

THE

N.Z. HONEYBEE

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News of General Interest

Congratulations.

The appointment of Mr. W. Dallas to the position of Director of the Horticulture Division of the Department of Agriculture, has given wide satisfaction to the beekeeping industry. Mr. Dallas has made many firm friends amongst beekeepers, and his organising capacity and sound, analytical ability have won him their confidence and esteem. We extend our congratulations to Mr. Dallas.

Farewell to Instructor

A very influential gathering of beekeepers representing nearly 9,000 colonies, met in Hamilton on October 6th, to farewell Mr. and Mrs. T. S. Winter. A most enjoyable complimentary luncheon and presentation was tendered to the guests of honour, and eulogistic speeches were made upon the work of Mr. Winter during his term of office as Instructor of the Waikato district. Beekeepers were present from as far as Tauranga, Waerenga, Matamata and Te Kawa.

Mr. Winter has been appointed Chief Honey Grader with headquarters at Auckland.

Miscellaneous

"I RATHER ENJOY reading the "Honeybee" although I do not now keep bees. Please receive subscription herewith."—J.B., Te Kuiti.

"I HOPE that the N.Z. Honeybee will be a complete success financially, and would like to help if it is necessary. Every success."—J.F., Timaru.

Manawatu Branch

The final meeting of the autumn season consisted of an interesting lantern lecture by Mr. H. F. Dodson (Apiary Instructor), who said that: Of the three types of bee to be found in the hive, the queen was easily the most valuable. A queen could lay up to 3000 or 4000 eggs per day—three times her own weight in 24 hours. The speaker outlined the best manner in which to destroy old queen bees, after which he traced the various stages of development of the bee from its birth to maturity.

An address was also given by Mr. R. S. Askew, a former English Departmental Apiarist, who related his experiences during the ravages of the Isle of Wight disease in England, and of work in Denmark, Holland and Italy.

Publications Reviewed

"First lessons in Beekeeping," by C. P. Dadant, is an excellent text book for beginners in beekeeping. It is very comprehensive, and is written in a manner that makes the manipulations of the hive readily intelligible to beginners. It contains sound instruction and reliable information, and is thoroughly up-to-date in the latest beekeeping technique and knowledge. This book is recommended to beekeepers. It costs one dollar (post paid) from the "American Bee Journal," Hamilton, Illinois, U.S.A.

"Frontier" is a new American journal written in a dynamic style, and containing many special articles of enlightening value. A section of the journal incorporates the bee journal, "Bees and Honey," and is interesting to beekeepers. The illustrations are excellent. The subscription is 2 dollars 50 cents post paid, from "Frontier"—Office, 40 N. Garfield Avenue, Alhambra, California.



The Prevention of Dry Granulation

By Allen Latham

SMOOTH HONEY

Though I live on the opposite side of the earth from New Zealand, it is possible that I may make a suggestion which will help solve the frosted-honey difficulty mentioned in your June issue of "N.Z. Honeybee."

I have been selling "honey butter," or finely-grained crystallized honey for nearly 30 years, rather just 30 years this year of 1938. In my efforts during those years to perfect my product, I gradually solved my difficulties, and to-day have a product which is practically free from frostiness and which will stand up for years. In fact, most people prefer my product after it has seasoned one year to that freshly prepared.

My method is much the same as that used in New Zealand, and also much the same as the Dyce method, but with one very essential difference. In the Dyce method, and I am inclined to think in the method used in New Zealand, the honey, after stirring in the starter and reducing the temperature to 14 or 15 degrees C. (the Dyce method calling for 57 F.), is immediately put into the final containers while it is still rather thin.

I use an entirely different method here, one involving more labour and time, but possibly with better results. A barrelful after a slight stirring to mix the starter is left to stand a few hours and again slightly stirred. It is then allowed to stand over night, and the next morning fully half an inch to an inch of the top is removed. Most of the air bubbles have come to the top and formed a scum. The top is removed till the remaining product shows a clean firm look. Again the contents of the barrel are slightly stirred, not enough to incorporate any air, but enough to make a better blend throughout the mass.

Usually, after 24 to 48 hours, the contents of the barrel are ready to put into the containers. It cannot be poured in, but must be dipped out by

the ladleful to fill each container. Yes, it takes a man practically all day to dip out the barrelful, and fill the containers properly. Of course, a big plant could use a filling machine, such as candy-makers use, but such an outfit is rather expensive for the individual beekeeper.

My product has a very high reputation, and I think that the removal of the air-bubbles is partly responsible.

