The Australian bee bulletin. Vol. 2, no. XXI January 23, 1894

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

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 2. No. XXI. JANUARY 23, 1894. PER COPY, 6d

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Hunter River Bee-Keepers' Association.

MONTHLY MEETINGS.

TUESDAY, FEB. 20TH.
At West Maitland.

TUESDAY, MARCH 20TH.
At Newcastle.

TUESDAY, APRIL 24TH.
At West Maitland.

O. MANSFIELD, Hon. Sec.

The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEE-KEEPING

W. MAITLAND, N.S.W.—JAN.. 23, 1893.

Re Mr Vogele's ringbarking alluded to in our last, in a recent conversation with him it seems that the floods of March last washed away both fences and some fifty or sixty hives, so that when the inspector came round (it was the fifth year) he reported the "improvements" as some £25 deficient. A summons was issued Mr Vogele to attend the Dungog Police Court re same. Mr Vogele, little suspecting any thing was going wrong, was working some thirty miles away from the Court house and the summons reached him only on the morning of the day on which the case was to be heard. Attendance was impossible, and forfeiture was declared. Some influential friends are using their influence in the matter, and we sincerely trust to be able to report a satisfactory termination of the matter in our next issue.—After the above was in type we received word from Mr Vogele, that through the energetic action of Mr R. Scobie, M.L.A., president of the H.R. B.K.A., the forfeiture is waived until the 8th July next, thus giving him time to effect the necessary improvements. We sincerely congratulate Mr Vogele on the termination of his trouble.

That "Heredity" question is getting warm. Mr Gale started it, Mr Abrams followed "on the other side," Mr Helms treats on the matter in this issue. Mr. Gale's reply appears in our next. In writing us Mr Gale says—"I am glad my article has opened up discussion. There will now be something in the bee world to live for." Hear, hear, and the more of practical discussion the more profit to keep bees for—say we.

Mrs Jennie Atchley says she has successfully dealt with the bee moth. A small lamp with soap-suds under in the apiary at night does it.

We would call the attention of New South Wales beekeepers to Mr C. Mansfield's letter elsewhere. The N.S.W. B.K.U. led people to expect great things from it. Is it doing anything ?

We are sorry space compels us to hold over to our next several very valuable communications, among the writers being Mr A. Gale (reply to Mr Abrams); Mr W. Shaw, of Mudgee; G. R. Harrison; Mr Peter Ridell; W. Seabrook; Mrs Atchley, Mr John Skinner, and others.

Mr Coghlan, the N.S.W. Government statistician's returns for the twelve months ended April, 1893, to hand, give a total of 48,204 hives, which produced 1,395,450lbs. of honey, and 48,178lbs. of beeswax. The average production was greater on the table lands than the coastal districts or Western slopes.

Mr O'Hearn of West Maitland, brought us a dragon fly which he caught killing and eating his bees. He had watched it come to the hive three times in about five minutes, each time adroitly seizing and carrying off a bee. Its body was about half as large again as a queen bee. Mr. M. M. Smith has sent us basswood leaves and flowers from Tasmania. Mr. Vogele a bottle of honey beer, which ought to be very refreshing on a warm day. We have several promises of hives of native bees.

Worth Noting. The basswood flourishes at the Snowy River, New South Wales, and in Tasmania, but a tree ten years old, at Moss Vale, seventy miles south of Sydney, has not given a bloom. Mr W. Shaw, of Mudgee, gives similar evidence of failure in that district. The choko thrives magnificently in Queensland, splendidly on the Richmond River, but poorly on the Hunter River.

Mr J. J. Dick, Macquarie, writes—I am glad to say my bees are rapidly recovering the attack of foul brood after treatment on the M'Evoy system. I have 38 hives doing splendidly; had 400lbs honey from them last week, and they are now bringing in plenty. We have had splendid rain, and there is every appearance of a good honey harvest.

The usual monthly meeting for January of the H.R.B.K.A. was held at Branxton. Mr H. J. Foreman, one of the vice-presidents, occupied the chair. Mr C. Mansfield, by the aid of a powerful magic lantern, exhibited a number of pictures on apicultural matters, which were explained by Mr W. S. Pender. A number of questions on bee matters were asked and discussed, and at the close of a most pleasant and instructive evening it was resolved to form a local beekeepers' association.

THE N.S.W.B.K. UNION.

To the Editor of the A.B.B.

Sir,—In common with others, I am at a loss to know what has come over the officers of the N.S.W.B.K. Union. Since the Convention, I understand, very few names have been added to the roll of members, and it seems to me a golden opportunity for the welding together of the bee-keeping fraternity is quietly passing away, and instead of the Union becoming a power for good, will soon at this rate, become the subject of ridicule. Many matters await the consideration of the executive. Such as a revision of the rules which were framed, or rather adopted in a hurry, and are in some respects unsuitable. Some alteration should be made in the rules, to include as full members of the Union all beekeepers who are members of local associations, paying five shillings per year on condition that a portion of that sum, say one shilling or more, be transmitted to the management of the union. Persons residing in isolated positions pay the full sum of five shillings to the union. If some such modification as this were effected, the Union, I opine, would soon increase to something much more worthy of the name.

Arrangements must also soon be commenced for the Convention of 1894.

Yours &c.,
C. MANSFIELD,
Largs.

HEREDITY.

A CRITICISM BY R. HELMS.

"If we do not reason we are bigots; if we cannot we are fools; if we dare not we are slaves."

The lengthy article on "Heredity in Bees," which first appeared in the August number of the *Agricultural Gazette*, and later in the *Bee Bulletin*, received only recently my careful perusal, and finding it replete with untenable assertions and theories, I think that a critical examination of certain points advocated will be of interest to those who feel sufficiently interested in the more scientific questions found in connection with bee culture.

The heading of the article strikes me as somewhat misleading and at any rate ill-chosen, because when the term heredity is used one may fairly expect to meet something about character—that good or bad qualities, such as docility or pugnacity, industry or laziness, special intellectual or instinctive tendencies, have been naturally perpetuated; or how these or any abnormal traits, &c., have been propagated by inheritance by judiciously made, or faulty, selection and crossing, &c. But nothing of the kind is met with in the article, and heredity *in* bees is scarcely touched upon throughout. It seems rather that Mr Gale has written the article solely for the purpose of bringing his new theory as to the reason why the queen becomes a queen before the beekeepers of New South Wales, which can scarcely be solely attributed to heredity in its true meaning. The heredity in bees is therefore lost sight of during the progress of this discourse. Unfortunately for his theory the writer contradicts himself so frequently that it becomes painfully evident to the unbiassed reader that he cannot have thought the subject out very carefully, and consequently he makes but a very poor special pleader on behalf of his hypothesis.

In the outset he says :—"The subject of the difference of the constituents of the hive has occupied my attention for years past; and long since I have come to the conclusion that the food theory is

wholly untenable." And he goes on to say—"I was lead to this conclusion by noticing that the efforts of nature to mature a queen bee are almost opposite of those required to mature the working bee, and that the aids nature uses in the one case are almost entirely changed in the other." It is a pity that these assertions are left unsupported by proofs, for in no way does Mr Gale explain in what respect the efforts of nature are opposite in maturing the different members of the hive, nor in what way the aid nature applies are almost entirely changed. It is admitted by every one who understands the economy of the hive, that fundamentally the reproduction and the maturing are the same, although wonderfully varied in their ultimate results, according to the different conditions under which the young have been reared, which however in no way differ to such an extent as to warrant them to be characterised as "opposite," or "entirely changed."

In opposition to the food theory, Mr. Gale advances that the abdominal respiration is the chief agent in the development of the ovaries of the queen, and says that for this purpose the queen cell is constructed of pollen and wax, and therefore more porous. Also that the cocoon of the larval queen leaves the abdomen free for that purpose, and besides claims the shape of the cell, which he calls an inverted cone, as being in favor of his theory, as well as the cavities upon its exterior surface. He maintains that these peculiarities, added to the tissue like walls of the cell, and the position of the larva, &c., &c., have more to do with the development of the generative organs than the feeding with larger quantities of food.

Now let us just see how far these premises are unsupported by facts. Is the royal cell really more porous than the ordinary cell, as asserted by Mr. Gale? I doubt it very much, and rather incline to the opposite opinion. The whole structure is considerably thicker than the ordinary cell, and more particularly so at the base, and where the abdomen of the queen is located. The walls of it are by no means "tissue" like, but rather solid; nor do the cavities of the exterior surface assist in any way the respiration, rather the contrary, because the cavities do not affect the cell proper in the least, as the outer network between which they occur is probably only formed by the bees to give more strength to the cell as well as for the purpose of allowing a better hold to the attending bees. The main consistency of the queen cell is wax, which is more or less mixed with pollen. The quantity of this however entirely depends upon the consistency of the comb the cell is attached to. The bees do not secrete the wax for building the queen cell, but they construct it with the material they break down to get room, and with such as they find surrounding it, and as the cell is invariably fixed to a brood comb, a considerable quantity of pollen is necessarily mixed with the wax that is taken from the rims of the cells. I do not think that pollen is purposely kneaded into the wax, because when a queen cell is attached to a new comb, it is light colored and more waxy, but if found upon an old brown one that has already served many generations of brood it is constructed of more impure material. The queen cell it will be observed is always of the same colour as the comb it is attached to, and this is sufficient proof that it is made of the material surrounding it, which varies considerably in its composition. The queen cell is undoubtedly porous at its apex, but if it were equally so at and near the base, as is the specially contended point, the food would probably get too dry for absorbtion. But on the contrary it retains its jelly like consistency till the day of emersion of the queen; however as soon as the queen gnaws through the cocoon, and abundance of air is admitted into the cell, the royal jelly becomes doughy and soon crumbly.

Great stress is laid by Mr Gale, upon the fact that the cocoon of the regal nymph does not cover its abdomen; and it appears to me, that he considers this a

speciality with this nymph only wher ea s as a matter of fact it is common to all the other inhabitants of the hive.

Is it moreover reconcilable that the abdominal trachea—and this is throughout contended by Mr Gale—can possibly be particularly active for breathing when the hinder portions of the larva and nymph's body is to the greatest extent surrounded by food substance ? I deem it more probable that the abdomen is left free from the network of the cocoon to allow a better and freer absorption of the food, which is always supplied in such abundance, that some of it is generally still found at the bottom of the cell after the matured queen has emerged.

