The Australian bee bulletin. Vol. 12, no. 6 September 29, 1903

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

Registered at the General Post Office Sydney, for transmission by post as a Newspaper

THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.
Edited and Published by E. TIPPER, West Maitland; Apiary, Willoy Tree, N.S.W.
Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

VOL. 12. No 6. SEPTEMBER 29, 1903. PER COPY, 6D.
Per Annum 5s, booked 6s 6d, in Australasia, outside N.S.W., add 6d. postage

N. S. W. BEE-FARMERS' ASSOCIATION.

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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.

Printed and Published by E. TIPPER, proprietor, High Street, West Maitland, N.S.W.

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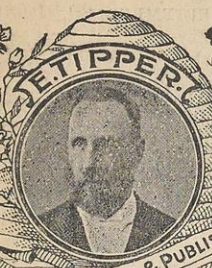

THE AUSTRALIAN BEE BULLETIN.

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

MAITLAND, N.S.W.—SEPTEMBER 29, 1903.

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

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MOUNTAIN FORESTS AND IRRIGATION.

[BY J. BLACKBOURNE.]

(Continued.)

Although much can be accomplished by skilled and scientific forestry properly directed, it is a lamentable fact that the damage caused in some of the countries alluded to by the errors of the past is to a great extent irreparable.

You may perhaps wonder, gentlemen, at this long preamble, and think what all this has to do with the subjects of Mountain Forests and Irrigation. I am now drawing near to these matters, but before entering upon them I must say a few words as to the causes that led up to the formation of the National Forests Protection League. Starting our career as a nation a short half-century ago, endowed at the outset with ample and unrivalled timber resources, it is to me humiliating to admit that we have misused, wasted, destroyed, and alienated our forest wealth and are fast coming to the end of any accessible supplies. Unless this calamity can be arrested a blow will be inflicted upon our national prosperity, the far-reaching possible effects of which we can at present form no adequate conception of.

Maryborough, as many present are doubtless aware, is a large and important

mining centre, and depends for its well-being and prosperity principally upon the PRODUCTION OF GOLD.

All the shallow ground is exhausted, but we have yet about 200 miles of deep alluvial leads awaiting development To work out this large area safely and economically will require enormous quantities of firewood, mining props, and laths. A lath, I may inform you, is a slab of timber 4 feet 6 inches long, 6 inches wide, and about 1 inch thick. Of these, three claims at Timor use over 1,000,000 annually, and it is estimated that the entire goldfield will swallow up at least 500,000,000. If we cannot obtain them the mines must remain unworked. As all the forest lands within a hundred miles of Maryborough have either been alienated by the State or the timber on them exhausted, we have latterly been procuring laths from Gippsland, and bringing them by rail 217 miles to our town at a cost of 6s per hundred for freight alone. When the Lands department started and continued to throw open for so called settlement all the accessible forests in Gippsland, we came to the conclusion that it was time to organise and fight for our existence as a great gold producing centre, giving employment to thousands of miners. Such, gentlemen, was the origin of the National Forests' Protection League. We afterwards decided to work on a broader basis, and to take up all matters relating to forestry that will tend to promote the welfare or advance the prosperity of the country in which we live.

You will remember that I have told you that the mean proportion of forest area in many great nations to the total territory is about 23 per cent., or nearly one quarter of the whole. In our dry climate, where everything should be done to promote rainfall and conserve humidity, we have only 5,000,000 acres of State forests, and a State area of over 56,000,000 acres, equal about to one-eleventh. In addition, we still retain about 6,000,000 acres of rugged mountainous country lying between, say, the head waters of the Latrobe River and the eastern boundary of Victoria. If this territory, which is totally unfitted for profitable settlement, were added to our already existing State forests (5,000,000 acres), we would then have as reserves 11,000,000 acres or exactly the proper proportion (one-fifth) for retention under timber cover. I have told you that the 6,000,000 acres is unfitted for settlement, but it is full of beautiful streams and springs, and should be devoted to the purpose for which the Creator undoubtedly intended it, namely THE STORAGE OF WATER for the irrigation of the dry but fertile plains, situated principally in the northern portion of Victoria. I wish you to take notice particularly of this matter, for we read that the Lands department intend to resume this mountain country, which is now held in large grazing areas under pastoral licenses, and devote it to small homestead holdings of from 2000 to 10,000 acres in extent, giving the holders the right to ringbark the timber and destroy the forest cover on slopes, in many instances almost too steep even to walk up. All virgin mountain forests are intersected by numerous small creeks and rivulets, and if you trace one of these to its source, you will find it near the crown of a range, where a clear spring of beautiful water issues from the damp soil, matted with ferns and other vegetation, and overshadowed with groves of Beech, Silver Wattle, Sassafras, and Eucalypts. The rivulet hurries down the steep slope to join a larger stream. The origin of these streams is simple. The aqueous vapour in the atmosphere, whether borne inland from the sea, or produced by evaporation elsewhere, is arrested by these forests, condensed by their coolness, and falls as light showers or heavy rain. The trees, by their roots and the humus that accumulates around them, keep the soil soft and porous, and the rain filters through it, and comes out at a lower level in the form of ever-flowing springs that feed and regulate the current of the main rivers. But destroy the forest cover, and what happens?

The soil of the slopes is washed into the stream, and it becomes a raging torrent in winter, and much diminished in volume in the summer—disastrous floods are of frequent occurrence, the fertile flats lower down are covered with silt and stones, ruin overtakes the agriculturalist, navigation is impeded, and if irrigation has been undertaken and dams constructed across such a river, they rapidly become filled up and useless, and unless the skilled forester takes the matter in hand, stops by barriers the eroding mountain torrents and re-clothes the slopes with timber cover promptly, the damage caused by the ignorance or folly of man soon becomes irreparable. I don't want you to take these statements upon trust, and regard them as the utterances of an alarmist or visionary, or, as Mr Taverner terms me, one of "the Maryborough busy-bodies." Hear what has been the EXPERIENCE OF OTHER COUNTRIES. France allowed the peasants in the Alps and Cervennes mountains to sell or burn the forests on their holdings, and their sheep and goats by eating up all the young seedlings, did not give Nature a chance of repairing damages. The heavy rains, instead of(as I have told you), percolating gently into the forest-covered soil, and reappearing in the form of never-failing springs, rushed off in devastating torrents, as one writer describes it, "like water off a slate roof." Deep ravines were soon formed on the mountain slopes, the soil was washed away, and rocks and stones soon followed. Such periodical devastating floods occurred in the valley of the River Loire, and such widespread calamities overtook the smiling cornfields and valuable vineyards of that fertile region that the French Government had to take the matter in hand and re-afforest, not only State, but private lands. They have, by skilled management, repaired damages to a very great extent; but at a cost of over two millions sterling.

(*To be continued.*)

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

OUR FRIENDS.

Sydney, 28/8/03.

E. Tipper, Esq.,
"Bee Bulletin" Office, W. Maitland.

Dear Sir,—I would respectfully ask that you give me all available information relative to the number of Bee-keepers in this State, and industry, etc. My object in asking for same is to try and have some provision made for protecting Bee-keepers on Crown Lands, etc., and the Land Bill is now under discussion. Thanking you in anticipatlon.—I am, Yours truly,

P. J. CLARA.

(REPLY)

Willow Tree, Sept. 7, 1903.

P. J. Clara, Esq., M.L.A.

Dear Sir,—Yours to hand, and in reply, I am sorry to state I cannot give you the statistics you require. But you can obtain it at the Census Department.

On behalf of the Beekeepers of this Colony, I thank you very much for your interest on their behalf. The lines on which you can help them are:—

Where there are forest reserves, that beekeeepers shall be enabled to select, say an acre of ground on which to place a dwelling and an apiary, at a moderate rent.

That in all possible ways, not only in the interest of Beekeepers, but the rainfall, and the interests of the State generally, the destruction of timber, ringbarking the same, etc., should be guarded against as much as possible, on all lands the Crown has any control over.

Again thanking you on behalf of the industry.—I am, dear sir, Yours very sincerely,

E. TIPPER,
Hon. Sec. N.S.W. Bee Farmers Association.

Willow Tree, Sept. 10, 1903.

