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West Maitland, N.S.W.: E. Tipper, March 23, 1894

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

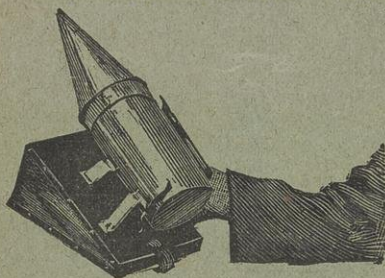
VOL. 2. No. XXIV.

MARCH 23, 1894.

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MARCH 23, 1894]

The Australian Bee Bulletin.

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Here's another:—"I received the two Carniolan queens you sent me in tip-top style—they were as fresh as though they were just out of the hive. I let a friend have one, and the one I kept myself I cannot speak too highly of. I introduced her into a small colony, and did not expect them to do more than build up for winter, but they have surprised me, and I had to put on a topstory. They have also built out the eight combs, and given me a surplus of 30lbs., and I expect more. I can see that nothing less than a 10-frame hive will do them, and they are the most gentle bees I have ever handled. I think in a short time they will take the place of many of our Italians. Enclosed please find cash for ten more, which I have sold on the recommendation of the one I got from you.—A. A. ROBERTS, Rosebud Apiary, Muswellbrook, N.S.W.

I have a number of similar reports, but try them yourselves.

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"Select tested queen is a beauty, and is laying splendidly, and I must say she is all that can be desired. I have some very fair queens, but none of them equal to yours, as she is splendid in colour and very prolific.—H. HAMLYN, Helidon.

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and answers in the following numbers of
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SATURDAY, MARCH 24TH.
At Tattersall's Hotel, Newcastle.

TUESDAY, APRIL 17TH.
At West Maitland.

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Mr. Robert Wolfe's Western Australia communication in our next.

An article on "Hereditry in Bees," by Mr. Abram, (reply to Mr. Gale), arrived too late for insertion in this issue.

It is no use sending stamps in payment of subscriptions from one colony to another. We are getting an accumulation of them, and will have to send back to be exchanged.

The Index and Title Page of Vol II of the *Australian Bee Bulletin*, will be published with our next issue. We shall be happy to bind the volume neatly in cloth for 3/6.

At Port Macquarie show, held Feb. 28th, and 1st inst, Mr. D. Scott, gave a prize of £1 1s, for best hive of bees at work in bar frames. Three competed, Messrs Dick, Brand, and Freeman, won by Freeman. Mr J. S. Dick gave 10s 6d for best bottle peach jam made with honey, 14 entries. Won by Mrs J. Campbell, Kempsey. Same donor gave 10/6 for best exhibit quince jelly, preserved with honey, 11 entries. Won by Mrs Tadd, Manning River.

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ALL COMMUNICATIONS for the *Australian Bee Bulletin*, should be addressed to E. TIPPER, West Maitland, N.S. Wales.

The Naturalist's Journal.

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The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEE-KEEPING

W. MAITLAND, N.S.W.,—MAR 23, 1894.

AS this number concludes the second volume of the *Australian Bee Bulletin* the beekeepers of Australia and New Zealand may well congratulate themselves on the result of their united efforts whereby the *Australian Bee Bulletin* has obtained such a good name not only in our own sunny southern lands but also in the United States and South Africa. These congratulations are due to correspondents, subscribers and advertisers alike, who have nobly done their best to make the *A.B.B.* what it has been called—a credit to Australia. We have no fear but that the same noble support will be continued, with the result not only that the *A.B.B.* will be improved, but that by the education and experiences it will continue to impart to beekeepers the quantity of honey raised will be increased, the quality generally improved, home and foreign markets extended, and prosperity and happiness more and more abound in the home of every apiarist in these glorious climes. We conclude by asking our many friends to forward their renewal subscriptions or other monies due at the earliest opportunity.

We have been asked by many of our correspondents—Is the *A.B.B.* paying financially? We reply, with our own editing, our own printing office, our own sons in the office; our daughter writing the beekeepers' addresses, and assisting in reading the proofs; and in our apiary—which we kept on the house-top, but with the exception of a couple of hives have had to remove a few miles away to where the bees could get honey—the help of one who was taught to love and attend to bees by her father in her earliest

years; added to an old established printing business, in which can be turned out the neatest of honey labels or excellent catalogues—we bring the *A.B.B.* out in its present form. To make it a *financial success* we want those who receive their copies with *blue pencil marks* on the address wrapper to forward their subscriptions. We could stand more advertising patronage, and being in no way connected with any supply house, or the selling of queen bees, can always act impartially by those who are so engaged. We sincerely thank our many friends and supporters for their liberal assistance, and conclude by asking all to watch for the Blue Pencil Mark on the address wrapper, and note what it means.

National Horticultural & Pomological Society.

We are indebted to Mr. A. E. Rumsay, assistant secretary of the N.S.W. Beekeepers' Association, for the following list of prize winners in the apicultural section at the first annual show of the National Horticultural and Pomological Society, which took place in Sydney on March 2 and 3. The judges were Messrs. A. Gale, M'Farlane, and George James. The show was a great success, and attracted a large crowd of visitors:—

Open to all.—Best collection of bee-keeping appliances—Hebblewhite and Co., George-st. city, 1; R. K. Allport, West Sydney, 2. Best trophy of apicultural produce, may include honey in jars, frames and beeswax—W. T. Seabrook and Co., bee farm, St. Ives, 1; R. K. Allport, North Sydney, 2. Best frame hive—Hebblewhite and Co., George-st. Sydney, 1; R. K. Allport, North Sydney, 2. Best Honey Extractor—Hebblewhite and Co., George-st. Sydney, 1; R. K. Allport, North Sydney, 2. Open to practical bee farmers only: Purest Italian queen and bees in observation hive—C. Mansfield, Largs, 1; W. Abram, Bee Farm, Beecroft, 2; J. D. G. Cadden, Windsor, v. h. c. Best frame hive—James Trahair, (Messrs. Hebblewhite & Co., Sydney) 1; W. T. Seabrook and Co., Bee Farm, St. Ives, 2; Best honey extractor—W. Abram, Italian Bee Farm, Beecroft, 1. Comb honey, best 12 sections—J. E. Taylor, Cowra, 1. Comb honey best large frame—W. Abram, Bee Farm, Bee-

croft, 1; J. E. Taylor, Cowra, 2. Comb honey, best small frame—W. Abram, Bee Farm, Beecroft, 1; W. T. Seabrook and Co., Bee Farm, St. Ives, 2. Extracted honey, 12lb. in glass jars, liquid—J. E. Taylor, Cowra 1; W. T. Seabrook and Co., Bee Farm, St. Ives, 2. Extracted honey, 12lb. in glass jars, Canded—W. T. Seabrook and Co., Bee Farm, St. Ives, 1; J. E. Taylor, Cowra, 2; W. Abram, Bee Farm, Beecroft, h.c.

Wellington P. H. & H. Society.

(N. S. W.)

The following are the Apicultural prizes for the above, to take place on Wednesday and Thursday, April 18, 19:—

Best collection of bee-keeping appliances, prize 20s.

Best Trophy of Apicultural Produce may include honey in jars, frames, sections, beeswax. 1st prize 20s, 2nd 10s.

Open to bee-farmers only.

Italian or any other breed of bee, in observation hive, 1st 20s, 2nd 10s.

Best frame and section hive not painted, hive made by exhibitor, 10s.

Best honey extractor, prize, 5s.

Best 12 lb sections of honey, 5s.

Best 3 large frames of honey, 5s.

Best 6lb extracted honey in glass jars, 1st 5s, 2nd 3s.

Open to Members of the W. V. B. K. A. only.

Most attractive display of bee products, 1st prize 20s, 2nd 10s, 3rd 5s.

Best specimen comb foundation, full size 16x8, made by a novice, 5s.

Best 5lb Beeswax, soft clear yellow wax to be given the preference, 5s.

Best collection and trophy of bee appliances and products the property of exhibitor, prize 20s. Mr. Nancarrow's special.

Best display in single glass nuclei, of the greatest number of different varieties of bees, not less than 3 varieties, prize 10s, Mr. Matthews' special.

Best Essay on Bees and bee-products, suitable for this district, in condensed form. Prize £2 2s, Wellington V. B. K. A. special.

The H.R.B.K.A. hold its mouthly meeting at Newcastle on Saturday evening, March 24. The energetic secretary, Mr C. Mansfield, and Mr. G. Hardy, are doing their best that the meeting shall be a large and interesting one. Mr Mansfield will bring his powerful magic lantern, to which he has added some most interesting and instructive apiarian slides. The suburban trains run very conveniently.

The following were the Apicultural prize winners at the Tatura (Victorian) Autumn Show, which took place on Wednesday, Feb. 28th:—

Showing Bees at work. First, £1, second 10s. J. T. Adams, Mooropna, 1; 1 entry.

Best collection Bee Appliances. First £1, second, 10s. J. T. Adams, 2; 1 entry.

Best 5lbs. Honey Comb. First, 10s, second, 5s. J. T. Adams 1, Mrs. Summerland, Mooropna, 2; 3 entries.

Best 5lbs. of Honey. First 10s, second 5s. H. Sutton, 1, J. T. Adams, 2; 5 entries.

MUSWELLBROOK B. K. A.

A meeting of the members of the Muswellbrook Beekeepers' Association was held in St. Alban's schoolroom on Saturday night last for the purpose of considering the advisableness of offering prizes at the next exhibition of the upper Hunter P. and A. Association. A sum of nearly £4 was subscribed in the room for the purpose, and Messrs. Grant, Paul, Ellerton, Hazlewood, and Roberts were appointed a sub-committee to allot the money subscribed. We have been informed that the P. and A. Association intend to offer three guineas for competition among beekeepers, and that amount with the sum previously mentioned, should certainly give an impetus to local apiculture.—*Chronicle, Feb. 27/94.*

FOUL BROOD CURE.

The Editor of the A. Bee Bulletin.

Sir,—I am very much interested and pleased with your journal, and consider it a very useful paper to beekeepers. I started last season with the Bar frames, having two black swarms, and I Italianized them, and increased stocks to 6 hives, when suddenly they began to fall off, the queens gave over laying before the close of the season, and as a consequence my colonies collapsed. I managed to bring one through the winter by feeding it constantly and removing the hive every cold night to a warm room. I discovered something was wrong, combs were mouldy and giving off a bad smell, and the bees inert. This season being well

advanced the bees did not make progress, so I determined to find out what was the matter and sent a sample of comb to the Technological College, and the report on it was, "Foul Brood of a very bad type, burn everything, stocks and all." I however had begun to act upon them as suggested in your September number re foul brood before receiving the report.

