flies with her abdomen hanging down and opens her vulva, when the drone accomplishes the act of copulation. I have seen hundreds of queen and drone ants mate in this way, and I fully believe that the queen bee does the same. The worker that I mentioned was in just that position, and was in front of a queenless nucleus, and a few days after I saw the drone trying to mate with the worker; there was a number of laying workers in the nucleus. It is my firm belief that fertile workers, just before they commence to lay, have the same scent as a virgin queen when on her wedding trip.

Ask your neighbouring beekeeper if he is a subscriber to the *A. Bee Bulletin*. If not tell him to send for a sample copy.

**SOLAR WAX EXTRACTOR.**

HOW IT MAY ALSO BE USED FOR PURIFYING THE WAX.

C. P. DADANT, IN *American Bee Journal*

The extractors I use are of a size to take glasses 30 x 40 inches in size. The comb-pans are made from 20 x 28 inch sheets of tin, thus allowing ample room inside the extractor for both comb and melted wax pans to remain in the sun.

When the melted wax is in the right condition, that is, just before the sun sinks low enough so the wax commences to cool, I dip off the wax into molds, using oblong square-cornered bread pans for molds, and a small flat-sided dipper. Empty square cans, such as those used for cocoa or corned beef, one-pound size, are good. With care, nearly all the wax can be dipped off in an absolutely pure condition, leaving all the dirt and a thin layer of wax. These last thin cakes of wax, with such dirt as adheres to them, are allowed to accumulate until there is enough to make a charge for the extractor, when they are re-melted and treated the same as were the original combs.

Of course, if one doesn't wish to take the trouble of dipping off the wax into molds, he can, after it has hardened, scrape off the adhering dirt, but I greatly prefer the dipping process.

**FINDING QUEENS.**

MR. DOOLITTLE, IN *American Beekeeper*.

From an experience of nearly thirty years, I am led to believe that the queen is near the centre of the brood nest at midnight, and works toward one side of said nest from then till about noon, when she returns on her trip of egg laying, arriving at the centre again at midnight, from where she passes in an opposite direction toward the outside, where she arrives about noon. Having this thing in mind, when I am trying to find a queen in a populous colony, which has not had its brood nest disturbed for some time, I go to it somewhere from 11 a.m. to 1 p.m., using as little smoke as

possible and not jarring the hive in opening so as to stampede the bees and queen, when, by carefully noting about where the outside comb of brood is, I lift it from the hive. If she is not on this comb, and it proves to be the outside comb of brood, I next lift the outside comb of brood on the opposite side of the hive, and in as many as four cases out of five, I will find her on one of these two combs; while if I do the same thing early in the morning or late at night, I do not find her on either of these combs one time in five, but must look nearer the centre for her. If you wish to see a queen quickly on any comb, don't hold it close to you and look right square on it, but hold it off at arm's length and so that the vision will strike it obliquely. Why? Because if you hold it close up, the vision will only take in a little part of the comb, and you will be looking directly on the back of the queen, in which position the wings will cover the larger part of her abdomen, when she more nearly resembles a worker bee than in any other. By holding the comb off at arm's length, the vision takes in nearly the whole surface of the comb at one glance, and by holding it obliquely, the long tapering abdomen of the queen is easily distinguished from the shorter abdomens of the workers, for it is the abdomen of the queen which more readily tells of her presence than anything else. Even in this worst of all seasons, I have found queens at the rate of ten an hour in the most populous colonies at the out apiary, taking off and putting back the surplus apartment at that, while I often treble this speed with my queen rearing colonies.

**THE SUNFLOWER.**

W. K. MORRISON, IN *Gleanings*.

The seeds are very fattening for poultry, and a small supply every day gives a stimulus to egg-production in cool weather.

The oil is scarcely inferior to olive oil, and for salads it is superior.

The oil makes first class soap.

The stems produce excellent fibre, chemically treated.

The seeds, roasted and ground, are a substitute for coffee.

Pigs fatten readily on the seeds alone—better than on corn.

Oilcake made from the seed after the oil has been expressed is considered by the agriculturists of Great Britain, Russia, Holland, Sweden, Denmark, and Germany, as the finest obtainable feed for cattle. This is high praise, but it is true.

In most localities it is an excellent honey-producer. Where it is not, a different kind ought to be tried. The Jerusalem artichoke is a good bee-plant, and its tubers will pay for hog feed—the hogs will be better for it. Vilmorin, of Paris, has an improved sort for the table.

Each bushel of seed yields a gallon of oil, and 1500 lbs. of oilcake per acre is obtained. The sunflower is exhaustive to the soil, but wheat produces extra well after it. It enables the farmer to rotate his crops more, and gives him another string to his bow, more especially if he is a stockman.

The white seeded variety is the best for oil; the big black Russian sort for poultry and cattle feeding; but *Helianthus Indicus* is the most profitable for general cultivation. It is a dwarf species.

It is imperative that the seeds be cleaned at once with a fan-mill, and *kept dry*; if not, they will mold. I think it worth while for beekeepers to experiment a little in this line, if only to induce their neighbours to take up the business.

Haage and Schmidt, Erfurt, Germany have good seed, and could probably give more particulars in regard to European methods, but cheap cultivation is what is chiefly wanted.

## C A P P I N G S.

*From American and other Bee Journals.*

A National Queen Breeders' Union is now formed in the United States.

In parts of Germany, the apiarist serves two years as an apprentice, then takes a situation as a journeyman beekeeper.

W. A. McPhail, says in *Southland Queen* :—I only use one super at a time on my extracting colonies; by this means they will seal and fill it quicker.

In F. L. Thompson's "Notes from Foreign Bee Journals," in the *Beekeepers Review*, we read the following:—Stopping of robbing is recommended by feeding the colony which is doing the robbing.

An English beekeeper is said to have mowed a meadow up to within a yard of the entrances of 17 colonies of bees. He had wiped the bodies and limbs of the horses with a cloth dipped in a solution of carbolic acid and water. Not a horse received a sting.

A Mr. Gubler advises all who can put their hives under shelter not to paint them. His experience for a number of years has been that colonies in hives not painted winter better. Another writer says the excessive swarming propensity of the Carniolans disappears in a few generations if they are put in hives larger than the little flat boxes in use in their native country.