P. J. Clara, Esq., M.L.A.

Dear Sir,—My attention has just been called to an evil that exists in Victoria. No such permission should be granted to a second apiarist nearer than three miles of where a Beekeeper has already got a permit to locate an apiary. Will you kindly keep this in your mind. Yours sincerely,

E. TIPPER,
Hon. Sec. N.S.W. Bee Farmers Association.

NATURE'S CLOCKWORK.

[E. TIPPER.]

Busied as most of us are in our daily associations and the struggle of life, we

do not think of the many wonders that are going on around us. We see the railway trains passing and repassing, and we say what a wonderful power is steam, but our thoughts do not go to the beautiful mechanism that controls that steam, the brains that have been exercised over it, or even the manufacture and production of the wonderful steel of which it is composed out of the hard rocks of the mountains. The same with our watches and clocks. We take great care of our watches and see they are not made play toys of by our children. And we watch their regulators that things don't go too fast, or too slow.

We look on those beautiful mountains around, and strangers exclaim, What beautiful scenery! So with the grander scenery of the heavenly bodies. And the wonderful clockwork movements of the stars and planets; so wonderful with regard to space and time that the mind cannot grasp it.

And is there no wonderful mechanism going on among those mountains? Not among the clouds that seemingly so aimlessly come and go? Yes, stop for a moment and think. What purpose do they all serve?

Let us travel for a while to other lands, where the mountains rise four, five, and six times higher than they do in Australia. They are covered with perpetual snow. What good are they? Nothing can grow on them. No animal can live on them.

They are Nature's reserves—Nature's reserves of water. At the proper time, when Spring comes round, the increasing warmth of the sun melts the snow and ice into beautiful water, which runs down to the valleys below, and fertilizes, and makes grass, and herbs, and fruit trees to flourish, and then makes it way to the sea, to be again lifted in clouds, and again caught by the mountain tops to again descend. Were it not for this turning to snow and ice, the waters and streams would so rush down the mountains, and away to the seas and be lost, no possible good would be done by them But the turning into snow and ice is the Creator's watch regulator, —the regulator in a watch, or the governor in a steam engine. Even the dread avalanches we hear of are aids in the Creator's work—that when too much ice and snow accumulates at an height where the sun's rays are powerless, then they roll down in masses on to the lands below, where the sun's rays can cause the sealed up waters to go on their regular course.

Our mountains in Australia are not so high. Few of them are high enough to have perpetual snow, and catch the clouds that float in those higher regions But what mountains we have have their grand mission, in the work of the great mechanism. They do catch the clouds. They are clothed with forests, who assist also to catch the clouds. The rain falls on their leaves, the leaves convey the moisture to the trunks, then to the roots; the roots, and stones and rocks about the roots act as reservoirs for the waters, which thus only gradually descend to the valleys below. The possums and wild creatures live among those trees; the trees shed their leaves; they live their allotted time; their limbs decay and fall off; they decay and fall on the ground; white ants reduce them to fine mould. Occasional rain storms carry this rich made soil to the valleys below; and the valleys are thus fertilised—the beautiful lowland flats, and the valley of the Hunter, and the many coastal rivers, with all the rich soil that grows such wonderful crops.

Now remove the regulator, nature, and the steam governor. Clear all the trees off the hills. In a short time no new soil to be washed down the hills; the land gradually deteriorates. No natural reservoirs of water; the rains, not being gently restrained by the forest trees, rush impetuously into the creeks and rivers below, and then we wonder the great devastating floods are greater than they were ever before. And in place of

the welcome alluvial soil, good soil is washed out to the ocean and lost.

Or, the hills being denuded of their forests, have lost their power of attracting and catching the clouds, and then we wonder at the awful droughts that destroy our flocks and herds, and impoverish and ruin so many people.

This trouble of ruining forests is not new. It happened ages ago. We read of the gold of Arabia, also of the deserts of Arabia. The gold brought the people there in prehistoric times. The places were denuded of timber. Now, every civilised Government are doing their utmost to protect their forests and trees. In some countries laws are made that for every tree cut down another must be planted. Large sums of money are spent in looking after State forests, and even in planting them.

For, in addition to their work as regulators of nature, there is daily increasing the need of timber, for household purposes, and building. Even all the paper for our newspapers and books are made from timber — whole forests being annually cut down for the latter purpose alone.

And only now are our Australian Governments awaking to the mischief that has continually been going on in the destruction of the timbers of Australia, and making laws to regulate it.

APIARY STATISTICS.

VICTORIAN HONEY AND WAX RETURNS.

The statistics relating to the production of honey and beeswax in Victoria are arranged this year on a different basis to those previously published. The Victorian Government Statist has compiled the returns as from the counties, and a comparison of the 1902-1903 yields with the records of the previous seasons, which were divided according to the produce of different shires, is therefore not possible. The totals for the State, however, may be compared:—

There is an all round increase for 1902-1903 in beekeepers of 626; frame hives, 4806; box hives, 5237; honey from frame hives, 511,723 lb.; and from box hives, 115,131 lb.; of beeswax, 9531 lb.

A scrutiny of the table shows where the best honey country is situated. The county of Borung, comprising the Grampians and the much-discussed Glenelg blue blocks, easily leads with 2250 frames and 266 boxes, a total yield of honey of 246,526 lb. from the former, and of 11,763 from the latter, or an average of 109 lb. per hive and 44 lb. respectively, or a total of 258,289 lb., nearly one-fourth of the total of the whole State, produced by only 102 beekeepers, as against 4300 beekeepers who produced the balance of the total for the State.

The county of Buln Buln, on the other hand, shows 572 beekeepers, with 1089 frame and 1727 box hives, for a yield of honey, from frame hives of 15,977 lb., and box hives 12,388 lb., or an average per hive of about 14½ lb. and 7lb. respectively.

This poor yield is partly due to it being the off season for Gippsland.

Not only are the yields high in the Grampians country, but the quality of the honey is of the best. It exceeds that produced in the eastern part of the State in value by 30 per cent. The total output of honey in the State represents a value of £15,000 (at 3d. lb.), of beeswax of £1153 (at 1/-), or a total of £16,153

This does not by any means represent the total production. Many beekeepers are overlooked in the collection of the statistics, and the total may be set down as at least 25 to 40 per cent. more.

It is to be hoped, however, that the Government will at least take notice of the figures of their own Statist and show a little more of that consideration to the beekeeping industry which is so freely given to it in all other countries.

The return of the number of beekeepers and the quantity, as far as returned, of honey and beeswax produced during the seasons 1902-1903 and 1901-1902 is as follows:

Districts and Counties.	Beekeepers	Hives. Number of Hives, in March, 1903. Frame.	Hives. Number of Hives, in March, 1903. Box.	Honey (Season 1902-1903.) From— Frame Hives.	Honey (Season 1902-1903.) From— Other Hives.	Honey (Season 1902-1903.) Total.	Beeswax.
Central District—	No.	No.	Lb.	Lb.	Lb.	Lb.	Lb.
Bourke	313	436	1,252	6,508	11,849	18,357	818
Grant	171	310	465	12,883	4,434	17,317	585
Mornington	248	889	941	21,368	10,086	31,454	628
Evelyn	230	269	762	3,388	7,367	10,755	451
North Central District—							
Anglesey	58	38	171	619	2,986	3,605	142
Dalhousie	194	558	924	34,332	23,295	57,627	1,444
Talbot	459	673	2,646	64,883	84,290	149,173	4,055
Western District—							
Grenville	35	32	94	946	841	1,787	30
Polwarth	33	60	64	1,390	1,135	2,525	75
Heytesbury	66	69	282	500	2,035	2,535	139
Hampden	2	39	21	732	250	982	30
Ripon	20	98	70	12,625	1,780	14,405	61
Villiers	170	842	774	114,489	3,215	117,704	1,417
Normanby	172	25	744	524	6,009	6,533	526
Dundas	24	276	204	20,075	4,095	24,170	417
Follett	22	—	56	—	296	296	7
Wimmera District—							
Lowan	92	605	358	59,312	3,485	62,797	1,348
Borung	102	2,250	266	246,526	11,763	258,289	2,296
Kara Kara	210	875	905	80,245	34,521	114,766	1,874
Mallee District—							
Karkarooc	31	674	39	37,083	270	37,353	400
Tatchera	8	16	9	260	70	330	22
Northern District—							
Gunbower	15	89	93	2,712	3,860	6,572	56
Gladstone	176	705	732	27,617	15,763	43,380	908
Bendigo	119	301	436	10,052	11,259	21,311	943
Rodney	208	928	356	24,368	3,551	27,919	521
Moira	139	214	211	2,400	1,295	3,695	114
North Eastern District—							
Delatite	151	400	448	9,712	4,400	14,112	447
Bogong	148	1,555	653	70,577	13,234	83,811	1,522
Benambra	13	2	26	40	525	565	—
Wonnangatta	13	12	115	100	1,804	1,904	84
Gippsland District—							
Croajingolong	37	20	96	371	1,827	2,198	93
Tambo	33	421	113	19,360	473	19,833	389
Dargo	36	23	122	222	1,448	1,670	68
Tangil	82	739	419	9,495	1,741	11,236	266
Buln Buln	572	1,089	1,727	15,977	12,388	28,365	945
Total, 1902-1903	4,402	15,532	16,594	911,691	287,640	1,199,331	23,061
Total, 1901-1902	3,776	10,726	11,357	399,968	172,509	572,477	13,530
Increase	626	4,806	5,237	511,723	115,131	626,854	9,531

Victorian Apairist's Association.