The above article introduces to our readers a new and valuable idea in the packing of granulated honey. The writer, Allen Latham, is one of the most notable contributors to the bee literature of the United States of America.

It has been proved by Cawthron Institute, Nelson, that "frosting" in honey is caused by air bubbles. Mr. Latham removes the topmost layer of honey in the tank, and thus removes the air bubbles, the cause of the frosting. The retention of air bubbles in honey is proportionate to its specific gravity plus its temperature.

Many beekeepers use honey-pumps, which incorporate millions of minute air bubbles into the honey. To ensure the clearing of air bubbles and foreign matter, the honey is warmed by being run over water-jacketed, shallow troughs. The water is electrically heated.

Cold honey is very viscid and its tenacious retention of air-bubbles and particles of wax, pollen grains, etc., induces "frosting" and accelerates the incidence of fermentation. Warm honey permits the rising to the surface of the bubbles, etc.

Mr. Latham's plan of skimming off as much as one inch of the top layer of the honey, 24 hours after stirring in the starter is definitely sound, and greatly improves the quality of the

The beekeepers who market the highest-grade packed honey in New Zealand usually,

- (a) Warm the honey after extraction;
- (b) Let it stand for 48 hours or more;
- (c) Skim off the top coating of scum and bubbles;
- (d) Stir in starter;
- (e) Stir the honey twice at 12-hour intervals;
- (f) Pack in 60lb tins; ;
- (g) When granulated, grade the honey and choose "select" lines to be packed;
- (h) Warm the 60lb tins of selected honey till the honey softens, just sufficiently to run from the tin—the granulation not being melted out;
- (i) Stir the honey slightly, let stand 24 hours, and skim;
- (j) Pack direct into containers.

Honey, when it granulates originally, "sets" with a "texture," which varies with different honeys. The shapes of the crystals of dextrose in the honey vary, causing some honeys to "set" with a "tough" texture, and others with a soft texture. When the

honeys are selected for packing, those with the soft texture and "buttery" grain, are chosen. These honeys give a smooth, soft article that is easily spread at the table, and rarely show any sign of frosting.

The lines with a "tough" texture, due to the formation and "knitting" of minute "plate-like" crystals, have to be entirely melted out, and then re-granulated with a starter of soft texture (due to crystals of microscopic "needle" formation) that has a smooth, buttery grain. This produces a honey similar in granulation to that of the starter, and thus changes the texture.

When granulated honey is softened sufficiently to permit the crystals to become entirely separated, it rarely sets with a "knitting" of the crystals, thus remaining soft and easy to spread. "Frosting" does not affect honeys unless they "knit" or "set" firmly. Mr. Latham arrived by a short-cut at the same result, a short-cut that should prove valuable to the many beekeepers in the Dominion, who are not packing in a sufficiently large way to instal special packing equipment—Ed., N.Z. Honeybee).

Obituary

Mr. J. A. Campbell.

The beekeeping industry has suffered the loss of one of its best friends, one who has given long and helpful service, in the recent death of Mr. James A. Campbell, Director of the Horticultural Division of the Department of Agriculture, who collapsed and died on September 24, while attending a Masonic lodge gathering at Island Bay. He was aged 64.

Mr. Campbell was a native of Victoria, Australia. He arrived in New Zealand 41 years ago. Among his many achievements was the laying out of the grounds of the Christchurch Exhibition. He joined the department in 1908. Later he was appointed orchard instructor at Hamilton and then at Hastings. In 1915 he was appointed assistant director.

Mr. Campbell in 1919 paid an extended visit to the United States in the interests of his department and shortly after his return Mr. Kirk retired and Mr. Campbell was appointed director.

During Mr. Campbell's term of office

the fruit export trade of the Dominion has been created and has grown to main importance. In association with the late Mr. G. A. Green, Mr. Campbell assisted in the organization of the New Zealand Institute of Horticulture.

Always a keen bowler, Mr. Campbell had a long association with the Island Bay Bowling Club and had served as president. He was a member of the Wellington Rotary Club, a foundation member and pastmaster of the Island Bay Lodge of Freemasons. Mr. Campbell is survived by his wife, two daughters and one son, Mr. Roderick Campbell, who is on his return from a business trip to the United Kingdom.

Mr. Campbell's enthusiasm and broad outlook always made him a very welcome and outstanding figure at Conferences of beekeepers. His advice was sound and helpful, and his efforts to encourage honey production and build it into an important primary industry are reflected in the splendid organisation that caters for the needs of the beekeepers of the Dominion.

Food Value of the Dark honeys

The Sales Appeal.