Regarding the shape of the queen cell, Mr Gale is if possible even more unfortunate in his deduction than in the other arguments he advances. To call the queen cell an inverted cone, is first of all a double misnomer, because it is neither coneshaped nor inverted. Inverted is probably only meant for pendulous, which more or less it always is, but as it is attached at the base or its widest part, it cannot be called inverted. As to being conical, the outside shape, which however cannot possibly be considered affecting its inmate, may sometimes be called so, but the cavity of it, and that is the only part that might influence the development of the young queen, is often very variable, as sections will prove, and no doubt mostly depends upon the locality of its attachment. The normal shape is probably elongate-ovoid, but sometimes very aberrant, still always roomy, which without doubt is a primary condition. Totally aberrent as a rule are the emergency cells, and this is perhaps the best proof that the shape of the cell plays no part whatever in connection with the development of the ovaries.

Considering the porosity of the cell, and the greater air-entering capability of the same, it is evident that the writer had some specially favorably positioned cells in his mind's eye, because he speaks of "semi-detached" cells. It is clear from this that only the solitary queen cells, according to the theory advanced, can produce perfect queens. But it so happens that frequently queen cells are built close together, and consequently have but a limited area of their surface exposed to the presumably all-important action of the air, and in some cases bunches of cells are met with. Quite recently I saw a cluster of nine cells, each of which to my eye produced a well-developed queen. If the theory of Mr Gale is the correct one, none of these queens can be worth much, because the queens from the outer cells must at the best be defective, and those from the interior of the cluster certainly completely worthless.

If the various points advanced by me are taken impartially into consideration it will I think be admitted that the influence of the porosity of the queen cell as advanced by Mr Gale, and his consequent theory, is untenable.

But further on in his article the writer admits that the food is of great importance, and that it is not illogical, &c., to attribute the remarkable differentiation in the hive to this. The passage runs as follows : "That there is a difference in the food fed to the larvæ of the queen and worker bees in the various stages of their development is unquestionable, but that that fed to the embryo worker causes the honey bee to possess those admirable faculties that have placed her in such a high place in the scale of animated nature is neither impossible, illogical, nor unreasonable." And he proceeds to give what he calls a parallel case, and quotes as such the different ways certain aphides are reproduced, concluding that this is "not brought about by a change of food in any degree whatever." The contradiction of the passage quoted with the hypothesis advanced, and the so-called parallel with that of the passage are too apparent to require comment. But even this parallel proves nothing, because the life history of the aphides and that of the bee differ to such an extent that, except perhaps that in both of them par-

thenogenesis occurs, which is equal to reproduction without fecundation, they have nothing whatever in common. And parthenogenesis occurs only partly and imperfectly amongst bees, but to excess, if I may say so, and most perfectly amongst aphides, as it has been observed that through upwards of twenty generations the females have been reproductive without being specially fertilised. It will consequently be seen that quoting these two life histories as parallels is a very ill-chosen argument, which proves nothing. That the peculiar change from a vivaparous parthenogenitically reproduced insect to that of a fertilising oviparous at the end of the summer (when this change generally occurs for the obvious reasons that the race may be perpetuated) is brought about without a change of food in any degree whatever is to my mind very problematical; and although Mr Gale makes it his strong point he brings no proofs for it nor quotes his authority if he has not based his assertion on original observations. Should, however, this remarkable alteration really be brought about without an alteration of food, it still proves nothing, as we have not even then a case of "alike causes alike effects."

That the abundance and quality of the food are the main agencies to produce perfection in the development of the sexual and reproductive organs in the female bee as hitherto adopted remains the most rational, and is in no way endangered by the respiration theory. I may mention here that it is very noteworthy that with unchanged food only the female bee will prosper, whilst the male seems not to be able to endure it. For the drones that are occasionally hatched in queen cells almost invariably die before they are matured.

Mr Gale, however, admits the influence of food upon the development of the bees, and says that pollen food is not supplied to the queen because pollen food gives muscle, which he considers the queen does not require; and assigns specially heat-producing qualities to the royal jelly. He however concludes as follows:—"Neither the pollen food nor the heat-giving food produce any difference in the physical structure in either insect—queen, worker, or drone." It is difficult, with such contradictory statements, to realize the real meaning of the argumentation, and it becomes doubtful whether the writer has formed quite a correct opinion about the chemical composition of the various foods and its action upon the bee system. But how the absence of anything can be productive of results is totally incomprehensible to me, particularly when such wonderful acquisitions as mentioned are supposed to be the outcome. The following passage occurs in the article—"The absence of these agencies from the cells of the worker larvae causes the development of the honey sac, the wax pockets and the pollen baskets, &c."

A great many more untenable arguments are met with in the article, but to criticize every assailable point would lead to several more pages of matter, and I think enough has been said to prove the fallacy of the theory advanced. In using the word *argument* I am scarcely applying the correct term, which more correctly should be assertions; for as such they must be considered so long as they are not backed by proof when they go contrary to hitherto adopted principles. I therefore content myself by quoting the following, which are the most noteworthy. Alluding to heredity, Mr. Gale says: "Conditions and agencies are hereditary, not constructive and mental characteristics." This would mean that all the wonderful instincts and intellectual faculties the bees are gifted with are the outcome of external conditions and agencies. It is scarcely probable that the writer will enlist many adherents to his idea, which may suit his argument very well, but otherwise is almost contrary to all doctrines of physiology and psychology.—Another rather extraordinary passage is the following: "There is no doubt the inverted conical cell of the queen is the normal cell belonging to

apis mellifica. The altered conditions and positions of the worker cells are abnormal. It must be so, whether we take a creative or evolutionary theory." There is no need for it in either case, because if we take a creative theory it is impossible to comprehend how anything that exists in such regularity (or anything else) can be called abnormal, and if we take the evolution theory, it is ridiculous to imagine that presuming the social bee has evoluted from an ancestral type with solitary habits, that the present queen cell had existed from the beginning as it is now, or in other words had remained stationary, whilst its surroundings evoluted.

Sydney, December 1893.

BRAIDWOOD.

W. C. writes—In the *Bulletin* for December, 1892, Mr Bolton, of Dunkeld, Victoria, wrote stating that he had discovered a method of having two and three queens fertilised in one hive, and again afterwards wrote, "I have now several stands with two and three queens laying in same." Perhaps, sir, if you just gave Mr Bolton a gentle reminder he might give some further details re the above, and also his experience for the past twelve months. I understand that they were not fertilised in upper stories on the Doolittle plan.

What has become of Richard? Has he ceased rambling?

Who is right?

Mr Alley says—"When a fertile queen has been taken from a colony I have for years made it a practice to immediately place in the hive a well matured cell."

Mr Doolittle says you must "wait from 24 to 48 hours."

Now, sir, which is it that destroys queen-cells, the queen or the workers?

[Are you listening, Mr Bolton? We have pleasure in telling W. C. that if Richard is not Rambling he is still *Riting*. Will any of Messrs. Alley and Doolittle's admirers in Australia reply for them till they have time to answer for themselves? This is a case of what you succeed in I fail, and probably the method of placing the cell has everything to do with it. No two persons do anything alike.—Ed.]

Special Subject Next Month, BEE PARALYSIS.

QUESTIONS NEXT MONTH.

17.—Do queen excluding boards tend to increased swarming?

18.—Do bees ever swarm normally, and leave unsealed or no queen cells started?

QUESTIONS.

12. Why does extracted honey candy before strained honey?

13. What is the best way to stop robbing?

14. What is the best and surest method for bleaching wax?

15. Why is egress not advocated from the outside of the upper story, say at the back?

16. Have any experiments ever been conducted by any of the scientific staff of any of the colonial Agricultural Departments (under the Government), to destroy any of the so-called objectionable flavours of Australian honey, without injuring its quality in any way, and make it suitable for the palate of John Bull? Will some of our bee-keepers well up in chemistry make some investigations or trials?

JOHN A. AYRE, Perth, W.A.

14.—I use steam and solar wax extractors, but it is too slow a process for bleeching.

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

BEST WAY TO STOP ROBBING.—Editor of *Gleanings* says Dr. Millar found that by putting a frame or two of honey in a spare hive, the robber bees would just steal it on the quiet, without fussing round the whole apiary.

WHY EGRESS AT THE BACK ON OUTSIDE OF UPPER STORY IS NOT NECESSARY.—The great practical "do much" (Doolittle) found out that the field bees when they brought in a load of honey *did not carry it themselves* into the supers, but were met by the young bees as soon as they got into the hive, and they transferred the load of honey to the young bees, who then carried it up aloft. There could be no mistake about the point, as the hive under observation had all young Italians, whilst the field bees were all blacks, and not a single black bee was to be seen in honey super. Therefore, as the field bees never went into upper story, and the young bees never left the hive, the egress at back of super would be useless.

W. SHAW, Mudgee.

12,—Cannot say for certain, probably on account of its extreme purity.

13.—By not encouraging it. Do not have any honey or combs exposed, if possible. I am not much troubled in that respect.

14.—Do not know.

15.—It is certainly not advisable to have two entrances, as in robbing, moths, &c., it would only act as an incentive. One is sufficient for all purposes.

16.—Not that I am aware of.

W. S. PENDER, West Maitland.

12.—It does not, if both are alike equally ripe.

13.—Don't allow it to commence is much better than all remedies to stop it. Take away the queen and all the brood of the robbing colony, which can be returned when robbing ceases. This is best in extreme cases.

14.—Prepare wax in thin sheets, put under glass and sprinkle with water. A moist heat with the light of the sun will bleach wax quite white. But why bleach wax? It sells at a much better price if its yellow color is retained.

15.—Bees can attend to and guard against robbers one entrance better than two Openings near the top of the hive, especially at the back, allow too free ventilation—in fact draughts or cold winds passing through may chill brood. A hive having one entrance is more easily handled than one having two.

16.—Write to the Departments and ask them. The flavour can be got rid of by placing the honey in shallow pans in a well ventilated solar wax extractor. Guard against moisture getting to the honey in damp weather, and too much heat. 180° F. is quite high enough, 150° I think best.

N.Z.

12.—Does extracted honey candy before strained honey? I am not aware that it does. If it does, it is probably because the process of extracting, and the handling it gets in that way, tends to a greater and more speedy evaporation of the watery particles in the honey.

13.—I was inclined to say, don't let robbing commence—"Keep your colonies strong." If the apiarist is so careless as to let robbing get a big hold in any one colony, put a very strong colony in its place, and the one being robbed in to the former's position.

14.—I believe the plan usually adopted is to run the wax out into very thin sheets and expose to the light.

15.—There *might* be some little advantage in a strong colony while the honey flow was on, but there would be some decided disadvantage when there was a break in the flow in the way of inducing robbing, and if the entrance in the upper story was closed at the time it would be decidedly awkward for the bees who had been making use of it. On the whole I don't think a second entrance is advisable.

J. TUCKER, Paterson.

No. 12.—Is there any proof that it does? Honey frequently crystallises in the combs. It may be that more crystals intermix with the honey when thrown out by the extractor than if passed through a cloth strainer.