DR. MILLER'S QUILT.—Hard-twisted sheeting made into a bag open at one end. Into this put six or eight thicknesses of newspaper, so cut or folded as not to come within an inch of the outside margin of the bag. If the paper is large enough to fill the bag, the shrinkage of the cloth will curl up the paper so it will not lie flat. The sheet is then stitched through the centre so as to hold the paper in its place. It should be made large enough to allow for shrinkage.

MR. DOOLITTLE SAYS:—First have your queens mate with drones as distantly related to your queens as possible;

second, use queens as closely related to imported Italian stock as possible, where working for extracted honey, for there are no bees in the world, in my opinion, that excel those one generation from imported stock for honey gathering; third, where white cappings of combs becomes one of the great objects to work for, as is the case when working for comb honey, then choose the Golden Italians, on account of their qualities in that direction, while at the same time they are in no way second to Italians from imported stock, as to their honey gathering qualities.

Mrs. David Popple, in *Canadian Bee Journal*:—We have wintered our bees in the snow three years in succession, and have had better success than any other way. In the beginning of November we put wheat chaff cushions on top of the bees, as thick as the supers will allow; then a board on top of the cover of the hive, then a brick on top of that, to keep the wind from blowing off the covers. When the first snow comes we bank it on the two sides and back firmly. You can open the hive when you like in winter, and the bees always seem comfortable. I tried a few hives this winter by shutting half the entrance, but do not care for it, as there seems to be a moisture form at the opening, and it freezes in an ice, and shuts out the air altogether. I had to thaw them open different times.

At the Ontario Convention, a considerable discussion took place as to the desirability of opening up the British market for Canadian honey. It was stated that the clover honey from Canada was of a better quality than that from Australia and other foreign countries. The British market does not demand minty honey, hence it is a mistake to send basswood honey there. Nothing but the best clover should be sent to Britain, and many thought that we could not expect to realise over 7 to 8 cents nett for it. Again referring to the subject of a British market for Canadian honey, it was moved by W. Couse,

seconded by F. A. Gemmil, and carried, that we heartily endorse the action of the Government in placing a commissioner in London to look after the interests of Canadian products, and that we request honey to be placed on the list, and that we would recommend to the Government Mr. C. W. Post as an inspector to guarantee any honey which we may export.—A. B. J.

Many still believe that the entrance to the surplus apartment serves to shorten the travel of the foragers. No, the bee that flies in the fields goes and returns through the brood-nest entrance; it does not frequent the super, having nothing to do there. When it enters the hive it delivers its load of nectar to the first home bee that extends its tongue to it. This one either employs it for the nutrition of the brood or keeps it in its own body, where it is separated from the water it contains, part of which is absorbed by the organism, and part by respiration. That the nectar is stored in the cells by the honey-gatherer, as it comes from the flowers, and is there condensed by direct evaporation, is a fable to which no one who wishes and knows how to observe will lend credence.

—Editor, *The Bee-keepers Review*.

Abbe Pincot, after six years' experience with an apiary in cubical hives with frames 13 by 13 inches, inside measure, has found it to be an invariable rule, without an exception, that worker brood will be found in the extracting supers when their frames run in the same direction as the frames below, but no worker brood will be found in them when their frames are at right angles to those below. The rule does not apply to drone brood. On comparing this experience with those of others which have resulted differently, he infers that it is necessary, in order to succeed, to put the supers on early enough to catch any early flow, thus relieving the brood nest of honey; and to use as deep brood frames as he himself has, since in Dadant hives the queen will lay worker eggs above, when the supers are placed

crossways.—Thompson's notes from foreign Bee Journals, in the *Beekeepers Review*.

One of the most interesting and most unique features of the forthcoming Industrial Exhibition, to be held in Toronto from August 29 to September 10 will be an exhibition of bees under the management of Mr. R. F. Holtermann, lecturer on beekeeping. At the Agricultural College, Guelph, Mr. Holtermann has made twenty years of close study of the habits of the honey bee. He will, under a specially prepared gauze tent, open hives of bees showing the contents of hives, including drones, workers, the queen bee, etc. When the weather is suitable he will also make a public exhibition of having an entire swarm of bees cluster and hang on his arm, and give brief lectures, explaining the methods pursued. Specimens of queen cells, combs, pollen and honey in cells, drone and worker comb and section honey in all stages, will be shown in an adjoining tent, also the ancient and modern methods of keeping bees.—*Canadian Bee Journal*.

H. F. Moore, says in *A.B.J.* :—Toothpicks are sometimes used to give a taste of honey. You can't carry a teaspoon along, for people will not like to eat after another. If you are calling at private houses you can ask each lady to bring a teaspoon, but even then it is best to have a small stick along, in case she don't want to bother. The nicest thing I know of is sold under the name of "cigar lighters." They are pieces of soft wood  $4\frac{1}{2}$  inches long,  $\frac{1}{4}$  inch wide, and 1-16th inch thick. They are sold very cheap. Stick one of them one to two inches into the liquid honey, and by rolling it up like a string you can give any one almost a teaspoonful of honey, if you and the other person are dextrous. The lady who won't go after the spoon, will be pleased with your ingenuity, and will taste your honey just for fun, and you have made a sale.

J. H. Martin, in *Gleanings*, speaking of the orange tree says:—The blossoms

are very fragrant, and the air is filled with the perfume, much resembling the odor of the old eastern lilac. The bees work with utmost industry while the groves are in bloom in April or May, and they will fly several miles for the nectar. The writer knows that his bees secured orange-blossom honey from an orchard six miles away; and recently Mr. Wilkin has written that his bees were getting orange honey from orchards eight miles away. Ordinarily bees will not go so far. I doubt if they ever were known to go so far for peach or apple bloom; but the orange has such a strong odor that, if a breeze is setting toward the apiary miles away, the bees catch the odor, and follow it; and while they get a little honey, the distance is too great for them to get it in paying quantities. Orange honey is of fine flavour and colour, and as there is but a limited amount produced it should command an extra price. Dealers, however, do not hesitate to brand whole carloads of honey as orange, when it is something entirely different.