And I may say in a few words that I have completely succeeded in putting away the disease. And the bees are doing first class, and I may add for the information of others, that in order not to lose the bees by swarming after taking everything from them, the queen's wings must be cut. My bees came out twice but the second time returned as the queen could not leave the hive. I boiled the frames and scalded the boxes well, and burnt up all the comb, and made a clean start again. I believe I got the foul brood from a swarm of blacks I discovered in the paddock on a tree, for it was soon after I found the bees falling off. I recommend the plan suggested in your September number, with what I have added. Yours etc.,

A. KING.

Broughton Vale, 15th Feb. 1894.

ANOTHER ENEMY.

Mr W. E. Bagot, Broadwater, Richmond River, sent us a beekiller which he stated frequents the corn crops. It was about the size of a large beetle, catches the bee with its front claws, and pierces them with a long horn. We sent the sample to the Department of Agriculture, Sydney, from whom in a short time we received the following reply.

217 Macquarie street, Sydney,
27th February, 1894.

Sir,—I have the honor to inform you that the specimen of bee-killer forwarded with your letter of the 4th instant has been identified as belonging to the order "Hemiptera" (bugs), and to the family Reduviidae; and stands near the genus Harpactor. The most of the species belonging to the family Reduviidae are predacious on other insects, and it is therefore not surprising that the specimen sent attacked a bee. As, however, rarely any of the species of this family appear in extraordinary numbers, the Department does not anticipate any danger from them

regarding bee culture. They are distinctly beneficial insects, and an exceptional destruction of a bee is more than outweighed by their general usefulness.

I have the honor to be, sir, your obedient servant,

WALTER CAMPBELL.

For the Under Secretary.

E. Tipper, Esq., *Australian Bee Bulletin*,
West Maitland.

EMPTY TINS PER RAIL.

At the instigation of Mr Niven, of Eugowra, and other beekeepers, Mr Albert Gale wrote to the New South Wales Railway Commissioners for a concession in the freight charged for empty cases used in the carriage of honey. He received the following reply:—

Government Railways of New South Wales,
Secretary's Office, Sydney,
21st. Feb. 1894.

Sir,—With reference to your letter of the 20th ultimo, in which you ask on behalf of the beekeeper's Association for a concession to be made in the freight charged for the carriage of new empty cases used in the carriage of honey, I am directed to inform you that the matter has been considered, but the rates for empties are so low that at present no further reduction can be made.

I have the honor to be, Sir, your obedient servant.

H. McLACHLAN,

Secretary.

Mr. A. Gale,
Beekeepers' Association
Ingleside
New Canterbury Road,
Petersham.

SENDING HIVES AWAY.

A few suggestions on the above may be of value to many of our readers.

A short time since a box hive, weighing altogether some 60lb, was sent us. It was closed, kept in its normal position, carried carefully to the railway station, travelled by passenger train forty miles, then taken by cab one mile to its destination. The weather was warm, the honey and comb came down, and out of possibly a 4lb swarm of bees only some half-pound was saved. The honey was rendered distasteful by the drowned bees. Next time such a hive is sent us we shall recommend its being turned on its back, then the honey will not fall and drown the bees.

After that we received some dozen

swarms of bees—bees only—in square boxes, with gimlet holes for ventilation. They came about thirty miles by mail coach. Four of the largest swarms arrived one mass of dead bees. Instead of all wood and gimlet holes we would recommend in future one side be a single thickness of bagging well tacked on.

Not long since several hives of bees were being carried by luggage train on a New South Wales railway. For convenience sake the guard put one of them on a shelf. In shunting the van got a jerk which brought the box down. That guard will never put a bee hive in a similar position again except when his bitterest foe is to supersede him in charge.

Hives should always travel with the frames parallel with the rails. Otherwise every sudden stoppage of the train means extracting brood and honey, and displacement and possibly killing of bees. So, when sending hives per rail, place plain instructions as to which side should be uppermost, and by the use of arrow-head marks indicate the position it should lie in relative to the rails. We have had much experience with railway guards, and always found them willing and anxious to carry out instructions. But a hive must take its chance where there is nothing to indicate top, bottom, ends, or side. And wouldn't a hive be in a mess that had travelled a few miles on one of its sides—a very likely thing to happen with no directions and a guard ignorant of bees!

Mr. W. F. Hunt, Frogmore, Burrowa, writes:—Perhaps you will be good enough to draw the attention of your readers to Bokhara clover as a desirable plant for the apiary. Last year I sowed a little in my garden, but it did not flower, apparently reserving all its powers for root growth. This year it has very large roots, has grown to a height of between three and four feet, was covered with flowers and simply alive with bees. It has been in bloom for quite three months and is still blooming a little. It emits a powerful scent.

INTRODUCING QUEENS.

JENNIE ATCHLEY.

Beeville Bee Co., Texas, U. S. A.

Written for Australian Bee Bulletin.

I have found that it is just about as hard to introduce a worker as it is a queen. But, at some seasons of the year, when bees are prospering, they will admit workers, drones, or take queens much easier than when they are gathering no honey. So we may conclude that the best time to introduce queens is when bees are busy gathering honey. They seem to be good natured at such times, the same as people are when they are prospering. Well, should we wish to be successful in introducing when bees are not gathering honey we must bring about these conditions by feeding, and I think that there ought not to be any loss to speak of if we only use care and contrive with the candy plan. The greatest trouble with the candy plan of introducing is, the party receiving the queen fails to fill up the food hole, and the queen is liberated too soon. If a small portion of common powdered or granulated sugar were mixed together till it formed a stiff dough and fill up the food holes with it, the queen will not likely get out too soon and all will be well. But should the recipient just place the cage in the hive as received, the food may be almost consumed and of course the queen and bees will get out too soon. I have not lost a queen by the candy plan in a long time. One other great trouble is the receiver of a nice queen is too anxious about her and opens the hive too soon. The hive, to insure safety in introducing, ought not to be touched until 5 days have elapsed, and usually all will be well. There is no other mode of introducing that I like as well as the candy plan. But to make a real success of it as in other business we *must* exercise our own best judgment, as sometimes circumstances are not the same. For instance it may be too cool to leave a queen on top of frames.

HEREDITY.

ALBERT GALE, SYDNEY. (CONCLUDED.)

"The bees could not well build upwards."

But they *can and do build* worker and drone cells *longitudinally*. Then why don't they build the queen cell in the same direction? Bees frequently build upwards. All burr comb is built upwards, and all broken comb that lies at the bottom of a hive is repaired by building both upward and downwards.

Instead of an *erect* comb a queen's cell represents an *inverted* one."

All queen-cells are cone-shaped and are *always erect*.

"Besides the larva might get drowned in the quantity of liquified food were the cell *upright*."

By "*upright*" I presume Mr Abram means inverted from its natural position. *Might* is no proof. If the cell could be "*upright*,"—inverted—its inmate must occupy the same relative position she does in a cell that is natural, *i.e.*, perpendicular, the inmate's head being earthwards, and the liquid food at the abdominal end of its larval or chrysalis tenant. If the cell were "*upright*"—inverted—its occupier would have her head skywards, but the liquid food would still be at the abdominal end. She appears more likely to suffer drowning in a naturally perpendicular cell, and would so suffer if it were not for the glutinous nature of the semi-liquid food combined with the capillary attraction of the cells, because the food is uppermost and its inmate underneath. The supposed inversion of the cell, as worded by Mr Abram, places the inmate of a queen cell uppermost and the food underneath, therefore in the final steps of her larval state and chrysalis form the liquid food would have to run *uphill* so as to be able to cover all the breathing spiracles of the young queen before she could be drowned. Mr Abram does not appear to be versed in the breathing apparatus of an insect, or he has not carefully read my article on that point. There is a great deal in the life-history of queen bees Mr Abram has yet to learn, and some of that history others of us have yet to acquire.

"But a different form is necessary to indicate the importance of its occupant."

This is purely a flight of imagination, belonging to medieval days, when the queen bee was looked upon as a royal inmate. We look upon her now and recognise her only as a mother bee. She is no more important than the drones or workers. If there were no queens there would be no drones nor workers. If there were no drones there would be no queen nor workers. If there were no workers there would be no queen nor drones. One element of the hives is as important as the other. They are only parts of a whole. Besides a queen cell could be built at the base of the comb longitudinally, and in that position as conspicuously as now when vertical.

Paragraphs six to seven I pass over because they have reference to food fed to larval bees, and I have not denied it. In fact it should not have been introduced.

"In looking upon Mr Gale's statement regarding the agencies of food, the sexual organs of workers ought to attain greater perfection than those of the queen, because the former receives more *producing* material than the latter."

How Mr Abram can construe any of the statements in my article to agree with this I can't tell. If by "*producing material*" he means the *materials of reproduction*, it is impossible for him to twist or to contort what I have written to agree with this "*simple statement*" of his.

"Well, I admit that a fertile worker cannot become receptive, but I maintain some worker bees are receptive, though before they become fertile."

Neither can a *fertile queen* become receptive. If all worker bees in a hive were to become receptive it could not alter the physical characteristics they received when developing as workers. In that development all the reproductive organs were suppressed.

"Perhaps Mr Gale has never heard of such a thing as a complete connection of a drone with a worker, but nevertheless it is a fact."

Yes, Mr Gale has heard of it. Cheshire, in "*Bees and Beekeeping, Scientific and Practical*," Vol I, page 239 says "An instance of worker copulation which has

been scientifically verified is on record." One swallow don't make a summer is a very old proverb, and was never more true than in this case. As far as a drone is concerned it may be complete, but not as it regards the worker. If Mr W. Abram wishes further information on the subject of his paragraph I can give him chapter and verse that would astonish him. Nothing of that nature would surprise me. If all the workers in a hive had connection with drones it could not make them lay fertile eggs or develop them into queen bees.

"But the imperfect developed sexual organs of such workers hinder her from fulfilling the full duties of a mother"

If such be the case *her* connection could not have been "complete." It is the agencies that I have referred to that have caused the imperfectly developed sexual organs of such worker, and they cannot exercise the complete duties of a mother.

Paragraph ten only deals with the incomplete cocoon of the queen larvae, and is only re-iterating the ideas of almost every writer on the subject from Swammerdam and Huber downwards. If Mr Abram understood more of insect architecture and general insect metamorphosis he would have been more careful in making known his own views on the subject.

The eleventh paragraph in Mr Abram's article is his *Amen* to all I have said on the imperative requirements for the developing queens to have all the air obtainable by both abdominal and thoracic spiracles. What better method could the bees adopt to give the required amount of air than to remove the cap of the cell as stated by Mr Abram. The very reason of the cell being removed is to give the extra amount of air I have referred to.

"In submitting the above information to the readers of this journal I have intentionally refrained from any remarks regarding mental characteristics."

Then what does Mr. Abram mean when he writes in his 5th paragraph and 18th sentence. "The bees in building their combs have no consideration for queen cells." Therefore they have a consideration for building drone and

worker cells. Is not this consideration a mental characteristic?