13.—Keep all colonies strong, and be very careful to leave no honey about. The carelessness of the beekeeper educates the bees to look about for honey that is easily had.

14.—Rendering wax by hot steam is a sure way, but I am not certain it is the best. I have had no experience with chemicals.

15.—Surely it would be inconvenient to have the bees issue from the hive at the back where the beekeeper should stand to manipulate. I believe bees prefer to go in at the top of a hive, but it is necessary to have a bottom entrance, in order that dead bees and other impurities may be thrown out.

16.—John Bull's palate is all right. It is his principles that are out of plumb. All the same there is a good deal of Australian honey that is below mediocrity. I believe our best quality of honey will hold its own anywhere. But if an export trade is to be built up supervision of quality will be needed.

GEODGE JAMES, Gordon.

12.—I have had both strained and extracted honey side by side, and found both candy at one and the same time. The strained honey was got by breaking up super combs that were too dense for extracting. As a reason why strained honey should not candy sooner than extracted I should say was on account of too much unripened honey.

13.—Keep all stocks strong. Do away with your black bees. Do not return extracted combs until night during a honey dearth. Keep entrances narrowed down on week colonies to one bee space, and in the case of nuclei use a division board with entrance cut in same at opposite end to entrance of hive. How to stop once well started is a poser, and makes one pray for night to come.

14.—Thin sheets laid in the sun, protected with thin muslin from the direct sun's rays, or would melt.

15.—I should not want an army of bees waiting to sting me every time I went to open a hive, which would most assuredly happen if there was any opening at rear of the hives, even if there was only a cone escape. Bees would mark the spot and go fooling round instead of going on with their work.

16.—Don't know.

J. R. H. GAGGIN, Lismore.

12.—Dr C. C. Miller, in *Gleanings in Bee Culture*" some time since said that "it was the whisking what done it," and in support of his view he quoted from a French newspaper, which informed a correspondent, who asked how to make honey candy in summer, that had only need to churn it for twenty minutes and that it

would very quickly granulate thereafter.

23.—Do not let it commence if possible. Should it have begun, close all irregular openings in hive being robbed, and loosely stuff its entrance with grass or weeds. The bees belonging to the hive will force their way through the weeds for entrance and exit, but strangers suspecting a trap will not venture.

14.—Boil it in a solution of two or three tablespoonfuls of sulphuric acid (the strongest commercial) to one gallon of water. The sulphuric acid must be poured in a very thin stream when adding to the water. From three to six boilings (in fresh solution each time) would be needed to bleech it at all thoroughly. Foundation prepared from such wax is of a beautiful snowy whiteness.

16.—It does not seem a very hopeful field for experimentation. In "destroying the objectionable flavour" I am afraid not much flavour of any kind would be left behind. I think we must be content to retain what is deemed by the English public "objectionably-flavored" honeys for our own use in Australia. And as a general rule we here prefer strong-flavoured honeys—whether owing to a better-educated taste or the coarseness of the national palate from our excessive tea-drinking and abnormal consumption of salt-beef, pickles, and condiments. I think I am right in saying, however, that the great bulk of our honey is of a mild, inoffensive flavour, and ought to suit the British palate (were it allowed to reach them by the almighty agents), being as devoid of rankness as their own clover, and much more so than their heather honey. It is likely to be a long fight against British prejudice, fostered as it is by interested persons, but if Australian honeys for export are carefully marketed, none but thoroughly ripe and mild qualities being allowed, I am confident that we shall surely and shortly stand foremost among Britain's honey suppliers.

FRITZ, GEEBUNG.

12.—Strained honey loses all the moisture it contains during the slow process of straining which is usually done in a dry warm place.

13.—Don't do anything to start it. Prevention is better than cure. If a small colony it is sometimes cheaper to let them finish it up. I have successfully stopped robbing by placing near the hive robbed a vessel containing honey mixed with wood shaving, the robber bees finding no resistance, take to it at once in preference to having to fight for it, when it can be gradually moved until beyond the apiary. In the meantime taking care to secure the hive against further attack by closing the hive entrance entirely or in part, according to the strength of the colony.

14.—Never bleached any beyond a sheet now and again, left out in the apiary, which changed from yellow to white in a few minutes.

15.—Egress from the top story at the back or sides makes the hive look unsightly. The holes have to be plugged up again if used for a bottom story. It is also a nuisance if a colony gets weak, for moths and robbers find their way into them. Many beekeepers have their frames across the hive. For them an entrance at the back would be unsuitable, because they would at every manipulation sit or stand right in the flight of the bees.

16.—Not that I am aware of. Don't think it is needed. John Bull will find that his palate will come round the objectionable part of our honey if he can get it as cheap as say 3d to 5d per lb guaranteed pure extracted, and 6d to 10d in the comb, I think the objectionable flavour originated with the supply dealers and not by the general public.

THE SPECIAL SUBJECT.

QUEEN INTRODUCING.

GEORGE JAMES, Gordon.

When I receive a queen from a distant apiary I go to the hive to which I intend to introduce her and remove the old queen, at the same time take out a frame of brood, seeing if possible that there are a few cells of honey and some hatching brood.

1.—Having first made a wire cloth cage, as described in Doolittle's Book, release the queen on the cells of honey and place the cage over her pressing the wires gently into the comb. By this method I never lost a queen.

2.—If I were to receive a queen in a Benton cage I should remove the old queen as at first and place the cage as received face down on the top bars under the quilt, for at least eight hours. Remove the cage, pry off wooden cover, replace cage as before face down. Don't disturb again for two or three days.

3.—Remove old queen in the morning. Place the queen you wish to introduce in a miller cage six to eight hours after and place same on top bars under the quilt. Don't disturb as before in No. 2.

4.—If it were a queen in my own yard I wished to introduce to another colony I remove queen to be superseded early in the day, at evening about one hour before sundown I remove two frames of brood and bees from the centre of brood nest and place the queen with two frames of her own brood and bees in this space, shake off the bees from the two frames first removed and distribute to any other hive that wants brood or return them bees and all to the nucleus from where you got the queen. I think it is a mistake to leave a hive queenless until they get cells started, as, in this condition I never had as good results. Another thing, if bees are not getting honey freely it is more difficult to introduce a strange queen and it pays to place a feeder in hive when no honey is coming in.

THE SPECIAL SUBJECT.

QUEEN INTRODUCING.

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

QUEEN INTRODUCING.—When a laying queen is put into a hive with hatching brood only, or very young bees, caged in comb, or entrance closed with wire cloth, then it is a dead sure thing so far as accepting her goes; but it is almost as certain that these bees will not let much grass grow under their feet before they swarm out—at any rate this is our experience. We find by far the best way as follows—We have cages 2in. square, made of $\frac{7}{8}$ and $\frac{3}{8}$, with tin or thin wood nailed on back, wire cloth on front; two holes bored in what may be termed the top bar, one $\frac{5}{8}$, the other $\frac{3}{8}$. Put in queen to be introduced by the $\frac{5}{8}$ hole, which cork up and fill $\frac{3}{8}$ hole with candy. Lay the cage on top of frame if hive is queenless. If not simply take out the other queen and then put the cage on frames. We don't bother any more about it, as the queen is almost certain to be liberated in 24 hours. We have not lost one this way, except *occasionally when double queening* a hive, when we have given the second queen rather too soon.

"BINNI."

Some years ago, in fact soon after I commenced bee-keeping in New South Wales, I purchased two Italian Queens from that old veteran bee master, F. A. Hudson, of Bathurst. Business bringing him into my vicinity, he very kindly undertook to bring the queens with him, and introduce them for me by a method, if my memory serves me well, he told me he always adopted with the happiest result. He obtained a piece of red wood three eights inch square, and cut two pieces three inches long, and two other pieces four inches long, with these nailed together, he made a small frame three and $\frac{1}{4}$ths x four inches, and tacked on one side, a piece of fine mesh wire cloth to fit. Selecting a frame from the hive to which I wished the queen to be introduced, containing some sealed cells of honey. he placed this cage over the queen on the honey, and punctured a few of the cells with a hair pin through the meshes of the cage. I having made that hive queenless two days before, by removing the queen, according to his written instructions. At the end of four days, from the time the queen was so caged, I was instructed to open the hive and remove the cage. By that time, he told me she would have been eaten out or released by the bees. I found this statement correct in every respect. Since then I have introduced hundreds of queens, with only this deviation from Hudson's method. I put the queen on the comb, caged at the same time I take the one out I wish to replace, and do not make the colony queenless for an hour, let alone two days. Although, as I have stated, I have introduced hundreds of queens, I have yet to experience my first failure. In my experiments, I have carried out this method in almost every conceivable state of a hive when made queenless, on the spot, when a hive for some reason has lost a queen and when a fertile worker has had possession even. The result has been the same every time. Give honor to whom it is due. *vive* HUDSON!

N. Z

There is certainly no royal road to the safe and speedy introduction of queens known at the present time, but as in all other branches of apiculture, so in this, we have made discoveries and are rapidly advancing in knowledge which enables us to perform the operation in less time and with much less risk of failure than formerly. There is a maximum formulated by an American lady bee-keeper, which no doubt many of your readers know, viz., "bees do nothing invariably," which has a particularly forcible bearing upon queen introduction, in so far that any one of the plans generally advocated may at times prove successful, while at other times under the same conditions exactly, so far as one can judge, failure will result. This is my experience at all events, and I speak after a long career in this branch of the art, and after trying every plan except that of chloroforming.

We have however discovered that there are certain conditions, which, if observed by the bee keeper in queen introducing, will tend greatly toward a successful result, while on the other hand neglect of these will almost certainly lead to failure. The conditions are: 1st. That the colony to receive the queen be queenless. 2nd. That the new queen be handled as little as possible. 3rd. That no bees be introduced with the queen. 4th. That the queen be protected when introduced for a time, and until the bees become accustomed to her. (This last condition only applies in some cases.) 5th. That if no honey is being gathered, the colony be fed, starting a day or so before the introduction takes place, and keeping it up till the operation is finished. Where Simmins' method of "direct introduction," or the "chloroforming process," is adopted it is not so necessary to strictly observe some of the above conditions; the three first however, should always be observed.

The object of the articles on this subject I take it, is to enlighten beginners, as those with experience will have tried different plans, and adopted one or more of those most suitable to their requirements under different conditions. For instance, if I have a good number of queens to introduce, and don't mind risking, one or two, and the conditions are favorable, I let the

queens run in at the entrance, or under the mat, but if I have a specially valuable queen to introduce, and want to run the minimum of risk, I invariably adopt the caging process. I don't think that my losses by this latter plan, extending over a good many years, would total 5 per cent, and this I consider as successful as it is possible to be, under any system, and I would strongly recommend introduction by caging to beginners, and others who wish to run as little risk as possible.