Under the heading, "The Poison of Bees" the *Popular Science News* (in its March, 1898, issue) remarks as follows : "It is generally assumed that the poison of the bee is formic acid. Prof. Langler however, finds that this is only partly true ; the bee-poison which he examined was a bitter tasting liquid with an agreeable odor, which, although it contained formic acid, when diluted to a one per cent. solution, so that it no longer gave an acid reaction to litmus, still possessed appreciable physiological action. Moreover, when kept at a temperature of 100 degrees for over six weeks, so that all the formic acid was entirely volatilized, the liquid still produced hyperæmia of the conjunctiva when introduced into the sac." Prof. Langler, a chemist, has isolated the active principle, which he finds gives alkaloidal reactions, is unaffected by heat, or cold, or by acids. Injected into the veins of animals, it produces effects similar to the venom of serpents.—A.B.J.

A NEW BEE TENT.—Two waggon bows are lengthened with strips of wood till you can stand up under them; and each extremity is shod with a sharp iron to punch into the ground. Bind the completed bows with cloth, to make sure that the tent proper will slip on and off without catching on a splinter. Now set the two bows so they will cross and form an X over your head. Fasten them thus by about three loops of strong wire—all on the upper half of the concern. Make a fourth hoop, of six inches larger diameter than the frame, and hang it in place with long strings. This keeps the shape of the fabric at the bottom; and by its lifting up property lets you out and in. The cover, or tent, proper, is mosquito-bar. Cheap calico part way up would be an improvement I think.—*L. L. SKAGGS, in Beekeepers' Review.*

HOW WILLIE ATCHLEY ADVISES BEGINNERS TO RAISE QUEENS.—Go to some strong colony and take the queen away in the evening, and on the next evening take all the unsealed brood away. Before doing this get a new tender comb, slip it in your breeder's hive between two frames of brood, where she will likely lay on it right away. Watch this frame every day, as soon as the queen has laid on it, take it out and cut several pieces out that contains eggs, fasten them on other frames that are in the queenless hive that you wish to build cells, also put the frames you have cut the pieces from in it same time, and you will get a lot of nice cells on it; then after they have the cells all started that they are going to build, look them over carefully and pinch off all the small ones, and save none but the largest, and by this plan most any one that understands bees can rear good queens.—*Southland Queen.*

The 13th annual report of the National Beekeepers' Union of U. S. A. by Thomas G. Newman, is very interesting reading. The troubles dealt with during the year have included:—"Prohibiting beekeeping; Wanted the apiary removed; Dr. Besses' sweet clover field;

Bees eating fruit; Trouble with fruit men; An inhuman neighbour; Trouble about a swarm; Declaring bees a nuisance; Commission men's rates; Depredations on an apiary; Threatening to poison the bees; Dispute about honey sales; Cares relating to apriaries; Bees near highways; Put a beekeeper in jail; Are bees a nuisance?" A number of these matters were referred to the law courts, where the union's lawyer was most successful in nearly every instance in the interests of the beekeeper; in other cases law work was avoided, through the parties being afraid to face the strength of the combination. The Union only fights for those who are its own members.

An interesting correspondence has been appearing in the *American Beekeeper* on the price of honey. It was commenced by Mr. Ed. Jolly in the March number. In it he said the cause that had been prominent in lowering the price of honey had been the competition among the commission men and dealers, and the rush of honey into these men directly the honey harvest is over. He strongly recommended unity and organization among beekeepers. He was replied to by Mr. G. M. Doolittle in the June number, who states the cause of the low price was the unearned charges of the non-producers. Mr. Jolley replies that the trouble is that honey occupies a lower place in relation to other produce than it did formerly, and that without the excuse of a single over-production to offer for it. In the same journal a Mr. M. W. Shepherd had accused farmer beekeepers of causing the reduction in the price of honey, to which Mr. C. Stanley Baxter replies, stating the farmers are as careful in placing their honey upon the market as the specialists. He concludes—The great cause of low prices is competition, and the law of supply and demand. If any person cannot compete with his brother beekeepers, farmer or otherwise, as to quality, quantity, and marketing in the most attractive packages; so the eye is pleased as well

as the taste, he had better engage in some other pursuits, and keep from grumbling about the price of honey.

E. Ruffy, says:—"At one time I stopped up all cracks, including the least; cushions, paper, paste-board, old clothes, etc., were all laid under contribution; the entrances were contracted as much as the authors of the period advised. Result: very irregular wintering, damp combs, damaged stores, dysentery, queenless colonies, and I don't know what all. This was repeated every year. Gradually I made experiments, more and more conclusive, and for more than ten years *I have no more winter losses*, after deducting some losses due to causes having no connection with my method. I have hives with big frames and with little frames, some parallel and some at right angles to the entrance; it makes little difference, I promise you I shall see them all in good health in March. Some years I winter on sugar syrup, others on dark honey; I have no more dysentery or losses." He also says it is necessary to begin wintering preparations early. Colonies deficient in stores at this time are fed, so that by the 15th of August all are ready. By thus doing, the bees that have no value for winter do the work of ripening and storing and the extra brood called into being by the stimulation emerges at the end of August. These young bees will not become aged before that time arrives, as is the case with bees in colonies fed in September or October. Speaking of sealed covers, he is of the opinion that the primary use of propolis is to defend against enemies, not to keep out ventilation. Another correspondent calls attention to the fact that bees in hot countries, such as the Tunisian or Punic bees, are lavish of propolis.—*Bee-keepers' Review.*

With regard to forecasts of the season. Last year I plead guilty to the mild insinuation; but this year I made a resolve that I should not be guilty of prematurely forecasting the season. I can not imagine to what our friend is

referring unless it is notices from our business manager to the effect that we are running night and day, and can not keep up with orders. Indirectly this would imply that beekeepers all over the United States are expecting a tremendous honey flow. But this is not the case; for the fact is, last year used up the supplies that were on hand; and as beekeepers had cleaned out their stock, which they had not done for several years preceding, they wanted more. Now, to offset the possible implication that this year was going to be a tremendous honey year, in our issue for April 1 I gave expressions to these words:—"What's the matter with beekeepers this year, that they are going in so heavily for supplies? Beyond the fact that bees have wintered well, there is no indication that the season will prove to be anything remarkable." I think now exactly as I thought then; and I will say further, that, one or two seasons when there has been a great rush for supplies, there has been subsequently an indifferent honey flow. In consideration of the fact that all the factories have been running full time, and some night and day, like ourselves, it would seem as if supplies enough had been made to last all the beekeepers of the United States two good seasons.—*Ed. Gleanings.*