"We have no alternative but to accept nature's law which proves that in bee life all fertile eggs possess the characters required for a mother."

In my article on "Heredity in Bees" I have adhered to nature's laws as it regards bee life. In that article I have used the terms "fertile," "fertilize," &c., in the sense as used by beekeepers. In the broad meaning of the word, i.e., not the sense in which it is used by beekeepers, it is not generally understood by others, because the egg that produces a drone is as fertile as the egg that produces a worker, or a queen. If a drone egg were infertile it could not hatch. In my article there are these words "Whether it is to be a fertile or infertile female is decided at the point of the ova depositor, i.e., Whether it is to be a queen or a worker is decided by the mother bee laying the egg in a worker's or a queen's cell, therefore I have said that "all fertile eggs possess the characters required for a mother."

"There are in nature certain matters which the Creator has wisely hidden from our observation."

Has Mr. Abram forgotten that the "mental characteristics" that he supposes he has "intellectually refrained from" passing any remarks upon, and the physical characteristics that he has felt himself called upon to explain, that the same Creator is Lord over both? Why has the Creator revealed the physical and only a *part* of the mental characteristics to Mr. Abram? That in nature certain matters appear to be "wisely hidden from our observation" is a very easy way of getting over a difficulty as regards things terrestrial, and it is not correct. In the days of Aristotle and Pliny, and almost up to the time of the elder Huber, the physical characteristics of the queen bee and indeed of her life generally, were wisely hidden from our observation. What would Mr. Abram have thought had he been alive in Huber's days, when that celebrated entomologist made his observatory book

hive? He must have thought that the war-dogs of heaven would have been let loose to tear him to shreds for his presumption in attempting to bring to light the physical mystery that up to Huber's time the Creator had "wisely hidden from our observation." But the dogs were not let loose; Huber lived, and observed, and studied, and we are thankful. To go back only 50 years and rake up all the certain matters in nature that were then supposed to be "wisely hidden from our observation" but have since been exposed to view would fill a mighty volume. Nature's laws have been hidden for a time from view because the education of the Creator's earthly master piece should find pleasure in the discovery of them. The rotundity of the world was once hidden from our observation by the Creator, but one of his creatures unearthed the secret and laid it bare, and the Creator does not appear to have resented that creature's inquisitiveness. Mr. Abram will yet discover, as he has already unwittingly confessed in the greater part of his article, that the laws of nature, as arranged by me, as it regards the development of the queen bee, are only the round arguments against the flat food theory of the bee world.

"These are but simple statements, devoid of questionable terms, and hard quotations."

The inference is that my article bristles with nothing but complex statement, that there is no reliance to be placed on the "terms" I have used, that my quotations are too "hard" for ordinary minds. For the hard quotations Mr. Abram must blame the authors. People that live in glass houses should not throw stones. The house that Mr. Abram has built for me to throw at is all glass—its foundations are glass, its walls are glass, its roof is glass, its floors are glass, and it is furnished throughout with glass, but my pen refuses to throw a stone because it is not gentlemanly.

In my article on "Heredity in Bees," and in this my reply to Mr. Abram, I have used the terms "queen eggs," drone eggs," and "worker eggs," because they

are accepted terms, but the term workers' eggs is a misnomer. Bee eggs are only male and female. For the same reason I have referred to the chrysalis worker as being enshrouded in a complete cocoon but her abdomen is encased with the cast skins, &c., that are thrown off in moulting, and are therefore equal to a complete cocoon.

HEREDITY.

To the Editor A. B. B.

Sir,—In last month's B.B. you have a notice that Mr. Gale "has his guns shot for Mr. Helms and the broadside will come off in our next."—If these are Mr. Gale's words I must say that they sound very boastful, but I am not in the least afraid of all Mr. Gale's powder and shot.—If they are yours I must tell you they are objectionable as they savour somewhat after an advertisement of a coming wrangle.* Now, I wish you to note that I do not write to encourage the morbid pleasure that unfortunately too many people find in the fact of seeing others in dispute. I have written entirely with the object of dispersing an error that might probably lead to greater if it were to gain credence, and for no other purpose I shall continue to do so. If, for instance, Mr. Gale cannot bring better arguments forward against me than he does in this month's issue against Mr. Abram, you may rely on it that I shall not take the least notice of it.

Mr Gale in his article asserts that he has come to the conclusion that the food theory is wholly untenable, and sets up a respiration theory instead. Neither has he proved the untenability of the food theory, nor has he advanced a single

*The expression is ours, but we would not have used it had we the least idea of its being objectionable. All we desire is that truth shall be evolved, and the beekeeping world are under the greatest obligations to Messrs. Abrams, Gale, and Helms, for the vast trouble and study given by those gentlemen to this matter of "Heredity."]

rational argument in favour of his new theory. I am sticking to the old love as long as she is faithful, and mean to nail her colours to the mast with the device : *A perfect queen can only be reared when her larva is supplied with abundance of food produced by young bees.* Under this banner I feel as safe as if I were on board of an ironclad against the pellets of a popgun. There is little fear that Mr. Gale's wind theory will prove a veritable torpedo boat, and send Helms kite high.

Meantime, let it be understood, the "food theory" against the "wind theory." *That is the question.*

By the reply to I.H., N.Z., I regret to find that Mr. Gale certainly must labour under gross misconceptions regarding the anatomy of the bee. It scarcely touches more than indirectly upon the contended question, and therefore might be left unnoticed by me now, since I considered it immaterial before, and bunched it with the assailable points I have alluded to in my criticism. As the errors, however, are repeated and accentuated, and holding that it is better not to know a thing at all than to learn things wrongly, I refer to the objectionable points with the view of setting them right.

Mr. Gale repeatedly speaks of an ova-depositor. The bee does not possess an ovipositor! In the aculeata, which include all the stinging hymenoptera, the ovipositor has been modified into an organ of defence. This is entirely a question of evolution, and therefore it is unnecessary to further enlarge upon it here, as it would lead into abstruse arguments of science. The fact, however, is as I state.

Mr. Gale further asserts that the change, i.e., fertilization, takes place at the spermatheca. This is also wrong, because the egg does not touch the spermatheca.

From each of the ovaries a duct leads to the common oviduct. Some distance from the ovaries the ducts are divided by a membrane, and thus duplicated by

a partition. The inner division of the duct leads through a constricted receptacle, called the fertilizing pouch, and the outer leads directly into the common oviduct. If an egg is to be fertilized it passes through the inner division into the fertilizing pouch, and here a single spermatozoon enters it by a minute aperture and works its way into the yolk. The absorption of the spermatozoon changes the nature of the egg. The spermatheca is connected with the fertilizing pouch by a duct, which near the entrance into the latter is furnished with a valve to open or shut it. It will be seen that the egg does not touch the spermatheca, and this is important, because it explains at once how a queen with a fully charged spermatheca may yet be only a drone breeder, if by accident or cold her nervous system has become deranged.

So by the way, and in a manner as if it was well established, he uses the term "of course," Mr. Gale asserts that the bees can transfer eggs and larvæ. I do not regard such a fact beyond the intellect of bees. On the contrary I am almost surprised that they do not do it considering their marvelously intelligent habits. The fact nevertheless remains that the bees do not do so because they have ordinarily no need for it. In the few cases where it seems to appear that eggs are removed the evidence is not fully conclusive. Anyhow one swallow does not make the summer, nor will an exception establish it to be a rule; and the rule is that bees do not remove eggs even under the greatest stress of circumstances, consequently there is no, "*of course*" about it. If the transfer of eggs or larvæ should be proved to occur it will nevertheless remain one of the most abnormal and exceptional phases in bee life.

Yours truly,
RICH. HELMS.

Sydney, 5th March, 1894.

Schonfield ascertained a bee lives 36 hours after the honey in its honey sac is all consumed.

QUESTIONS 17 & 18.

(This arrived too late for insertion in our last.)

MR. THOS. KITCHING, Clover Meadow.

Question No. 17.—Do queen excluder boards tend to increase swarming? Cannot say, as I have never used excluder boards. I have never had a queen lay in sections. I use tin frame and crate for sections.

Question 18.—Do bees ever swarm normally, and leave unsealed or queen cells started? My experience is that they always leave queen cells sealed before swarming, but if we try to stop them swarming they will take to all sorts of pranks. Last month I had one colony swarm out. I cut down all queen cells; they started more queen cells, killed the old queen, swarming with virgin. I went to cut the cells down in the evening, so that I could put the swarm back. While I was doing this, a queen came out of a cell, and I could not catch her, so I boxed the two together, thinking the queens would settle the matter, putting a queen excluder on the hive. To my surprise they swarmed next day. When I saw they meant business. I took excluder away and took away the swarm that came out. I then gave the remaining swarm unsealed brood and eggs to keep them from swarming. When the queen came out for her flight, they started queen cells from these eggs, and swarmed out in three days, only leaving as many bees as would cover three frames.

My bees are cured of "Bee Paralysis." I formed a nucleus from the hive most affected, experimented myself, was successful. Will forward the experiment later on.

THE SPECIAL SUBJECT.**RIPENING OF HONEY.**

W. SHAW, Mudgee.

I have been beekeeping for the past six years and consider a lot of stuff is written and said regarding the ripening of honey.

Our climate is very different from the American, in which most of the bee literature originates, and consequently many of the precautions urged in their literature may be with safety considerably modified here or altogether dispensed with, and this subject (honey ripening) is one of them.

In this district which is only a moderately warm one, the only time ripening becomes necessary is when unsealed honey is extracted during the time the Cape weed is blooming, but as sealed or unsealed such honey is worthless owing to being contaminated with pollen from the weed, I convert it all into vinegar, which is more profitable and likely to do the industry more credit than sending such stuff to an auction

room as extracted honey, as I have often seen done.

My plan is to keep the extractor going whenever surplus honey appears in the hive. I do not wait for it to be sealed over, I once did but found that my yield suffered very materially in quantity, and gained nothing in quality. One to four days ripening in a tank is all I find necessary according to the condition it is in when extracted.

I may add that I have now more customers (and these or most of them unsolicited) than honey; that I never have to sell an ounce in an auction room, and that I always get from 50 to 100 per cent. more than auction room prices.

Re Extracting wax from old combs.

The screw press is the most effective.

Place the wax (hot) in a small bag, place in an old cheese vat, and press it at once.

