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West Maitland, N.S.W.: E. Tipper, August 29, 1903

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

Edited and Published by E. TIPPER, West Maitland; Apiary, Willow Tree, N.S.W.

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

VOL. 12. No. 5

AUGUST 29, 1903

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TON.

RULES & OBJECTS.

1. The careful watching of the interests of the industry.

2. To arrange for combined action in exporting honey to relieve local glut when necessary.

3. To advise members as to suitable localities for establishing apiaries.

4. Any beekeeper can become a member on approval of committee, subscription 2/6 per annum.

5. That every member with more than 50 hives shall be allowed an extra vote for every additional 50 effective hives.

6. No member be eligible for office who has less than 50 effective hives, or his subscription is in arrear.

7. The Association to consist of a central body and district branches affiliated with it.

8. The principal officers be such as will undertake to meet each other in committee at least once in twelve months.

9. The officers shall consist of President, Vice-President, Treasurer and Secretary, and Executive Committee.

10. After the first election of officers, arrangements to be made by the Secretary to call for nominations for office-bearers, and issue ballot papers prior to the next annual meeting.

11. Supply dealers or commission agents cannot become members.

12. Members unable to attend meetings or conventions can authorise or nominate any member they know will be present to vote for them on any subject brought forward. Such vote or votes to be in addition to the member's present own vote.

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL
Devoted to Beekeeping —
Circulated throughout the Commonwealth of
Australia — New Zealand, & Cape of Good Hope

J. E. TIPPER
EDITOR & PUBLISHER.
WEST MAITLAND & WILLOW TREE.

MAITLAND, N.S.W.—AUGUST 29, 1903.

The following is a list of advertisers in our present issue:—

Supply Dealers.

- R. K. Allport, Chuter St., North Sydney.
A. Hordern & Sons, Haymarket, Sydney.
The W. T. Falconer Manufacturing Co.,
Jamestown, N.Y., U.S.A.
L. T. Chambers, Gladstone Buildings,
128 Franklin-street, Melbourne.

Queen Raisers.

- W. Abram, Beecroft.
Jas. McFarlane, Lyndhurst, Victoria.
R. H. Jervis, Moss Vale, N.S.W.
E. T. Penglase, Fernbank P.O., Gipps-
land, Queensland.

Honey Tins.

- Chown Bros. and Mullholland, Ltd.,
Thomas St., Ultimo, Sydney.
W. L. Davey, Plenty Rd, South Preston
Victoria.

Miscellaneous.

- A. Hordern & Sons, Haymarket only,
Sydney.
Allen & Co, 242 Sussex-street, Sydney.
P. J. Moy & Co., 161 Sussex St, Sydney.

MR. J. W. Shakespeare writes us:—
He, in combination with Mr. A. Parkes, have been interviewing Mr. P. J. Clara, M.P., relative to his assisting us in the matter of obtaining licenses for beekeepers for out apiaries. They deserve our thanks for awakening this matter. There is plenty of Government unalienated land with abundance of bee fodder, on which apiarists could get livings with out-apiaries. To a great extent these lands are unknown, either on account of neighbouring squatters, who covertly use them and call them their own, and even are assisted in this deception by their local land officers, or the best timber for bee purposes is carelessly destroyed. The Victorians have an arrangement with their Government whereby they can secure a license for the purpose of "a bee farm not exceeding an acre in extent upon any crown lands, or upon any lands held under a pastoral lease or a grazing area lease, or annual grazing lease." And ringbarking upon such land is expressly forbidden. See *A. Bee Bulletin*, page 79, January 28, 1902.

It is a matter which should be considered heartily by beekeepers. We would much like a lot of correspondence on it in our pages, and then, for members to come fully prepared to act at our next meeting of the N.S.W. Bee Farmers'

Association, and to utilise all influence they have with members of Parliament, so
Beekkeepers—Write us all you can on Bee Licenses for Out Apiaries.

MOUNTAIN FORESTS AND IRRIGATION.

THE preservation of our forests, and also the trees on private lands, is a matter of so much importance to beekeepers, we feel too much cannot be done in the way of educating the public on the subject. In accordance with this idea, we take the liberty of republishing in our pages a pamphlet by Mr. J. Blackbourne, Secretary of the Victorian National Forests Protection League. We trust our readers will well read the same, and so arm themselves for discussion or controversy when occasion arises:—

I have been induced, gentlemen, to adopt the above title for my modest effort this evening, because I have noticed with a great deal of satisfaction that the Australian Natives' Association has lately taken up warmly the important subjects of Water Supply and Irrigation. I am aware, also, that whatever the young men of Victoria undertake to carry out is always done well, and is invariably brought to a successful issue, thereby proving themselves to be true sons of those men who, like myself, came out here in the early fifties and overcame all impediments, hardships, and privations in our efforts to develop and build up the good land we chose for our adopted home. Our work is nearly finished, but the important trust of the general welfare of the State is committed into your keeping. I will ask you to carefully follow my remarks this evening. I will make statements only that are perfectly true, and will prove them by evidence from the history and present condition of other countries whose inhabitants have, in their ignorance or folly, disregarded one of the greatest laws of the universe by unduly destroying forests, especially those growing upon steep mountain ranges. Before dealing with wooded areas situated in such places, I may assert that all scientific men

agree that a certain area of every State, according to its position in the universe, must be retained under ARBOREAL COVER if that State is to remain rich and prosperous, and a fit home for the people who inhabit it.

In France they have 23,000,000 acres of State and privately owned forests (being about one quarter of their whole territory). From those under State and communal control (about $7\frac{1}{2}$ million acres) a revenue was derived in 1892 of over £2,250,000 sterling.

In Belgium one quarter of the kingdom is under forest cover.

The forests of Germany extend over 35,000,000 acres, being a little over one-fourth of the total area of the Empire—one-half is privately owned, one-third belongs to the state, and the balance to towns and municipal bodies. From the State portion a net revenue was yielded in 1892 of £2,500,000 after paying all expenses of control and management.

In Italy the forests cover 10,000,000 acres, about one-seventh of the total surface of that historic peninsula.

In Austria-Hungary they have over 43 million acres of timbered territory. Austria has $24\frac{1}{2}$ millions, or nearly one-third of the Empire; Hungary nearly 19,000,000 acres, or roughly calculated one quarter of it is under forest cover.

In Sweden the forest area owned by the State and private individuals amount to 47,000,000 acres. In 1897 the hardy Scandinavians exported, in addition to supplying home requirements, timber to the value of over £10,000,000 sterling.

The forests of Norway cover nearly 20,000,000 acres, or one quarter of the total extent of the kingdom. In 1898 timber worth £3,250,000 was sent out of the country.

In the Russian Empire 500,000,000 acres, or about one-third of its area, is under woodlands. The net revenue in 1897 was about £3,500,000.

One-fourth of the United States, or 500,000,000 acres, is forest territory. In 1890 the estimated value of produce from

the same reached the enormous total of 200,000,000 sterling. The timber industry ranked second to agriculture, and exceeded in importance to mining. Notwithstanding this our American cousins have—what we hope with the help of the A N A. to establish in Victoria—a National Arbor Day devoted to universal tree planting.

One-third of Canada, or $1\frac{1}{4}$ millions of square miles, is under forest cover. In 1896 the exports of timber were valued at £5,500,000 sterling.

In the Indian Empire they have 75,000,000 acres of forests, about one-eleventh of the area under British rule.

In addition to the enormous consumption of a large and increasing population, teak timber alone worth £460,000 was exported in 1897.

One-third (nearly) of the country inhabited by our new allies, the Japanese is under forests (nearly 29,000,000 acres). This nation, with the remarkable aptitude for which they are distinguished in all things, manage their timbered areas skillfully and scientifically and go largely into tree planting.

I have quoted, gentlemen, these interesting figures in which I trust that you have noticed two prominent points. The first is that forests, properly cared for and preserved, are a MINE OF WEALTH, unfailing for all time to the fortunate people who possess them; and, secondly, that countries enjoying a far greater and more regular rainfall, and a more temperate and equable climate than we do in Victoria, retain from one-third to one-eleventh of their surface under woodlands. Taking the mean of France, Belgium, Germany, Italy, Austria-Hungary, Sweden, Norway, Russia, Japan, India, Canada, and the United States of America, it works out that 23 per cent., or nearly one-quarter of this immense territory, is covered with arboreal vegetation. We may therefore reasonably assume that if our sanguine dreams about the magnificent future that lies before Victoria (our country) are to be realised—if she is to become great and

powerful, a fit home for thriving millions of progressive people—such results cannot be attained unless we guard with jealous care, wisely maintain and intelligently conserve the forests that the Creator has entrusted to our keeping for the express purpose, I firmly believe, of being used by us in a proper manner for the supply of our wants, and handed down in an unimpaired state to our posterity. How the UNDUE EFFACEMENT OF FORESTS has gradually brought ruin and disaster upon many powerful nations is a matter well-known to every reader of history. I may mention, as instances, Armenia, Asia Minor Palestine, and Northern Africa, and perhaps in a lesser degree Italy, Spain, France, and the European coast region of the Mediterranean. Dr Oswald, the great American authority, asserts, “that the tree-felling axe has turned five million square miles of once fertile regions into deserts. It has cancelled our tenure of an earthly paradise, and has made one-third of the Eastern continent an unfit abode for the human species.”