M. Minoret states his practice of migratory bee-keeping, on the plan practised by an old bee-keeper with a hundred colonies for the last fifty years, modified by extensive experiences of his own. He does not move established colonies, but swarms only, procured artificially. None but large swarms are transported. Two swarms weighing five kilos (about 11 pounds) will yield much more surplus with less trouble than five swarms weighing two kilos. Plain light boxes are used, containing frames with starters, and covered with wire cloth. The same boxes serve for hives after the arrival. When the destination is inaccessible by wagons, narrow boxes with wire cloth sides are temporarily substituted. To procure the swarms, the

transportation box is set on the stand of a strong colony, two combs containing a little honey and brood of all stages removed and set in it, then the bees brushed into it from the rest of the combs. The old hive with its combs is then set on the stand of another colony, and the latter moved to a new location, after brushing the bees from three or four frames, so that the brood of the hive set in its place will not become chilled. When evening comes, the transportation boxes are closed, and the trip made in the night. The home-hives, containing from 16 to 20 frames, are large enough to winter two colonies apiece. When the colonies from the out-apiary are brought home in the fall, each is domiciled in one half of a home-hive, with a division board between. The nextspring, when the flow opens at the home-yard, the colonies may either be run on the Wells system, or united to make strong colonies. This management, of course, presupposes an early flow at home and a later one elsewhere.—Thompson's notes from foreign bee journals in the *Bee-keeper's Review*.

Aaron Snyder, in *Beekeepers' Review* says:—There are two or three varieties of American buckwheat; the black, the grey, and the silverhull; all having nearly the same habit of growth; viz., that of branching considerably. For this reason we should sow only from two to three pecks per acre. Of late, the Japanese variety has been introduced into this country; and is pretty well liked as a main crop, but not as good for honey. The grains are black, and little larger than the American. It does not weigh quite so much per bushel, and the straw grows larger and does not branch out so much as the American. For the latter reason, farmers generally sow more seed; about a bushel to the acre. Here in Eastern New York, buckwheat is usually sown from the 20th of June to the 6th July. It is generally thought the later it is sown, and yet have time to ripen before frost comes, the better it yields. There is a wide range in yield; all the

way from 10 to 35 bushels per acre; all depending upon the soil and amount of fertilizer used. I know of no grain that will respond so readily to the use of fertilizer as will buckwheat. The crop is generally cut by hand, with grain cradles, raked up in small bundles, set up on end, left to dry, and just as soon as dry enough to thresh is hustled into the barn on the principle of "hurrah boys, make hay while the sun shines." The straw is almost worthless, except for bedding. Stock will eat very little of it; in fact, they might about as well eat so much wind. As a honey plant it is one of the best; so much so that a bee-keeper located in a buckwheat district has a *sure thing*. Failures are so scarce they are not worth mentioning; at least, that has been my experience. The weather should be a little damp to have it secrete honey to best advantage; for that reason the bulk of the crop is gathered in the first half of the day, unless it should be a little damp all day; in that case the bees buckle right in as long as they can see.

ONE WAY OF UNCAPPING.—All of my honey houses are arranged on the same plan as nearly as possible. This plan is arranged so that the work may be done with as few notions and as little work as possible. Some people seem to work just for the fun of it. I don't. Results are what pay the bills. The filled frames in the carry-alls are placed on the stand, facing the operator. We will assume that the honey is all capped—that is, that all the combs have some capped honey in them, ranging from the outside combs with just a strip in the middle to combs that are capped all over. The operator picks up the first one by the top bar, and places it on the rest to the capping-can. The frame is stood on one of the staples that are driven into the end of the bottom bar, and grasped by the opposite end of the top bar in such a way that it may be put in any position; and when one side is cut off it is whirled around the other side to, without having to be lifted. Commencing at

the bottom, the cappings are cut with a quick drawing or slightly sawing motion. About two sweeps lengthwise of the frame will usually clean a side. Then a slight twist whirls the comb round ready for the other side. As the last cut is made, the comb is brought down to a horizontal position ready to go into the extractor. All of my extractors take the frames in a horizontal position. When the combs are uneven of course it takes some extra digging with the point of the knife to clean them. After they have been through the extractor a few times they will be level. Where the combs are only partially capped, one sweep of the knife does it. To cut nicely, give the knife a slight drawing motion, about as a barber uses a razor. Once in a while one strikes a batch that will not cut nicely; then smaller cuts and more of them are required. After trying all kinds of capping knives, I have come to use only the Bingham, principally because they seem to stand better. To do good work the knife must be kept very sharp. I always use the knife cold, washing it off only once in a while to sharpen it on a fine-grained stone.—HARRY S. HOWE, in *Gleanings*.

At the late annual meeting of the Ontario Beekeepers' Association, a Mr. Dickenson said:—I took the trouble to write to a friend in Liverpool who is a commission merchant and sells a great deal of honey; the reason I did so was because I saw that it would not be long before we would be looking around for a market; it was the year before the hard frost; I had a thousand pounds over after the winter sale. Of course I anticipated a very large yield the next year, but it was a blank, but nevertheless I have the information that I had written for. He sent me three samples of California honey, graded, with a very lengthy letter explaining the whole situation, as to what I would have to do in order to compete against that honey, and figuring it up I found that the honey would have to be put on the Liverpool

market at seven cents net. Since that there has been, as I say, this year with the hard frost, which made it a blank with me, and I expect it did with a great many beekeepers. I know that there are some apiarists in this meeting that are worse off than I was. Generally speaking it was a hard year for beekeepers, and therefore it made a scarcity of honey; it left it in that shape that we did not need to look for a market till we got a large flow again; I think we have had a large yield this last year, and I would just say that there is a difficulty; if we should get a yield next year the same as we had this year, that is, if the clover and basswood should yield an ordinary yield, we would have an enormous quantity of honey to dispose of some way. This Liverpool market is in that shape, and I think we will have to compete with sage honey from California. I should judge that possibly that market might fluctuate, that is, the California supply; there would be just that feature about it. The most of the quotations that this gentleman gave me were from shipments that came around by Cape Horn in vessels. Until this honey arrived at Liverpool, there was a little better price to be got; that is when it came by the overland route, which made the freights very high and expensive; but the bulk of the honey we have to compete against is honey that goes around by Cape Horn in sailing vessels; and one year ago in large quantities. Seven cents is I think what it netted at that time.—*Canadian Bee Journal*.