The honey producers of the English-speaking world are forced, by consumer demand, to produce a honey of light colour, delicate flavour, heavy body, and (where granulated) of fine grain. Dark honeys or strong-flavoured honeys are most difficult to sell and their being forced on to unwilling consumers by reduced-price methods, merely creates a slowing-up of consumption and, in the end, adversely affects consistent consumer demand to the injury of the industry. This either causes a general reduction in prices, or the holding of excessive stocks of slow moving honey.

The education of the consumer as to the food value of the darker honeys is the natural way out of the difficulty. This is costly and slow. Meanwhile, the production of these unmarketable honeys is inadvisable and uneconomic, apart from the supplying of a definite local demand, or the creation of a market for any particular type of honey as a specialty—and this latter is costly.

Honey is a Whole Food.

In the "Bee Kingdom" is a report of an address by H. A. Schuette, given at Madison, U.S.A. "Light honeys usually bring better prices than dark ones," he stated. "The world tendency is towards light-coloured, refined foods. Foods, such as sugar and white flour, are "refined" by removing their most valuable constituents. Honey is sold in its whole natural state, and is unrefined, retaining its many valuable chemical constituents.

"Although those who are conversant with the chemistry of honey may have long suspected that, as between a deeply coloured product and one less so, the mineral content exceed that of the latter, yet experimental proof of this was wanting until recently. It is a question made important by the disclosures of our newer knowledge of nutrition, for it would follow from a factual demonstration supporting this

suspicion that a deeply coloured honey ought to be deemed superior to one of light colour from the standpoint of nutritional value if the mineral content of the former should prove to be higher. When such an analysis was made in our laboratory—twenty-two honeys were examined—such was actually found to be the case. It was surprising to find that the elements iron, copper and manganese predominated in the mineral matter of the dark honeys. For our purposes, a clover or alfalfa honey was designated as a light honey, whereas any honey which was amber in colour or darker was classified as dark.

Value of Iron.

Iron is important nutritionally because of its relation to the colouring matter of the blood. That colouring matter is called hemoglobin. It has a certain power of carrying the oxygen to the end that the quantity of this gas which the blood will carry is determined by the quantity of hemoglobin which it contains. We build that hemoglobin out of our food. It is a complex substance consisting of a protein (globin) and a pigment, or colouring matter. The latter, which is called hemin, is the active constituent which holds the iron in which the oxygen is carried. Hemoglobin has been described as a sort of handle which holds iron and presents it in turn to the air in such a manner as to make possible the absorption of oxygen. Oxygen is necessary in the functioning of our muscles, and the content of hemoglobin of the blood is an index of its ability to furnish this substance. It has been estimated that an adult needs about 15 milligrams (3/5000 oz.) of iron daily.

The Copper Content.

Copper in minute amounts has recently been found to be of the greatest importance in the nutrition of the higher animals in that it seems to unlock the therapeutic powers of

iron in restoring the hemoglobin content of the patients afflicted with anemia. The discovery of this fact was made about three years ago by Professor E. B. Hart of the University of Wisconsin under circumstances which were near-accidental. Professor Hart's experiments showed that iron, long accepted as beneficial in some cases of anemia, required the addition of copper to promote the action of the iron,

but that the "iron" which he had been using so effectively in the treatment of anemias contained traces of copper as an impurity. When this observation was traced to its logical conclusion it was actually found that the curative effect of the iron had indeed been promoted, or catalyzed, by the very small amounts of copper which it contained, one part of copper to sixty of iron.

(To be continued)

Honey Crop Prospects

Dry Spring Weather.

The weather has been very unsuitable for spring growth, there being almost a drought during September and October. The ground became very dry, and small cracks appeared. The pastures showed a luxuriant growth at the end of August, but this was checked by the dry, hot weather following.

The willow gave a big flow, especially in the South Island. The fruit bloom provided a generous source of nectar in September, and tea-tree secreted freely. The latter has been below normal, however. The barberry is blooming freely, and the cabbage tree is now in full flower.

The bees have bred up to great strength, and the continuous fine weather has been a factor in providing conditions inducing the building of queen cells weeks earlier than usual.

Honey Crop Prospects

The honey flow will, unless a prolonged spell of wet, cold weather is shortly experienced, begin two or three weeks earlier than usual and will be a short one. The pasture shows signs of an earlier maturity than is normally the case, and farmers are anxious regarding their hay crops and adequate green feed for their stock.

The dry conditions have discouraged

the growth of buttercup, and large areas that were a mass of bloom last year are, this spring, only sparsely sprinkled with the yellow flowers.