(To be continued.)

There are 700,000 beekeepers in the United States.

Salt and air-slaked lime should be put convenient to bees.

Californian beekeepers were not anticipating a good season in June.

Don't condemn a purchased queen till you see what her daughter can do.

Bee forage may be apparently plentiful, and the blossoms come and go, and yet not give an ounce of honey.

Double-pointed tacks $1\frac{1}{2}$ inch wide, with points $\frac{3}{4}$ in. in length are very useful in fastening up hives for removal.

A few members of the N.S.W. Bee Farmers' Association have omitted to send in their annual subscription of 2/6. Kindly do so.

The Irish Bee Journal for June has a supplement catalogue of hives and appliances for sale by the Irish Beekeepers' Federation, Limited.

We acknowledge receipt of Messrs. A. I. Root & Co's. catalogue of beekeepers' supplies for the present year. It is very complete, not to say interesting.

Gleanings says a Miss Lorenzo Bennett once grafted forty-eight Doolittle cell cups in one frame. All accepted without a miss, and every one of them hatched a queen.

We acknowledge receipt from Messrs. Anthony Hordern & Sons, of pamphlet "Eggs and Honey," also their catalogue of Beekeepers' Supplies. Our readers should send to them for same. They are very complete.

Usually the proper time to put on supers is when the upper edges of the top bars of the brood frames begin to have a white or fresh appearance, indicating that the bees are gathering honey and secreting wax.

We would call attention to Mr. L. T. Chambers' advertisement elsewhere. The pamphlet is certainly very interesting, as it opens out new ideas, both in manufacture of hives, and also methods of procuring both honey and wax.

This spring has been very backward in England. The past winter has been very bad. The *Beekeepers' Record* for May said: "The honey supply of the country is practically cleared out, so that the first crop should be eagerly bought up."

Will beekeepers think out the matter more of forest protection for bee purposes. The next Convention of the N.S.W. Bee Farmers' Association should make this a great point. Will members forward suggestions at once, to keep the matter open in the mean time.

Last December we had a queen and her daughter in one hive. The same are in the same hive now, both laying on the same comb, one on one side, the other the other side. The queen has not a vestige of wings. Eight months for mother and daughter in the same hive. Is this phenomenal?

Mr. R. Helms, of the Chemical Laboratory, Department of Agriculture, N.S.W., is empowered to analyse and

report on any samples of diseased bees. Should anyone require such examination, they will please send samples to Mr. Tipper, as secretary N.S.W. Bee Farmers' Association, accompanied by necessary stamps, to forward to Mr. Helms, who if necessary, will visit and take remedial steps at apiaries.

Mr. Penglase, Fernbank, Victoria, writes:—This season is my first attempt to put queens on the market, although I have been improving my bees for a number of years and have always made the breeding question a study. I find the long-tongue bees a long way ahead. They are not the nicest colour, but I think we have got the colour far nearly played out. It is nice to see a hive of bright yellow bees, but when it comes to business they are left behind.

Our flow last summer concluded with apple tree about the end of January. We thought we had left sufficient honey in the hives to carry through, but at the end of April, after being away some fortnight or so to Conventions, &c., found five had died out for want of stores. Looking through during the past few weeks found three queenless. So our winter losses, or spring dwindling, or whatever it may be termed, amounted only to five (that might have been saved had we not been from home), and three queenless, out of 160. Is this a bad record?

When putting on crates of sections apply vaseline to the bottoms of the crate and the lathes on which the sections rest, in order to prevent the fastening of them to the frames with propolis. In taking off have a cloth well saturated with carbolic acid, which put on in place of quilt. This, and possibly an escape board underneath the sections, will speedily drive all bees down, and enable the crate to be taken away without trouble. It has been urged when putting a second super on to put in under the one that is on. An American says not to do this, but to put it above. He has had much better results doing it that way.

We have been busy the last month painting hives, tarring bottom boards, to

protect them from white ants, clipping queens, and going through the bees, cutting out drone comb, and regulating frames. Drone combs placed in the supers, and all worker combs in the brood chamber. We had not looked at the brood chamber since the fall, and were very pleased to find there was still a quantity of honey in each hive, one to three or four frames of brood in each, also a little drone brood. So we look forward that as the season advances our bees will be in good fettle for whatever flow there is to gather.

With the beautiful spring weather we are now enjoying our bees are quite active, and bringing in lots of pollen. We were very disappointed with the white box flow, which was restricted to a few blossoms on odd trees here and there. Our bees are very strong in numbers, and we shall not be surprised if swarms are not out soon. We purpose from now examining each hive once a week, to keep down drone brood, and watch for queen cells. Also clip any queens that may not already be clipped. The yellow box is promising well. We visited Gunnedah a short time since, visiting Mr. Richardson's apiary, where we found similar conditions. But he has been a greater loser, many of his boxes being empty.

SIZE OF HIVE.

About five years ago an article in one of the bee-journals led me to form the plan of hiving all of my new swarms into shallow hive, with foundation; and the plan looked so plausible to me that I constructed quite a number of such hives, having them ready for my first swarms, which usually come soon after white clover comes into bloom; and so, with thoughts of an abundant harvest, and with visions of a long row of supers towering high, I hived my best swarms into these shallow hives, placing double supers with 48 sections on top, with queen-excluder, and then waited for results.

Well, I was having my way so far; but what did the bees say about it. In the first place, they held an indignation meeting, and then for two successive days swarmed out, losing valuable time when white clover was in full bloom; and then they loafed awhile, and finally began to dwindle; and when the honey season was over I had a few weak colonies and very little honey.

I very soon began to apprehend that I was making a mistake, and so I hived the rest of my swarms into regular dove-tailed hives, full depth, contracted with dummies to correspond to the size of the swarm.

Shall we consult the bees again? Their actions speak louder than words, for they immediately went to work with a vim, with no thoughts of swarming out, and I soon began to tier them up; and at the end of the season many of my new swarms hived upon the deeper frame gave me 100 lbs of as fine honey as was ever placed upon the market.

The conclusion that I came to is this: That a shallow frame and hive is not in harmony with the natural instinct of the bee; and, forced out of their natural form and condition, they fail to do good work; but when placed in a hive which gives them room to cluster in natural form, and when their new home is made agreeable to them, they very seldom swarm out, but will very soon adjust themselves to their new surroundings, and the whole machinery of the hive is set in motion. More than all this, the surplus warmth and energy from this more nearly perfect form or cluster flows up into the super above, and an impulse is given that sends the busy workers out into the field, and

Victorian Apiarists' Association.

PHACELIA TENACETIFOLIA.—The new honey and fodder plant so largely cultivated and highly spoken of in Europe. The seed ordered having come to hand, beekeepers may obtain $\frac{1}{2}$ oz. packets for 6d in stamps on application to the correspondent, R. Beuhne, Tooborac.

the hum of contentment and industry is heard from every side, the occupant of the hive being a better judge than we when our opinion is formed from a standpoint of theory. I am pleading for the depth of the regular Langstroth hive in which to place our new swarms. We may contract, if we choose, down to five or six frames, according to the size of the swarms and the prospective honey harvest.

So the thought comes to me, "Can we afford to place our prime swarms in a shallow hive, shut down in many cases with a queen excluder, compelling them to begin housekeeping in such a cramped up place that they must show their resentment by swarming out again and again, and perhaps dwindling until they are almost worthless, and that too, in the midst of a white clover yield of honey?" This has been my experience with shallow hives. I hope others have been more successful. If so I should be glad to know it. I for one want the regular dovetailed hive with full sheets of foundation; for with that management I am sure to get a crop of honey if it is in the field to gather.

—E. N. Woodward, in *Gleanings*.

MOVING THE BEES.