F. W. PENBERTHY, Elmsmore.

A tank as broad as it is deep, with a very large opening at the top, with a neck about 4in. high, and a rim about 2in. high, and 2in. out from the neck, to hold water to keep out ants; a cover of wire cloth to keep out bees, and a plain cover when not in use; an iron pipe 1½in. to 2in. in diameter, according to the size of tank; bend it to go around the inside, and nearly on the bottom of the tank, the two ends pass out through the side about 6in. apart, join on two pieces of lead pipe to connect to boiler (I use a 5 gallon oil drum on end), connect one pipe to the top, the other to the bottom. Build a furnace—a few pieces of bar iron will do for fire bars; the furnace should be 18in. to 24in. long, a foot wide, and a foot deep below the boiler. Let a couple of bricks project in for the boiler to rest on, but keep them 2in. clear from the sides until near the top, then close in close. A fire door to close tight, about 6in. up from the bars, a chimney a foot high, 4 x 4 inside will do. Keep boiler full of water; never let it boil, or you will scald your honey. Regulate your fire with a piece of sheet iron on the chimney. Keep your honey up to from 100° to 150° F. When you get the hang of it its no trouble. Only fill your furnace about three times a day.

JOHN SMITH, Montrose Park Apiary, Mount Cotton, Brisbane, Queensland.

The Special Subject this month, Ripening of Honey, with the view of rendering it fit for the English market and the getting rid of the flavour which has been so much objected to by English experts, opens up a big subject and one somewhat difficult to deal with. On the face of it, it looks quite simple, and is so under certain conditions. These conditions are—A well regulated apiary, with all the best appliances; a district free from obnoxious bloom of tree or plant; an apiarist whose motto, so far as quality of honey goes is "Excelsior," who is not content with only pro-

during good honey, but aims continually at getting better, by the utmost care and cleanliness. etc.; and above all, one who will play no tricks. Who to use a Yorkshire expression is "four square all round," whose word is his bond, and whose products or shipments are reliable.

Under these circumstances, there are then two ways of obtaining ripe honey fit for any table use. The first and simplest way is; never extract honey until the bees have sealed it over, then it is properly ripe. Avoid extracting from frames having larvæ, eggs, or pollen in them. If only sealed brood no harm can accrue, with due care. If it is urgently necessary to extract before the honey is sealed, then it will ripen all right if kept in a tin tank with wire cloth over; protected from ants, etc., by standing the support in water. About a fortnight is long enough in our climate, with temperature in shade at 80 to 90, and at night 70 in the summer months. Under any circumstances the honey should stand two or three days before being strained off into tins. It surely is scarcely necessary to point out that thin unripened honey ferments and sours, as also at times does that obtained from trees and box hives, when it has been extracted in some more or less objectionable manner. Unless great care is used I should be afraid that a sun evaporator might spoil rather than improve the flavour, and as for the natural flavour itself, my advice is, Don't try to get rid of it, unless very bad; but ripen the honey and sell it on "its merits." If the flavour is very objectionable the best plan is "to move on" with the bees to some more favoured district. This plan would pay better than tinkering to get rid of the flavour. (Don't come here, however, as we are somewhat crowded out already, not many this season extracted at all.)

Now supposing by proper care in getting—extracting and ripening the honey—you have produced a real first rate sample, then you naturally expect you can sell it for a reasonable price in the English market. That does not follow—Prejudice dies hard—There is such a thing as boycotting and cornering. These would be eventually overcome, but the greatest obstacle to contend against is adulterated foreign honey, which can be, and is, got up to imitate, as far as possible and sell under the name of any kind of honey which for the time being is in the greatest favour or demand. It is a well known fact that about three years ago some of the most horrible stuff in the world was sold in England as "Australian Eucalyptus honey," and the British public swallowed it with a wry face, thinking it did them good; since which, however the average Briton has declared he will rather die of plague than take any more Australian honey. To remedy this evil a short Act like the oleomargarine Act, adapted to the honey trade is in my opinion the *great point* that all the colonies, should, through their Agents-General impress on the English government, as a matter that requires immediate consideration. How much

butter was sent to England from the Australian colonies before the Oleomargarine Act was passed, and how much since?

Owing to a suggestion in the *British Bee Journal*, the question is now being considered as to the advisability of offering Australian honey on the English market, solely on account of its medicinal qualities, thus tacitly admitting that it is "not fit for table use." This would be a huge blunder, and to start with would be *untrue*, for it would be taking it for granted that all Australian honey is gathered mainly from the gum trees; this is not the case. Hence we should next hear the experts declare that Australian honey was neither one thing nor another it was "unfit for table use" and as for its medicinal qualities they would probably assert that they had found out that most of the honey contained only a very small portion obtained from the Eucalyptus, and they might even go beyond that and say that colonials were tricky, and had tried to palm off honey as Eucalyptus (on account of its medicinal properties), that had been gathered from clover, lucerne, and various other sources. Thus Australian beekeepers would be like the men in the fable who first rode, then carried the donkey, and finally let it drop over the bridge into the river. Don't let us get entrapped into doing a foolish and wrong thing. Let us all strive to get the best honey we can, ripen it properly, have all the surroundings clean and healthy, manipulate it carefully, ship only first class quality, and above all sell it under its own name and no other, then I have no doubt it will soon find its way on to the table of both rich and poor, and into thousands of homes in the grand old country, but there is only a poor chance until a pure honey act is passed there, here also for the matter of that.

Till then "glucose" must win. A counterfeit article always drives the genuine one out of the market.

N. Z.

Next to the knowledge of how to secure the largest crops of honey—how to market it in the best manner? is the most important question, and as it cannot be marketed in the best manner without being properly ripened, it follows that the subject chosen this month has a very important bearing upon the honey industry generally. I may say at once that I have paid great attention to this subject for many years past, so that I think I may venture to say I can speak with some little authority upon it.

Nectar when gathered from the blossoms contains a considerable amount of water; the quantity depending a

great deal on the atmosphere. If the latter is dry the nectar will contain less, and the reverse if it is moist at the time of gathering. After being stored in the cells the superfluous water is allowed by the bees to evaporate—by the heat of the hive—before they seal the cells. After which it will keep good and in its liquid state for a long time. The normal quantity of water in ripe honey is from 18 to 21 per cent. If it is much above the latter figure there is danger of fermentation. Mr. Otto Hehner, F.I.C., F.C.S., Public Analyst and Lecturer, and analyst to the British Beekeepers Association, gave a most interesting experimental lecture on honey before the British Beekeepers Association on October 17th, 1883. Referring to the amount of water in honey he said:—

“Essentially, honey consists of water and sugar. Of the water, I need say but little, expect that I have found it to vary in quantity from 12 to 23 per cent., the normal proportion being from 18 to 21 per cent. When the percentage falls below 18, the honey is generally very hard and solid; when it is higher than 21 it is frequently quite, or almost clear.

... The clearness and transparency of any given sample of honey does not depend however, upon the quantity of water alone.”

Now the question is, how are we to find out how much water there is in our honey? for assuredly it will ferment when put up in close vessels if it contain more than the normal proportion. The granulation of honey as a rule, may be taken as a test that it is ripe, but not always, as I have seen on many occasions granulated honey ferment after a time. Then again there is honey that does not granulate under any conditions, notably, some of the sage honey from California, and also some of your eucalyptus honey—I have had samples of both direct from the apiaries. The specific gravity should be the surest test. If we know the specific gravity of a well ripened sample of honey there should be no difficulty in testing other samples. A

Baum's Hydrometer would give the specific gravity at once. In reply to a correspondent in the British Bee Journal for July 6th, 1883, the editor gives as the specific gravity of “pure refined honey” as 1.261, which would be a trifle over one fourth heavier than water, and of average unripened honey as 1.350. Now two or three tests I made some years ago with my honey—which afterwards granulated very hard indeed—gave me 1.488, or very near one half heavier than water. This result, which I am sure was correct, made me always doubt whether the editor of the B.B.J. was quite right in his answer. It would not be at all difficult for any intelligent beekeeper, anxious to have his honey right, to make a few tests with an hydrometer so that he could afterwards use it intelligently.

I have always believed that honey could be as well ripened out of the hive as in it. There are many, however, that think otherwise, and will only extract from sealed combs. I have arrived at my opinion not in any haphazard fashion, but from practical experience with many tons of honey. This being so, I have had no hesitation in extracting from unsealed combs when it suited me to do so, but I have taken every care to ripen it afterwards. My arrangements were, a very warm extracting house; large shallow, wooden tanks, 6 ft. x 4 ft. and 18 in. deep, lined with tin; and good strainers. As the honey ran from the extractor, it fell into the strainer, or rather strainers, three arranged one above the other. The top one rather coarse, the middle one finer, and the lower one very fine. This lower one split up the honey into very fine, silk-like threads as it dropped into the tank, and I believe a good deal of the surplus water evaporated during the operation. The honey was allowed to remain in the tank exposed to the atmosphere for a day or two until I considered it sufficiently ripe to tin. In the meantime a scum would rise to the top, which of course was skimmed off. A tap in the bottom of the tank allowed the honey to be drawn off without disturbing the surface.

The secret of ripening honey rapidly and at little expense or inconvenience, is to expose as large a surface of it to a warm dry atmosphere as possible. Don't try to ripen honey in deep vessels, as it will result in failure. Honey is heavier than water, consequently the latter has to rise to the surface, and if the honey is thick and in deep vessels, the chances are it will ferment before it will ripen. The shallower the tanks the better.

There was a very good article on this subject from the pen of Mr. J. H. Larabee, in *Gleanings*, some short time ago, giving the results of his experiments in "The evaporation of honey," well worth publishing. There are of course many methods of artificially ripening honey by heating &c., but I never found need for any method but that given above.

QUESTION 19.

What is the best way to get the best and most wax from old combs?

N.Z.

The "Solar Wax Extractor" is one of the best utensils I think invented for this purpose. The wax comes from it in a nice clean bright state. Probably "Jones Wax extractor," is the next best one. Where, however, there is only a little occasionally to melt up, I have found the following plan answer very well:—Get some paperhangers' scrim, and make one or two small bags, not too large. Work your old scraps of comb into pretty hard balls, about the size of a cricket ball; put these in the bags, and the bags in a kerosene tin. Fill up with water, and boil. If the combs are very old, it is better to boil them a little longer than with new combs.

Cut a one inch board so as to nicely fit inside the tin; bore some half inch holes in it. This is to place in the tin, and with a lever which is easily arranged, press the board down on top of the bags to squeeze out the wax. The latter will rise to the surface, and can be skimmed off. To clean the wax thoroughly pour it into a good body of very hot water; as it cools gradually any foreign matter, such as dirt, will settle to the bottom of the cake, when it can be scraped off when cool.