(R. BEUHNE, CORRESPONDENT.)

DEPUTATION.—A deputation consisting of Messrs. J McFarlane, L. Wills, V. R. Davey, W. L. Davey, and R. Beuhne, interviewed the Directer of Agriculture, Mr. Williamson Wallace, on July 10th, in reference to the various matters of timber reservation, investigation of bee diseases, and experiments for the improvement of flavour and colour in honey. Mr. Wallace expressed his sympathy with the objects, and the honey value of timber country will be duly taken into account in connection with the alienation of crown lands. The investigation of the "disappearing mortality," and experiments for the improvement of honey are to be at one proceeded with.

DISAPPEARING DISEASE.

June 18, Dr. Cherry, Bacteriologist of the Department of Agriculture visited my apiary and obtained five samples of pollen gathered in different months of the previous season, including one from a hive of which the bees disappeared. Also specimens of bees suffering from paralysis, and of healthy ones.

Dr. Cherry in the "Journal of the Department of Agriculture," page 233, reports as follows:—"A disease which causes great mortality amongst bees is being investigated. I am inclined to think that it is due to a deficiency of proper food during the larval stage. It is in this period in the life of an insect that all the active living tissues are built up. In the adult stage the food is used to supply energy, but there is little done in the way of the renewal of the worn out tissues, comparable to what obtains in the higher animals; hence a deficiency in the nitrogen of the food of the larva is likely to result in malnutrition and permanent loss of vitality. Analysis of the different samples of pollen shows that considerable variations occur in the amount of nitrogen present, but it will take some time before a sufficient number of samples, the history of which is known, can be obtained to settle the point definitely one way or the other."

IMPROVEMENT OF HONEY.—At the request of the Secretary, Mr. Davey, I have sent two samples of rather strong honies to Dr. Howell, Chemist for Agriculture for purposes of experiments for the reduction of colour and flavour.

[W. L. DAVEY, SECRETARY.]

STATISTICS.—In connection with the statistics this Association is collecting, I beg to place before our friends the following figures for season 1902 and 1903:—

Returns to hand	Colonies Spring Count
50	3,100
Honey Produced	Beeswax
470,000 lbs.	5,800 lbs.

Will our friends who have not returned their forms, kindly do so as we are only collecting these figures to know what position our Association occupies as a representative of wealth produced from tree tops, and for no other purpose.

I regret to draw the attention of your readers to the enclosed newspaper cutting announcing the sad death of Mr. Gideon Hollis, Beekeeper of Bacchus Marsh, Victoria. Mr. Hollis as a Beekeeper was manfully plodding along in beekeeping, having, I believe, received his full share in the adversity of the industry and not much of its prosperity, but he was not to be beaten, by foul brood, drought, etc., and was looking forward to a better season, so he wrote me before his death, and was hoping to meet us all at our next annual gathering, but alas he was timed for that long journey whence no traveller returns. Owing to several misfortunes he has unfortunately left his wife and young family almost unprovided for, and I am requested to appeal to the sympathetic beekeepers to send some token of sympathy to the sorrowing wife. I shall be pleased to receive and forward any donation, how-

ever small. Perhaps Mr. Tipper will act in the same capacity in New South Wales.

[Mr. Tipper will indeed be very pleased to receive and forward such.]

FATAL ACCIDENT.

On Friday morning of last week Mr. Gideon Hollis lost his life instantaneously by being overwhelmed in the falling of a brick wall which he was undermining, with the object of utilising the bricks to build a house for himself on the old Baptist church site, next the State school, in Lerderderg street, which he had purchased. The deceased had purchased an old church at Parwan, which was built by the Presbyterians some 30 years ago, and afterwards sold to the Education Department, which sold it recently to Mr. Gideon Hollis. He had taken down a good deal of the walls when the deplorable accident occurred. The proceeding was hazardous, no doubt, but probably he thought that as he had a clear get-away he could get clear when the wall showed signs of giving. However, such was not to be, as the evidence given by his mate shows. Some people think that a gust of wind was the cause of the calamity.

At a magisterial enquiry held by Mr. G. Dickie, J.P., the following evidence was given:—

Robert James M'Lellan: Am a carpenter; I lived with deceased, and was in his employment. We were engaged in taking down an old brick building at Parwan. About 11.30 a.m. deceased was removing the foundation, in order to let the wall tumble down. The wall suddenly fell, without warning. As it was falling, I heard deceased call out something; I could not say what it was. I was close to the wall at the time, and in a dangerous position. I ran away when the wall fell. I returned immediately, and saw deceased lying under the fallen wall. He was partly covered by the bricks. I removed the bricks off deceased. I think he was then quite dead. I procured assistance, and removed the body to deceased's residence at Bacchus Marsh. The occurrence was purely accidental.

Robert Henshall Sergeant: Am 14 years of age. About 11.30 a.m. to-day, in consequence of what my mother told me, I went to the old brick building in course of removal by the deceased. I there saw M'Lellan removing a part of the fallen wall. The deceased was underneath it, and quite dead. I went for assistance.

Verdict:—Accidentally killed by a brick wall falling upon him.

The deceased was 30 years of age. and was born at Gisborne. He had resided most of his life at Bacchus Marsh, where his parents, Mr. and Mrs. W. Hollis, carry on a bakery business. Deceased has left a widow, and a son aged 5 years, also a daughter aged one year. Mr. Hollis was a good workman, and a very ingenious one, in all that related to building. He was an enthusiastic member of the Salvation Army, also a Rechabite, and altogether a very useful member of the community.

At the funeral on Sunday the Rechabite service was read by the Rev. G. P. Rees, after which Ensign M'Camish, of the Salvation Army, gave a lengthy address. He also held a special service in the evening in the A.N.A. hall, and Captain Holman also assisted. Needless to say, very great sympathy is felt for the relatives.

HONEY MARKETS.

Queensland Country Life.—Honey 2d to 2¾d per lb.

Maitland Mercury.—Farmers' Produce Sales, honey, 2s 6d small tin.

S. M. Herald.—Choice, 3¼d to 3½d, good 2¾d, inferior to 2d to 2¼d for tins containing 60lb.

Adelaide Garden & Field.—Lovett and Co. (retail we take it), 4d to 3½d per lb.

Tamworth News.—Messrs. Searle and Davidson—Honey 2s 3d 7lb tin. Beeswax 8d lb.

Australasian, Melbourne.—Retail, 4d to 6d.

West Australian Beekeepers' Conference.

The Annual General Meeting and Conference of Beekeepers held in Perth on 29th July last, was fairly well attended, and the discussions on the various questions showed a generally good feeling to exist amongst those present, which, if maintained throughout the now present year, should tend to advance the industry.

The following are the names of the representative members present:—Mr. J. N. Shipton (Subiaco), President, in the chair; Messrs. Kline (Guildford); Captain Oats, Ankers, Dickie, Arnott (Perth); J. Poole, J, James, J. Street (Leederville); A. E. Frape, (Cottesloe Beach); F. J. B. Clifton (Australind); — Boehn, S. Cheney (Lion Mills); C. Clifton (Harvey); J. Sutton (Drakesbrook); G. Johnston (Albany); A. P. McCormick (Coolgardie); F. H. Layton (Donnybrook); Mr. and Mrs. Hilton (Victoria Park): and W. Potter (Claremont), Secretary.