As to the kind of cage, I think it matters very little, so long as it will protect the queen, allow sufficient room for her to move about in, the bees to touch her with their antennæ to feed her, and to release her. Any modern standard work on beekeeping will explain the matter, and most of them have illustrations of cages. I have found Alley's introducing cage figured in his work on Queen Rearing, and in Hopkins "Australasian Bee Manual" page 223, to be the most simple and most successful of any I have used. All that is necessary is to plug up the notch in the cage pretty tightly with food (I use "Good" candy) after the queen has been put in. Remove the queen you wish to supersede, hang the cage between the frames, and close the hive. If the food is jammed in the notch, it will take the bees some twenty-four hours to gnaw their way through to liberate the queen, and by this time they have become friendly disposed to her. It is, as a rule, better not to disturb the hive, for at least 48 hours, as sometimes disturbance, just as the queen is liberated, will cause the bees to ball her. I have had in view while writing this the introduction of fertile queens.

Mr. J. R. H, GAGGIN, Lismore Apiary.

The three methods I recommend are, (1) Direct simple introducing. (2) Direct introducing by the chloroforming process and (3) caging over hatching brood. The two or three possibly four or five days' delay that was requisite in introducing queens by any ordinary plans generally means a considerable loss to the beekeeper, and the suspense and anxiety besides are vexatious, hence when introducing I nearly always try to give every queen-requiring colony a mother by direct introducing either simple or by the chloroform plan.

1. DIRECT SIMPLE INTRODUCING.

To succeed in a large percentage of cases with simple direct introductions it is necessary to have the proper conditions. There should be an absence of not less than one hour of their old queen from the queen-requiring colony previous to attempted introduction, and the colony must be disturbed as little as possible by smoke or otherwise. When ready to introduce go to your nucleus colony provided with a tumblerful of honey and a teaspoon. Seize the queen by the wings, plunge her beneath the honey and insure her being thoroughly daubed by immersing her three or four times as she comes to the top with the teaspoon. Now carry the queen still in the tumbler to the queen-requiring colony, lift her out and deposit her with the spoon on a central brood-comb. That brood comb must be gently raised from the hive and the movements of the bees towards their new *sovereign* carefully watched for two or three minutes till she is licked free from honey, when if the bees be observed to behave themselves respectfully towards her the introduction may generally be looked on as successful. To make quite sure, however, the bees must be examined in half an hour again. A little natural curiosity to discover what manner of creature their new monarch is may be excused, and so the novice need not be alarmed should he see the bees climbing over Her Majesty's back and poking her in the ribs and about the body generally with their "feelers"—it is but the bees way of paying their court to royalty—

Should they begin hustling her about however, dragging her by the legs, nipping at her wings and trying to screw them around, and above all suspiciously curving the posterior portion of their bodies, biting angrily and showing a general disposition to "mob" her, it is high time to cage her and to try No. 2

DIRECT INTRODUCTION BY CHLOROFORM.

I would advise all beekeepers to adopt this plan whenever dealing with refractory colonies or introducing elderly virgin queens. While not claiming for it invariable success I can say that the cases of failure are exceedingly rare, and the chloroform is perfectly safe and will not produce the slightest ill effect. Curious enough the one or two reported ill successes have all been in attempting to introduce to pure Italian stocks, and *I have yet to hear of a failure of the method with hybrid or black bees*—usually the most difficult bees to induce to accept a new queen. Nearly every beekeeper must have observed their more cowardly nature—smoke, tapping on the hive and robbing disorganizing them in a far greater degree than the Italians. In like manner they would seem to be more quickly and thoroughly confused and cowed by chloroforming than Italians. Certainly it is a great comfort to have a remedy in our hands that is able to knock the "sheer cussedness" (to borrow an Americanism) out of some of these vicious intractable hybrids, and this chloroform may be relied on to do. At the same time I unhesitatingly affirm that this drug if properly applied is perfectly safe and will no more harm the bees than a glass of wine would their master. With the single exception of some extraordinarily valuable queen I would strongly recommend a fair trial of this method in every case where simple direct introduction as given above fails, where elderly virgin queens have to be introduced or where the beekeeper is confronted with one obstinate hybrid colony that will persist in "balling" its queen. The manner of using it

is shortly given on page 173 of the last No. of the *Bulletin*.

3.—CAGING OVER HATCHING BROOD.

In view of the chloroform plan being not *quite* infallible (though very close to it) when introducing extra valuable breeding queens, such as an imported mother, as we cannot afford the risk of possible failure (tho' the percentage of losses be but fractional) I would recommend the above plan. I need not go over the details, they are to be found in every text book on bee-management.

Apologising for trespassing so far on your valuable space.—Yours, &c.

THE CHARACTERISTIC FLAVOUR.

Written for the A.B.B. by G. R. Harrison.

I feel very little interest in questions 12 to 15, so shall leave the answering of them to those who do, but No. 16 suggests a subject which I have been having a chew at lately. Whether the agricultural departments of the several provinces have done any experimentalising along the lines indicated would best be ascertained by communicating directly with them, but it doesn't matter, because it will not be settled that way.

The principal trouble with our honey on the British market is not its one flavour, but the great number of flavours, and the rarity of any one person getting our honey twice with the same flavour.

Most of the honey produced in Britain and on the continent, as far as I can learn, is very mild, but then we produce a lot of mild honey. Our "clover" honey can be classed as such, as also "lucerne," and we have many others which would also fill the bill.

Therefore, I want to say, it is not by "doctoring" our beautiful product, which must always be like Cæsar's wife, "above reproach." Can we find any other method?

We have close upon one-and-a-quarter million people in N.S.W., and I doubt if we produce 2lbs. per head per annum, and if we work our own market properly, we won't want to send more than a third of our product away, and fully that proportion is such as would strike the appreciation of Bull.

Again, the old "Toro" is quite ready to learn to like a new flavour, but then it must be a standard; it must be true to name, and it must have a name, and for this we would want it all to pass through the hands of one expert, to blend all to obtain that standard, which means that the bulk of the honey produced would require to go through the hands of the expert, that he could pick that required to attain the blend required, passing others for consumption here.

But I hear someone say, nothing less than the Government of the country would be strong enough for that. Well, the Government will do it if pushed. Don't you know that the S. A. Government has put aside £3,000 per annum for five years for the purpose of maintaining a depot in London for selling her wines and other produce, and also to bear the expense of selecting, ripening, blending, &c., before sending? Well, it is so.

It is no use sending raw spotted gum, coastal white box, dandelion, or any honey produced very near the coast, but our milder honies, when well ripened and blended, so as to get a standard of colour and taste, and perhaps another blend of choice sorts, not too strong, under a distinctive name, will give us what we are looking for, and it must be put on the British market under Government guarantee, and be made the subject of interesting lectures by able men paid by the State. We could send Mr. Gale over to give them a gentle breeze.

Orange Grove Apiary,
Lower Portland,
Jan. 6, 1894.

THE EUCALYPTUS FLAVOUR OF HONEY.

By JOHN SMITH, Montrose Park Apiary, Mount Cotton, Brisbane, Q.

In last number of the A.B.B. Mr. L. T. Chambers asks if I will inform him of my authority for saying that "in addition to the flavour the active principle of the eucalyptus permeates the honey."

In a paper also (printed in same issue) read by Mr Chambers at the late conference at Melbourne, he says—"The name 'Australian Eucalyptus Honey' has been used to foist a so-called medicine honey on the British public, claiming the properties of the extract of eucalyptus. Under this name all manner of rubbish has been sold, &c., &c." Very glad to see that Mr. C. adds his testimony to that of others who have repeatedly pointed out that it is the mixing up of "rubbish" and flavouring with eucalyptus oil that has done Australian honey so much harm in the old country, and thoroughly disgusted the much enduring British public with Australian honey. One more reference, and then I reply to main question. Mr C. says "It is moreover a difficult matter to knock it out of the head of the average Briton that we here live in a state of semi-barbarism, consequently our products are not equal in cleanliness to those of the more refined and older nations, &c., &c." I am a poor

average Briton myself, and from my own personal observation since I came to Australia seven years ago I am of opinion that these other average Britons are not very far wide of the mark. I have seen the "entourage" of many beekeepers, which I will not attempt to describe, but suffice it to say I should not like to be compelled to eat any honey they had to sell—the very idea of such a possibility nearly turns one sick; and I would respectfully ask Mr C. if it is not from such sources that the shipping houses gather some of their supplies. Now for the adventurous person with the fertile brain who just "hatched" the statement about the active principle of the eucalyptus permeating the honey gathered from the gum trees in order to get up a trade.

In the first place I said nothing whatever about the essential oil of the eucalyptus being in the honey. At the same time I know that oil, as well as alcohol, is distilled from various vegetable products, and I think therefore that the essential oil* is in the honey gathered from the blossom of the gum trees, but in what way the essential oil differs from the "active principle" I cannot say, making myself no profession of chemical knowledge; but common sense tells us that the "active principle" of the plant from which honey is gathered must be in the honey—*otherwise how acconnt for the marvellous difference in effects of various kinds of honeys*—some kinds even being nearly a deadly poison, as that obtained near Trebizond and other places. But my statement was not based solely on common sense, or my own opinion, but on a valuable article on "Pure Honey," written by one of the most painstaking, and probably second to none botanists and naturalists in the old country. He is moreover a celebrated bee expert, and has made many interesting researches and discoveries in connection with bees. The name of the gentleman is R. A. H. Grimshaw, a name now known principally to the outer world as the starter of the "heredity theory." I now give a brief extract from the article "Pure Honey, which was printed in the *A. B. Bulletin* in the January number, 1893:—

"The most useful point about honey as a medicine, is that its flavour is caused by the active principle of the plant from which it is gathered permeating the exuding nectar.

> "Within the rind of this small flower
> Poison hath residence and med'cine power.

"Such active principle in concentration is nearly always a deadly poison—e.g., tea, coffee, theine, strychnine, quinine, whilst plants of which our potato and tomato are examples yield solanine; yet diluted or attenuated, these active principles become most powerful remedial agents. So it is with honey, &c., &c."

Friend Chambers, ask editor of A.B.B. to send you copy of article; it is well worth reading. It will convince most people, I think, even the average Briton, that *genuine* eucalyptus honey is an exceedingly valuable article, not only as food, but as medicine. Still the poet says:—

> "A man convinced against his will
> Is of the same opinion still."

I'm wrong. The poet I think said "a woman."

*In the case of wine the essential oil is gradually absorbed, hence good wine always becomes better with age, and new or raw spirit is injurious on account of quantity of oil in it.

BEEKEEPING IN WARM COUNTRIES.

Beeville, Texas, Dec. 8th, 1893.
For Australian Bee Bulletin.