We acknowledge receipt from Mr. J. C. Fittell, Eel Creek, Queensland, of photo of apiary. He has been a very successful apiarist, having won many prizes at Shows. The photo is an exceedingly good one, showing a large number of hives, with honey-house and residence, and plenty good honey timber surrounding same. We note he goes in for large gabled covers over hives. We presume the Queensland semi-tropical sun needs such. May continued success attend him.

## CORRESPONDENCE.

R. C. L., Emu Park, October 28 :—The season here is promising to be a good one for bees. Wishing the A.B.B. every success.

W. G. White, Melbourne, 16th November, 1898, reports :—The market here is dull owing to the hot weather, and large supplies of local honey arriving.

W. H., Greta, Nov. 3 :—Please let me know what is the best method of keeping a fresh swarm in a box, as I have had two good swarms leave a box similar to the one they came out of.

We always give them a frame with larvae in.

H. R., Thuringa, 11th November :—Last season was a very poor one for the bees. I lost nearly half my stock and had to feed owing to the sudden cessation of the honey flow in December, and there being no autumn honey.

J. L. M. S., West Tamworth :—I have had a very good honey flow, been robbing all the winter. I have taken a ton and a half from 66 hives. Hope you have had good success with yours and that you are all well.

C. W. G., Wattle Flat, Nov. 1 :—The A.B.B. is always welcome. The season looks bad for honey this year on account of the dry weather. We had nice rain lately which freshened things up a bit. It may make the timber bud next year. Wishing you a good season. Can you tell me where I can get the pure Cyprian queens, and the Carniolan ?

See our advertising pages.

W. D., South Woodburn, October 25 : If the price of honey does not improve during the next six months, I am afraid I will have to give beekeeping up. I have had honey in Sydney for as long as ten months, and my agents still advise me that they cannot get sale for it, and as honey season has come around again, and prospects no brighter, I am nearly "full up" of it. Wishing you and your paper every success.

F. P., Nabiac, October 24.—We had a very poor season last year, but they are doing splendid now, and prospects are bright. I have taken sixty-one 60lb

tins, and more yet to extract from my own yard of 100 colonies. I am also working an apiary for a gentleman close by, and they are equally as good. The labels you sent are very nice.

F. W. Penberthy, Elsmore, 17th November :—It is very dry here, everything is getting dried up, a lot of wheat is being cut for hay. Honey is coming in fast. I am kept very busy extracting. This season will be my heaviest so far by all appearance. Last Sunday my bees took a boiled oil drum of water in three hours,—equal to 150 hives, including nucleus hives—and I am sure one third of them went to a dam some distance away for water. I hope you are very busy extracting too.

W. P., Marrar, October 17 :—A man down this way has a few hives of bees. He was under the impression that his bees were loafing, and required something to stimulate them. His remedy was as follows :—He procured a frame with comb from the hive, and put the same on a black ants nest, till it was covered with them, went to the hive and put the frame of black ants into the hive to stimulate them, which of course they did. This latest discovery may be a help to novices. Any beekeeper may in fact use this remedy if they feel disposed, as it has not as yet been patented.

H. W., West Devonport, Tasmania, Nov. 7 :—I have been away in West Australia; have arrived home again, and found all my A.B.B.'s stored away for me to read. Bees did very bad last year, and now I have got foul brood, so you can guess what a treat I have got. Things look very well for a good season, but the bees are so weak that there are very few to gather the honey. I am hiving my bees on empty frames; those that I have treated are working pretty well, but I don't think I will get much honey from them. I think it will take all the season for them to pull up.

Might you not secure more honey by doubling up.

J. G. C., Kangarilla, S. A., Nov. 7 :—I always look forward to the end of the month for the A.B.B., I would not be

without it for three times the amount I pay for it. Bees are doing first class just now, but I lost a good many in the early spring, died out leaving box full of honey; nor am I the only one, as plenty of others have lost half their stock, while a few have not a solitary bee left. There are scarce any bees left in the bush. Last season was the worst I ever experienced, but at present there is a good run of blue gum coming in which seems to warm the mettle of the bees. There is every sign of a good honey flow till the end of January, after which there is white gum and peppermint. Wishing you and your paper every success.

J. S., Tomingley Road, October 31.—It has been a splendid season so far, for the bees in this locality. All through the winter they gathered plenty of pollen, and a little honey. Now spring has once more dawned upon us; it has brought with it all prospects of a splendid honey season. Bees are now storing honey from red gum, which is coming out in good style. We have not been exempt from the scourge of paralysis in this district; some beekeepers have lost heavily here. I quite endorse "Australian Yankee's" remarks in regards too much notice being taken in the colour of bees. To a great extent I have proved hybrids are the best in this part to winter, and are troubled but a very little with this so-called paralysis, and by no means behind pure bred bees at honey gathering. I have always found them superior in that quality. For example, a neighbour of mine, whose apiary was located one-and-a-half miles from here. In the spring of '96 he started with one hundred and six colonies strong, all pretty bees, and I started with fifty-seven colonies of mixed bees, about thirty good colonies, and the balance from small to medium. In '96 and '97 I hybridised all colonies except a few. My neighbour still kept to the pretty bees; whether it is for the docility or honey gathering qualities I don't know. Anyhow, this season he, my neighbour, came out of

winter with something over 30, and very weak. I came out with 49, 40 of which were in tip-top condition, so I think this is a fair proof, for which came out on top. I may say both apiaries were sheltered about equally.