The minutes of the previous meeting having been read and confirmed, the President asked permission to adjourn his reading of the report until the afternoon, in order that the morning should be devoted to the re-adjustment of the prize schedule for the Royal Agricultural Society's Meeting, to be held at Guildford, this year. The Beekeepers' Association having been in communication with the Secretary of the Royal Agricultural Society in this matter, with the result that they have, to some extent, been asked to supervise the Apiarian Section.

The result of the morning's work has been to increase the number of classes in the section from 12 to 16, and the prize money from £6 to between £12 and £13, without having interfered with the entrance fees.

This work having been completed, the President, with Mr. Sutton and the Secretary, were asked to meet Mr. Lowe, of the Royal Agricultural Society, and deliver to him the amended schedule, and, if necessary, to make any alterations in the same that may be deemed necessary.

The meeting was adjourned from 12 to 2.15 p.m.

After lunch the President reported having met Mr. Lowe, and that the schedule had been accepted with all amendments, and, also, that Mr. Lowe had requested this Association to nominate some competent person as judge to the Apiarian Section.

The President then read his address, as follows:—

(*Report of the President of the W.A. Beekeepers' Association.*)

LADIES AND GENTLEMEN,—In making a report of this year's work of the Association, I wish to state that the present officers were elected at the annual meeting held 4th November, 1903.

At the following meeting, held 2nd December, it was decided to hold meetings on the second Wednesday in each month, at which, with one exception, a quorum has been present, and interesting meetings held.

The principal motions carried have been in connection with—

(1) Amendment of the Foul Brood Act of 1899;
(2) Exhibiting at the Royal Agricultural Show;
(3) Honey export;
(4) Representation at the Producers' Conference; and
(5) Foundation of District Associations for the advancement of beekeeping.

(1) In reference to the Foul Brood Act, mainly by the efforts of this Association a Bill has been drafted for the amendment of the Contagious Diseases of Bees Act of 1899, which should give satisfaction to all persons interested in beekeeping.

(2) *Re Exhibitions.*—The matter of better accommodation at the new show grounds has been considered, and other societies in the Eastern States have been communicated with for advice in this direction. The Royal Agricultural Society seems disposed to give every assistance possible to carry out the suggestions of this Association.

(3) *Re Honey Export.*—The Agent General of this State has been communicated with, and it is not considered advisable, owing to smallness of local supply and low prices obtainable in England, to take further steps at present in this matter.

It is, however, to be hoped that beekeepers generally will endeavour to better grade their honies before placing on the market, as by this system only can a regular satisfactory price be obtained. You will be asked to consider, in the near future, the advisableness of establishing a central depot honey exchange for this purpose.

(4) *Re Representation at Producers' Conference.*—By the request of the Hon. the Director of Agriculture, this Association was invited to send a delegate. Mr. John Sutton was unanimously voted to fill the position. The main item brought forward by the delegate was the matter of food adulteration, when the motion proposed was as follows :—"That, in the opinion of this Conference, steps should be taken making it necessary that all persons responsible for the manufacture or production of food stuffs should have attached to package containing same, as a guarantee of quality, a label giving name of article contained therein, or when such contents are made up of two or more parts, the name of each part should be stated." This motion was discussed, and it was considered as being so far-reaching that it would require a special Act of Parliament to deal with it.

(5) *Re District Associations.*—This matter has been discussed in a broad-minded manner, with the result that it was considered advisable to summon this Conference to thoroughly deal with the question.

It is with great regret that the decease of Mr. Hipwell, one of the members of the Committee, has to be chronicled. Mr. Hipwell always took great interest in the meetings, and never missed one single meeting. His knowledge of beekeeping—and particularly his enthusiasm—will be a great loss to the Association. A letter of condolence has been sent to his relatives.

In concluding this report, I wish to thank the members of the W. A. Beekeepers' Association for their support and attendance at the monthly meetings. The thanks of the Association are especially due to the Secretary (Mr. W. Potter), and also to Mr. Jno. Sutton, for the special interest they have taken in sparing no inconvenience to further the welfare of the industry.

Wishing the Association a most successful year of work,—I have, etc.,

J. N. SHIPTON, President.

After the reading of the Address, the Secretary read communications that had been received from the various States in reply to a circular (that had been issued by the Department of Agriculture at the request of this Association) asking for information as to what class of buildings were most suitable for exhibition purposes. Many answers were received, some of which were accompanied with photographs. After the letters had been read, the following was proposed:—"That this Conference thanks the Departments of Agriculture and other bodies throughout the Australian States for their kindness in replying to the questions asked."—Carried.

The next item to come up for discussion was with regard to the formation of country branch associations, with the result that Captain. Oats moved—"That this Conference empowers the Secretary to forward circulars to persons in various districts, asking for every assistance in the formation of branch associations, and at the same time detailing to them the advantage of so doing."—Carried.

Mr. Kline suggested that country districts should form Associations and then apply to be affiliated with the Perth Association as the head governing body.

Mr. McCormick moved—"That country associations should be formed as branch associations, and should be charged an affiliation fee of 10s. 6d. per annum to the main or Perth body."—Carried.

Mr. Layton moved—"That the Secretary communicate with the secretaries of the various agricultural and other societies throughout the State, asking them to inform any of their members who should be interested in bee-keeping."—Carried.

Messrs. McCormick, Layton, Johnston, and others promised to give every assistance in forming branch associations in their respective districts.

Mr. Layton moved—"That the Department of Agriculture be asked to answer through the *Journal of Agriculture* any questions addressed to the Department on beekeeping."

Mr. Sutton, in reply, stated that the Department desired beekeepers to state their questions, when the answers or information required would be published in the next issue.

The question of how to dispose of honey and to obtain a fair and profitable price is one that requires a lot of thought, but it may yet be got over by the formation of a honey exchange. It was the question of how to successfully work a concern like this that called forth many suggestions. Mr. Cheney read a paper which dealt with the subject, showing how much such an institution was needed in Western Australia, and giving his per-

sonal experiences of the working of a similar institution in connection with the dried fruit business in the Mildura district of Victoria, which were certainly of a prosperous nature.

Mr. Layton moved—"That it is the desire of this Conference that the committee appointed shall take steps at the earliest opportunity to formulate a scheme with the object of establishing a honey exchange to regulate the wholesale and retail prices of honey."—Carried.

Mr. McCormick moved—"That the Government be asked to legislate in order to prevent vendors disposing of honey that has been adulterated, or any composition manufactured to resemble honey, as pure honey in any form."—Carried.

Mr. Layton asked—Would it be advisable and practicable for this Association to fix the minimum wholesale price of honey?

Mr. Sutton moved, in reply—"That this Association should from time to time fix the minimum wholesale and retail prices of honeys, according to various standards."—Carried.

Mr. Cheney moved—"That the Secretary write to all known bee-keepers in the State, setting forth the desire of the Association to fix a uniform price, asking them, Do they desire to fall in with the idea? If so, what would they suggest as a fair price?"—Carried.

Mr. McCormick moved—"That the Government be approached and asked for a grant of money to assist in carrying on the work during the present, and to extend the operations of this Association."—Carried.

Mr. Layton moved—"That all members possible meet the following morning and form a deputation to wait on the Minister of Lands and lay their requests before him."—Carried.

Mr. Layton moved—"That this Conference ask the Department of Agriculture to raise for distribution, for street and ornamental planting, trees that are good honey producers, and which blossom at a time when there is a natural dearth among the indigenous trees of this State, say, during the months of October, November, and December; also, to procure for distribution amongst bee-keepers seeds of various foreign honey plants."—Carried.

The election of officers which followed resulted as under:—President, Mr. Shipton (re-elected); Vice-Presidents: Capt. Oats, Messrs. Hilton, Kline, and Sutton; Secretary and Treasurer: W. Potter (re-elected); Committee: Messrs. Masterson and Taylor (re-elected), also, Messrs. Ankers, Dickie, Cheney, Ainsley, and Street; Auditors: Messrs. Sutton and Ankers (re-elected).

The first day's meeting concluded with a resolution (proposed by Mr. Sutton) that the date of the ordinary meeting be the third Wednesday in the month, instead of the second as hitherto.

Conference adjourned until Thursday, 10 a.m.

THURSDAY.