Dear A B B:—I knock at your door even if you are so far away, and should you open unto me, I will take pleasure in entertaining you as best I can, and will be glad to exchange ideas with our brother and sister beekeepers of your far-away land.

I have often maintained the idea that all warm air southern countries are the only natural home of the honey bee, and that while bees do well only when it is warm in cold countries, I think beekeeping is only an artificial pursuit in coun-

tries where bees have to be wintered in cellars and caves, &c. Notwithstanding bees do well a few months in the year, in most places where civilization exists, in countries where bees fly and gather honey most every day in the year, and where fruit and flowers abound 10 to 11 months in the year, surely must be the natural home of the honey bee. But here lies the secret. If we would only take care of our bees in warm countries as they have to in cold climates we would realize a greater return for our labour. We are too apt to depend upon our warm winters doing for the bees what we should attend to, to insure the best results. I am sure that our bees need good, tight, clean, dry quarters with plenty of stores the same as if we expected a freeze up for several months. Then bees would be more apt to bring in the sweets and swell the pockets of their keepers. A sluggish, slipshod-kept apiary will not pay in any country, cold or hot.

MRS. JENNIE ATCHLEY.

DOMESTICATING NATIVE BEES.

Mr S. SHUMACK, of Binnaway, writes to the *Western Post*, Mudgee :—I have secured two splendid swarms of native bees, and I have them in two small boxes, 2ft. in length and about 5in in diameter. I have one made octagon, and one is glazed on four sides and the other on three, so as the bees and honey can be plainly seen. It is grand to sit and watch them of an evening, and see the loads of pollen which they carry on their legs. They also carry the honey in its natural state on their legs. I would not have believed it had anyone told me of it, but the day after I put them in the box I went to the log I took them from, and there, sure enough, I could see them taking the honey off the log and placing it on their legs. They would carry a drop as large as a small grain of shot on each leg. It is wonderful to see the loads of pollen they carry, some being fully as big as themselves, it is chiefly white in color. The bees in color are of a burnt amber, which is of a very dark blue. The queen is totally unlike the workers in color. She is of a milky amber, and in length about three-eighths of an inch, with very short wings. I fail to find anything in the shape of drones among them, as they are all the same in size and color. There seems to be little trouble in getting them to stop in these little hives, and I think it a pity all bee-keepers are so backward in not getting one or two swarms of these bees, as they are worth the trouble if it is only to show them, as they would be a great novelty to those who never saw them before.

BEE CULTURE AS AN INDUSTRY.

(We are indebted to Mr W. Dumigan, of Killarney, Queensland. for a copy of the *London Standard*, containing the following :—)

An interesting ceremony took place in the Mansion house on November 1st, when a number of gentlemen, representing the British Beekeepers' Association, offered the Lord Mayor, as representing the chief commercial centre of the world, a small collection of British honey to the amount of one hundred weight. The presentation was made in the state Drawing-room by Sir J. WHITEHEAD, M.P., in the absence of the president of the association, Baroness Burdett-Coutts. The Lord Mayor was accompanied by the Lady Mayoress ; and among those present were the Hon. and Rev. H. Bligh, Mr J. W. Hooker, Mr. H. Jones, Mr G. Garrett, Mr. F. H. Meggy, Mr. W. Broughton Carr, Mr. A. D. Woodley, Sir R. Hanson, M.P., and Alderman Tyler, Lord Mayor Elect.

Sir J. WHITEHEAD said that the honey had come from all parts of the United Kingdom. The Association desired to point out that the quantity which they were offering the Lord Mayor might, under fair conditions, be looked upon as the net result of one of the hives as they

were now constituted. His connection with the Association arose from the fact that he, as Pastmaster of the Fruiterers' Company, had taken a very great interest in the cultivation of fruit in this country, and all experts in fruit culture seemed to think that bees were essential for the fertilization of the flowers. It was desired to bring the influence of the Mansion House into play for the advancement of the objects of the Association. Could bee-culture be made to pay? They were aware that they had to contend againts the products of New Zealand and California. The honey grown in New Zealand was of an excellent character, and no one who reflected on the fact that the whole of the Southern Island was covered with white clover, from which the bees derived so much honey of the best kind, could wonder at it. Californian honey was derived from a great profusion of white flowers in the valleys, and those flowers did not give the finest quality or the sweetest honey, so that, in brief, this country has mainly to contend with opposition from one of her own colonies, New Zealand. The net profit to be derived from the cultivation of honey depended on the successful treatment of bees, and the object of the Association was to impart the knowledge of the cultivation of bees, and possibly to recreate the industry. So far they had been very much encouraged, and it would not be difficult for him to give hundreds of examples showing how successful bee-culture had been in this country. That morning a letter was placed in his hands from a sheep farmer in Kent, living near Farthingham. He was entirely unskilled in the cultivation of bees, but the results that he had obtained so far had been so eminently successful that it ought to be an encouragement to others to follow in his footsteps. He had only two hives, which were stocked last Autumn, and one had produced no less than 142lb. of honey and the second 64lb., giving an average of 103lb. for each hive, and if they assumed that he was able to dispose of it at 9d. per lb.—a reasonable price—he would have a net result of £7 14s 6d. In connection with the County Council lectures at Swanley last year two boys, who had distinguished themselves, were each presented with a hive. One derived from his hive no less than 71lb. of honey, which he sold for 60s., and after deducting 17s expenses had a net profit of £2 3s. He had in his own knowledge a case in his native county of Westmoreland, where a small tradesman had 80 hives during the spring and summer, when the flowers and the fields were in bloom, and up to the time when the bees had swarmed and made their casts, he kept them in the valleys, and afterwards took them on to the moors, where they could gathsr honey from the heather, and the result of the eighty hives, after paying all expences was a net profit of 25s per hive, or £100. The county of Kent had in some some respects been taken as a typical county of what might be done with regard to this culture, and it was estimated that there alone no less than 400 tons of honey could be grown provided that those who had hives were sufficiently skilled in the art of cultivation. That 400 tons, at 9d a lb would give to that county alone no less than £33,600. Kent was not an exceptionally good county for bee culture, for he was told that there were counties in the West of England, some of the valleys of Wales, the northern counties, and Scotland, where heather was grown, and even in Ireland, where honey could be produced in even larger quantities. Their desire was to popularise this movement and to develope it into an industry which would be of benefit to small agriculturists and the working labourers who lived in country districts. They looked forward to having affiliated associations in every county in England.

The LORD MAYOR, in acknowledging the presentation, said he agreed in the necessity for doing all they could to encourage our home industries, especially in connection with our farms and cottages, and he believed that these efforts would

be successful if Englishmen were true to themselves and encouraged those works which were really legitimately their own It was not many years ago that every cottage in his county of Hereford had its hive, which was successfully tended. In these days, though unhappily there were fewer hives, there were greater reasons why men, and especially women should, if they were industrious, profitably cultivate the bee and its products. This year he attended an agricultural exhibition at Coblentz on the Rhine, and witnessed an exposition of hives and honey, and to his surprise he learned that beekeeping had attained such a degree of perfection that the bees themselves were made to tell when they were about to swarm (laughter). This was done by electricity—for, as the bees begin to swarm, the tell tale in the owner's house two miles off acquainted him of the fact (laughter). Bees always reminded him as Lord Mayor of the City of London of the Corporation itself. The Corporation were working bees, and the Lord Mayor seemed to be a kind of queen bee (laughter), residing in the midst, and supported by those who worked and acted most loyally with him. This gift of honey was valuable to him, not only as an individual offering but as a token of that great system for the encouragement of home industries which the Lord Mayor, above every one, should be anxious to uphold.

The proceedings then terminated.

CAPE COLONY.

Mr Fred Taylor, Baltrama, writes:—Just about here I think I am the only one who takes much interest in bees, although there is a farmer here and there who keeps one or more colonies in the old beer or soap box. Bees have had dreadful hard times the past year owing to the drought. Thank goodness, though, we have had splendid rains lately, almost too much I may say, but the country is now looking like a flower garden, and I've no doubt my little friends will hurry up and make up for lost time. Enclosed please fine P.O. order for 5s 6d., subscription to the A.B.B. for the coming year. I find very much of interest in the paper, and wish it a very long life.

TASMANIA.

Mr M. M. Smith, Launceston, Tasmania, writing Jan. 5th, says:—"Speaking to a gentleman re the linden or basswood yesterday, I was much surprised to hear that they are growing in Launceston. To-day he kindly obtained a sprig of it from the gentleman in whose garden it grows, who says that it is booming with bees. He informs me that it also grows in the Botanical Gardens at Hobart. In comparing the specimen with Root's A.B.C. it is identical. I enclose a small sprig." Mr Smith concludes with —"*Bulletin* much improved since I saw it first, and arrival of it always looked for and read with great interest by my son (who has lately taken to bees, as well as myself. I am keeping record of one hive. So far have taken 34lb of honey from it. Our locality is considered a rather poor one, and as a rule our best honey-flow after the middle of January."

WESTERN AUSTRALIA.

Mr J. B. Kline, who some months since left the Hunter River for Western Australia—where we most heartily wish him every success, his many excellent qualities also fully deserving same—writes us from Perth—

There certainly is not much to write about in the bee line in Western Australia. The interest taken in the little worker is very little indeed, and coming to one used to having a look around among the apiaries of the Hunter you miss the friendly greeting so frequently found over there when you make yourself known. And often I think of the times I spent among the hives located in and around Maitland—not forgetting the one on the house-top—and the host with smoker in hand introduces you to his pet queen and her daughters.

Well, I suppose it will come some day.

There is plenty of country, but not too good a market. Perhaps when the gold fields bring thousands of people, as they promise to do ere long, something may be done to help it.

Would-be beekeepers over this way know very little of keeping bees, and have a lot to learn. Fancy a beekeeper not being able to show you his queen simply because he has not seen her himself, so that a great deal of enthusiasm is taken out of one living in this country who has been used to peep through the net at them now and again.

There is one here though that one may always find a welcome on visiting. I speak of John A. Ayre, who I notice gives you a par now and again. He has named his apiary Mel Bonum. He is working on the ground work commenced by another, but has increased it a lot. He seems to be getting a good flow at this time, and with his experience will no doubt give a lift to the bee industry of Western Australia. The banksia and Christmas tree are I think the main honey producers. The latter is a good-sized tree, blooms up to Christmas, is covered with beautiful yellow flowers, and looks very conspicuous wherever seen.