In early spring, before the general business of the season has commenced in the hives, is the best time to commence beekeeping. The weather is then cool and agreeable, and the hives may be handled with less irritation to the bees, and less damage to the honey cells than during the hot months, when field work is in full swing among the inmates. Of course, the hives may be moved at any time, providing that due caution and intelligence is exercised in the handling of them; but, if possible hot weather should be avoided for this operation, as at this time the bees are very irritable, and the heat has a softening influence on the honeycombs, and there is danger of their bursting, and the honey being lost, and the bees lost or killed. Moving a hive of

bees is, as a rule, a rather delicate job. Have ready some carpet tacks and pieces of thin muslin, about half-a-yard square. If much honey is in invert the hive, put the cloth over, neatly folded, and fastened with a tack at the corners, and another in the middle of each side. If the bees are to be taken some distance, and to be confined for some days, the muslin will hardly be sufficient, and wire cloth must be substituted. To prepare the movable comb hive for long journeys, put sticks on each side of each comb, in about two places to hold it steady; then lay on top of the frames, crosswise, thin strips of wood, to hold them in place, and fasten on with screws. Turn the hive over and cover the bottom with wire cloth. If sent by rail place them parallel with the rails. If by road probably the best mode of conveyance is a waggon with elliptic springs. A waggon without springs is bad, especially for young stock, yet I have known them to be moved safely in this way, with care in packing hay or straw under and around them, and careful driving. Whatever contrivance is used, if much honey is in the hive, the hive should be inverted. The combs will then rest on the top, and are less liable to break than when right end up, because in the latter case the whole weight of the combs must come upon the fastenings at the top and sides, and these are easily broken. When bees are moved thus inverted, they will creep upwards, in stocks partly full they will often nearly all leave the combs, and get upon the covering. If they are to be shut up any length of time, it is often beneficial to furnish them with water, by sprinkling it through the wire cloth. Half a gill may be given each swarm two or three times each day. Or a piece of sponge may be fastened to the wire cloth, and kept saturated, allowing the bees to take as much as they desire. In packing hives into a waggon, place them so that the combs will stand crosswise of the waggon box, as they are less liable to break in this position. Get everything done during the day except

closing the entrance. This may be done after dark when all the bees are in by having strips of whatever you close up with, tacked on quickly and quietly when all the bees are in.—Exchange.

EGGS.

"Do you actually think that an egg laid in a queen-cell is any better than an egg laid in a worker cell?"

"To say that an egg laid in a queen-cell by the same queen is a better and more vitalized egg than one laid in a worker-cell, is something that very few, if any, would be ready to assume. From years of close observation I cannot think that there is any difference in favour of the egg, no matter where it is laid, whether in queen, worker, or drone cells, providing said egg is properly fecundated."

"What is the difference, then?"

"To my mind, the difference comes in the treatment of the innate life of that egg after it has come to the larval form. In natural swarming a larva intended for a queen from the time it first breaks its shell is nursed *all its larval life* with a fondness equal to any mother's fondness for her child; and in this nursing we have the part which plays for good or evil in the future queen."

"What do you mean by that emphasized 'all its larval life'?"

"I mean that, from the very outset, the larva from an egg laid in a queen-cell by the mother-queen is fed with royal food, and nursed for a queen, while with an egg laid in a worker-cell, the larva is fed and cared for a longer or shorter period, as a worker bee, and not for a queen."

"Yes, I see. But is the food given the queen larva at the outset different from that given the worker larva when it is first hatched from the egg?"

"I have never been able to discover that it was, and I think that the majority of our best beekeepers of to-day believe

that the food given all larvae for the first 48 hours of their existence is the same."

"That being the case, then it would seem to me that the matter rested on the conditions rather than in the matter of food."

"That is the way I look at it; and if by any means we can secure a like condition for the just-hatched larva from an egg laid in a worker-cell, we can secure a like-conditioned queen. — Doolittle in *Gleanings*.

HONEY MARKET.

Melbourne Argus.—Honey and Beeswax. —In honey, good to prime clear samples are selling at $3\frac{1}{2}$ d to $3\frac{3}{4}$ d., and extra choice at up to $3\frac{3}{4}$ d. Dark and inferior lots are slow of sale at low rates. Beeswax is quoted at $1/0\frac{1}{2}$ to $1/1$.

Melbourne Leader.—Honey—Best lines of pure garden honey were obtainable to-day at from $3\frac{1}{2}$ d to $3\frac{3}{4}$ d, plenty of good being available at 3d. Heavy stocks of medium and indifferent qualities are on hand, holders asking from 2d upwards. Beeswax.—There was a firm feeling in this line to-day, sellers securing $1/2$ for prime clear lots. Medium to good had sale at from $1/-$ to $1/1$.

Garden & Field, South Australia.—M'Clure, Valentine & Co.—Honey 3d to $3\frac{1}{2}$ d.

S. M. Herald.—Honey—Choice 3d to $3\frac{1}{2}$ d, good $2\frac{1}{2}$ d, inferior 2d to $2\frac{1}{4}$ d for tins containing 60lb. Beeswax—Choice clear 1s 1d, other sorts 1s 1lb.

Any condition that will retard rapid comb-building, like an old queen with a good force of young bees and a small field force, or a colony that has been given a frame or two of brood to help them, and has a small field force, or a colony, let it be large or small, that is compelled to raise a queen, will invariably construct much drone comb. — *Beekeeper's Review*.

A writer in the *British Beekeeper* says: In Scotland there has been an unusual scarcity of tree bloom this season. I have found by experience that the honey flow in Scotland usually comes very suddenly, and seldom lasts longer than a fortnight at one time.

Victorian honey and bee statistics in our next issue.

23rd Annual Price List of Best Italian Queens from the First Bee Farm in Australia, recognised as Absolutely the Best Bee Farm for the supply of Queens, Hives of Bees, &c. Always winner of most prizes.

QUEENS.—Untested, 5/- each.

Tested, .. one 10/-; three, 25/-; six, 45/-

Select Tested, one 15/-; three, 40/-; six, 70/-

Extra Choice, one 25/-; three, 60/-; six, 105/-

Also, Swarms, Hives of Bees, Implements, Foundation, &c.

W. ABRAM,


ITALIAN BEE FARM,
BEECROFT, NEAR SYDNEY,

P.S.—My knowledge and experience of nearly 40 years practice enables me to breed and supply Queens Superior to Any, possessing the Most Desirable Qualities combined. Desiring to maintain that High Reputation, I again submit for your consideration the fact that I can supply to satisfaction, if you give me description of your requirements. Thanking you for past favours—I remain, yours truly, W. ABRAM.

Something about Beehives and other matters.

The New Beekeeping,

BY L. T. CHAMBERS,

Send a penny stamp for a copy. 

Two-storey Frame Hives, 5s. each.

Zinc Excluders 6s per doz.

Two Comb Reversible Extractors, removable baskets, 50s.; with 20in. steel can, American gears.

Swings and cages only, 15s.

Four comb loose hanging basket Extractors, 20in. cans, 65s.; 24in. cans, 80s.

These Extractors are as strong as possible to make them.

The *Southland Queen* is again being published.

In European countries a regular system of forestry is practiced. The large estates have their timberlands divided into a certain number of squares. When one is cleared off another is planted. The thinning-out process goes on from the time the pine seedlings are large enough to answer for bean poles, until the trees have reached a diameter of one foot or more. Thus the country produces what timber is needed.

A very practical way of feeding during cold spells.—Take some extracted honey, which is candied solid; stir it and punch it until it becomes soft like dough. Then take a wrapping paper or fibre, cut it into pieces about eight or ten inches square, take the honey-knife and on it paste or smear about half a pound of this extracted honey. Raise up the hive in front and push the paper under the cluster, or if the cluster does not reach the bottom-board, paste it right under the cluster on the frames. In this way you do not have to open the hive and let any heat escape, for it is done almost instantly, and the bees will take the feed up without breaking cluster.—A. B. *Journal*.

Query: Will the smell of it start robbing?

Mr. James Heddon, in the *American Beekeeper*, says brood rearing is favoured rather by cool than by hot weather, if the humidity is right.

Dents certainly do no good, but why allow a dent to remain, when ten seconds will remove it? We have never come across a dented queen but that we could remove the dent; but the longer the dent remains, the more skill it takes to do it. Roll a sheet of paper an inch in diameter then dent it. Now with thumb and finger press on each side of the dent, and it will snap out. Practice on that paper, and then try a queen. It is rather tedious work to take the dent out of some queens, yet it can be done.—H. G. QUIRIN, in *Gleanings*

Our idea is leave the dent alone.

BEE STUDY & OBSERVATIONS.

[W. ABRAM.]

In continuation of the subject of my previous article, the term, "No two peas are alike" expresses my meaning as regards individuals of a class, as Darwin's term, "Like produces like" applies to class distinction. No matter what two of a class we take into comparison there is always some difference between them. This applies to bees as to anything else. Thus it follows that besides the study of a class or race the study of individuals must be of equal, if not superior, importance. In the one case we generalize, in the other particularise. With bees, this latter is very difficult and complicated because bees of three different kinds, namely—a queen, many bees and some drones form a unit—colony, therefore queens, bees and drones, are generally taken as one of a class; what makes it more difficult still is the great number of bees in a hive and their short life. In general, class-study is efficient with bees, but a closer observation shows that individual study is necessary, as queen, bee and drone, each has its individual characteristics distinct one from the other, and this is a most important factor when defining certain traits or habits. Take colour of a coloured race for instance. One colony will produce better and more evenly marked queens, bees and drones than another, but nevertheless there will be a variation, which even continuous breeding for colour will not eradicate, though affirming colour more constant. The same applies to any other trait or quality—variation is present. Therefore, in defining anything we must study individually as well as generally. If there was no variation our aim to attain certain objects would be very simple; but on closer observation very great obstacles present themselves.