J. S., Drakes Brook, W.A., Nov. 8:—I regret my long silence, but have not been well since my last note to you, and as you know, things thus get behind. However please find my subscription now overdue, as I don't want you to stop my paper, and put me on your black list, for I can assure you I go from cover to cover every time the A. B. B. arrives (I felt like trying once or twice) but had not the energy to put my good intentions into practice. I had a fair share of honey last season, and went into winter with forty good strong swarms, and five small ones, each had an abundance of stores. But we have had a very wet and trying time, the bees and I, except just a few days in the latter end of September. It has been wet, and very cold right up to the end of October, some days a half an hour of sunshine, when out came swarm after swarm, and clustered sometimes altogether, then the rain, and I assure you we had quite a picnic getting them fixed up any way comfortably. However, I think the trouble is over; had all told 20 swarms off, and for nearly a fortnight I have had to feed them—the new swarms. One very strong swarm began to dwindle, and I had to watch a chance between the showers to see what was wrong, and found brood in 9 frames in lower story, and not a drop of honey, while the upper story was filled, having quite 50lb of honey. I exchanged a few frames, uncapping those I put below, but found when next I saw them, it was too late, being too far gone, and they were simply drowned in the comb. However, I removed queen, and after a few days let them have another, and they are now all right. In future they shall winter upstairs, and have the stores below. I don't know what to say about the season; last year I had extracted 500lbs before this date, and I have not any show of getting any at

present, as it takes them all the time to get sufficient to keep them going. However we must hope for the best.

G. P., Molong, writes:—It's a very long time since I addressed you on matter pertaining to bees, and I am afraid that you will have long since concluded that I had forgotten the A. B. B. and its genial proprietor, but such is not the fact, as I look anxiously for it about the end of the month. Though I have been silent in this district, I have noticed with pleasure several able correspondents have been contributing from here. I notice one writer wanting to know how to arrange bees for removal by train. I am not quite certain who the inquirer is, but have a strong suspicion, and am under the impression that the questioner has had sufficient experience in moving bees to answer the question himself for the benefit of others. We have had a remarkable season; all through the winter there was abundance of blossom, with whips of nectar which the bees collected during the fine weather, and up to the present there has been a good supply of blossom with plenty of honey, yet there has been very little swarming, and the bees are backward in building up. In '93 and '94 I was directing my best attention to breeding out the swarming fever, and I think that my efforts have been very successful, for I can count my natural swarms in four years on the fingers of one hand which must be considered a very great success, seeing that I have kept 70 hives all the time. But hold on, I think I hear someone say how has the extractor been kept running. Ah, that's the point. The season that I thought it necessary to make an effort to breed out the swarming fever, the extractor did a great run, and more honey was extracted that year than all the time since. Now Sir, I am contemplating establishing an out apiary, and am looking round for a race of bees that have not had the swarm fever bred out. Wishing the A.B.B. every success.

H. R. L., Boggabilla, November 3rd:

Sir,—Would you let me know what is wrong with my bees. I have been subscribing to your paper this last twelve months and I think it is a very good little paper. I started with three swarms of bees in about January, 1897. I had one good swarm that did well and two weak ones in April. I thought the two weak ones were queenless, so I got a neighbour of mine to look at them and he said they were queenless (of course he was a beekeeper and understood his business). So I got two untested queens from him and got him to introduce them. They remained weak until the spring, when they did very well, all three hives. Extracted about 4 cwt of honey up to about the next March and increased them to seven swarms. When the winter came they were very strong, the first 3 hives being the strongest. They were alright until the spring, 1898, when they all disappeared except two swarms, and they were very weak. I noticed in the hives there appeared to be honey and water mixed which had gone sour. I do not know whether that would kill the bees. I never saw any dead about the hives. My hives were very tight. I think the breath of the bees is what has made it go sour. I have oilcloth over the frames, so no air escapes from the top. I might mention there are two other bee keepers, close by, one that has been bee keeping for about seven years and he blames sugar ants for killing his bees. He had twenty-eight hives and has only five left. Another beekeeper had about thirty-five hives and has only five left, he does not know what to blame. I am sure it is not the ants that have taken mine. I think it is some poisonous flower that has killed them. The hive had plenty of honey, it was not starvation, and it was a good winter for bees. They were working all winter. Bush bees five or six miles from there did well all through the winter, and came out strong in the spring.

We would like to know the size of your hives and their entrances. Are there many spiders in the ground and bush around you. How were those queens reared? Much depends on

that. Haphazard reared or old queens are not to be depended on for long life or prolificness. Will some of our readers have a say on this matter?

Dr. Miller says in *A. B. J.* :—The tendency now-a-days seems to be in favour of board covers without quilts. That may do for comb honey, but not for extracted. Take a top off with no quilt under, probably the top fastened to the combs by the bees. Look out for stings. But take the top off when a quilt is on, and you can gently lift one corner and smoke as you pull the rest off. See the difference between the two operations.

A HOME-MADE SWARM HIVER.—As I live in the timber I had to devise something to get down the swarms, which clustered high in the trees. For this purpose I found a crotch of wood large enough to spread wide open a large bran sack, which I secured to the outer ends of the crotch, with rings for the other side of the sack to slide up and down the arms of the crotch. When I wanted to catch a swarm I pulled the sack wide open with a string, held it under a cluster and shook the bees into it. I then let go of the string and the sack closed |

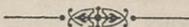
on them, when I let them down to the ground by the aid of a heavy twine.—L. A. Syverud, in *Gleanings*.

Some ten years ago I decided that a screwdriver was about the worst thing about, moving frames, and lifting cases etc., and I made a tool that is one of all sorts. We need a scraper in the corner, of hives as well as, often, at sides and bottom; and, too, it's just the thing to clean in corners of window sashes, and then the women can scrape the spider and kettle bottoms; and it's just the tool to scrape up spots on the floor. They can be made of worn-out files if one wishes, and save quite an item. I make the wide end standing out, so to reach handily into corners of hives or any corner; and after using awhile all who use them say, "Why didn't I think of that before?"—H. P. Churchill, in *Gleanings*.