Mr John A. Ayers writes—

A few lines to your valuable paper will perhaps not be amiss. First, in reference to Abrams v. Taylor, on "Do Bees steal or transfer eggs?" In my opinion they are both right and both wrong. That reads strange, don't it. Well let me explain. First, when I took charge of this apiary I found six colonies queenless, and had been so I should guess more than six weeks—in fact there were not three pints of bees in one hive. However, none of them had any brood and not an egg in their hives as I could find. I gave each hive a frame containing eggs and three dozen old larvae. On the combs of such colonies you will always see queen cell cups. The day after I went to the hives, and what should I see in all the queen cell cups next to the frame containing the eggs and larvae but eggs and larvæ in them. The first hive I went to I counted six of these cups, two with larvae just hatched, and four with eggs. Well, as I wanted some queens and the frame was from a good queen, I let them all get capped, and at the proper time cut them out and gave them to neucleus hives. They hatched out, were fertilised, and they are now some of the best-laying queens in the yard. Five out of the six did the same. The one had no cups next to the frame I gave them, and two of the hives did not even build a cell on the comb I gave them. Now this upsets Mr. Abram's theory, that bees cannot transfer eggs. But, on the other hand, I do not believe that bees will steal eggs; nor would I believe it only on the very best of proof. I have tested a colony not once but often on the same point, by putting a frame of eggs outside the hive. They would only eat them, and I find, in doing so, the bees would take no notice of the larvae, they would only eat the eggs. I would never find one in the hive. And another thing. If they would or if they could steal eggs don't you think they would do it? I say yes. Therefore Mr Abram is right, in my opinion, that bees don't steal eggs; but Mr Taylor also is also right, that bees transfer eggs—that is, in the hive.

SENDING HONEY TO ENGLAND.

I have been very much interested of late in a market for honey in England, and have succeeded to a certain extent. One of the partners of the largest firm in Western Australia was out here. I got wind that he was a partner in a large retail establishment in London. He seemed very much taken up with the idea of taking Australian honey to England, so today, the 15th December, he sailed away taking 300lb, paying me cash for it. He likes the honey very much, says its splendid, and to expect a big order out. [Every success to you, John. Yours is a good sample of what can be attempted, and may good fortune ever crown your energies.—*Ed.*]

N. Z. DEPARTMENT.

JOTTINGS FROM FOREIGN BEE JOURNALS.

PROPER CARE OF HONEY. HOW TO RIPEN AND KEEP IT.

Under the above heading, Geo. F. Robbins has an interesting article in the *American Bee Journal* for Nov. 23rd, which is well worth the perusal and attention of every beekeeper. Mr. Robbins says, "If properly cared for honey does as well out of the hive as in it, in many cases even better," and I quite agree with him. The great mistake made by many beekeepers is the hurry in which they close up the vessels containing the extracted honey before the superflous water has had time to evaporate. I have seen whole casks of honey containing many cwts. spoilt in this way. Mixing sealed and unsealed honey when extracting is also I believe, a source of danger, and unless great care be taken to thoroughly ripen it before tinning for market, fermentation is sure to set in sooner or later. Some years ago, I advocated in the *Australasian Bee Journal*, the use of two extractors in order to keep the sealed and unsealed honey separate. I have found this plan to be a great convenience myself, as the unsealed honey requires much longer to ripen than that which has been sealed over by the bees. However, to quote further from Mr. Robbins' article.

"I have taken a comb that had been filled with clover honey inside of a day or two, and put it in the upper story of a hive where no bees could get access to it, and it would promptly sour. I have also shaken some of this same raw nectary honey out on a painted hive cover, where the summer sun would strike it, and a few hours later licked some of it off a knife blade, or my finger, about the thickest, richest honey, I ever tasted. Now don't you grasp the idea? Don't you see the difference? The water quickly evaporated from that sprinkled on the hive cover, while it could not from that in the comb. From the above examples alone I gather—First, that bees can add nothing to the flavour of honey, after it has left the honey stomach. Second, if proper conditions are observed this honey may be taken the moment it is deposited in the cell, and ripened artificially as well as the bees can do it. In other words, the only thing that improves the quality of honey is ripening, i.e., expelling the superflous water."

"With regard to section honey, Mr. Robbins is adverse to leaving finished sections on the hive too long, i.e., until they become travel strained. He says, "I am satisfied that while honey gains nothing on the hive that cannot under proper conditions be gained elsewhere, it does at least in this clime, lose in quality by being left on very long."

Mr Robbins acknowledges that of two sections, one travel stained, and the other just finished in its marble whiteness, the former may be superior to the latter in richness—"but I do say you may take those two sections of honey to a honey house, situated in a hot sunny place, with a free circulation of air all around and beneath it, pack them in a box, being sure to set the box at least 6in. above the floor and away from the wall—I think higher above the floor is better—and in a few weeks at least the white one will be fully equal to the other. At the same time, you may put the travel stained one back on the hive and take the marble white one to this same honey house, and in three months the former will be far inferior to the latter, while that in the honey house retains all the original rich oily flavour found only in honey in an intensified degree that on the hive loses that flavour, and often acquires a strong mouldy taste. Bee-keepers to my mind cannot give the above subject too much attention. It does seem the height of foolishness for the apiarist, after working hard to secure and extract his crop of honey, to lose it by fermentation, owing to the want of a little care and forethought in ripening the same.

CROSS BEES AND HONEY GATHERING.

In the same journal, T. J, Dugdale makes (to me) the somewhat astonishing statement that "cross bees seldom unite well," and as honey gatherers they are no better than the average of the more docile races in the same yard." I must entirely disagree with Mr. Dugdale. When manipulating either pure blacks, or pure Italians, I never wear veil or gloves, and when there is a good flow of honey coming in, I can manage them without smoke. The case however is entirely different with hybrids, i.e., a cross between the Italians and the blacks, I must always smoke these and give them a good dose at that, and if no honey be coming in, they prove as a rule perfect demons. I remember packing some hives up for removal some two winters ago. Smoke had no effect on them, and although I had the bottoms of my pants tied round with string, they even crawled inside my boots and stung me. After finishing the job I think I pulled about seventy stings out of my hands (I don't suffer from rheumatism.) Of course the above was an exceptional case, as in the ordinary course of events the bees would not be meddled with during the winter months. Now I claim that these cross hybrid bees are the very best honey gatherers that one can possibly keep. A hive of hybrids that came under my own observation some two years ago, gathered close on 400lbs of honey during the season, so that if they are a bit vicious, they amply make up for it in other ways. Use plenty of smoke and manipulate only when honey is coming in freely.

COMB FOUNDATION IN THE BROOD CHAMBER.

Mr. R. L. Taylor has been conducting a series of experiments at the Michigan Apiary (U.S.A.,) at the expense of the Government. He publishes some most elaborate tables in the A,B.J., which however are too long for me to re-produce here, but some of the conclusions at which he has arrived, are to me to say the least rather startling, for instance, in summing up the whole case he says.

"1st. That for profit foundation in the brood chamber for swarms has a decided advantage in point of surplus comb honey over both drawn comb and frames with starters only, that drawn comb stands second, and starters third."

How he reconciles the above with the following statement I am at a loss to know. That swarms, on starters only, sustain their rate of gain decidedly better than do those *on combs or on foundation*." And again in 6th par., "That of the light colonies, those on starters are decidedly more profitable than those on either comb or on foundation." The report to me seems to contradict itself. Any how I shall not give up my old plan of giving full sheets of foundation to all young swarms.

THROWING OUT BROOD.

Often during a spell of bad wet weather, succeeding a copious flow of honey, the bees will frequently pull the young brood from the combs, and deposit them outside the hive. Mr. J. Somerville, of Hamilton, Ont., writes to the A. B.J., that he has cured them of this by giving each colony a little food once a day until they were able to go out and forage for themselves.

OLD FOUNDATION.

Foundation that has been kept over a year, generally gets so brittle that it can scarcely be handled. To bring it back to its original state, simply soak it in tepid water for a time, when it can be handled and will be as good as ever.

A NEW SYSTEM OF BEEKEEPING.

According to the *Bee-keepers Review*, a Mr. Alpang, of Canada, has invented a new system of bee-keeping. As far as known at present, it consists of placing a hive between two colonies, and starting a colony in the central hive. The colony in the central hive is to be devoted to the storing of surplus honey, while the two outside colonies, are to be "feeders" to the central one. These outside colonies are to be manipulated something the same as the old hive is managed on the Hed-

don system of preventing after swarming. When the three hives are standing all in a row close beside each other, the entrances all facing one way, the outside hives are to be reversed, their entrances turned in opposite directions. This would throw the working force all into the central hive. The outside hives are again brought round, so that their entrances are the same as that of the central hive. Swarming is prevented and great crops secured.

THE SPECIAL SUBJECT.

I have received two or three of your bee journals, and am very pleased with it, and your mode of conducting it. Discussing special subjects every month, I like very much indeed. Hutchison, I think was the first Editor of a bee journal to start this in his "Bee keepers Review," and as Hutchison himself said some two years ago, "it had been the making of his Journal." I think however that it is wise to specially select such subjects as are to be discussed—subjects that we know are of the most importance to bee-keeping in this part of the world, and only those of large experience in Apiculture should attempt to give their views, except in cases where individuals have had special facilities for studying any points in the subject discussed. I am of the same opinion as a friend of mine here, who suggested while we were discussing your journal that it would be well if you could make it convenient to summarise the result of each discussion and show on which side the weight of the argument tended.

AUCKLAND.

SPECIAL WORK FOR FEBRUARY—N.Z.

There has been a considerable improvement in the weather since writing last month, and we have been getting some proper bee weather lately. It seems at present as if it was going to last for some time, and I hope it may.

END OF THE SWARMING SEASON.

In N.Z. we generally consider that, with the end of January, our swarming season closes, though it often happens in a backward season and in late districts that swarming takes place through the first half, and in rare cases through the whole of this month. As a rule also, the best part of the honey season in the clover districts of the North Island is over at the end of January, but there is generally a good deal gathered from other sources during February. Sometimes the season is cut dead short at this time, so that it is wise not to extract too close in case this should occur.

AUTUMN FORAGE.

Although we can boast of an excellent variety of bee forage, that in the autumn as a rule is rather scant. In some seasons the bees gather a good deal, more than sufficient for winter stores, even when every scrap of honey available has been taken from them right up to the close of the ordinary season. As, however we cannot always depend upon this it is best to be careful if we wish to avoid the bother of feeding and not deprive too close when the season is near the end. Last season for instance there was little or no honey gathered during the autumn, and the consequence was that in the majority of cases the bees went into winter in almost a starving condition—result, hundreds of dead colonies before the Spring came in. Of course it is indeed poor beekeeping where bees are allowed to starve to death under any conditions, but the mortality last winter showed the necessity of providing food for winter when the Autumn forage fails.

SUPERSEDING QUEENS.