Take a hive having shown preferable qualities to any other. You breed from same. Do you, then, in the young progeny find the same qualities? Does the

progeny of every one show the good characteristics equal to the parent one. Are not amongst them many different traits observable? almost as many as in an equal number from different stocks? If there were no individual difference then every queen from the same stock ought to be alike. But if they differ it can hardly be denied that bees and drones must also differ as do queens. The shortness of bee life and their living in communities are the difficulties in the way, and hinder such closer study of individuality as would be requisite to attain the most desired objects sought after. The general ways are fairly well known, and we utilise the acquired knowledge to the best of our ability, and experiment as it were; but by closer and careful study in every direction, general and particular, we may solve obscure problems successfully, and effect better results. We must give more attention to individual difference than is generally the case. Queen breeders, who are to some extent distributors of qualities, can do much in the line indicated. Having the welfare of the industry at heart and possessing the knowledge of judgement between the different conditions and characteristics one can do much good; on the other hand much harm may result by indiscriminate breeding, as bad qualities easily overbalance good ones, whereas good qualities are not so readily discerned, which makes the matter all the more difficult. Then again, conditions differ so. What suits in one locality might not suit in another under different conditions. Thus there are many things to be considered to make advance in the art of bee culture. Likewise some beekeepers are better adapted for one study, some for another; some grasp the different problems more clearly and effectively than others; some may study all their life and fail to understand the real facts. If all were alike we could not learn as now, when one's failure proves another's gain. That much, however, seems evident to me after many years experience: Bees

will continue to vary in their habits. But we may with advantage weed out bad characteristics before they become a natural prey sooner or later. At the same time we must bear in mind that any one particular characteristic may become bad if it over-balances all others. The swarming habit is as bad as the non-swarming habit, if either overshadows all other habits, and so on; a combination of the best is to be our aim, always observing that for the different seasons and conditions various traits are required.

Some enthusiasts write as if the effecting of any desire lay simply and entirely in our hands, and all that needs to be done is to follow certain directions. The fact is that for a time everything suited the purpose. When a re-action, climatic, conditional or constitutional takes place and former resolves are scattered to pieces, nothing is farther than the admission of miscalculations or errors on the part of the enthusiast; the successful one puts to down to his knowledge and efforts, the unsuccessful one blames anything but himself. For these reasons one must be a good judge of wide experience to discriminate the writings on various subjects.

No great amount of knowledge is required to keep bees in good seasons, but it requires skill to keep them in bad ones. These are our lesson-books which may teach those willing to learn. They come and go, unexpectedly, and the observant cannot ignore the fact.

From the foregoing it will be apparent that bee study is not exhausted yet, but my remarks may arouse renewed interest, open new fields for study with beneficial results for the future occupants of our noble industry.

In my next I intend to discuss individuals subjective to disease, etc.

Two years ago Jamaica honey sold in the English market at 32s per cwt., and 2s 1d per gallon locally. It went down six months ago to the wretched figure of 12s per cwt. abroad, and 6s per cwt. locally.—*Gleanings.*

HER ROYAL HIGHNESS QUEEN BEE.

[BY MR. H. BYRON MOORE.]

(Continued.)

Then she wants no more food for a few days, and the workers put a roof on to the house with fine threads of wax and pollen. This keeps her warm, and lets in plenty of air; in fact, it is like a lattice cover.

By degress she grows and grows, and grows; she gets legs, she gets wings, she gets a mouth, and everything else she wants to become a perfect bee; and she opens the door of the little house and comes into the glorious sunshine, and plays about until she gets strong. Then she looks after the baby bees and takes food to them, and makes the lattice tops to the cells when the baby is wrapped up in its cocoon, and takes the wax from the older bees, and gets it into shape, and stores away honey in the cells, and cleans up and does all the house work; and after about three weeks (which is a long time in a bee's life) she goes out with the elder bees, and is taught how to find honey.

The Queen puts a different sort of egg in the little houses for drones. I don't think they can be fresh laid—any way, they don't make working bees.

They are much longer in growing (I suppose they are too lazy to grow quickly), and they don't seem to be in a hurry to go out. All they can do is to talk and make a noise. So there they are, and they hum, and hum, and hum, and all the other bees have to put up with them, the same as we have to put up with idle people in our world, who go gossiping round and hindering others.

In the cells like acorns which are built for Queens they don't put the ordinary honey and pollen, but the head cook provides a very nice strong food, called Royal Jelly, and this makes a Queen.

The Royal Jelly is so good, that the Queen grows much faster than a working bee and very much faster than a drone.

A Queen comes of age when she is 16 days old, a worker when she is 21 days

old, and a drone when he is 25 days old. Even then he hasn't brains enough to make a worker), and you must bear in mind that days with bees are as long as years are to you.

There are several Royal cells in a hive, but as long as the reigning Queen is there, the bees inside them are only Princesses. When a country gets too full of people they have to find room elsewhere and in that way colonies are founded, say, like there are in Australia, the people having come here from the overcrowded parts of great Britain. Now in the same way the Queen knows that when all the new baby bees are hatched and have grown up, there will not be room or food for everybody, and, besides, she somehow knows that in a day or two one of the Royal princesses will have come of age, and will most likely be wanting a situation as Queen. The news soon spreads and the bees get excited; they run about and seem to tell each other, and they give up gathering honey and working, as if it were holiday time. It is like what you see on a public holiday amongst us. Then the Queen determines to go out into the world and establish a new home. Immediately after the Queen leaves out comes one of the princesses. Now these princesses are very jealous of each other, and if the first Princess to come out were allowed, she would go and kill all the other princesses in the Royal cells. But guards keep watch around the cells, and whenever the new Princess comes near, they pinch her and drive her away. Sometimes another Princess tries to get out of her cell, but the guards put a fresh lattice top on, and give her some honey to keep her quiet. Then the Princess that is at liberty again tries to kill the other princesses, but is driven back, and the whole population is in great excitement. Now a very curious thing occurs; the Princess sets up a shrill cry like a cricket, and all the bees bow their heads and remain perfectly quiet, as if they were stupefied. Then finding that

she cannot break through the guards she flies out into the world, become a Queen, and takes another swarm with her. Sometimes three or four swarms go out of a hive during a fortnight in this way. The bees in the hive are now so few that there are not enough to guard the remaining princesses, so the next one that comes of age becomes Queen of the hive, and she then breaks open the Royal cells one after another and stings the remaining princesses to death. It seems very cruel, but they are not required, as there are only enough bees left to occupy the hive. The working bees now pull the dead princesses out of their cells, and throw them out of the hive. The Queen then begins to lay eggs in the cells, and another curious thing takes place. The workers kill all the drones, they search for them in every corner, pull them out, and sting them to death, and throw them out of the hive.

One of the most wonderful things about bees is the way they gather food—that is, honey from the flowers—and they have been doing so for thousands of years.

In the Old Testament you read that Jacob, when he wanted to make friends with Pharaoh, the great King of Egypt, sent amongst other things by his sons to Joseph a present of honey, and the New Testament tells you how St. John lived on locusts and wild honey.

The bees were not so clever in the long long ago, and the flowers did not make so much honey. But the bees and the flowers have worked together, each helping the other, and, as a matter of course, when you are good-natured to each other and work hard, much can be done to improve matters.

In the long long ago, most of the flowers were white or yellow, and they had not so much pollen, or so much perfume, or so much honey.

(To be continued.)

Gleanings says the coming way of handling out-apiaries will be with the automobile.

FOUL BROOD.

This disease seems to affect the bee when it is along from four to nine days of age; sometimes it will be later. As we go farther south into the Southern States, it seems to affect it at an earlier day, along from two or three up to six days of age, making its first appearance.

Those first symptoms to the naked eye perhaps would not be noticed. I had to shade it here to show that it lies down curled up; right there is where it gets its first fatal blow; it is in the food. Foul brood becomes contagious to that larval bee just when it is fed the disease, and not before, and never until then.

The first indications are that this larval bee becomes restless, and instead of lying down in a flat, curled-up condition, it becomes standing on the point end, with the larger portion of the larva uppermost, and a little brownish streak begins to show. The naked eye, perhaps, would not notice it at that stage; but instead of that growing—all of us have seen the natural healthy brood—this bee, lacking the vigour of a healthy bee, the germs of disease preying upon it, it becomes weakened and falls flat upon the lower side-wall of that cell instead of standing apparently out from the walls of the cell.

Right at that stage the gases begin to accumulate internally in that larva, and it becomes somewhat of a gelatine or gluish nature, and the moment that larval bee strikes the lower side-wall of the cell (represented as if the comb were turned, looking straight down from this—this would be the lower side-wall of the cell in its natural condition), wherever that strikes it will never let go; wherever pickled brood, chilled brood, starved brood, may strike against the lower side of the wall, or upper, it is sure to stay, and it is lost.