The following, from the pen of Mr. G. M. Doolittle, is copied from *Gleanings*:—

Any plan by which the wax is kept in a liquid state for a long time, the same being perfectly stationary during this time and while cooling, and using quite a body of water with the wax for the dirt to settle into, has a tendency to sep-

arate the impurities from the wax, and give it a bright yellow color. If, in addition to the above a pint of good strong vinegar is used for every ten pounds of wax and one quart of water, the result will be far more satisfactory. My plan is as follows:—Put 10lbs. of wax, one quart of water, and one pint of strong vinegar, into a flaring tin dish, and set it on the stove till the wax is melted and the whole become as hot as it will bear without boiling over. If the impurities are of any size it should now be strained through common cotton cloth, or these impurities are likely to be partially imbedded in the wax at the bottom of the cake when cold, so as to make the job unsatisfactory. Having this accomplished, spread down two or three thicknesses of old carpet or two or three horse-blankets, where the wax is expected to stay till cold; then set the vessel of wax in the middle, and wrap over the top and sides till well protected from the outside air, so that the whole may be two or three hours in cooling. If you will watch the liquid you have in the vessel before covering up, you will note that the whole mass seems to be in agitation, rolling and turning about as though it were alive. This is the work of the vinegar, and that which makes dirt separate more perfectly from the wax than it otherwise would. If strained as given above, there will be only a fine dross at the bottom of the cake when cold which is easily separated from the wax by scraping with a dull knife.

Special Subject Next Month.

Give suggestions how to increase the home (Australasian) market for honey.

This is a matter beekeepers should take a very great interest in. What is the use of making yourselves proficient in beekeeping, spending money on bees and appliances, and inducing others to do the same, if every effort is not made to make a corresponding, if not a greater increase, in the amount of honey consumed by the general public? We invite suggestions from all who can give them, and trust not only that they will be numerous and practical, but be the means of much ultimate good accruing to the honey industry. Now beekeepers, let us have a lot of suggestions on Increasing the Consumption of Honey among ourselves in our next issue.

QUESTION NEXT MONTH

20. To which of the following would you adjudge first prize :—

No. 1. A square cedar polished hive with super, observatory window at back, cottage top, with inside top covering tightly screwed on, super also screwed on ; frames in supers empty, with starters in frames. Inhabitants black.

No. 2. A Langstroth hive, all sides glass ; flat top, also glass and moveable ; ten frames full, combs perfect ; inhabitants black.

No. 3. Common Langstroth hive, with flat top covering board, combs fair, 10 frames full, inhabitants pure Italians.

JUDGES AND JUDGING.

TO THE EDITOR A.B.B.

Dear Sir,—The show season is on, and likely to continue, and from reports to hand, as well as witnessed, exhibitors should demand more care in selection of judges, and see that judges are not merely lecturers on a subject, but practical, reliable and experienced persons, and, then, if a proper system of judging by points is adopted, exhibitors can confidently stage their exhibits, feeling assured the best exhibit must win. As a proof that such is not the case under present judging, take the report of Wollongong Show in your last number, or listen to remarks of visitors to other shows held early this month, and if exhibitors do not get disgusted and refuse to exhibit I can only think it is because better management is hoped for. Both at Penrith and Town Hall, Sydney, the judging was far from satisfactory, and if a silly by-law had not read "Decisions of judges are final, a number of protests would have to be considered. The award for candied honey was bad, and for purest Italian queen and bees a hive with *black* bees in it received first, and did not come near either the second nor v.h.c. exhibits, the latter being named by one of the judges, and also by a number of visitors, as being entitled to the first honors. Trusting you can find space for the above, and thanking you in anticipation,

I am, yours, &c.,

J. D. G. CADDAN.

Roodmere Apiary,
Macquarie Street, Windsor.

Sir.—If the system of judging by points, as adopted at the last Convention, has been followed at the late N. H. and P. S. Show, then in at least one class have the judges either misunderstood the points, or they adjusted them improperly. Class 332—"Purest Italian Queen Bee and Bees in observation hive" is the one I refer to. On this point I may express my opinion with authority, and I must admit that it differs entirely from the decision of the judges.

The exhibit which obtained first prize deserved it the least, as there were black bees present, and the Italians varied very considerably in colour, which indicates impurity—not purity, and the queen looked the smallest in form and size, and decidedly dark in colour. Beekeepers would, therefore, hail with satisfaction the judges' reasons for their decision. Messrs. Gale, James, and McFarlane are the judges.

In class 330—open to all—Mr Allport showed three hives of different construction under one number. This is contrary to the rules, and an unfairness to other competitors. The judges selected one of the three for a prize.

W. ABRAM, Beecroft.

A PROTEST.

TO THE EDITOR A.B.B.

Sir,—As President of the Convention of Beekeepers of New South Wales, that gave existence to the New South Wales Beekeepers' Union, and framed laws for its guidance, permit me to protest against any alteration of the law or laws relating to the admission of persons to that Union, until the beekeepers of New South Wales have had an opportunity, in Convention, to discuss or amend those laws, if they think proper,—I am, &c.,

T. H. BRADLEY,

Sunnyside Apiary, Appin,
17th March, 1894.

MUSCLEBROOK B.K.A.

Mr D. G. Grant, of Silver Oak Apiary, Musclebrook, secretary of the Musclebrook B.K. Association, has forwarded us a list of the prizes in apiculture offered for competition at the next Musclebrook Show, May 16th and 17th :—

For the best trophy of apicultural products, viz., honey, comb honey, and beeswax—First prize two guineas, second prize one guinea. Offered by the P. and A. Association.

Special Prizes, offered by members of the Musclebrook B. K. Association (open to all comers.)

Best 12lb jars extracted honey—First 10s., offered by Mr C. C. Paul ; second 5s., offered by Mr J. Hazelwood.

Best 12 1lb sections—First 10s, offered by Mr F. Ellerton ; second 5s, offered by Mr A. Roberts.

Best 6lb Beeswax—First 10s, offered by Messrs. Grant and Budden ; second 5s., offered by Mr Thomas.

Best 6 bottles honey—5s., offered by Mr H. J. Clark.

Best wired frame of comb foundation, 5s, offered by Mr A. Wiedman

Best frame comb, built on foundation, 5s, offered by Mr S. H. Luscombe.

In addition to above the Muscleebrook B.K.A. has offered a few small prizes for competition by members only, and have been fortunate enough to secure a large space in the pavilion, where they intend shewing a complete and comprehensive exhibit of bee appliances and products, and give practical illustrations of such of the operations of the apiary as are possible under the circumstances.

QUEENS DOUBLING THEMSELVES UP WHILE CLIPPING.

I experienced a case of this once, in 1892. I grasped the queen by the wings, and before I had time to clip her wing she doubled up, and I thought was as good as dead. I held her in my hand for some time. I noticed her body quivering. I was so surprised, and she being a splendid queen, I did not care about throwing her away, so I dropped her down between the frames in the hive. On opening the hive a few days after, to my surprise she was doing her duty as well as ever. Perhaps I can give a little light on the subject. I am not prepared to say I know I am right. No doubt most beekeepers who have done much clipping have noticed that some queens while being handled will try to sting, but the sting will not penetrate our skin, as you all know. I believe it possible for these queens to sting themselves while holding them by the wings. When you catch a queen by the wings, if you do not let her stand on your finger or catch hold of something she can double up in a way that enables her to sting herself. I firmly believe that these queens sting themselves. The body of the one mentioned was drawn up so closely, and held in that way until I removed it with my finger, and the way she was doubled up when I dropped her down between the frames was just like a queen that had been stung. I have always been careful since, and when I catch a queen by the wings I let her catch on my finger.

H. W. J. TAYLOR,
Mountain Apiary, Minmi.

Mr Hewitt, of Lismore, writes:—Last Saturday I had a somewhat similar experience to that reported by Mr. Jones in last issue. Wishing to clip the wing of a fine large Italian queen (young), I set the frame down, and grasped her by the wings. Immediately I noticed her body curve similar to the form exhibited by bees when stung. I at once released her, putting her in the

palm of my hand, but she was apparently lifeless. I held her for a minute, but noticed no sign of life, and I concluded she had shared the same fate as Mr. Jones' Carniolan. Being anxious to see how the bees would act, I put the frame flat on the grass, and dropped her among the bees. About a dozen at once formed a circle round her, and after a little hesitation, a number set to work, and appeared to be stroking her down the abdomen, as if caressing her, while a couple of others seemed to be trying to feed her. This went on for just five minutes, when I noticed her legs quivering and soon after the body began to heave. In less time than it takes to write this, she was to my surprise on her feet again, and soon began to move across the comb. Observing closely, I noticed she halted every now and again, and appeared to rub the side of her abdomen below the wings with her leg, being apparently hurt, although I am confident I never touched her body when taking hold of her. As she appeared alright, I replaced the frames. Some five hours afterwards, suspecting that all was not right, I re-opened the hive, and found her as I expected, balled by the bees. I at once caged her, and she appears alright, but owing to very wet weather since intervening, I have not yet released her. I can advance no reason for the queen or bees acting as they did, for it is the first case that ever came under my observation, although I too have clipped hundreds of queens. I may add though I never clipped a finer queen, than the one I have referred to.

THE LISMORE SHOW.

The above was held on Feb. 27, March 1, 2, wet weather sadly marring its success. This, however, did not greatly interfere with the show of exhibits as the weather held fine previous to the opening. There was a good attendance of visitors, many coming long distances. More than ordinary interest was attached to this year's exhibition, owing to the fact that this year's National prizes

(£200) for the north coast were to be distributed. The principal part of the schedule (at least to our readers), was that devoted to Apiculture. In addition to the Society's prizes, a National prize of £3 was offered for the best apicultural exhibit, appliances, products and working exhibits. This was awarded to Mr. T. M. Hewitt, who was the only competitor. According to the Lismore papers, it was a very complete exhibit, and the principal attraction in the building. It occupied a big space. At the one end was shown bee literature, books, papers, periodicals, and catalogues. In the centre was a very attractive exhibit of extracted honey very neatly got up in several sized glasses. In connection with this, half a dozen different samples of honey were shown. The exhibit of comb honey in full sized Langstroth frames, Gallup frames, and section boxes, was also a fine exhibit. On the wall and arranged on the bench, were the many articles both useful and ornamental in use by a bee-keeper. A large collection, showing the different frames in use—about a score—was also an interesting exhibit. Four hives were shown, Root-Hoffman, Langstroth, Gallup, and nucleus, and three extractors, Reversible, Novice and Swinger. A large observatory hive of Italian bees, with five smaller hives, showing a pure Italian queen, a Hybrid, a Black, a Punic, and a Carniolan, attracted a great deal of attention. An exhibit that spoke more eloquently than words, was an old box of moth eaten combs alongside the bar frame hives, ticketed "the old style and the new." On a card was also shown a number of bee moths and grubs, the well-known enemies of black bees in old boxes. The difference between the queen, workers and drones, as also their cells was shown, together with the Doolittle style of queen rearing, and an exhibit of pollen and propolis was also instructive. Some first class foundation was also included in the exhibits, and a plaster of paris slab for working brush foundation, also

had a place. The exhibit was referred to by Mr. Dowling of the *Sydney Mail*, as "a grand one, and the chief exhibit of the show," and he also said in his many visits to apicultural shows in the South, he had not seen a finer exhibit.