It is a very great point in beekeeping, and one that tends greatly to success, to have only young and prolific queens at the head of each colony. Very many years ago I discovered that queens however good they may be, soon run or rather *lay* themselves out. In English and other European works we read that good

queens remain prolific for four or five years. Now in N. Z. I have never found a queen worth much after the second season, that is, when she has been reared early in the first season and done the work of that and the following one. There is good and sufficient reason for this difference, inasmuch as queens in this climate, where they breed more or less all the year round, would probably lay in one season almost or quite as many eggs as in two seasons in some parts of Europe. Here they quickly exhaust themselves and require superseding at the end of their second season. A great deal of winter losses may be set down to such exhausted queens dying during the winter months, and when they do survive till spring the colonies are never worth anything owing to the uselessness of the queens. February is a very good time to do the superseding and the young queens should be laying pretty freely at this time, in which case there will be plenty of young bees in the hives when they go into winter quarters, a most desirable thing.

ROBBING.

Care should be taken as soon as the season closes that no honey is left about or that no encouragement of any kind is given to induce robbing. To the careful beekeeper there is little or no anxiety concerning robbing, as ordinary care will prevent it, but carelessness is often the cause of its occuring, and when once fairly started in an apiary will cause a deal of trouble and loss. The first three or four weeks after the close of the season is the most risky time for robbing, and at that time the hives should not be opened unless a bee tent is used to cover it and the operator. Close attention to weak colonies should be given and the entrances to their hives should be contracted if there are any robbers about.

We hold over to our next description of new mailing cage sent us by Mr C. Mansfield, which we have every confidence will overcome the queen on long-voyage difficulty.

BEES IN NEW ZEALAND.

Dear Sir,—A short time ago I saw the *Bulletin* advertised in the *N. Z. Farmer*; I sent for a specimen copy—and was so pleased with it that I decided to become a subscriber. I sent off my subscription of 5s, and am now receiving your little journal every month. I would express the hope that you may see your way to making the *Bulletin* a fortnightly publication, and I would also urge that "Maorilander's" sugestion to substitute "Australasian" for "Australian," be carried out. I am already a subscriber to American and British bee papers; and I am delighted we in Australasia have now got a journal to represent an industry which is perhaps more suited to the Australian colonies than any other part of the world. I believe that the Eucalytus honey will in course of time be considered both from the medical and the epicurian points of view as the best in the world. So then let our motto be "Advance Australia." A few remarks upon bee-keeping in this part of the world, may perhaps be acceptable to your readers. I am living in a district some sixty miles north of Auckland; and as I have never resided in any other part of N. Z., I trust that my remarks will be understood to only refer this part of the colony. There is very little cultivated land hereabouts. White clover is not at all prolific, and a honey harvest from this source cannot be relied upon. There is a great deal of bush, and manuka scrub (called in N.Z., tea tree), but I have come to the conclusion, after keen observation, that the bush trees are not over productive in yielding nectar. Some of the native trees though producing much nectar, are quite neglected by the bees. For instance the *Pururi*, whose flowers simply drop with it, but which are rarely visited, if at all, by our bees. The *Kohi Kohi* flowers in winter and is evidently popular with the bees, but they make use of its nectar for immediate needs, and not for storing. I do not know of any N.Z. trees or shrubs from which a surplus

store of honey can be gathered. I am told that the *Pohutokawa* is a good honey secreting flower, but unfortunately it only grows near the sea shore, or on the cliff overhanging the larger tidal rivers. We have nothing in the way of honey producing flowers to compare to the Australian Eucalypti. Here, for instance, I do not believe we should get much surplus honey, were it not for the *Pennyroyal*, which has spread to an enormous extent over the whole country side, and which blossoms in the Autumn. There are some other introduced flowers which go to help on the harvest. But the *Pennyroyal* and a few acclimatised plants and herbs are really all that we can depend upon here for any large yield of honey. I believe that south of Auckland and in the South Island, the crops of honey come mainly from white clover.

The last season with us was a very bad one, a wet summer followed by a long wet winter, played havoc amongst the bees; and even now in our December, which corresponds to the English June, swarms are by no means common, and the bees still backward, owing I suppose to the small yield of pollen and nectar in the spring. I further notice, robber bees trying to effect entrances, even into fairly strong stocks. This in itself speaks badly for our bee pasturage. The losses in colonies during the winter were legion. Settlers who had numerous colonies, are in many cases now reduced to one or two. Of course to a great extent these losses are mainly due to ignorance of the art of apiculture.

I commenced the season of 1893, with four stocks of bees, three of these I tranferred to frame hives. I have had no swarms, but for the simple reason that I have discouraged swarming in every way possible. Two hives have supers on them, but as yet no flow of honey makes its appearance. I am intending to Italianise my colonies. My preference is really for a hybrid between the brown and the Italian. I came here in April last, so I have really had very ltttle chance of doing much in beekeeping, but hope in a season or two to have made progress. Yours truly,

WILLIAM HORSFALL.

P.S. Bee culture in the North Island is at a very low ebb. As far as I can gather, there are very few persons who keep bees intelligently and on a large scale. The reasons for this I do not attempt to give. At the recent Agricultural Show in Auckland, there were three different classes in which beekeepers could compete. The only entrance in each class was by an Auckland gentleman, who took every prize. We ask why should there have been no competition? And where are our beekeepers? Further, there are no beekeepers' associations, and thus no means of bringing bee-keepers together, or combined action to make the industry a success. Honey too is wretchedly cheap. At a local show in the neighbourhood prizes were offered for the best comb and the best extracted honey, but there were no competition. In my own settlement there is to be a a show in the month of February. There are classes for the best comb, and the best strained honey. To encourage the industry, I have offered prizes for the best locally made hive, and the best bees-wax. Time will prove if the competitors show up. Last week I was in Auckland, thedays were bright and sunny. The vegetation about the city is fine and various. The flower gardens are exquisite, but I looked almost in vain for the little busy bee. Once or twice I espied one, but his rarity was disappointing. *Bee Bulletin*, pray help us out of our slough of despond.

W.H.

Popoora, Kaipara, Auckland.
Dec. 9, 1893.

☞ Mr F. S. Fisher, of the Richmond River, in forwarding his subscription, says:—Your paper has saved me many a heartache. I would not be without it.

CONFABULATION AMONG THE BEE HIVES.

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

Respecting the honey that was seized in London by Custom' officers, because it did not comply with the "Merchandise Marks Act." The Editor of British Bee Journal, says—(Oct 5th.,) on the subject —" that every package or tin must have the name of the country in which it is produced, stamped upon it." Further, "This Act provides that no goods shall be imported into this country, unless they are stamped in a conspicuous manner, with the name of the country in which they were produced."

All the tins and cases were marked in a conspicuous manner, and if Editor of B.B.J., will peruse the letter which is inserted above his remarks, he will see that this was properly done, and the contention of Customs is therefore *on a different point*. See extract from Customs letter to hand. "If plain tins are used with or without Mr. Smith's label, they will comply with the Marks Act. The tins may of course be stamped if desired, but they must not (as these did), bear the name of a place other than the place of origin of the goods, unless the place of origin be also added in an equally indelible manner." The difficulty arises on account of label being "*detachable*" and stamp being "*indelible*."

Respecting valuable *medicinal properties* of eucalyptus honey, Editor of B.B.J. says: September 21st—"We take it these are admitted, and considering the favour with which the various eucalyptus oils are now regarded for their antiseptic and medicinal properties, there is every chance of it meeting with a ready sale as medicinal honey."—Will friend Chambers please note this.

In November Bulletin, Mr Geo. James calls attention to Mr. Taylor's "Non Swarmer," &c., and his intention to keep himself legally protected, as expressed in "Gleanings,"—and then refers to his own, and other beekeepers using similar devices on the same lines.

I know two or three in Queensland, who have had hives fixed up in this way a long time. Last season we had several hives "double queened," one in bottom and one in second storey, excluder between them, a third super for honey. Afterwards we thought we would *divide* the bottom hive with zinc excluder, a queen on each side; then a zinc excluder on top; and a surplus honey hive on top of that. Our idea was this, *not to prevent swarming*, but to prevent the bees from favoring one queen too much, and neglecting the other. Our device was this, one entrance three inches in length in front, a piece of tin five inches in length, nailed on inside of hive opposite entrance, wood cut away full length of front, but slips nailed on to contract entrance, a slip of wood moved from one side of entrance to the other, as required, sufficed to turn all the field bees in to whatever side of hive we wished to *push most*.

All went well for some time, then one queen got killed, and as the season was getting late, we just let the experiment slide. Our mistake, we consider, was the *excluding* zinc in centre, as the queens probably met and fought "to the bitter end." We intended putting either perforated zinc or thin wood partition or tin, with bee space only underneath the next time, but the season has been so wretched that we have as yet done nothing further in the matter. Will beekeepers who have tried it give their experience as to double-queening hives, and say what way they find best, *if any*—(1) putting a swarm with laying queen in *each* hixe or division; (2) a laying queen in one side of hive and let the bees rear another in other compartment; or (3) laying queen in one side only, and introduce a laying queen into the other, after properly preparing it for the purpose. Don't all speak at once.

By double-queening we don't mean old queen and daughter laying in same hive, which is often the case in natural order of things, but the system of civilising the natural instinct out of the bees, so that two hostile races or queens will live peaceably under one roof—unite to pile up the honey, and fill the beekeeper's pockets with money.

GORDON AND ST. IVES VISITED,

By C. MANSFIELD.

Being on a visit to Sydney during the Christmas holidays, like most bee men I had an eye to things apicultural, and, with that end in view I spent a day at the apiaries of George James of Gordon and W. T. Seabrook and Co, of St. Ives. Alighting at Pymble with a friend we wended our way over the hills to Gordon, some two miles distant, and were fortunate enough to find our friend at home, in fact quite "on the job," being engaged dibbling in peas. After a cordial greeting—usual among beekeepers—some time was spent inspecting Mr. James' plantations of vegetables and fruits. Tomatoes are a specialty with Mr. James, a fact not to be surprised at seeing he is a disciple of the veteran Root. Such tomatoes! The favourite kinds are Livingston's "stone" and "beauty," "ignotum" and "trophy." An adjournment was next made to the bees. Mr James has been importing extensively for the past two or three seasons from Doolittle in America, and the distinguishing brands of that strain are plainly seen throughout the yard, viz., the well defined bright orange yellow bands, and the high colour of the drones Previous to his acquaintance with the orange coloured beauties, Mr. James had some experience with the Ligurians or leather coloured

strain from Northern Italy. And, after a most careful trial with these and other strains he gives a decisive verdict in favour of the "leather jackets." The only fault found with them is that they are rather shy at laying in the winter and early spring. Mr. James purposes to overcome this difficulty by an infusion of Carniolan blood. He intends to overcome the propensity to swarm in this race by replacing those queens by Ligurians before the swarming season commences, a task which, if the two races are to be kept distinct, will certainly put the skill of the most accomplished bee-master to a severe test. However, Mr. James is not of a faint-hearted type.