You can take a pair of tweezers and go down in here and take that out, but if it is foul brood, and it once strikes the

side-wall, it is there for all time, and I know of no medical treatment that will ever cure that germ of disease once there. Instead of maturing and hatching, the cells become sunken instead of being capped over; they begin to be irregular, the gasses accumulating, drawing down apparently, until it will break the capping sometimes in the centre, but more frequently to one side of the centre, the weaker part giving away, and have ragged holes in the cappings. Quite often that is the first stage that the naked eye would see.

Now, at that stage it has become dead matter; when it is in the ropy stage it is brown and stringy and ropy in its nature. The head of the bee will become dried faster than the rest. As I have tried to illustrate, here on the lower side-wall the head end of the bee turns up; back of that as this spreads out in the cell, just as it is getting ropy, there apparently is a little back-bone with ribbing showing; then the odour is worse; it is then at the ropy stage; it may stay in that condition from three or four days to three weeks according to the condition of the weather; It will continue to dry down on the lower side-wall of the cell until we have just a little thin scale; sometimes it is as thick as the side-wall of the cell; quite often it is not even so thick, but invariably this one thing prevails—the head of that bee will become dried before the rest and curl up, and frequently that little bunch right at the top, and no one need ever mistake that for anything else.

Just at this stage, when there apparently is back-bone and ribbing showing, and it is nearly flat across the cell, it is most ropy, and that is about the stage when the cappings are sunken in; then a toothpick would draw it out probably nearly the length of the cell before letting go; but now, at this time of the year it has become thickened by the coolness of the atmosphere, and would not draw it so far; it would be thicker.

Dr. Miller—Did I understand that the curled-up head is always present? Will you always recognise that?

Mr. France—I have never known it to fail as yet; both from samples from our own State and from nearly all of the States where I know of the disease. I have tried to compare it from different localities, and never knew it to fail. I find that in comparing that of the different localities with that of my own State, it varies little.—N. G. France, in *American Bee Journal*.

BEEKEEPING IN CUBA.

The summer is the season of the mosquito and the flea; the time when we look in our shoes, in the morning, for scorpions and tarantulas—and find them at other times when we don't look for them. Malaria prevails everywhere, while consumption claims many victims. The common people have no sanitary kitchen, but we are free from yellow fever and smallpox.

As to honey production, some have had big crops, and we have heard of them, but many have had poor crops and nothing has been said of them. My nearest neighbour has gone down from 800 to 40, in his home yard, in three years. Another put in a ranch between here and Quana Jay, and the bees all died the first season. One of my ranches gave me 14 gallons to the hive the first season, $7\frac{1}{2}$ the next, and 3 this year. This reduction of yield comes from the flowers being plowed up to make room for sugar cane. One man had a fine system of ranches along the stone road between here and Havana, but this year he is moving them back into the wilderness. Stock and general farming have cleared out the honey plants.

The present price of honey is 27 cents a gallon. Wax is 31 cents a pound. But this is Spanish gold upon which there is a discount of about 10 per cent compared with American money. Supplies and freight must be paid for with Ameri-

can money. Things that we buy are high. Put a tariff of 33 1-3 per cent. freight and profit on top of American prices, and you will get something of an idea of the cost of some things. A few things are cheaper—sweet potatoes, for instance.

A prominent queen breeder has scarcely been able to keep his own colonies in queens the past winter, when he had expected to have them to sell to the rest of us.

Some strange stories have been told of the honey plants here. One man told of banana honey. If he got any, he took it from the wasps, for the honey bee is not able to get into the banana blossom. Another told of cocoanut honey. I have climbed many cocoanut palms, but have never seen a bee gathering honey from their blossoms. There are vast tracts of land here in natural meadows, and others in scattering forests of a species of palm which yields no honey. Other great tracts are in cane, or some other crop that yields no honey. The honey country that is not already exploited is nearly all situated so far from transportation as to make its occupation unprofitable.—*Beekeepers' Review*.

CORRESPONDENCE.

S. H., Telangatuk East, Vic., July 14.
—Just a few lines to let you know that we had a fairly good season, average about three tins per colony, but the wet, cold weather came in too early to finish extracting, and we had to leave the boxes full. I am afraid it will be bad for the bees without the spring comes in early, as if the day is clear the bees fly out, and the weather is so showery that hundreds die without getting home again. I was not able to get to the conference, or I would have had the pleasure of seeing you. You have an idea of the locality of Black Range. I see an article about

Apis Dorsata in the last paper. I was talking to a young Afghan the other day, and he tells me that there are large bee-farmers there with these big bees. They build cellars for the bees, with a large stump in the middle for the bees to work around, door with a hole for the bees to go in and out. They smoke the bees and sweep them into boxes off the combs, then cut them out, then release the bees to go to work again. The honey from them sells at 1d. or 2d. per lb. I wonder if they are Apis Dorsata. There is a smaller variety about the size of the house fly; the honey from them fetches up to 1/6 per lb.

C.E.R., Baerami.—I have but five colonies of bees at present, but I am too interested in the little bee to be without your valuable paper. I lost 42 colonies during the terrible dry time we had some 12 months ago. I tried my best to save them, but did not succeed. I had but one swarm left when enough rain came to start a honey flow. I was feeding for 8 months. Have you ever heard of bees being that long without their natural food, and then coming through all right? Trusting you have had better luck with your bees.

No, but you deserve better luck for your perseverance.

O. L., Sutton Grange, Vic.—Honey season just closed with me; was not as good as previous red gum season, when I got 4½ tons from 50 colonies. I got six tons from 80 hives last season, which I consider a fair yield for an inexperienced beekeeper like me. Reports from other beekeepers around this quarter are only fair compared with other seasons. I have not sold yet, waiting for 4d. per lb. or over. I receive the A.B.B. regularly, and find useful information in it every time.

R. G., Colac, July 13—Bees in this district are almost a thing of the past. Whatever little timber there was in former years has been felled for cattle and sheep feed; river gum, yellow box, white box and willow all met the same

fate, so the prospects are not over bright for beemen in this particular district, though the country looks well at present.

G. C., Marulan.—The B.B. turns up regularly, and is mostly always interesting and instructive. That spring dwindling seems to have got a fair raking amongst you experts, and difference of opinion apparently waxed a little warm, here and there, particularly so as regards a passage-at-arms (good-natured banter of course) between Messrs. Parry and Davey. It does not follow because a man may be the greater number of years at any one profession that he is of necessity the best mechanic. But jocularly speaking, the average young Australian will suck the eggs and not bother about granny. There are exceptions, it is true, who would work concurrently with the old lady, willing to impart knowledge and receive the same, but usually this riles grandma, as she wants to be paramount—rightfully so at times, but not always. Honey is selling here (Goulburn) at 3½d. to 3¾d. for 60lb. tins. There has been a splendid rain also lately, and contrary to last year, there is a little grass. The westerly winds are very destructive in this locality at all seasons.

H. W. S., Walcha.—My bees had a long winter last winter, and were very weak in the spring, so they did not gather much honey till the end of the summer, when I extracted 116 lbs. per hive, and left them plenty honey for winter. I have no doubt I will reap the benefit of it next year, as prospects are bright for next season.

M. H., Bunyip, Vic.—It has been a disastrous time for honey this year, not even enough to keep the bees alive.

J. L., Merriwa.—I note Mr. Nicholas Kinkoff's advice re eucalyptus trees, to get rid of eucalyptus trees and replace same by other shade trees—contract too large for no results. I can't help thinking if this is the best advice he has to impart to Australians, it's a pity when he saw that hole six feet deep with the

water in he did not get in and stay there. Regarding bee news—Bee life has had a rough time in this part for the past few years; most of the bees have died out. I have at present about 40 hives; most of the other bee farmers are run out of bees—plenty boxes left though. I have been cleaned, or almost cleaned out of bees twice, but like the spider, I am climbing up again. I bought out the remnants of two apiaries this season. I might finish up by forming a bee trust. That seems to be the usual now-a-days.

J. T. A., Mooroopna, Vic.—This last twelve months has been one continual rack trying to keep all things, ourselves included, with enough to eat. The stock was the worst rack, for even with money in your hand it was not so easy to get it, having to almost beg for it while paying £6 and £7 a ton for chaff not near prime. But I suppose you have a taste of the same, so know it by heart. The bee business was not as good as it might have been, the red gum flowering five weeks before it was due, so caught me napping, as I had only got fairly under weigh getting them ready, so only half were fit for the fields, the rest were just ready when it was all over, or about the time it should have recommenced to flower. The red gum is all I have to look to now for a surplus; box, yellow or grey, is a thing of the past here now, and lucerne too far away.