SPECIAL SUBJECT FOR APRIL IN N.Z.

The season since my last has proved satisfactory, and the ordinary work of the apiary has been carried on under pleasant circumstances.

There is really no special work required to be done this month, (April) other than what was advised last month. There is just one thing, however, I might give a hint about, and that is,

FUMIGATING SPARE COMBS.

As they come out of use, and before storing them away.

In small apiaries, where there are but few combs to be fumigated, hang them in body boxes of hives, piled one on top of the other, allowing the combs to hang at least half an inch apart, and should the hives not fit close on one another paste a piece of paper round the joints.

On top of all place an empty body box within which and on the top most tier of combs, place a brick, now produce an iron dish or shovel, containing live wood embers, which place on the brick; throw on a handful of sulphur, and put on the cover, seeing that it fits closely and that no smoke escapes. The reason for placing the sulphur on the top instead of below, as might seem most suitable, is that the fumes being much heavier than the atmosphere, gradually descend, so that each comb gets a thorough fumigation.

In large apiaries it is necessary, where there are some hundreds, or perhaps thousands of spare combs to carry over the winter, to fit up a smoke proof room for this purpose, arranged so that the combs may hang on a frame work of battens. Here they could be stored in safety all the winter, and fumigated without difficulty as often as required.

APIS DORSATA.

Mr A. C. Rumsay, of Lewisham, writes us:—In the *Tropical Agriculturist*, Sept., 1882, I noticed a letter on the Bees of Ceylon, that I think some of your readers might like to read. As it is rather a long letter, I will only quote what I think will be of interest.

It is written under the *nom de plume* of "Honeydew." He writes—"Seeing so many swarms about, I thought to secure some, so had a frame hive made, after the English pattern, with sliding frames, glass top, &c., and finding a large swarm in the coffee under a low rock, I took my appu with me at night, and secured the lot in a pair of pyjamas in this way:—First I tied up the legs of this article of apparel, then gently put the top part over the bees, close up against the rock, then with a stick I cut away the bees as they hung; they all fell down in a mass, when by pulling the tape of the pyjamas the top is closed, and there you have them. Having reached the bungalow, they were let out into the hive by one of the legs, when they all settled on one of the frames.

"The Bumbara (*Apis Dorsata*) are very handsome, with a gold body, and are much larger than the British bee, but it seems impossible to domesticate them, at least I found it so with five different swarms I took. They object to a box strongly, preferring to hang from a big rock, generally a cliff, under light shade of hanging vegetation, or from the branch of a big tree. Some I kept quiet for a week, feeding them with honey, which they always ate too much of, making themselves very drunk, from the effects of which most of them died. The average comb is about two feet deep, hanging in a half moon; the honey cells occupy the top part of the comb for about six or eight inches; at the top, where the comb fixes on to the support, the cells are as deep as a Bryant and May's match is long, and from that tapering down to about half-inch in depth. There are six cells to the inch, and two rows of cells each side of the mid-rib. Was it not

dysentery that the bees died of? if not, is it not a pity that these bees do not wear the blue, like one of our bees (*Anthopora Cingulata*.)" He says they are very much larger than the British bee, yet the cells are smaller, being only six to the inch instead of five.—A.C.R.

QUEEN MATING.

Mr. Thomas E. Cambourn, Rose Valley Public School, writes—Believing that the general opinion re the mating of queen with the drone is, that the queen generally, if weather permits, takes her maiden flight when a few days old, and that she meets the drone *only* when in the air—the following circumstance may be of interest to beekeepers:—About the beginning of November of last year I had occasion to open a colony of bees, when I found several queen cells on the point of hatching. I took a queen cell, which hatched in my hand, and having caged the young queen, put her into a colony which was queenless. Late the following day I let her out of the cage, and soon after meeting a drone, she caught hold of it, and they became entangled. Thinking that perhaps my little queen might get hurt, I tried to separate them, with the result that I knocked the queen off the frame on to the ground. Having replaced her, she soon after met another drone, which she crossed at right angles at the waist. This time I thought I would let them alone and watch results. The drone was beneath, and whilst in this position (the position of their heads still formed a right angle) they brought their extremes to meet, when the queen became pregnant. At the parting the queen carried away the drone's organ, with the stringy white attachments. The drone, immediately upon the severance, bent its body up, and by the time one could count five was dead. I may mention that the queen bent her body downwards and inwards to meet that of the drone's, and after she had co-habited they simply pulled themselves apart.

TO OUR NEW ZEALAND BEEKEEPERS.

From a private letter received from the editor of the *Bulletin* I learn with regret that a very scant support so far is being given to his journal. He tells me that very few subscriptions from New Zealand beekeepers have been received at his office up to the present time. Over 300 of those to whom the journal was sent have not responded either by returning the *Bulletin* as an indication that it was not required, or by sending their subscription. Now it would be very little trouble to do the former, as the journal only requires re-addressing to Messrs. I. Hopkins and Co., Auckland (the New Zealand agents) and posting if not wanted; or to send 5s. in stamps or money order, with name and address, to the same firm to ensure it being sent for twelve months. Every intelligent beekeeper who has received the journal must admit that it is a credit to the editor and publisher, and more than worth the small subscription charged; and they must also acknowledge that a technical or trade journal is absolutely necessary now-a-days to every one following any kind of pursuit, if they wish to keep themselves abreast of the times and be successful. It is therefore inconceivable to me how intelligent men—for without flattery I consider beekeepers among the most intelligent of men—can so far overlook their interests as not to give hearty support to a paper published in their interests. I trust, however, now that attention has been drawn to the matter, that our beekeepers will wake up and send in their subscriptions, and so help those who have put themselves to both trouble and expense to assist us.

MAORILANDER.

Mr. W. J. Dockrill, Casino, writes:—My bees worked well this year, I took from 80 supered hives 18,000lbs extracted honey. I took 2,260lbs in one day with two assistants helping. Honey is still coming in freely. Beekeepers are getting very numerous here, and some are making great strides in the art of bee culture.

JOTTINGS FROM FOREIGN BEE JOURNALS.

DO KINGFISHERS EAT BEES.

A par has been going the rounds of the papers to the effect that a farmer lost as he says unaccountably, several colonies of bees, but one day he noticed a kingfisher catching his bees and shot him, when he found his crop full of dead ones, thus seemingly accounting for his previous loss. Some few years ago I was living in a district where a good many of these birds were to be seen, and when I first saw some of them perched suspiciously near my bees, I wondered what their object was and closely watched them on many occasions, without however seeing them touch the bees. I afterwards concluded that kingfishers were not among the enemies of bees. Have any of your readers known them to eat bees? Such queer pars. get into newspapers sometimes, it is wonderful where they originate.

BRACE AND BURR COMBS.

For many years past American Beekeepers have been discussing how to do away with brace or burr combs between the upper and lower stories, and I see by the last (December) Beekeeper's Review Haddon is on the job again. This question in America seems as likely to become as lasting as their eternal one of "wintering". Honey boards of all patterns have been devised, as well as top bars of all dimensions, and self-spacing frames to get over the difficulty, but, judging from the discussion still going on the difficulty is there still. American beekeepers are nothing without a big difficulty to get over, but I notice as a rule that after a course of experimenting in all directions and exploring all the crannies of the art, they eventually land about where they commenced. I have got so used to this kind of thing that I invariably wait now when our cousins have anything new on that is "going to whip creation" for two or three years to see where they are going to land. If it holds out for that time I begin to think there is something in it, but as a rule it don't hold out for that time. Time was when

I rushed at any new device introduced by such leading beekeepers as Heddon and others, but having been fooled by so doing once or twice I take things cooler now and *WAIT*.

Heddon winds up his article in the following manner:—"To sum up, a pine top bar $\frac{3}{8}$ in wide and $\frac{3}{8}$ to $\frac{1}{2}$ deep, under a break-joint honey board is the best arrangement to prevent brace combs." Brace combs are a nuisance but if I have got to use such fixings to prevent them I shall say as did the lord who was troubled with the gout after tasting some wine sent to him "guaranteed to prevent gout," "I prefer the gout"—I prefer the brace combs.

BEE AND POULTRY KEEPING COMBINED.

In the *American Bee Journal* for Dec 21st there is a very interesting paper by Mrs. S. E. Shermon, on the above. It is also highly instructive as showing what can be done by a woman who previous to her engaging in bee and poultry keeping had very poor health. She runs about 60 colonies and the demand for her honey exceeds the supply. With regard to poultry keeping she says:—"Poultry keeping combines very nicely with bees, as most of the work comes on at different seasons of the year. I began the fine fancy poultry at the same time I commenced with my bees, and have kept them right along together, and find little conflict between the occupations. I have raised from 75 to 250 chickens per annum." Between poultry and bees this lady has made a good living for some years, and what is more has regained good health from these out-door occupations.

TREATMENT OF FOUL BROOD.

In *Gleanings* for Jan. 1, 1894, Mr. A. C. Mitchell of Illinois gives his method of treating foul brood. He says his district is full of the disease, but after treating from 700 to 1000 combs and the bees by his method there has not been a sign of the disease. Briefly his method is as follows:—He has a tank 8 in deep large enough to take a frame and comb—this is the bath. He next procures a pound

of absolute phenol in which is mixed by the druggist 2oz glycerine. One part of this is added to 50 parts of water, or $\frac{1}{2}$ lb to 3 gal. of water. Shake most of the bees off the combs of a diseased colony leaving enough bees to care for the brood until most of it has hatched; then make another drive of the remaining bees—put them all on new foundation. Thoroughly wash the combs in the carbolic solution and syringe them clean and as soon as they are dry you can use them again without risk. Follow this plan whenever the disease is apparent and it can soon be eradicated. The same solution will do again if bottled.

BEEES AS FERTILISERS.

The other day I saw in the papers that Lord Ludeley was on his way to pay a visit to the colonies. This nobleman some 10 years or so ago commenced the planting of fruit trees on a very large scale—500 acres—which area I believe has since been increased. In the collected reports of the British Beekeepers' Ass. published at the time the following appeared:—Lord Ludeley has lately laid down 500 acres of land for the production of fruit, and has established in his orchards an apiary of from 100 to 150 hives of bees for the purpose of cross fertilisation of the fruit blossoms. That attention was being drawn to the value of bees in connection with fruit growing at that time is shown by the fact that Mr. Gladstone in an address to the Howarden farmers "urged the advantages of fruit growing, a subject he first took up two years ago. He showed how sadly we had fallen off from our ancient agricultural customs. It should be remembered, however, that it would not be sufficient merely to plant orchards all over the country, unless we extended apiculture as well. The flowers of our orchards are hardly half fertilized as it is, owing to the comparative scarcity of bees. In ancient times, when sugar was scarce and dear, people were forced to keep bees for the sake of their honey, and then apples, pears and plums, were abundant."