The adjourned meeting of bee-keepers was concluded this morning, when those members present were introduced by Capt. Oats, M.L.A., to the Minister of Lands, to whom a request was made for a grant of a sum of money, after explaining the object of the Association and its work. The Minister promised to give a grant of £10; also, a number of copies of the "Journal of Agriculture" for distribution amongst bee-keepers, and to watch the progress of our work. The deputation thanked the Minister and retired.

On resuming work at the meeting rooms, Mr. McCormick moved—"That this Conference desires to express its thanks and satisfaction to the Minister of Lands for the help that he has given to the bee-keeping fraternity by the appointment of an expert to supervise the industry."—Carried unanimously.

Mr. McCormick moved a vote of thanks to the President for the way in which the Conference had been conducted.—Carried unanimously.—From Journal Department of Western Australia.

HER ROYAL HIGHNESS QUEEN BEE.

[BY MR. H. BYRON MOORE.]

(Continued.)

Her Royal Highness Queen Bee, noticing this, said to her workers:

"See if we cannot improve these flowers. I will tell you how to do it. You will find some dusty stuff like flour, called pollen, on the little thread-like bits that stand up in the middle of the flower.

Now when the flower is kind enough to let you take the honey, just run your head up against this pollen, and take some of it on your hair to the next flower you go to and rub it on the little sticky part you find down in the centre of the flower called the stigma, which is on the top of the pistil. This pollen," said Her Majesty Queen Bee, "is the seed of color and perfume and all sorts of lovely qualities; and when you sow it this way in another flower it makes it more lovely, larger, better, brighter, and of more beautiful perfume. And as the flowers have no wings and cannot fly about as you do, and as they are so good as to grow honey for you, the least you can do is to help to make them more beautiful in return for the food they give you."

Well, the bees were surprised at the cleverness of the Queen, but they found it just as she had told them, and the flowers grew better and brighter and larger year by year.

Then the bees found they got better and more honey, and they had not to travel so far to get all the food they wanted.

This the Queen knew would happen, but she did not tell them, because she said it would make them selfish, and they would only do it for selfishness, and she wished them to do it out of kindness and gratitude for all the goodness of the flowers.

You have no idea what immense distances bees have to travel to make a hive of honey.

A bee can only carry as much as a tiny drop of honey at a time, and she may have to travel a long distance to get it, and, of course, the same distance back to her home.

Now there are about 500 drops to an ounce and 16 ounces to a pound. We may say there are 60 pounds of honey in the hive, and each bee has averaged two miles every trip. If you get a slate and pencil, and ask your big brother to work out this sum, you will find the bees have travelled nearly a million miles, or as far as 40 times round the earth to make that 60 pounds of honey, and yet some of you children grumble if you have to walk a few miles a week to go to school.

Some flowers are selfish, and are not kind to the bees, but the Queen is very clever, and either teaches them better or punishes them.

There is the evening primrose, that would not open till she thought the bees had gone to bed, and she had very little perfume, so the Queen said to her workers, "You get some scent pollen, and sow it on the evening primrose. I command you to sit up late and do it." So they did, and then the evening primrose had such a strong scent that she had to open earlier in the evening, and the bees were guided to it by the perfume, and they got the honey in spite of her selfish ways.

The common white Iris is very sweet and very good to the bees, and the Queen said to her workers, "Get all the pollen of the most lovely colors, and take it to the Iris, for she will make good use of it." So they first made her blue, then they looked up at the sky and saw a beautiful rainbow that God had put there, and they said, "How lovely! Let us go and paint the Iris like the rainbow," and then they brought pollen with splashes of mauve and yellow and orange and pink and red. And that is how the gorgeous Iris of Japan was made, and her Majesty Queen Bee said, "Well done! Well done! My bees are clever artists."

The Queen was so pleased with the way her bees had painted the Irises that she told them to treat the convolvulus and the peas in the same way. The blos-

som of the long, long ago pea was white like that of the one we eat, but the bees fetched color seed and scent seed, and took them to the white peas, and soon they came out all colors of the rainbow, and they smelt so pleasantly that they were called "sweet peas." They in return have grown a lot of honey for the bees, who love this flower very much.

Take the blossom of a sweet pea, and hold it towards you. Get a pencil, and put it between the petals that stand out in front like the prow of a boat, gently open them as the bee would by its weight resting on them, to get the honey. As you do this you will make the little thread like portions of the flower called filaments jump out and scatter some pollen from their stamens on the pencil. Now that is the way it sprinkles the pollen on the bee's head, while the bee is taking the honey. Then she goes to another blossom and leaves some of that pollen there.

Now I suppose you know the wild briar that grows in the hedges; how it has a little white flower tinged with pink. Some times it is all pink.

Then there is the strawberry blossom, white, and the blackberry, and the apple blossoms. These belong to what is called one order—that is, one kind of plant.

One day—this was in the long, long ago, that the memories of all the people you know put on end could not get within cooee of—a young bee, quite new to the business, was just beginning to fly about when she got on to a wild rose flower, and being, as I said, new to the business, she could not find where the honey was kept but the rose bent her blossom over a little and said to the young bee, "Come round to this side, and I will show you where I keep my honey." So the bee went where the rose told her, and she took home a lot of beautiful honey.

Well, they were talking this over at supper time, and the Queen heard of it, so she called her subjects together, and sent for the young bee and commanded her to tell all about the wild rose.

The young bee was a bit shy at first, but she told how good the wild rose had been to her.

Then Her Royal Highness sent for her Heralds—they looked very beautiful in their rich brown coats with bands of gold round them, and their brass trumpets—and she commanded them to blow a fanfare. That is when they all tootle together very loud. Then she said:

"Hear all my people! Henceforth and forever till the end of the world the Rose shall be the Queen of the Flowers, so get pollen of the most beautiful colors and the most lovely perfumes for the Rose and deck her with tints from the softest to the brightest and anoint her with perfumes that will make the fairies come down in the moonlight and kiss her. She shall be sought for to deck the persons and palaces of kings and queens, and she shall be beloved of all the world."

So away flew the workers, and the young bee got some beautiful color pollen and took it to the wild rose that had given her the honey and told her as a great secret the Queen's command, and how she was to be dressed in the most beautiful colours and perfumes till she was a treat to smell at. And the white wild rose blushed, and that was the first time she became pink.

And all the other bees took color pollen and perfume pollen. This was of course in the long ago, and the next year the roses scarcely knew each other. One said, "What a lovely color you have!" And another said, "What beautiful perfume you use!" And another said, "Where did you get that new dress?" So it went on year after year, and century after century, and they got bigger, and brighter, and sweeter, till you have the lovely roses you now see, all made from little wild roses by the bees, and because the little wild white rose was so civil.

The rose has been the Queen of Flowers for thousands and thousands of years. And no flower has been able to displace her.

As long ago as the Old Testament time the Prophet Isaiah, when he wanted to describe a beautiful land, said, "the wilderness shall blossom as a rose."

The ancients dedicated the rose to their fairest goddess, Venus. Nero spent at one feast, £30,000 on roses for decoration, Rome and Greece made wine, perfume and medicine from roses, and it is now the emblem of England, our dear old England, who has adopted for her crest the Queen of Flowers made by Her Royal Highness, Queen Bee.

Now one of the wild roses had been so changed that it became a wild apple. It wasn't much of an apple, for it was very sour, very small, and very bitter, but it was a little better than the red coloured seed that grows on the briar.

So it got very proud of itself and conceited, and thought it was no end of an apple, and it waggled itself about on the tree, and said to the wild rose, "What do you think of that for an apple?" and it was just too uppish for anything, so the sweet briar took no notice of the wild apple because it did not want a quarrel.

(*To be continued*).

AMONG THE BEES.

THE BABYHOOD OF THE BEE.