W. N., Eugowra.—I herewith enclose subscription for the A.B.B., also subscription to the Bee Farmers' Association, and 5s. to assist in paying expenses incurred at Bee Farmers' Conference held in Sydney last Easter. I thank the members of the Association for again placing me on their committee. I promised to take an active part in the 1903 Conference. Events happened over which I had no control, that prevented me. I will not promise again, but I will do all I can in the interests of the Association. During the past two years I have taken a small quantity of honey for the number of hives, and lost over half the bees. We

have about 130 colonies at present, but there may be more empty hives before swarming time. It is the third big loss I have had during 18 years. For 12 years I have given the bees all my labour; I find the returns not good enough, and it is necessary to run another industry with them, which I am doing now. At the present time the outlook for the coming season is good. Hoping you have been successful in getting your bees through the drought all right.

"Melbourne," Northcote, Vic.—As a subscriber to your valuable paper, I would be obliged if you would favour me with the following information: (1.) I have a 4-frame nucleus; when and how should I transfer it to a larger hive? It is fairly strong at the present time, but not strong enough to remove. I think August about the time, but would like to know for certain. Last November I put a hive in my front garden, and about four weeks ago I removed it to the back garden, placing an empty hive on the old stand. The bees went back to the old stand, so I had to replace the hive on the original stand. Now can you tell me how to make the removal and keep the bees to the old hive on a new stand. I don't want to make another try at it till I've had some advice on the subject.

1. Yes. August or September is quite correct. Simply lift the frames from one hive to another, keeping them in the same relative position. Do it on the old stand in the afternoon. Then shift the new hive with the bees in it, putting an obstruction at the entrance; when they go out in the morning they will be bound to re-mark the new position. Could you shift it a few feet every day till it gets to the new place? 2. Whatever way you do some will go back to the old stand. You may close the entrance for a day or two, and put some obstruction across the entrance. The young bees that emerge during the time they are closed will be sure to remain, but don't depend on the old ones.

J. E. C., Wattle Flat.—Things are very dull here on account of the drought, and I have lost most of my bees.

W. F., Bungovannah.—The past season has been a poor one for honey in this district. There was a good flow from red gum about November and December,

but most of the colonies were too weak to take advantage of it. I only extracted about half-a-ton from 30 hives.

J. T., South Lillimur, Vic.—Our promise for the coming season with the bees is good. We are having plenty of rain; that usually means good returns with us.

J. F. P., Wagin, W.A.—I have had a fairly good season this year, but I had to neglect the bees too much, because I had too much other work; it did not pay humbugging about too much with a few hives. I hope you had a good season last year, and wish you another good one this year.

A. B., Nurrabiel, Vic.—I only had 26 hives to work last year for honey, but I took 110 60lb. tins from them. There is a lot of talk of spring dwindling, but bees, like all other insects or animals, or human beings if you like, have their ups and downs in life, whatever may be the cause. The extraordinary seasons we have had the last four seasons have indeed accounted for our shortage in bees; added to this, in winter we have had some heavy frosts that have frozen up good hives in one night, while others have come out very weak, but I believe our hardship is over for a time. Our season is just delightful for farmers and graziers, and the apiarist will come in later on. The winter is very mild so far. Bees should come through well.

T.E.W., Moruya.—Had a splendid winter, bees gathering pollen all through. Swarms strong, with fair amount of brood, and no signs of foul brood appearing. Judging by present appearances a good season coming.

E. T. P., Gippsland, Vic.—Bees are coming out in good condition this spring. No losses this winter. Trees are just commencing to bloom. Had a very cold, frosty winter.

W. S. H., Glengarry, Vic.—Just a few lines to let you know how things are over my way. I had a very fair year last season, as I extracted 120 lbs. per colony from 30 colonies, and left plenty to tide them over the winter. They are very

busy on warm days, at present working on wattle bloom, which is a great yielder of pollen in early spring, white gum is also out in bloom, but they bloom too early over here for the bees to store any surplus from them. I do not expect much the coming season, as there are very few buds on the trees about here. Trusting you have a good season ahead of you.

C. H., Christchurch, N.Z.—In the May number I notice an interesting extract from *Gleanings* re uniting weak colonies in early summer instead of in spring (Doolittle.) Two colonies, say No. 1 and 2 are united (page 36, line 4.) Can you or any of your numerous readers answer the following questions: 1. Will not most of the bees transferred with the frames to No. 2 hive return to No. 1 stand? 2. What is done with the bees and queen on the one frame of No. 1 hive which is not transferred to No. 2 hive, when not used as stated at the bottom of page 36? I derive great pleasure and profit from your excellent paper. No beekeeper should be without the A.B.B.

¶ We usually put the queen in No. 2, and a young queen or queen cell in No. 1. When uniting we ourselves get a third empty box, which we put between the two to be united. When the uniting is done we remove the other hives altogether away. The bees, missing them, go into the united hive. To No. 2 question the above ought to be the reply.

W. G., Campbelltown.—Just a few lines to let you know that I am still alive, and still taking an interest in the bee line. We have had one of the worst bee seasons on record—hundreds of hives dying out, some small beekeepers losing all they had. I lost heavily last spring, and have only 50 hives left out of 200, and when they died out they left the hives full of honey. The weather still very dry. Hoping you have a better season your way.

See that your neighbouring beekeeper takes the "A.B.B."

D. McL., Coonamble.—I have neglected my bee hives of late, let them take pot luck, still I like reading up what is going on in that line. I got my last six bee journals all of a heap, and found them good reading on the roads.

J. C., Bulli.—The last season on the south coast was a good one, and honey is very plentiful and rather dull of sale, and difficult to sell at 3d. per lb. My yield was three tons for 70 colonies, which is considered good for this district. I started winter with 80 colonies, well stocked with winter supply. They are all in splendid condition for this time of the year, and we are looking forward for a good season next summer. Wishing your journal every success.

J. W. S., Condobolin.—My bees are all strong and healthy.

M. M., Deep Lead, Vic., Aug. 13.—We have had two very dry years just gone through, and now we have had one of the wettest winters known, such a contrast. We have been very fortunate with our bees with the exception of last spring, when we lost fully one half in one apiary. They went to pieces just something similar as Mr. Beuhne described his. I did not bother writing about the matter then, as I had more than I could do to read the writings of others on the matter, but my loss was simply for the want of good pollen for the young. They reared brood alright, but the young was no good. I fed them on pea meal giving them a great quantity of it, and its the last of artificial pollen for me. I shifted about 80 hives in the winter from the same place with the same stores some two miles away, where they get pollen off scrub. They came through alright and they were a much weaker lot than those that vanished, so I looked no further for the cause. It was all grey box honey, and I winter every year on the same stores, and this winter they came through well, better than I have had them yet, thanks to the great amount of pollen stored last autumn. We have had a fair amount of honey this last two crops, and fair prices.

The Victorian Apiarists' Association are on the up grade, and will soon be a real live Association, but I think instead of the V.A.A. it would sound better as the Federal Australasian Union. Why not have one Association for Australian beekeepers and have branches all over the State? We would be a body with strength then, and we could soon have capital then that would mean good work being done in the interest of all Australian beekeepers.

C. D., Drake, Aug. 15.—Things haven't been too bright of late years. However, there is every prospect of a good season here now. Last year was a very hard one on the bees in this district, all the small ones have been wiped out. I saved nine by feeding with flour, the first year they would ever take to it. I noticed them about the pollard bag and put out flour. Had no trouble after with them. Out of 160 in the home yard I only lost five, where in the out yard of 47 I had only 28 left, those I neglected until too late. All that I could do I could not keep them from swarming; they all dwindled away, giving me a lot of trouble. They are only three miles from the home yard. There is a station three miles to the north of me, he had fifteen hives. He noticed no bees flying and went to look, not a bee left. All had plenty of honey. I get the "A.B.B." regular, have only missed one in eight years, and would be lost without it. Wishing you a prosperous year.

N. M., Wartook, Vic., August 12.—I received your Bulletin, and think its a splendid journal for apiarists and beginners.

J. M. J., Ramornie.—Every appearance of a good spring this way. Bees doing well.

Queens over two years old are past their prime, and should be superseded.

Very little disease among bees in the West Indian islands.

Salicylic is said to be got by the bees from willow.

CAPPINGS.

From American and other Bee Journals.

If people or teams are stung in highways or public places by your bees, it is your duty to so locate the bees, or change the surroundings that they do not disturb the public. If damage to person, stock or property is done by the bees, the owner is liable for damages. And if it continues may become a nuisance. High board fences or high hedges are a great help. Even with all possible precautions if bees are near the street, the bees at times will bother. Keep out of trouble if possible.