It is now getting pretty well recognised

among fruit growers that bees are almost the only insects they can depend upon for the cross fertilization of fruit blossoms, without which they can expect but little fruit.

AUCKLAND.

VENTILATION OF HIVES.

N.Z.

This is a question that has been discussed so often, one is inclined to think it almost superfluous to add anything more to the sum total. However I intend to venture on the strength that I have given considerable attention to the matter, and that I once assisted to carry out a series of experiments to determine the best method for ventilating hives. I must tell you that previous to these experiments I had followed in the footsteps of others, and had both adopted and strongly advocated what is known as "upward ventilation" that is ventilation from the entrance up through the hive, mat, and cover. This system I considered was thoroughly in accord with science, and that it was too ridiculous to suppose there could be the slightest hope of success by any other means. Notwithstanding, however, that I had such absolute belief in this mode of ventilation there was one thing that puzzled me, that seemed to be contrary to my theory, and that was, the bees apparently by their action was not of my way of thinking; for they persistently closed up every chink in the upper part of the hive and even propolized the mat, so that there should not be the slightest chance of upward ventilation. For a long time I pondered over this, but the inherent pride in man as being superior in intelligence to all the rest of the animal kingdom eventually asserted itself, and I at length settled down into the conviction that the bees were—well, fools, and didn't know what they were about. At last a friend who was much interested in the subject and had particularly noticed the action of the bees, thinking there must be something in it, suggested some experiments to test the

matter, which I cordially fell in with, and we at once proceeded to carry them out.

First of all we prepared a hive by boring a number of holes in it—on a definite plan of course—so that we could insert thermometers in different parts of the hive, and so get the temperature all over it. We next transferred a strong colony with its combs, etc., to the prepared hive and commenced our experiments. Without going into detail, which would take up too much of your valuable space, and probably do less good than to briefly give the result, I shall adopt the latter course. I may state however, that our series of experiments extended over a period of about three months—from the middle of January to the middle of April—during our hottest weather, and the readings of our thermometers were taken hourly, frequently on several days in a week. Every precaution was taken to eliminate all chance of error, and so far as we could determine to carry out each experiment without allowing any previous ideas to interfere with them. To give an idea of the earnestness with which we carried out our research we had as many as thirteen thermometers in the hive at one time. We experimented with porous mats and also with what was equivalent to an hermetically sealed hive, and after all my previous assurance that I knew how best to ventilate the hive I was forced to admit that the bees at all events knew what was best for themselves and that my system of cool air was not what they wanted.

We found in all cases that the cool air was either driven or drawn in at one side of the entrance and after being carried round the hive the warm air was expelled at the other side, so that all ventilation was done at the entrance independent of whether facilities had been made for upward ventilation or not. It was a rather curious fact that when a porous mat was on our experiments showed a draft of cold air was being drawn down through them. With two thermometers—one

on each side of the entrance—we found as much as 24° difference in the temperature between them, demonstrating the fact noted above, viz., that cold air was going in on one side and warm air being expelled on the other.

To sum up the matter, our experiments led us both to conclude that the principle of upward hive ventilation is wrong. That every facility should be given to the bees to ventilate from the entrance by making it roomy. And that non-porous mats should be used, especially in cold weather. But that some considerable thickness of non-conducting material should be placed upon them to prevent condensation of moisture underneath.

BRUSH MADE FOUNDATION

Silver Oak Apiary,
Muswellbrook, Feb. 15th, 1894.

Dear Editor,—In the December number of *A. B. B.* I find an article on Brush Foundation by Mr. M. Scobie.

I used brush foundation rather extensively some two years ago, but for several reasons was induced to cast about for an improvement both on the process and the product. I found it very hard to make it of an even thickness, and more over it was very slow work.

After some consideration it occurred to me that a plaster slab *dipped* into melted wax would retain a film of it on its surface, and after a couple of failures I managed to mould a pair of slabs for my purpose. These slabs were the same size as my frame, a $\frac{3}{4}$ Langstroth, $1\frac{1}{4}$ inch thick at top, $\frac{3}{4}$ inch thick at bottom, and by means of a pair of wire loops, let into the top edge, they could be dipped into a vat of melted wax in the same position as the frame occupies in the hive.

The slabs being cast *between* two sheets of foundation bore the impression on *both* sides, thus securing two sheets at each dipping.

It is rather an important matter to dip the blocks in the position mentioned above, for the obvious reason that the sheets will be a little thicker at the bottom edge, which when fastening the

sheet in the frame must be secured to the top bar, so as to get the strength when it is most needed.

For making the foundation I used one wooden vat of water to soak and cool the slabs and one tin vat of melted wax to dip the slabs in. This was contained in a larger one, full of water, kept boiling by means of a small stove. I found two or three dips quite sufficient to make a fairly strong sheet, also that the blocks worked better when not *cold*, as the sheets would crack in all directions for the first dip or two.

There are of course many "wrinkles" in connection with the work, but these will suggest themselves to anyone trying the process. I have dipped as many as 400 sheets in one afternoon and every sheet as smooth and as even as milled foundation, though of course bearing the impression on one side only.

The one great drawback to one sided foundation is the difficulty of getting the bees to work on the smooth side; in fact it is such a drawback that I would not exchange 1lb. of the milled foundation for 3lb of dipped or brush made (leaving of course the value as raw wax out of the question.)

Mr. Scobie explains clearly enough how to get the blank side built out and my experience in that respect corresponds very closely with his. I have however noticed that some colonies take to the smooth side much more readily than others and to them should be given the task of finishing the combs that may be improperly drawn out in other hives.

I have a number of such combs in my apiary, drawn out, filled and beautifully sealed *on one side*, the other being as smooth and blank as the day they were put into the hive, and I think that the bees have come to look on this smooth surface as a *capping* and so refuse to build on it.

Such combs are decidedly unprofitable, for they only contain half the normal quantity of honey, and I have found that if they are extracted and placed in the centre of the brood nest, the queen in five cases out of six will refuse to lay

in them, so that they get refilled with honey, thereby cutting the brood nest in two and inducing the queen to walk upstairs. There is also a certain risk of having drone comb built on the smooth side.

In conclusion, Mr. Editor, I will say that I do not claim having invented this process of foundation making, it was probably in use long before I thought of beekeeping, but I never saw anything of the kind mentioned in the various bee-books I have seen. I worked the idea out myself, whatever may have been done before, and it may be of some benefit to beekeepers whose purse cannot stand the cost of a mill and appliances and who find the constant drain for expensive foundation rather severe. To such my plan will commend itself, though as with all other make-shifts it is a doubtful point which is the greatest evil, the expense or the annoyance and the time wasted by the bees and the beekeeper.

I am afraid I am drawing rather largely on you for space, but I must say that Mr. Ayers has hit the nail on the head re bees stealing or transferring eggs. There can be no doubt that they can move them from one cell to another within the hive, but it seems rather hard to credit that they can go to other hives and help themselves. Why do we have laying workers if such be the case? I am rather looking forward to Mr. Gale's reply to Mr. Helms' on "Heredity". Although not exactly a practical question for beekeepers it is a very interesting one.

I remain, Yours sincerely,

DONALD G. GRANT.

Mr Burbank, of Mount Gavatt, Queensland, in sending his subscription says:—

"My son, 16 years old is deeply interested in the *A. B. B.*, and I believe will contribute to its columns shortly." [We shall be very pleased with his youthful experiences, but let them be brief, and we wish him a long and prosperous career as a beekeeper.]

Mr. James McRenney, Cowra, says:—The *Bee Bulletin* is full of good useful reading, and all that are in the line of bee trade, should be subscribers. The following are questions I wish to be answered:—1. If a queen comes out of the cell, with one of her wings off, would she be any good for breeding. 2. Is the queen as long when she comes out of the cell, as she would be four weeks after. 3. If the working bee's average lifetime is six weeks, how is it that the queen lives for two or three years.

[1.—Being minus a wing she could not fly to get mated, so certainly could not be any good for breeding.]

2.—A laying queen is longer and larger in body than when she was a virgin.

3.—The working bee wears its life out in constant work. The queen's constant life in the hive is a comparatively easy one.]

Mr. John Stewart, Kangiara, Tangmangaroo, says:—When I first became a subscriber to your paper I got a black swarm of bees and then made a start. I left them in the box for about two months, I then got an extractor, knife, and all things ready. But now came the trouble; first to get the frames out of the box. After getting a few stings I managed that lot, then the uncapping, the knife clogged in the comb. I left it all night and started in the morning, but it had got chilled. After turning the extractor at a great pace I broke the combs. I never was in such a mess in my life before. But I have since found out the trouble. I have sent for a hive of Italian bees. I wish to ask you a few questions. 1. In Hybrid bees how do you tell them from other kinds. 2. For sending honey to market what size of tin do you think the best.

[Italian bees are not pure when all bees coming from the one queen are not alike and three-banded. Re sending honey to market it depends much on the class of customers. Here on the Hunter the most common ways are—a tin can holding 9lbs, a pickle bottle holding 2lb, or a large tin holding 60lbs. In some districts 1lb or 2lb glass jars are much in use.]

CANDIED IN THE COMB.

Mr R. H. Jervis, Moss Vale, writes :— I took some sections off to-day, and in doing so I noticed that a lot of the unsealed ones are granulated quite hard. Box hive men tell me their's are the same. Is it very unusual? If it had kept fine I should have extracted, and I expect I will have a treat. What a picnic if I had not all my frames wired. A frame I showed at the Berrima district show has gone that hard that I will have to keep it for feeding in spring. There is always a certain portion that is not granulated, but if I uncapped to extract it and disturb the capping on the granulated—and bees dislike granulated honey—would they be liable to carry it out, seeing there is lots of new honey about?

[Root's A.B.C. says :—"It is very seldom indeed that we find sealed comb honey in a candied state, and we therefore infer that the bees know how they can preserve it best for their use; for although they can use candied honey when obliged to do so, it is very certain that they dislike to bother with it, for they often carry it out to the entrance of their hives when new honey is coming in rather than take the trouble of bringing water with which to dissolve it." The best way to extract candied comb is by keeping the combs for a while in, and then extracting the honey in, a room well warmed.]

Another communication from Mr. Jervis, dated March 9, says :—Re honey granulating in the comb, some is very hard. When I was extracting, I uncapped it, thinking perhaps bees would restore it, and in all probability, it would get mixed with the new honey coming in, and by that means I would be able to extract, but unfortunately it has set in wet and has upset all my calculations. I would put some of it away for winter store, but I have so much of it, as much as thirty pounds in one super. The honey is a very good quality. Several beekeepers round here have seen it. I would like to hear some ones experience in a similar predicament as, if bees keep on gathering honey that granulates before it is capped, it will be a caution. I have never known honey to granulate in comb this time of the year.