Beekeepers should, from now on, see that their colonies have ample room for the storage of nectar. During the height of the flow one colony can gather up to 20 lbs. weight of nectar in a day, and a case of 29 lbs. has been recorded. This means the use of nearly a whole super for storage, as nectar, comprising approximately 70 per cent. of water, requires more storage space per pound than does honey. The bees evaporate the water to about 18 per cent, thus reducing the bulk of the nectar to approximately half.

During the height of the flow the bees may require a super every three days or so, and if this is not given burr comb is built in the hive until all space is occupied. Then the bees "go slow," and pounds of honey are lost to the beekeeper.

Strong colonies should now be the aim of beekeepers. Numbers mean very little in respect to a crop; it is better to unite 20 weak colonies and get 10 good ones, for the former may secure 30 lbs. surplus each, whereas the latter will under the same conditions store 100 lbs. each—a total gain after uniting of 400 lbs. of honey.

The watchwords for November should be "Strength and Room."

Work for the Month

By J. Unsworth.

Swarm Control

By the time these monthly notes appear it will be around the latter part of October, and special care must be taken to prevent colonies from becoming overcrowded, by giving extra room to colonies as occasions warrant.

Young queens are of great importance in swarm control. The beginner with say half a dozen colonies should send to a queen-breeder for four untested queens.

Each colony should be examined, weather permitting, once a week, from now on till say mid-January, which is approximately the end of the main honey-flow from the white clover—each hive needs individual treatment; treatment that suits one hive does not always suit another.

During the latter part of October bees should be capping honey from fruit bloom, barberry and hawthorn hedges, also broom. However, should unsettled weather prevail at this period, a careful watch must be kept on the amount of capped honey in the hives.

Colonies that are in two full-depth Langstroth hive bodies and are becoming crowded should have every other frame removed in the top storey, and empty combs, or frames, potted with full sheets of foundation, inserted in the vacant spaces. The frames removed should be placed in another full-depth super, the brood being kept to the centre and an empty comb or frame filled with a full sheet of foundation spaced in between the frames of honey. Place this super on top, which makes the colony three storeys high. Give weekly attention. Notes on the working of the colonies till the end of the main honey flow from the white clover in, say, mid-January, will be given in following monthly instructions.

Swarming is usually the greatest problem the beekeeper has to contend with at this period of the year, at least, until the beginning of the main honey flow from the white clover, which commences about the end of the first week in December. It is nature's method of spreading the species over the surface of the earth.

If one is to get the greatest amount of honey possible from one's bees, swarming must be kept down to a minimum. While it is not always possible to control it, much can be done to check it.

In examining a colony, and on finding queen cells capped, it is best to artificially swarm the bees, by re-

moving all frames of brood from the colony, and giving them to weaker colonies, so as to strengthen them. If queen cells are not capped, destroy all cells and see that the bees have extra room and ventilation, usually at the next weekly examination. If cells are then again in evidence one must artificially swarm the bees. Once the bees have definitely made up their minds to swarm; that is, are persistent, if not allowed to swarm naturally or if not artificially swarmed they either swarm out, or destroy their queen.

(Note: If the beginner is unacquainted with foul brood it is not wise to spread brood among the apiary—but to allow the bees to swarm naturally.)

Immediately a swarm has issued from a colony, take the colony off its stand, and place in another part of the apiary. Then place a hive prepared with full sheets of foundation in its place. As soon as the swarm has settled shake the swarm into a box, and dump the bees in front of the prepared hive on the old stand. The swarm will readily enter, being given a start by the returning laden field bees. One must now go to the hive the swarm has emerged from, and remove all queen cells, except the longest and best looking one. In a few days' time a queen will have emerged. This method effectively prevents after-swarms from issuing, which are most undesirable in the hands of a beginner, sometimes merely amounting to a mere handful or so of bees. A beginner wants nothing but strong colonies.

A swarm should be hived immediately it has clustered, more especially one that issues in the morning. While, in some instances, swarms have been known to cluster for days, it is too risky to leave them as they are liable to decamp at any time. If sprayed with water every half-hour until four in the afternoon they will stay.

Swarms on the wing can usually be made to settle by spraying them with water.

If the swarm cannot be taken before sundown, it should be protected from the sun's rays with a sheet or similar covering. A good plan when hiving, a swarm is to place an empty super underneath and leave it there for four days. This keeps the swarm cooler, and greatly minimises the risk of the swarm clearing out, which they sometimes do if the weather is hot—some sort of shade board is also a great help.

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