The "Tall Sections."—Regarding these I cannot say much in their favour; I have tried a rack or two, and shall do so again this year, but fail to see any advantage in the extra $\frac{3}{4}$ in. added to the height or length—whichever way it is worked—over the $4\frac{1}{4}$ in. by $4\frac{1}{4}$ in. sections. All I have had, so far, have had to go into my second or third quality sections to clear them. Honey dealers do not want them—the ordinary square honey dish will not take them when cut out of section, and the part cut off makes a mess in the larder.—W. Woodley, in *British Bee Journal*.

If an apiary is properly conducted for extracted honey with large hives, and a plentiful supply of supers filled with combs, there will be very little swarming, and it will not prove necessary to take any measures to prevent it. Ordinarily such measures would be useless, or worse than useless. A colony which is at all times supplied with a large quantity of empty combs, will make no preparations for swarming, unless it is in an uncomfortable position, exposed to the sun, or with too little ventilation, or with too many drones. Neither will such a colony produce much wax. I have seen it often stated that the bees produce wax independently of their will. The quantity thus produced is very small. It is only when they are compelled to remain

full of honey for hours and days that the small scales of wax are produced, seemingly owing to the prolonged holding of a surplus of honey within their sacs. When the colony swarms, each bee takes a load, and as they find no combs in their new abode they are compelled to carry this load until part of it has been changed to wax. The bee which finds room to unload her honey sac as soon as she arrives home only produces a minimum of wax. That is one reason why the production of extracted honey is so great when a full supply of combs is furnished to the colony.—C. P. Dadant, in *American Bee Journal*.

Many people cover hives with an old bag, no doubt with the very best intentions; but it must be obvious to anyone who will stop and think that, instead of being of service, this method only serves to keep the whole in a cold and sodden condition, seeing the overhanging old bagging acts like a sponge. The heat of the cluster of bees draws the damp through, with the result that wet keeps dripping on to the bees within the hive, exposing them to chills and disease.—J. Sutton, Western Australia.

Jamaica, with an area of 4200 square miles, and an output of 16,000 cwt. (1,792,000 lbs.) annually, would show a yield of 423 lbs. per square mile in round numbers. This is away ahead of Texas, California, and Cuba. When it is considered that Jamaica is a land of eternal sunshine, and well defined seasons; that this is the home of the logwood, one of the finest honey-producing plants of the world; that here such a thing as foul brood, black brood, or any other bee-disease, is unknown, and, lastly, that here we have the largest yield of honey per square mile, the term "beekeeper's paradise" might truly be the designation of our island, Jamaica, land of wood and streams.—Correspondent of *Gleanings*.

Division boards were once thought quite necessary in packing up and protecting weak colonies in the spring, but Dr. Miller calls attention in his book to

the experiments of Gaston Bonnier, showing that combs serve as good a purpose as division boards, thus there is no necessity of putting in a division board and moving it from time to time to accommodate the size of the colony.—*Beekeepers' Review*.

Robber-bees, as all experienced beekeepers know, are loth to enter a long or obscure passage way. Mr. R. J. Stead, of Lanark, Ontario, secures such a passage by laying two bricks in front of the entrance, close against the front of the hive, and shoving the bricks so close together that only one or two bees can pass at a time. On top of these two bricks he now lays a third that covers the passage-way overhead. Robbers are thus confronted with a sort of tunnel which they are slow about entering.—*Beekeepers' Review*.

A PLAN FOR REARING QUEENS AND STARTING NUCLEI.—Nuclei may be started in different ways. A plan of getting nuclei started that is easy of accomplishment for the beginner, at the same time resulting in a laying young queen in each nucleus, is as follows:—Take from a strong colony of choice stock its queen and two frames of brood with adhering bees, putting them in another hive on a new stand. In place of the removed frames two empty combs may be given. The hive in which the queen has been put may also be filled up with empty combs, or with frames filled with foundation. Nine days later take the old colony from its stand, and put in its place the hive with the queen. The field-bees, when they return from foraging, will join the latter, and it will soon be a good colony. The contents of the old hive may now be divided up into nuclei. The bees being queenless, they will stay wherever put much better than will bees taken directly from a colony with a laying queen. Two frames of brood with adhering bees will do for each nucleus, and it will be well to add a frame of honey to each. One of the nuclei should be placed on the stand which the queen

occupied for nine days, and this need hardly be so strong as the others, for it will have the advantage of the field-bees that had been with the old queen. The result may be unsatisfactory if no attention is paid to the position of the queen-cells. They will be mostly found on the edges of the combs, where they may be easily chilled in the nuclei. Cut out those that are not centrally located, and see that each nucleus has two or more cells fastened upon the combs where they will be sure to be kept warm. Not all the cells will be good; for the bees have a habit of starting the last cells after the brood has become too cold; but if they have two or more to choose from they will choose the best.—*American Bee Journal*.

It is a fact patent to all, I think, that a colony that is building a set of combs in the brood-nest, and that has at the same time ample storage room in the super, has all desire to swarm removed, and the necessity for rapid comb-building for storage purposes removed, and that the desire for workers in such a colony is paramount. Hence nearly all the comb that is built by the bees, and immediately occupied by the queen, is built worker size, whether the queen be one month old or three years old. But to secure these conditions, everything must be normal. The colony must have a laying queen and an ample field force at the time they are hived, whether the swarm is forced or natural. Again, it is necessary to have a steady flow of honey; but these conditions nearly always prevail at such times in Colorado. Any condition that will retard rapid comb-building like an old queen with a good force of young bees and a small field force, or a colony that has been given a frame or two of brood to help them, and has a small field force for a colony, let it be large or small, that is compelled to raise a queen, will invariably construct much drone comb. But I think it is still safe and advisable, where our swarming season does not stammer along through the year as in oriental

countries, but is nearly all done in twenty days after the honey-flow begins, to continue the use of starters only in the brood-nest; and our reward will be a good crop of the most beautiful surplus honey that can be raised, and brood-chambers filled, with none too much drone comb.—*Gleanings*.

The natural instinct of the bee is to store its food as near as possible to the brood. The apiarist should heed the teaching of nature, and keep food and brood in as compact a space as possible, and not violate the rule so unerringly pointed out by the Creator, by lifting the partly filled super and placing beneath it one containing empty sections, according to orthodox teaching. By practicing the orthodox method, much of the working force will be withdrawn from the upper super, and work will be distributed through that and the lower one in undesirable and unprofitable proportion, oft times resulting in none of the sections being properly filled. The system of management we have attempted to outline, and which we have found to produce profitable results, requires that there be no separating of the working and storing force of bees from the brood more than is necessary by the outward and upward extension of work in the supers; that there be not more than two supers in use on the hive at any one time; that the supers be removed as fast as completed; that there be no enforced idleness by leaving the super on till finished before giving additional storage room; and, as far as possible, to have the bees complete each super while it is next to the brood chamber to insure perfect work. By keeping the colony compact its heat is conserved, which promotes brood-rearing, keeps the hive well-stocked with bees, resulting in rapid, perfect, and uniform building of combs in the super. The bees will complete each super separately, using only the upper one as opportunity for work in the lower diminishes and finally ceases. As the end of the season draws near, the bees

will finish the last super, next to the brood chamber, with honey from the unfinished combs in the last upper super. The apiarist will thus approach the end of the season with practically all the unfinished sections in the last upper super, and all other sections filled and finished fancy.—*Gleanings*.

Introducing without making queenless is advised by the "Modern Farmer and Busy Bee." That is, instead of first making the colony queenless, put the new queen caged in the hive, and then remove the old queen 48 hours later, when the cage is to be so arranged that the bees can liberate the new queen by eating out the candy. Well worth trying.—*American Bee Journal*.

Colonies with virgin queens in early summer need special treatment in some cases. Generally when an old queen is superseded by the bees she continues to lay until her successor is ready to take up that duty. In that case there is no need of interference on the part of the beekeeper. But it sometimes happens that by some means a virgin queen is found in a hive with no brood present unless it be sealed brood, perhaps well advanced. In general it is bad policy to take from a strong colony early in the season to give to a weak one. Here is an exception. This colony with the young queen can just as well as not be taking care of some brood from elsewhere until its own queen is laying. Take from a strong colony one or two frames of brood—the youngest you can find—and give to the broodless colony. In place of the brood taken away, put an empty comb, or combs, in the middle of the hive. A week later these will be filled with young brood and eggs, and may be given to any colony with a virgin queen. Thus, young brood and eggs may be drawn each week so long as there is any colony with only a virgin queen, and in this way it will be seen that for any frame thus handled there will be three times as many bees as if the frame had been left untouched for its three

weeks in its original place. If desired, a frame of sealed brood from the colony with the virgin may be exchanged for the frame of young brood, and in this way the strong colony will be stronger instead of weaker for the performance. In any case, the sum total of bees will be increased.—*American Bee Journal*.