Mr. James uses a hive containing 12 frames of the Gallup pattern in the brood chamber and 10 in the honey chamber during a honey flow. By this means the cells in the top storey are drawn out deep, and the queen is thereby debarred from laying in the upper chamber. This saves a honey-board, an adjunct of the apiary, by the way, which is fast falling into disuse.

The honey supply is drawn from orchard bloom in early spring—some hundreds of acres of which are found at intervals within bee range. During the remainder of the year the vast extent of forest trees are drawn upon.

After partaking of the hospitality of Mrs James a start was made for St. Ives in Mr James' trap behind the staunchest of horses driven without winkers. On the way we fell in with another beekeeping friend, Mr. Riddell, whose genial face we had greeted on several previous occasions. He was in trouble, and talked of moving his busy tribes to "fresh fields and pastures new." His trouble was that some mischievous young folk from towards Sydney had set fire to the bush near his apiary, and so destroyed his bee forage not only for the present but for some seasons to come.

Further on over the hills we came to the pleasantly situated apiary of W. T. Seabrook & Co., of St. Ives. The apiary occupies the crown of a hill some six hundred feet above sea level, from which excellent views of the surrounding country are obtained, including even Sydney and suburbs.

The surroundings are somewhat similar to those at Gordon, forest lands alternated with extensive patches of orchard. The Lane Cove orchards being among the oldest and most noted in the colony. Messrs Seabrook's bees are Italians crossed with Carniolan blood more or less.

Ourstay was cut short by the approach of train time, and so we had to utter a hurried adieu and clear for the railway station. Through out the district for some time previous to our visit paralysis had ravaged the apiaries, but is now pretty well obliterated. During its continuance one interesting fact, which I have before heard stated, was plainly noticed. That was that the orange-coloured bees were more seriously affected by the disease than the leather-coloured strain, thus proving the greater hardiness of the Italians.

MOSS VALE.

Mr R. H. Jervis writes—

Re American Basswood, there are two growing in a garden near my place ; have been planted about ten years ; have not flowered yet; very healthy, about fourteen feet high. One of the shrubs grows about five yards from one of my bee boxes, so I have every opportunity of seeing when they bloom.

Recently I went to a hive, and the first comb I took out I found the queen. I cut her wing and let her run in at the entrance. In about an hour after I was going by the hive and noticed a small cluster of bees at the entrance. I looked to see what was up, and behold my cut-winged queen dead—bees had balled and killed her. Just at that particular time bees were very cross, had been killing off drones for a couple of days, so I do not blame the cutting of the wing altogether. I have all my queens cut-winged, and that is the only one I have had killed. I have a lot of tall pines round my place, and would have a fine pic-nic with full-winged queens. For months I have been looking forward to the snappy-gum blooming. It has bloomed, covered with a kind of beetle, and hardly a bee to be seen on it—I think on account of the beetles. It was in bloom over a month —trees as white as a sheet. The blue gum is in bloom now. How often do they bloom? Some say about every five years. I have been increasing as fast as possible. I have now as many colonies as I require, and bees still preparing to swarm, although I have taken brood from below and put in the top story—in fact so much so that I have fourteen frames with more or less brood in some hives and others with sixteen frames of brood in. I do not use excluders, and queens seem to lay wherever they get a show. I intend putting a third story on some of my hives this week. February and March are the months for honey in this district. If trees bloom and weather is warm my bees will be in great form.

MORUYA.

Mr. Thos. E. Walter, writes:—In reply to your kind invitation, I am sorry that my experiences in beekeeping are just commencing. I have kept bees ever since I was a boy, off and on, but always in boxes. This year I have caught three or four swarms and have one in a bar frame hive and hope to transfer the others to the bar frames, when I have got into the way of it a bit. This has been a splendid season for swarms. I live right in the heart of the town, and have caught four swarms. Nearly everybody about here that cares for bees has several swarms. I have received my first number of *Bee Bulletin* and am well pleased with it. I enclose the names of several persons that I know to keep bees. Wishing you an increase of subscribers, and a Happy New Year, &c.

Mr James O'Connell, Cooper's Island, Bodalla, writes:—The season here has been very wet, consequently there is very little honey, the blacks barely keeping themselves, whilst the Italians are storing a little. However, wild apple, box, ironbark, and thorn bush are just coming in bloom, so there may be some honey got this season. Some of the wattles blossomed twice this season. The bees worked strongly on them the first time, but not at all on the second time. Dandelion is very plentiful, and the bees gather great loads of pollen off it. There is a great quantity of red clover, but the bees do not work on it at all.

SHOWS TO COME.

The National Horticultural and Pomological Society, to be held in the Centennial Town Hall, Sydney, on Friday and Saturday, 2nd and 3rd March, 1894.

Division 26.—Open to all.

Best Collection of Beekeeping Appliances. Medals value.. 60s 30s
Best Trophy of Apicultural Produce, may include Honey in Jars, Frames and Beeswax. Medals value .. 30s 15s
Best Frame Hive.. 20s 10s
Best Honey Extractor.. 20s 10s

Division 27.

Open to Practical Bee Farmers only.

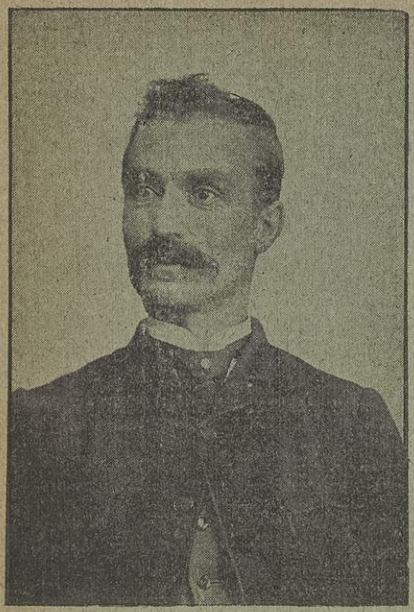
Purest Italian Queens and Bees in Observation Hive.... 25s 12s 6d
Best Frame Hive.... 20s 10s
Best Honey Extractor.... 20s 10s
Comb Honey, best 12 sections.... 20s 10s
Comb Honey, best large Frame.... 20s 10s
Comb Honey, best small frame.... 20s 10s
Extracted Honey, 12 lbs in glass jars, liquid 20s 10s
Extracted Honey, 12 lbs glass jars, candied 20s 10s

NOTE.—All exhibits in this Division must be produced or manufactured by the Exhibitor.

The Hunter River Agricultural and Horticultural Association Shows to be held in Maitland on the 18th, 19th, and 20th April, 1894.

Prizes offered by the H. R. Bee-keepers' Association and Agricultural Society conjointly.

Comb Honey, most attractive display, not less than 50lbs.; labels allowed, 20s, and 10s.
Comb Honey, best 24 1lb. sections, 15s.
Extracted Honey, most attractive display, not less than 50lbs., manner of putting on market to be considered; labels allowed, 20s. and 10s.
Extracted Honey, liquid, 6 2lb. screw top jars, 15s.
Extracted Honey, granulated, 6 2lb. screw top jars 15s.
Beeswax, not less than 10lbs., soft clear yellow wax to be given the preference, 15s.
Display in single comb glass nuclei of the greatest number of different varieties of bees; not less than 3 varieties, 30s.
Honey Vinegar, in glass, not less than one gallon 15s.
Beverages, best and largest number made from honey, 20s and 10s.
Comb Foundation, best three sheets, different grades, 10s.
Cookery, best and largest assortment made with honey as an ingredient, 20s and 10s.
Honey Extractor, 15s and 7s 6d.
Method quickest and best to wire frames and fix full sheets of foundation: frames, wire, and foundation to be provided by and to become the property of Messrs Pender, and 5 frames (Root Hoffman) to be done by each competitor in presence of the judge, at 3 p.m. on second day of show, competitors to provide their own appliances, 15s and 7s 6d.
Bees at work, best hive, 15s.
[Special Prizes offered by A. J. C. Vogele:]
Best Combs (3) naturally built, 5s.
Best Combs (3) built on foundation, 5s.
Best Beehive, suitable to the district, £1 (offered by Mr R. Scobie, M.L.A.); second, 10s.
Best Honey Extractor,, £1, (offered by Mr. R. Scobie, M.L.A.); second, 10s.
Beeswax, not less than 7lbs., 10s.
Honey, 6 bottles, 5s.
Best Specimen Comb foundation, 10s.
National Prize, Collection of Apiculture and Appliances, products and working exhibits, £5



The Hunter River Queen Breeding Apiary is admirably situated for the purpose, being about two miles from the bush, and all the black bees kept in my neighbourhood have been destroyed by the late floods.

My hobby and forte is queen-breeding. Still believing that no race surpasses the Ligurians, I am in treaty with skilled breeders of Naples and Florence (Italy) for the importation of new blood from those regions. Repeated importations from the one apiary—which has hitherto been the practice—can not tend to maintain the vigour of the race. My recently imported queens are doing famously, in fact, I have a good number of drones from them flying. I keep none but tested queens of this strain in the apiary, to insure as far as possible pure mating.

I sent 34 queens to one customer last season, and 33 arrived safely. I fancy this is a feat with few parallels.

If you want bees that will keep the extractor going, and give you satisfaction, and at the same time not peg out, and leave you empty hives in hard times, why, send along your orders to the Hunter River Apiary.

I shall make five classes. No. 1 are queens imported from Italy direct, which you can have in rotation while they last. No. 2 are selected queens bred from these, and tested for queen progeny, as well as workers, and called for that reason "double" tested. No. 3 are progeny of imported queens, and tested for worker progeny only. No. 4 are bred from good queens, but have not so good a pedigree as No. 3. No. 5 are young laying queens from imported and equally good mothers, but untested. Prices of Ligurians or leather-coloured Italian Queens :—

No. 1.	Imported Queens	30s.
No. 2.	Double-tested	20s.
No. 3.	Best Quality Ligurian	12s. 6d.
No. 4.	Ordinary Quality	10s.
No. 5.	Untested	7s. 6d.

Hives of bees, with hives, combs, frames, add 15s. to above prices.

During the breeding season I am prepared to supply Queens in quantities of four or over at special rates. Write for prices. Satisfaction and safe arrival guaranteed.

C. MANSFIELD,

Hunter River Apiary, LARGS, N.S.W.

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ITALIAN BEES.—The Drumfin Apiary has been kept going supplying bees and queens, and has given great satisfaction to all customers. The following is one of the testimonials we received:—

Public School, Mount View, Millfield,
December 19th, 1893.

Dear Sir,—Enclosed please find cheque for....., payment for six untested queens. I am very well satisfied with these queens; five of them could not have turned out better had I given three times as much for them. They have got the three bands, and are splendid honey gatherers.—Yours truly, D. BROADBENT.

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