The present time seems opportune for a study of the young bee. So many thousands of eggs are being daily deposited in those palaces of art—the hexagonal cells—and so many thousands of young bees are every sunny hour essaying their new wings, that we can each and all enjoy the luxury of studying that fascinating feature of insect life, the development of the larva, and indeed the whole metamorphosis from egg to perfect insect. The queen has a marvellous power of egg production, and can lay from 2,000 to 3,000 eggs in twenty-four hours. At first the egg appears a tiny white or bluish-white speck, lying at an angle in the bottom of the cell, but the nurse bees constantly tend on it and change its position, on something like a definite plan, almost from the moment it is laid. Inside it the vital germ of the future bee lies, fed by the egg substance, until on the fourth day, as a rule, it breaks the chorion or covering and issues a living larva. Floating in a rich and abundant supply of chyle food, which it not only sucks in at the mouth but absorbs through the skin, the tiny grub very rapidly increases in bulk until it fills all the lower part of the cell, being curved up in a crescent or circular shape for a time. Gradually, however, it assumes a straight form. It casts its skin several times while in this larval stage, and several other wonderful changes takes place before the insect spins its marvellous cocoon and is hid from the prying eyes of man by the fine porous covering, a compound of wax and pollen, with which the bees seal over the mouth of the cell, generally on the ninth day from the laying of the egg. This delicate silken cocoon, in which the nymph wraps itself as in a shroud, completely envelops it. The materials are spun by the insect itself, the threads being produced from the fluid generated in a special set of glands, and after being spun these harden into very fine threads. In this chrysalis state the nymph lies inert, undergoing some marvellous metamorphoses, many of its wonderful organs gradually evolving until what at first appeared mere rudimentary specks, streaks, or lines show the distinct formation of eyes, wings, or legs. The internal organs also develop and become perfected, each organ going through wonderful transformations. Magical changes follow on each successive step, and the creature slowly but surely attains nearer and nearer the perfect imago, until on or about the sixteenth, twenty-first, or twenty-sixth day she issues from the cell a queen, worker, or drone. I have said that the future insect issues from the egg a living larva, but the germ of life had been there from the very beginning and before it even breaks the covering several parts have so wonderfully

developed as to show certain organs in distinct outline, or even rudimentary formation. One might wonder how the young nymph could live in the close prison of a sealed cell, presumably hermetrically sealed ; but by an admirable arrangement of the capping, an air-space is left even above the full honey cell, and in the case of the chrysalis the covering is not a solid layer, but composed of open and porous work, so that the young insect is enabled to have a full supply of air during the whole time of its marvellous transformation into an imago. In regard to the egg, perhaps the most remarkable point is the extraordinary fact that, as found in the ovaries of the queen bee, every egg is the same, and capable of becoming either worker, drone or queen. In passing the spermatheca, however, she has the power of deciding, by the withholding or evacuation of a spermatozoa to impregnate the egg, whether it becomes a drone or worker; and the bees have the further marvellous power of changing one of these worker-eggs into something resulting in a queen.

Even as a baby the just-emerged bee, after cleaning itself and having a sip of honey at one of the open cells, proceeds to act as a nurse bee by tending the egg and placing it as the glorious gift of instinct directs it is best for its development. No teaching or training is required, as the already perfect insect has no A B C of beekeeping to go through. At a very early stage it engages in the fine and delicate work of comb-building, and it takes its part in sealing the cells, maturing the nectar, redepositing the honey and pollen, acting as a manufacturer of royal jelly, and a feeder of the mother bee with the copious supplies of the sacred juice necessary to keep up her egg-laying powers.

On some fine, bright sunshiny day the baby bee takes a "frolic flight," playing itself in glad joyousness in front of the hive to accustom its wings to their new duties, and it is interesting to note them, their yet lighter and greyer bodies clearly marking them out, sporting themselves about in merry glee and gay abandon, while they are engaged in this pleasant pastime. A very few more days and they try their skill at loading up with pollen at some flowers near at hand. Gradually their excursions become more lengthened, until, in about ten days from their emerging from the egg, they embark on the serious and active duties of life, carrying them on henceforth with the utmost assiduity, having no thought for anything but what tends to the order, progress, and well-being of the community of which each bee forms a small and insignificent but wholly indispensable unit.—D. M. M., *Banff*, in *Beekeepers' Record*.

SPREADING BROOD.

The prime object of spreading brood is a rapidly increased brood nest, having in view the opening of the honey season, before which date a crowded hive is desired. Foundation should never in my opinion, be used for this purpose, as brood is wanted, not early or cheaply-built combs, and the two purposes must not be confused. Every comb so built in spring is built at the expense of the very life of the bees, for though, if absolutely necessary owing to shortage, combs may be built in this way, yet the heat necessary for their production is obtained at the expense of the consumption of valuable stores which should be used as brood food, whereas the combs can be produced more cheaply later in the year when the bees have "surplus heat" at their disposal. Too often the bees attack the foundation with obvious reluctance, the corners remaining in this state for long, with every incentive to damage or warp. Of course they may be worked out in this way later in the year, when honey is coming in, by such stocks as are too weak to store much surplus, but they would be better given to swarms, or to special stocks devoted to the purposes.

To obtain the best results with spreading brood, fully drawn combs free from

old poller should be given. This may save the disappointment of comb cut down, and drone comb built; but if frames are inserted in the centre of brood nest I would give preference to clean old combs, than to new ones. Queens appear to lay more readily in combs in which brood has already been reared, and I have had cases where a perfectly new comb on either side of the brood nest has seemed to confine its area until such time as the bees were forced to expand.

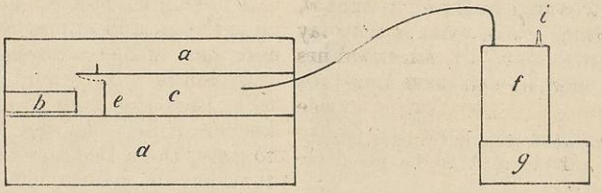
It is better that the combs should contain stores, as the uncapping and *traffic of the honey in the hive* has a highly stimulative effect, owing no doubt to the more frequent feeding of the queen. The operation must, however, depend upon the condition of the season and the hive. It cannot safely be practised before permanent warm weather has set in, judged by the minimum temperatures of the night. It is also apparent that a well-packed double-walled hive is more likely to obviate chill than one thin and poorly protected. I have sometimes seen brood spread to the extreme outside comb next to a thin single wall, with the inevitable result that bees on the point of hatching were ruthlessly and wantonly exchanged for a few eggs, the worst possible of such bargains with the bees! The age of the queen must also be considered. A young vigorous queen will probably rear all the brood advisable, while an old queen may be fairly hustled into doing better than her own best. Would it not be better to have all our "honey stocks" headed by just such fine young queens?

Where small patches of brood are naturally begun upon additional combs, it is perhaps inadvisable to insert a new one, but the brood-nest might be left alone, as the step once taken the bees will now extend rapidly, though artificial extension may, if still desired, be obtained by placing these combs in the middle.

Where the brood nest shows its outer combs, next to the pollen combs, well-filled with hatching brood and well covered with bees, a comb may be fairly inserted. The "spreading" must, however—and this is the main contention—*depend upon the quantity of bees and not of brood.* Where the bees are covering more combs than contain brood, extension may be safely practised, but where the brood-nest has already reached that common condition of early summer, the combs well-filled with sealed brood, but thinly covered with bees, *leave it alone.* In other words, the spreading of brood by the insertion of more combs may be fairly practised where the colony is making little or no progress for no apparent reason than a disinclination on the part of the bees or queen to extend. The operation is of value as providing combs free from pollen-clog and drone-cells in the best place, for while drone-comb is often occupied without any apparent justification of a desire to swarm on the part of a weak colony, drone rearing and swarming on the part of even strong colonies may be, to some extent, retarded by extension of the brood nest in proportion to the bees.

If the advance of the season has been *well gauged* in relation to the sequence of brood-spreading operations, supers may be put on the last of the "spread," which may be about ten days before the beginning of the honey-flow, as the bees thus have surplus room in advance of their requirements, and can become accustomed to an excluder *before* the necessity for it.

The indication of injudicious spreading of brood are very simple. The queen ceases to lay in the outer combs of the nest, and in bad cases the brood is largely chilled owing to the incapacity of the bees to keep it warm during cold nights; a colony in such a case often failing to recover from the setback until too late in the season, so that I would here re-emphasise the warning to the beginner that more harm than may at times be done by the indiscriminate use of our powers over the movable frame, and that in this as in many other bee matters, *one cannot be too careful.*—*Beekeepers' Record.*



THE MODEL WAX EXTRACTOR.

[SOLAR AND STEAM.]

A Tray for cappings, etc.

B Receptacle for melted wax.

C Steam tight compartment on which capping tray rests.

D Stand.

E Escape tap.

F Oil drum boiler.

G Fire.

H Pipe from boiler into steam apartment.

I Steam escape.