In reply to a question from us, as to what the bees were feeding on, Mr. Jervis answered :—In fine weather, on woolly-but, after heavy rain, on clover and a kind of dandelion, I think it is cape, not the English hollow stemmed, also white clover, and a nice lot of large blue thistle. I think it is the honies getting mixed, the action of one acting on the other. The temperature must have something to do with it, as they all start to granulate on the out side of the combs, where the temperature is the lowest.

[Will some others that have had similar experience, have a say on this matter?]

Mr. Kenneth R. Douglas, Cudgel Creek, asks :—Are there two sorts of Sun Flower? I have had one sort here but the bees did not take much notice of them. If there are would you kindly let me know. Could you tell me where I could procure the Spider Plant seeds, or does it grow from the seeds, and when is the best time to sow it. Would you let me know how long it takes bees to make the queen cells and have young queens in them and capped.

[There are two kinds of sun flowers, the large Russian and the Japanese. The former is by far the best. The spider plant grows from seed. Should think the early spring was the best time to plant it. You should be able to get the seed from any respectable nurseryman, who would also give all information when to plant, &c. The queen cell is capped in about nine days from the time the egg was laid. When they discover themselves queenless they will take an egg just ready to seal if no other is available.]

Mr. Wm. Jacobs, Nemingha, Tamworth, writes :—I am well pleased with the *A. Bee Bulletin*, I wish it every every success. What shall I do with supers in winter, leave them on or take off. How shall I keep the moth away from supers, if I take them off. A very good honey yield this season.

[Bees should be kept as warm and compact as possible in winter. Therefore it would be better to take the supers off. You can keep the combs free from the moths, when away from the hive, by occasionally burning sulphur under them.]

Some eighteen months since we placed the *British Bee Journal* on our exchange list. We have never received an acknowledgment or seen a copy in return—we believe it exists.

Mr. G. R. Harrison, writes from Orange Grove Apiary, Lower Portland, says :—The rain has spoilt our last hope for a honey flow this year, from the bloodwood and stringy. We may get 2000 from it, but not quite certain. Only got 3000 till orange bloom, and nothing since.

Mr W. E. Bagot, Broadwater, R.R. writes :—“I am afraid my bees have got a touch of paralysis. The appearance of the affected bee is small and shrunken, and very black. The other bees try to sting them and carry them away from their hives. At present the number of dead bees is small, and does not appear to diminish the strength of the hives affected, which are Italian hybrids, first cross. The pure races, both black and Italian, are not affected.

[The subject of Bee Paralysis was well worked out as the Special Subject in our last issue. The peculiarity of your case is that it is the hybrids that are affected, not the pure-breds. Would that be a point to be noted by those who are studying the question? We shall be glad to receive Mr Bagot's further reports.]

Mr. Frank Curr, Bendolba, Williams River, writes :—I am only a beginner, having bought 18 swarms of black bees in box hives early in the spring. Transferred them to frame hives. I have increased them to 50; have Italianised 40 of them. Extracted about 1000lbs. Bees did well in this district till about January. Since then they have not been storing much honey. There is a good many in this district making a start to keep bees in frame hives. I should like to ask you a question, if you require a swarm in the spring and give them plenty of working room all through the season, will that colony swarm that season?

[The chances are against their swarming but much depends on the quality of the queen.]

THAT BLUE MARK AGAIN.

As we ruminate in our mind the question, Can the *A.B.B.* be improved? and are met by the question, “Will the income justify it?” the shadow of a big handicap looms up also gloomily behind. We are constantly receiving the names of fresh beekeepers, to whom we send sample copies, in which is a circular containing the following words :—

“Should you not desire to become a subscriber return the next copy unopened.” The return is often the 5s. subscription, sometimes a return with a note that they are in such a small way they do not need to take a periodical. After three or four issues are sent without a return of any sort we put the blue pencil mark across the address. But at the present time our blue mark list comprises some 650 names, which means labour, paper, postage, and sundry other expenses, forming a considerable handicap on the advancement of the periodical, and also indirectly affecting the progress of the honey industry. We now give notice, that we shall be compelled, in our own interest, and in the interest of every beekeeper in Australia, to assort the names on the blue mark list in batches, and take such steps as the law allows.

The Chicago Honey Exhibits.

March 12, 1894.
Bell View, Morongla, Cowra.

To the Editor *A. Bee Bulletin*.

Dear Sir,—As the exhibits are just arriving from the fair at Chicago, as an exhibitor at that place, I would like to see all the honey kept in Sydney, and sent to the Royal Agricultural Show, if there is time, so as all bee-keepers could see the changes on our honey by the long sea trip. Trusting that the Bee-keepers Association will give it a favourable consideration.

Yours faithfully,

R. MANKIN,

[The honey exhibits were placed in possession of the U. S. Department of Agriculture at the close of the Fair. See Vol. 2, page 101.]

PETERSEN'S BEE FARM.

We have given an account of this farm on a previous occasion, but the following, from the *Mudgee Western Post*, will doubtless be read with interest:—

Mr. Petersen's farm comprises only 12 acres, 10 of which are used as paddocks, $1\frac{1}{2}$ acre as an apiary, and $\frac{1}{2}$ an acre is allotted to grapes, from which are made most delicious wines, which the hospitable owner delights in asking visitors to sample after they have inspected the apiary. It consists of 190 hives, a third of which are of the Italian species, while the remainder are hybrids. Last year the owner sent to the Sydney market 22 tons of honey, for which £28 per ton was returned. Mr. Petersen sends all his honey away in 140lb. and 15lb. tins, and sells at wholesale prices, retailing very little. The returns from this apiary during the years 1891 to 1892 are the highest on record, being $26\frac{1}{2}$ tons (48,000lbs.), the product of 64 colonies, an average of 750lbs. per hive. There are twelve 40C-gallon tanks placed at intervals in the apiary, four of which were full at the time of my visit, and Mr. A. Petersen spoke hopefully of filling them all before the season is over. Though many apiarists complain of a scarcity of honey this year, Mr. P. does not, there being a large quantity of white box now in full bloom surrounding him in his mountain house. At this season of the year the hives are robbed every week regularly, but sometimes the most energetic of this numerous family are despoiled twice a week, and some of the comb in the frame weighs as much as 12 $\frac{1}{2}$ lbs. One-story hives are used, containing 20 frames, which are considered best for extracting. Cowan's rapid extractor is in use here, which is nearly automatic, and is found to answer the purpose admirably. Mr. Petersen has been engaged in the culture of bees for the past 15 years, and with the experience he has achieved during this time, there can be no doubt that he is one of the most experienced apiarists in N.S.W.,

and he takes a delight in explaining and answering questions to anyone wishing to learn the nature and habits of his numerous pets.

Mr. John Carey, Pioneer Apiary, Kil-larney, Queensland, writes:—It has been a bad season for honey with the constant rains—being bad for others it has enabled me to dispose of mine.

Mr. A. J. Buttsworth, Public School, Yarrowah, Robertson, writes:—The bees work well enough in this district; their chief sources of honey supply are the clover and dandelion, but the two great drawbacks are the number of rainy days, and the long and cold winters. Mr. Gale lectured in Robertson a short time ago, a number of persons seemed interested, but it is surprising how few will trouble to engage in anything beyond the mere routine of milking their cows. There are a few beekeepers around who seem to do fairly well, but most of them keep black bees. Wishing the *Bulletin* success, etc.

Mr. George Stevenson Waerenga-a-hika, Gisbourn, N.Z. writes:—I am sorry to say that the honey season is a complete failure here. It rained incessantly from October to January and the white clover, on which we depend for surplus, yielded no honey. Now, that the season is over, the weather is delightful. Unfortunately we have no fall source of honey. There is a little bush honey in spring, but our surplus is from clover and thistles, and both are out of bloom. I am glad to see you have so many breeding Italian bees. We have had to send to America for them, and there is great risk. I sent for eight queens last spring, and only one reached me alive. One thing I am satisfied about, the great superiority of the Italian bee. Any bees gather honey in a good season, but a bad season gives the test, and nearly all my honey this year was taken from hives of hybrid bees. Next year I hope will see the last of the black bees in this neighbourhood.

MARCH 23, 1894]

The Australian Bee Bulletin.



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LIGURIANS LEAD.

"Upon no other one thing does the honey part of the apiary depend so much as it does upon the queen."—Doolittle in *American Bee Journal*.

"There is more business in one such queen (Ligurian) than there is in any five queens whose progeny are marked by five yellow bands."—Henry Alley, in *American Apiculturist*.

"Just consider for a moment the returns beekeepers have made the present season to some of the bee papers—'Bees gathered no honey this year,' 'White clover a total failure,' &c. In our opinion the failure has been owing to the bees, and not to the flowers."—Henry Alley, author of "Thirty years among the Bees."

"The tongue of an Italian (Ligurian) is calculated at about one-twentieth longer than the tongue of common blacks, which in conjunction with greater size and strength, and industrious disposition, makes them a truly preferable bee."—C. W. Dayton, in *Progressive Beekeeper*.

"The Ligurians are recommended by a greater number of beekeepers than any other race of bees."—J. A. Stoner in *American Bee Journal*.

Seventy-five per cent, of beekeepers assembled in the State of Illinois voted in favour of the Ligurians.—See report in A.B.J., 1893.

These are the verdicts of leading bee masters in America after 30 years' experience. "Experientia docet," which being interpreted signifieth experience teaches. But teaches whom!

"Received the four queens on Saturday, March 10th, in good condition. Are pleased with them."—C—n Bros., Nailsworth, South Australia.

"I am very pleased with the size and colour of the majority of the queens (from breeding queen sent), and the mother herself is splendidly prolific, hardly missing a cell in eight frames."—J.R.H.G., Lismore Apiary.

"The queen arrived safely, in fact all the bees were quite lively when I opened the cage. I have her successfully introduced by the Simmins method."—Rev. W. H., Paparoa, New Zealand.

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C. MANSFIELD

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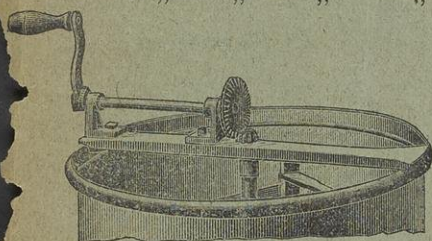
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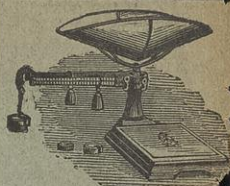
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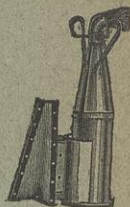
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