✕ To FASTEN QUEEN-CELLS ON COMBS.—

One way is to cut a hole in the comb and fit the cell into it. Another way is to use a heavy pin or a light $1\frac{1}{2}$ -inch wire-nail, thrusting the pin or nail through the bit of comb at the base of the cell, and nailing the cell to the comb. Perhaps a still better way is to use a staple such as is now used in fastening bottom-boards to hives ($1\frac{1}{2}$ inches wide with legs $\frac{3}{4}$ inches long), pressing one end into the comb and letting the other compass the cell. Of course care must be taken that the cell is not crushed, and that its cavity is not thrust into.—*American Bee Journal*.

✕ A balled queen is sometimes stung to death, but that is when the ball has been meddled with by the beekeeper. If left to themselves, balling bees do not sting a queen, and when the central bees are held together in so tight a grip it does not seem possible that they could sting if they tried. Besides, if it was the intention of the bees to sting the queen, why should they not sting her the same as they sting a worker, without going through the preliminary work of balling her?—Exchange.

✕ We think there are years when the seasonal conditions make bees almost the entire dependence for fertilization. At other times, it seems that bees are not needed at all, because other insects and winds furnish satisfactory fertilization agencies." I would suggest that a wet season would require the bees' work. In that condition the flowers and pollen are moist, and therefore the pollen cannot be so well transferred to other flowers by winds. The bee is built for its work on business principles. Hair is situated on its hind legs and form a pocket in which pollen can be carried home, the ultimate

use of which is for food for the young. The bee is covered with pollen in passing from flower to flower, so that it can scarcely help passing the pollen to the stigma of the flower.—*A. Bee Journal*.

✕ Get one of the bright pendants that are used on the hanging lamps. They are of glass and cut with many faces, so that the rays of light strike from all directions making an attractive mark. I have to wear glasses to see well in clipping queens. I don't like to wear a veil, as it not only impedes sight, but interferes with breathing, and then as I am one of the boys of '61, I contracted the tobacco habit when camp-life had few entertainments. The veil interferes with the use of the weed. The bees had a habit of diving for the glistening of my glasses, and generally would hit the mark, then crawl under them, and get in their work on or near my eyes. I have had as many as 100 shots a day, and while the sting doesn't swell my flesh it interferes with one's comfort. So I stuck a pin through one of these pendants, and making a hook of it, stuck it in my hat. This makes a prominent mark and good target, and keeps them wondering why things are thus.—Writer in *A. Bee Journal*.

✕ Phacelia, which has now been in bloom in the window for some time, has a blue flower resembling the heliotrope, equalling it in beauty, strongly fragrant, although I don't think it has the same fragrance when grown as an open-air plant. It is wonderfully lasting as a cut flower, rivalling the carnation in that regard.—Dr. Miller, in *Gleanings*.

✕ The nearer the equator the larger the colonies as a rule.—*Exchange*.

✕ A French journal, devoted to the interests of bakers, says, "In a little valley bordering on the Rhine the cutting of agates furnishes employment for a number of persons. Before cutting these stones they are soaked in honey for eight hours, and then in sulphuric acid for three hours. This operation gives to the stones a beautiful cloudy appearance, which is greatly admired in the finished

product. The grape sugar contained in the honey, by its combustion in the sulphuric acid, produces this discoloration. Every agate-cutter uses every year about 100 lbs. of honey in his workshop."—*Gleanings*.

How beekeepers write in England.—A writer in the *Beekeepers' Record* says: I think sufficient has been written to show to all beekeepers and prospective ones that we have in our hands and under our control a potent factor for the further development of beekeeping on a profitable basis, and the consequent *reclaiming from foreigners* of a large share of the £30,000 to £40,000 worth of honey they send annually to our shores. Considering the excellent forage we have at home in all our fields and dales waiting for the welcome bees to suck up and gather for our use we should have such a development of the industry as would stamp out all this foreign importation !!!

The microbes causing foul brood retain their vitality in honey for some time, but just how long we do not know. That the spores of *bacillus mesentericus* will germinate after being steeped in honey for over a year I have very grave doubts, and if a few years' immersion in concentrated honey is fatal to them we have a clue to the reason why bees store and keep in store large quantities of honey. The instinct of the bees in storing large quantities of honey—an instinct upon which beekeeping is wholly dependent—contributes, without doubt, to the bees' welfare, and the principal object must be to protect the colony from the microbes. Microbes will invade the larvæ if bees are not placed under conditions that are normal and unfavourable to the development of the microbes. Cold is the greatest evil that bees have to contend with. An abundance of honey will save them from famine, but numbers alone can save them from cold. As their number is cubed the quantity of honey consumed to keep up the temperature of the hive is only squared, and numbers therefore have the advantage. Strong colonies only

can resist cold, and trying to maintain strong colonies in small hives is merely a waste of labour and a loss of time—the normal proportion of bees and honey cannot be maintained, and disease is the inevitable result. Most assuredly "Nature does not work for an object and against it at the same time," but some beekeepers, who imagine they can teach nature, do it every day—In that 'tis God directs, in this 'tis man. If the microbes causing foul brood could be exterminated there would be no beekeeping—the bees would not store honey enough to make it an object.—*Irish Bee Journal*.

If sections are crated in such a way as to be favourable for it, the whole crate of 500 are wet before being taken from the original package, one side of the crate being removed so as to expose the edges of the sections. If the crate is not of the right kind for this, then the sections are taken from the crate and put in the proper position in an empty crate lying on one side with the top and one end removed. Of course the sections do not lie flat, but on their edges, the grooves of each tier corresponding with the grooves of the other tiers, so that a small stream of water poured into the grooves at the top will readily find its way clear through to the bottom. If necessary the sections must be wedged together, so there will be no room for water to get between them only at the grooves. A pint funnel is specially prepared for the work. A wooden plug is pushed in from above, projecting below two inches or less. The lower end of the plug is whittled to a point, and either by means of a bad fit or by means of a little channel cut in one side of the plug, there is just leak enough so that when the funnel is filled there will be a continuous fine stream of water running from the point of the plug. Holding the funnel in one hand I pour into it boiling water from a tea kettle held in the other hand, at the same time holding the funnel so that the stream from the point of the plug shall be directed into the grooves, moving the

funnel along just fast enough so that the water shall be sure to go clear through to the bottom. Cold water will not work well."—Dr. Miller.

Dr. Miller says:—When bees will not be easily shaken or pounded off a comb, and you don't care to get a brush, try this: Hold up the frame with the left hand by one end of the top-bar, and while thus suspended pound on the top of the top-bar near the other end with the ball of the right hand; then reverse ends and pound again.

Some experience in nuclei making is what we have been having lately. During the month of April we made about 300 nuclei drawing two frames or brood from full colonies that were threatening to swarm. We started queen cells in advance and gave each nuclei as made one ripe queen cell in a cell protected. We gave each nuclei a new stand and closed the entrance with green grass stuffed in just as tight as we could stuff it. Two days later we would go and remove the grass from all hives that had not already pushed their way out.—*Exchange*.

"Bees caressing the queen and offering her food when she pokes her tongue from the partly opened cell." That surely is a relic of the dark ages. The tongue is probably put out as a "feeler," for it is often used thus. Bees never offer food to the queen, or to each other; it always has to be asked for, and sometimes almost taken by force. From long observation I am satisfied that it is never given on or by the tongue of the "giver," but is taken from the mouth of the "giver" by the tongue of the "taker." When a queen is free to roam at will she can get such food as she needs, but, shut up and dependent on "callers," she stands a slim chance. It is not the worry of confinement which kills queens, but starvation.—A. C. Miller, in *Beekeepers' Review*.

Bees can be moved *backward* more readily than sidewise. I would not hesitate to move a whole apiary three or four feet backward; and it would make no differ-

ence if it were moved sidewise providing there were no distinguishing landmarks such as trees. If, for instance, the apiary were located in an open plain or field, without any trees or knolls, nor any thing to distinguish location, the whole beeyard, if the relative position of each hive were preserved, could be moved a good many feet one way or the other.—*Exchange*

FROZEN BEES REVIVED, AGAIN.—"Bees chilled to death came to life again." The bees in question were only apparently dead, but not really so. Nothing can be raised to life again by natural means when life is once gone. More than 20 years ago I had the same experience during a very cold winter, with bees that were *like dead*, and "came to life" again. After a severe cold spell a colony was placed in the sun. A few bees came forth, and, flying about, they soon fell on the icy snow and remained there for about six hours. They seemed to be frozen to death. When I gathered them in a small pasteboard box and brought them into a warm room I could scarcely believe that life was yet in them; but after two hours the bees began to hum within the box. In many other instances, where bees were in nearly the same condition for a longer time they never came to life again. Considering this I am apt to judge that severe cold weather will not kill bees if they have plenty of honey just where the cluster of bees is sitting, provided cold spells do not last too long without interruption. That bees can ever be brought into a state in which they hibernate, as some other insects do, without food, is yet to be proved. Experience shows the contrary, so far as my knowledge reaches.—Writer in *Gleanings*

Honey is a luxury, and most people consent to go without it very easily, if the article is not handy.—*Exchange*

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