We purchased one of Mr. J. Anderson's solar extractors. Though good, it was not workable in winter for want of sun. Got a larger one, the body not of wood but of galvanised iron. Converted the space underneath tray into a steam tight compartment, giving two small holes for steam escape. Purchased some six feet of lead tubing, $\frac{3}{8}$inch. Inserted about two feet of it in the steam tight compartment, and connected the other end with the top of an oil drum. Filled the drum with water, put a steam escape, and put fire under. The sun above, and the steam under the the tray of wax or cappings making a perfect wax extractor. It is a combination of Mr. Penberthy's and Mr. Anderson's ideas

CORRESPONDENCE.

H.D., Mulgoa, Sept. 3.—Will you be good enough to inform me how long I should leave brood combs in the hive.

[Have heard of them being 25 years old. We have some over 10 years old.]

W.P., Rock Hill Farm, Rheola, Sept. 15.—The "Bee Bulletin" has been a great help to me as I am quite a novice. I have only 21 hives of bees. Last season was not a very good one with us. I took from my bees 42 60lb tins of honey from them. I am going to try some of your plans of increasing my bees, I hope I shall be successful. I think we will have a good season. My bees are working up pretty well for this time of the year.

A.J.R., Coleraine, Vic.—The "Australian Bee Bulletin" is a most valuable paper, we have had a wet, long, cold winter. I lost only two hives, the two strongest, I think they were lost this way: We had in June a week of this weather, half hour of very strong wind and sleety rain, then from one to two hours of nice sun. These two hives were so strong they went out as soon as the sun came out, and did not get home before next storm and were beat to the ground by hail and wind, and were

numbed with cold. I live in centre of town and bees must cross two chains of metal road to get home, and I could pick up dozens of my poor bees on the road. I have four hives in cases, and I want to put them in frame hives, what is the best time? I know how to save brood. What is the idea of salt and lime for bees?

[Now is a very good time to transfer bees to frame hives. Salt is said to be good for paralysis.]

G.B., Dawson, Sept. 2.—I receive the "Bulletin" regular, and am pleased with it. My bees got through the winter very well, and I never lost a hive out of 40. They look very well at present.

W.M.C., Stoke, Nelson, N.Z. Aug. 13.—I find the "Australian Bee Bulletin" is very useful and interesting, and could recommend any beekeeper to become a subscriber. My bees did very well last season and are wintering well so far, and I hope they will come out alright. The blue gum will soon be in bloom, which gives the bees a good start. Wishing you a prosperous season.

J.McF., Lyndhurst, Vic., Sept. 18.—We have had fine weather during the past month; and now it has got quite wintry again, and been raining steadily for the past twelve hours, and looks like continuing. Good prospects for farmers in Victoria. I suppose things are looking well in New South Wales also.

E.P., Narrang, Vic., Sept. 17.—Bees are breeding up fairly well for the kind of season we are having over here, which has been very cold and frosty.

G.H.V., Mossvale, Aug. 26.—I have gone out of the beekeeping for the present, but after a time I may go in for them again, if so I shall certainly subscribe to the "Australian Bee Bulletin" again, as I think it is 5s well spent when a man is keeping bees. I have subscribed 4 or 5 years, and I don't think I ever spent money more profitably on my bees than on the "Australian Bee Bulletin." Wishing you every success and with all other beekeeper friends, better times to come.

A.T.C., Mountain View, Vic., Sept. 4.—I have just started to take your valuable paper, and appreciate it greatly. In reference to Bee Licenses I wish to say a few words. It would be a splendid thing for the New South Wales Beekeepers if they can get the Government to grant them Bee Licenses, as I am sure that lots of money can be made out of them as out apairies. We here in Victoria can get an acre of a bee site on any crown lands. But one great fault about it is that anyone else can come and settle down beside you, and if he is a larger apiarist than yourself cut you out of yours. To illustrate this and show my meaning more fully, I will give you my experience. Some months ago I applied for a bee site on certain crown lands which I reckoned would carry about 70 hives. Being only a beginner myself and having only 15 hives, I thought that I would do all right and be able to build my hives up to that number in a short time, and was in fact rather pleased with myself at the prospect, when a very enterprising man who has been bee farming all his life, and who has 170 hives or thereabouts, and ought to have made his fortune long ago if he had any sense, steps in and got a site joining on to mine. Now what was the use of me going there, and is it at all fair that such things should be? There ought to be a law passed that no bee farmer can come within less than 3 miles at least of one another, and till that is passed bee sites won't be much good to anyone. So when the New South Wales Beeman get the right to take up bee sites, I hope that they will also bring that little item along with them and get it passed too. Re Forest Protection.—I'm a beeman myself. But fair play to every one, say, the sheep farmers included. If the beeman want the trees protected around their apairies, why don't they make it worth while for

the sheep farmers to leave the trees green or a portion of them at least. If a man can make £150 with bees off the land where a sheep farmer can only make £30, or if he rings the timber £10 more, as was stated a while back in the "Australian Bee Journal." I think it would pay the beeman to pay the £10 extra, and have the trees left green. I know I would willingly, and not rush round the Government and try and get it stopped like some of them are doing. Not at least till I saw the sheep farmer. But we must all live, and why not live as peaceably as possible, and make our business as profitable as possible for all of us, sheepman and beeman alike. If the trees are left green the bee farmers prosper and the other man goes under, so we can't altogether blame him for ringing the trees. My advice to sheep men who have plenty green timber is to sell their sheep and buy bees, they pay better.

F.W.P., Elsmore, Sept. 14.—It is many years since we had such a mild and wet winter, and of course any amount of grass, etc. The bees are building up at a great rate, after wintering very well considering their condition last autumn. Plenty of pollen and thin honey from ground flora is the right condition for breeding up quick, and if the weather continues wet, swarming will be very heavy this season. The prospect for a large crop is not too good, yellow box only to bloom and not many buds on that, which may drop off if the trees run to timber very fast, which they do sometimes.

[This state of things is very much as with us, but we think the beautiful rains we are having will develop the present buds well.]

J.B.K., Midland Junction, W.A., Sept. 3.—The seeming trouble with most small Beekeepers is the market. How to dispose of their honey? Most living at a distant from the population (i.e. Perth) find the auction marts are not the places to get prices, as most auctioneers look for per cent., and will accept say 10s per ton in three ton lots that sell at 14s single tins, less trouble, and so the producers suffer. We are endeavouring to form a Honey Exchange, and some good may come of it. The quality of West Australian honey is not graded, so the best extracted is ruled in public market by the lowest grade usually strained and strong flavour.

T.McD., Forbes, Sept. 5.—With reference to the dwindling we all find it is caused through the dry season, and we have saved a good many by feeding, which has cost us time and expense, and that is one reason why we do not send for queens I have had bees for ten years and have not sent for queens or do not trouble much about them. I sometimes swarm artifically, and think of doing so again about the end of this month; and thought to spend 20s to 30s on a few untested Italians from Queensland, but as I have not much cash to spare, and if it is possible for bees to do as well without getting queens, which the Beekeepers here, who have tried think, I would rather not get them, but I am undecided.

E.G., Manildra, Vic.—I like the "Australian Bee Bulletin" very well, and am a silent subscriber I fear. Although I have over 40 hives you have not been troubled with any correspondence from me. Still I read with interest the articles in your paper and have derived a lot of information from it Some time ago I read an account of a steam and lever wax extractor in the "Bulletin," and would like your opinion or advice, as I want a good cheap extractor, for either old combs or cappings. I have the solar, but it is too slow and requires a hot sun, which is not always convenient.

See page 137.

BEE STUDY & OBSERVATIONS.

(W. Abram, Beecroft,)

In the process of my remarks on Bee Study, I now intend to treat vitality relative to disease—subjection. This is

a more delicate subject than any other in as much as it is not usual for a bee-keeper to have his bees continuously effected with one and the same disease, therefore his study in that direction is more limited than in other matters. The disappearing trick, for instance, about which a good deal has been written, is not constantly present, though by no means a new thing; the trouble is that it appears so irregular, and that no remedy has been found to be absolutely affective. Writers have their ideas, but some favour this, others that. Some call for governmental investigation. Whether the latter's help will solve the problem has still to be seen. Generally the bee-keeper has neither the knowledge nor the means for scientistic investigation, whilst the scientist lacks the practical knowledge of bees, wherefore, the one has to rely on the other, with the not infrequent result that suppositions form the best part of their conclusions. I do not profess to be a scientist, therefore stand corrections from a scientistic standpoint, and I would have preferred to see expert results before giving my views, if I knew such were forthcoming. I am, however, too busy with my bees in summer to spare the time that such writing requires, thus my anticipation. I have had some experience of diseases and dwindling, but got over it without expert help, therefore my views may be worthy of notice.