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I procure Fresh Breeding Stock EVERY SEASON, so as not to in-breed (a great factor I think in preventing Foul Brood). I had eight breeding queens arrive from Italy last month (September)

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|  | 1lb. | 5lbs. | 10lbs. | 25lbs. |
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| Brood, | 2/- | 8/9 | 16/6 | 40/- |
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|          |     |      |      |      |
|----------|-----|------|------|------|
| Section, | 2/6 | 12/- | 22/- | 52/6 |
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Corks (Pickle) small, 3d dozen, 2/3 gross

|   |   |                   |           |  |
|---|---|-------------------|-----------|--|
| " | " | medium, 3d dozen, | 2/6 gross |  |
|---|---|-------------------|-----------|--|

|   |   |                  |           |  |
|---|---|------------------|-----------|--|
| " | " | large, 4d dozen, | 3/- gross |  |
|---|---|------------------|-----------|--|

Drone Traps, Alley's, 1/4 each

Entrance Guards, 3d each

Enamel Sheets, 4d each

FRAMES—(Hoffmann) 9/- per 100

|   |                       |
|---|-----------------------|
| " | (Allwood) 6/- per 100 |
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|   |                        |
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|         |           |
|---------|-----------|
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|          |           |
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|                |          |
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| Little Wonder, | 9/6 each |
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Honey Gates, 1½ (tinned and cut) 2/9 each

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Honey Cans, Counter, 120lbs, 10/6

Honey Jars, from 2/6 dozen

|                   | doz. | gross.                   |
|-------------------|------|--------------------------|
| Honey Tins, 1lb., | 1/-  | 10/6                     |
| " 2lb.            | 1/6  | 15/6                     |
| " 4lb.            | 2/-  | 22/-                     |
| " 7lb.            | 2/9  | 29/-                     |
| " 9lb.            | 3/-  | 34/-                     |
| " 10lb.           | 3/6  | 39/-                     |
| " 14lb.           | 5/-  | 57/6                     |
| " 28lb.           | 6/9  | 72/6 (levers 2in.)       |
| " 28lb.           | 6/9  | 72/6 (bung 1½in.)        |
| " 28lb.           | 7/9  | 87/6 (1½ screw caps)     |
| " 28lb.           | 8/3  | 92/6 (2in. screw caps)   |
| " 60lb.           | 9/6  | 105/- (lever tops 2in.)  |
| " 60lb.           | 9/6  | 105/- (bung 1½in.)       |
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|---------------|------|------|------------|------------|
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| Select Testeg | 14/- | "    | 2 " 26/-   | 3 " 35/-   |

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I am again to the fore with my well-known strains of Bees, to which IMPORTED additions will shortly be made.

I am breeding as fast as possible, but owing to so many booked orders for large lots, I am unable to supply any fresh orders, and must ask you not to expect queens by return just now. I cannot guarantee to supply fresh orders before middle of October.

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" " tested, 8/- " ; 6 for 40/-

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| do 11, 7/6 pair ; 84/- dozen pairs                        | W.B., No 12 " 9d ea. 8/- "  |
| do 12, 7/6 pair ; 84/- dozen pairs                        | Honey Cans, Counter, Japd., 120lbs., 17/6 each  |
| each dozen  | do Plain .. 12/6 each   |
| Honey Extractors, Little Wonder, 10/- 110/-               | d Japd. .. 60lbs. 10/- each   |
| do do do Best, 12/6 138/-                                 | Doz. Gross  |
| do do (Novice) (Am.), 35/-                                | Honey Jars, 2lb. (Round) .. 3/6 36/-  |
| do do (Col.), 35/- deep tank                              | Honey Tins, 1lb. (Lever Top) .. 1/- 11/-  |
| do do Cowan 2-frame American 50/-                         | Do 2lb. do 1/6 19/-   |
| do do do Colonial 50/-                                    | Do 4lb. do 2/- 22/6   |
| do do (deep tank)   | Do 7lb. do 2/9 30/-   |
| do do Stanley 2-frame Reversible, 60/-                    | Do 9lb. do 3/3 35/-   |
| Gear Baskets and Gate Complete (Novice) 26/-              | Do 10lb. do 3/6 40/-  |
| do (less can only) (Cowan) 35/-                           | Do 14lb. do 5/6 60/-  |
| Gear Bevel, 17in., 6/- set ; 68/- dozen sets              | Do 28lb (Bung) 7/- 75/-   |
| ," Side Bevel 20in., 8/- set ; 90/- dozen sets            | Do 28lb (Lever Top) 7/- 75/-  |
| Pinion Wheels, for Bevel Gear, 17in., 1/- each 10/6 dozen | Do 28lb (1½in. screw cap) 8/- 90/-  |
| do do 20in., 1/- ; 10/6 dozen                             | Do 28lb (2in. do ) 8/6 95/-   |
| Pinion Wheels, for O.S. Novice, 6d each                   | Do 28lb (2½in. do ) 8/9 97/6  |
| Crank Wheels, O.S. (Novice) 6d each                       | Do 28lb (3in. do ) 9/- 100/-  |
| Gear Wheels, 17in. bevel, 1/6 ea., 16/- dozen             | Do 60lb (Lever Top) 10/- 108/-  |
| do 20in. bevel, 2/- ea., 20/- dozen                       | Do 60lb (Bung) 10/- 110/-   |
| do. Shields, 17in. bevel, 1/- ea., 10/6 dozen             | Do 60lb (1½in. screw top) 10/6 115/-  |
| do. do 20in. bevel, 1/- ea., 10/6 dozen                   | Do 60lb (2in. do ) 10/9 117/6   |
| Gear Handles, 17in., bevel, 1/6 ea., 16/- dozen           | Do 60lb (2½in. do ) 11/- 120/-  |
| do 20in., bevel, 1/6 ea., 16/- dozen                      | Do 60lb (3in. do ) 11/6 125/-   |
| Sockets, Bottom, or Shoes, complete, 1/- each 10/6 dozen  | Special Quality Tin, 2s 6d per dozen extra.   |
| Gear Wheel and Bracket, O.S. Novice, 3/-                  | NOTE.—Case and Packing.—7lb. to 14lb. Tins 2s. per gross or less. 28lb. and 60lb. Tins, lashing in bundles, 1s. |
| Gear Connections, double 9d ea. ; 7/6 dozen               | Honey Pails (nests of 3) painted 1/6 per nest   |
| do do Pins, 17 and 20in, 6d ea, 5/- dozen                 | Do Dadant, 6d each  |
| 10/6 dozen  | Hive Openers, Simplicity, 4d each, 3/6 dozen  |
| Gear Wheel and Bracket, O.S. Novice, 3/-                  | Honey Tanks (quoted on application)   |
| Gear Connections, double 9d ea. ; 7/6 dozen               |   |
| do do Pins, 17 and 20in, 6d ea, 5/- dozen                 |   |
| 10/6 dozen  |   |