Paralysis, dwindling, and the disappearing trick may all be classed as relative to one another, but paralysis is the more easily detected because the bees die in and near the hive, whereas in the other cases the bees die mostly away from home. Be this as it may, the question is: What is the cause and how to remedy it. The course is mostly an erratic one, now more, then less severe; thus the belief by some of having affected a cure. The best cure is a good honey flow with fine weather prevailing.

Some writers contend that the honey has some defection, and is the cause, others put it down to scarcity of pollen, and so on. I think it is neither. I have fed bees on honey from districts hundreds of miles away, and on sugar-syrup, golden syrup, etc, but in each case with the result that some pulled through while some dwindled away. And as for pollen—the bees gathered any amount of it at the time and had stores of it in the hives. Some hives had plenty of honey, others not—no difference, some dwindled, some not. I strengthened depleted hives with brood or bees or both from progressive hives,—it simply weakened the latter, and only prolonged the fall of the other. I interchanged queens, got strange bees, etc., and I found the same varying result. It became thus apparent to me that there are other factors at work.

At last after much time and thoughts I gave up worrying and concentrated my attention to those stocks that got on under prevailing conditions without my aid. I began to see a wider field, and to detect some errors of the past, and this led me to better results. The breeding and keeping of bees has much to do with it, but once a disease becomes established it is apt to affect even the strongest and robust vitality. As I keep book of every queen and hive it enables me to observe variations readily. Now I had noticed—I think I published it—that progeny from some queens possessed qualities for very early swarming, kept their hives well stocked with bees and gathered rather more than the average of stores. For bad seasons, then, those were the bees needed, so I began to breed those strains extensively—before I considered them rather objectionable – and I got a lot of robust stocks and replenished the depleted apiary. I have now adjusted my breeding in accordance with the dearly bought experience by combining all the best qualities as much as possible, with best results. Thus I incline to think that at least one of the factors of dwindling is weak vitality.

Unfavourable seasons, climatic and conditional, have great influence on bees, and diseases have more chance to attack

constitutional weak individuals This is observable in all things. Robust vitality withstands changes of aggressive elements much better than the weakling, therefore the latter is apt to be attacked first, and when they form a breeding ground, and disease prospers, then even the strongest may be overpowered and succumb quickly. During bad seasons most danger prevails, whereas favourable seasons are conducive to prosperity. That some stocks, as some bees also, are more able to resist attacks is evident. The "fittest survive." Is not this noticeable everywhere? Take mankind. The strong withstand changes from fine to cold, rain to warm, changes of food supply and clothing, where the delicate finds discomfort in anything that disagrees with his particular weakness. Assuming then, that the honey contained some particular defects as a bee-food, perhaps consequent upon unsuitable weather conditions, must it not be assumed also that it is not so bad as to be unfit for all? Do not some survive? If so, the remedy then is, have the latter. It would be easier, anyway, than to change conditions which make the food unsuitable for some, but not for all.

Once a disease is established, often long before It becomes known to the beekeeper, it may infect others, as I have had opportunities to observe. Thus my contentions are: Always observe your bees carefully. Never breed queens or drones from stocks showing weak tendencies. Do not interchange combs from affected hives to others. Get rid of the affected queen and replace her by one from a resisting strain. Let the bees build combs when possible, and do not prevent drone brood altogether.

Retrogression does appear now and then like after sunshine follows rain, but there must be something radically wrong where almost total loss takes place. If we cannot alter conditions, much can be done to check the bad effects thereof, but if the matter is absolutely beyond over control altogether, we must be content; we cannot change conditions beyond our control.

In regard to pollen it is a fact that bees can live for a time without any, so that scarcity of that is not a cause of the malady, as some think.

Another not immaterial question has often occurred to me, namely: How much extremes of climatic and atmospheric conditions have to do with diseases. We know bees can produce heat by consuming more honey, and they cool the hive by fanning. We also know bees require water. They gather it from grasses, leaves, and drink it from shallow waters. The larva food consists of about 70 per cent. of water, thus they need a lot at breeding time. Whilst requiring water, too much moisture may be as bad as too little, whereas a change from one extreme to the other may be worse than either. The construction of the hive plays a part in this, unless the beekeeper is able to modify effects. If the hive is so constructed that it admits the atmosphere, unhindered access to all parts of the hive, and the beekeeper does nothing to modify it, the bees are exposed to its full influences and effects, be such good or bad. Especially in early spring when the strength of the bees is the lowest, and renewed breeding commences, may this be of serious consequences. In a hive, roomy and airy, the bees choose the best position obtainable to commence brood-rearing, the honey is somewhat dense, they must get water, the conditions now cosy inside, are worse outside and not suitable for a flight, but an attempt has to be made—even at their peril. Bee after bee gets lost, the conditions in the hive become more critical, the weather is against them, everything is, the result – the disappearing trick! How different had the hive, their home, afforded them a cosy abode; they might have stood it; or if the weather had suited them better, all might have been well yet. The same applies should the honey be watery, the atmosphere moist and the hive damp. The

dampness first begins to settle on the extremes of the interior, gradually extending towards the cluster of bees, and they feel more discomforted the farther the dampness extends; they try to produce more heat, and they produce more moisture instead, which means more dampness, and extensive dampness favours disease, spoils the combs and makes the honey watery.

On the other hand if the bees occupy almost every available space, the hive provides access of fresh air, but no draught, then the bees have an easy task to suit themselves to any changes, and the moisture, produced by the contact of heat and cold, is just enough to supply their wants. The American hive is not adapted for observations of that kind. The Berlepsch hive is better suited for that purpose. I find, so long as no brood is reared the bees cluster close together on combs of empty cells just under and on some honey, which is kept warm by the heat from the cluster. When breeding begins the bees spread out, causing more heat to escape, which coming in contact with cold from outside, results in the production of more moisture. Is the space between the bees and the hive walls wide or roomy there is more moisture than if the bees occupy almost all the space. They generally do better if in the latter condition than in the former, especially in cold and damp weather; but cold alone is not objectionable to the bees - I have seen bees breeding in cold weather. Heat in summer has almost as much effect as cold in early spring with similar results.

The *Leader* says: A report from Dunkeld states that Mr. T. Bolton, of the Grampian Apiaries, has sold 100 hives of bees to Messrs. Chuck and Lundy for £200.

Mr. Wm. Carr, a well-know writer in the English *Beekeeper's Record*, and one of the first importers of Italian bees into England, died on April 30, in Staffordshire, England.

From the *Beekeepers Record* we learn the bees in Scotland were nearly four weeks later than usual in getting into full strength. Also that wasps were exceedingly numerous this season.

To a question about old combs, we have some good worker combs over ten years old. They do in the brood chamber apparently all right. We have known the bees to renew them. For extracted honey they are not satisfactory, the bees seemingly objecting to extend the cells, and work out the old tough wax.

Last February, all our local flows were ceasing, the white box had ceased in November, the yellow box about Christmas, maize and apple trees the end of January. Directly we saw, by the conduct of the bees, their inquisitiveness about the extracting, etc., the flow was ceasing, we stopped extracting. Result: There was sufficient left in to keep them in food and warmth all the winter, and some of the hives have as much as 40lb or 50lb of honey in now. This honey has done its winter work, and directly the next flow commences, can be extracted. No honey lost and no spring disappearing trick through starvation and cold.

Alfalfa must be cut just before blooming to get the best hay. Sanfoin is the reverse, it must be cut just at the closing of the blossoming. In grounds of medium fertility sainfoin is better than lucerne. For sainfoin the soil must contain a large proportion of lime, either natural or applied, and if not permeable, must be deeply subsoiled, as the sainfoin is a deep rooted plant.

In France foundation is often sold in rolls, the purchaser cutting it in lengths to suit.

A Frenchman, in introducing queens, puts the caged queen in the hive. Next day, he takes the cage (queen included) puts it in a cup of cold water, and then turns the wet queen loose. He says he never lost a queen this way.