|  |     |          |  |  |
|--|-----|----------|--|--|
| Kuife Heaters (with lamp)  | ..  | each     | doz  | Separators (Wood) 2/6 per 100 ; 22/6 1000                  |
| Knives, Uncapping Novice   | ..  | 3/6      | 40/-   | do (do slotted) 3/- 100 ; 27/6 1000                        |
| Do do Abbott's   | ..  | 3/6      | 40/-   | Spacing Strips, 8 frame, 2d set (3), 1/9 doz sets          |
| Do do Bingham  | ..  | 3/6      | 40/-   | do 10 frame, 2d set (3), 1/9 doz sets                      |
|  |     | 100      | 1000   | Slate Tablets, 2d each ; 1/3 dozen                         |
| Labels for Honey Tins (in colours)   | 2/6 | 20/-     |  | Scales, Union (single beam) 18/- each                      |
| Do Jars 50   | do  | 1/6      | 10/-   | do (double beam), 22/6 each                                |
| Do Jars 42   | do  | 1/6      | 10/-   | Swarm Catchers (Manum's) 3/9 ea., 42/6 doz                 |
| Label Cartoons   | ..  | 1/-      | 5/-  | do with tripod do. 5/6 ea., 90/- doz                       |
| Metal Corners for Frames   | ..  | 1/-      | 7/6  | Swarm Catcher Tripods, 2/6 ea., 27/- doz                   |
| Metal Rabbets, 8 and 10 frame, 6d doz., 5/- gross  |     |          |  | Stencil Combinations, 1/2 in 2/- ; 1/2 in 2/6 ; 1 in 3/- ; |
|  |     |          |  | 1 1/2 in 3/6 ; 1 1/2 in 4/- ; 1 1/2 in 4/6 ; 2 in 5/- ;    |
| Nails, 5 in. (flat head) 19 guage  | ..  | 8d       | 7/6  | 2 1/2 in 6/- per set                                       |
| Do 4 1/2 in. do 18   | do  | 7d       | 6/-  | Screw Caps and Collars for                                 |
| Do 1 in. do 18   | do  | 6d       | 5/-  | Honey Tins, 1 1/2 in 1/- doz ; 9/- gross                   |
| Do 1 1/2 in. do 17   | do  | 6d       | 4/6  | do 2 in 1/3 12/-   |
| Do 1 1/2 in. do 15   | do  | 4d       | 3/6  | do 2 1/2 in 1/6 15/-                                       |
| Do 2 in. do 13   | do  | 4d       | 3/6  | do 3 in 2/- 22/6   |
| Do 2 1/2 in. do 13   | do  | 3d       | 2/9  | Screw Cap Honey Gates, 1 1/2 in 9d. 8/6                    |
| Do 2 1/2 in. do 12   | do  | 3d       | 2/9  | do 3 in 1/- 11/6   |
| Do 3 in. do 11   | do  | 3d       | 2/9  | do 3 1/2 in 1/- 11/6                                       |
| Paint (any colour) 6d lb; 3/- 7lbs.  |     |          |  | Saws (Barnes) Circular, complete, £8/8/-                   |
| Queen Excluding or Perforated Zinc. 8ft. x 28in  |     |          |  | do do Jig attachment, £1/5/-                               |
| 6/- sheet ; 70/- dozen sheets.   |     |          |  | do do Boring attachment, £1/-                              |
| do do 28in. wide 1/- foot run  |     |          |  | do Rip Cross-cut, 6in set 7/6 ea, 84/- dz                  |
| Queen Register Cards, 4d dozen, 3/6 gross.   |     |          |  | do do 7in for use 8/- ea, 96/- dz                          |
| Queen Cages, small (Benton's) 3d each, 2/- doz.  |     |          |  | do Files, 10in Cnt, 1/6 ea, 16/- dozen                     |
| do large do 4d each, 3/6 doz.  |     |          |  |  |
| Queen Cage Covers, small (Benton's) 6d dozen ;   |     |          |  | FULL STOCK OF ALL PARTS                                    |
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| Queen Cage Covers, large (Benton's) 6d dozen ;   |     |          |  | 2A, 3A, 1 set figures (7) 3/6 per set                      |
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| Queen Cages (Miller's) 6d each ; 5/- dozen   |     |          |  | 2A, 3A, 2 do (9) 6/- do                                    |
| do spiral (West's) 4d each ; 3/6 dozen.  |     | ea. doz. |  | 5A, 6A, 3 do (9) 10/- do                                   |
| Queen Cell Protectors (West's) ..  | 3d  | 2/6      |  | 5A, 12A, 3 do (9) 12/6 do                                  |
| do do (Doolittle's) ..   | 2d  | 1/-      |  |  |
| Smokers, Corneli ..  | ..  | 3/6      | 39/-   | Type Combination Holders—                                  |
| do Small (Pender's) 2 1/2 in. ..   | 4/- | 45/-     | Nos. 1, 2, 3, 4, 5, 8, 10 and 12, 1/- each       |  |
| do Medium (Pender's) ..  | ..  | 5/-      | Type Combination Holders—                        |  |
| do Large (Pender's) 3 1/2 in. ..   | 5/6 | 60/-     | (Partitioned) Nos. 6, 7, 11 and 15, 1/6 each     |  |
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| do Dr. Best's (Bingham) ..   | 5/6 | 60/-     | Uncapping Cans (Dadant's) 25/- each              |  |
| do Clark's (Original) ..   | 2/3 | 25/-     | Wire Tinned Spools, 1 oz. 2d each ; 1/6 dozen    |  |
| do Crane ..  | 5/6 | 60/-     | do 1lb. 6d " 5/0 "                               |  |
| do Quinby ..   | 4/6 | 50/-     | do 1lb. 9d " 8/0 "                               |  |
| Smokers Hill's ..  | 2/6 | each     | do 1lb. 1/3 " 12/6 "                             |  |
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| do do 2nd ..   | 3/6 | each     | Note.—All our Wire is on Spools. No waste        |  |
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| Section Holders (for Dovetailed Hives) 6/- 100 ;   |     |          | do do 30in. wide, 1s yd ; 9/0 doz                |  |
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