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Beekeeping in Tasmania.



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DEPARTMENT OF AGRICULTURE, TASMANIA, 1921.

# Beekeeping in Tasmania

By G. BINGHAM.

THERE is probably no other branch of rural industry which, if given a fair location and proper attention, that will give as good a return for the time and capital employed as beekeeping.

In Tasmania one seldom hears of any very heavy returns, but there are few seasons when a moderate return may not be looked upon as certain. In some of the other States, notably in Victoria, one hears of very heavy crops of honey being obtained now and then, but along with such heavy returns comes years of a dearth of honey and pollen, so that, given a series of years, the average is not a great deal better than may be obtained in Tasmania. There is no room to doubt that beekeeping is still in its infancy. There are, however, a limited number of specialist beekeepers working with the most modern appliances, and their return for a number of years will show the possibilities of development of the industry. In Tasmania generally the beekeeper depends chiefly on ground flora as the source of the nectar secretion, and probably 80 per cent. of the honey produced comes from this source, as against 90 per cent. from the eucalypts in Victoria.

In some districts there is a fair amount of honey obtained from the eucalypts along with the ground flora, and where this is the case an observant and active man, who is not afraid to put in long hours during the active working months, will be amply rewarded.

One of the first questions usually asked by persons becoming interested in bee culture is: How much honey will each hive produce in a season? This is a very difficult one to answer, as there are several factors in determining this. Three main ones might be mentioned. First, the flora and climatic conditions of the locality where the bees are kept. The second (and some think this should be put first) is the ability and experience of the beekeeper; and third, the kind of bees kept. Under fair conditions, and given good management, a return of 20s. to 25s. per hive for a number of years should be considered a fairly good average. Taking the above as a fair general average, it must not be assumed that a man may increase his income indefinitely by simply increasing the number of his hives. The best returns will be obtained by limiting the number kept to what a given district will carry without over-stocking, and the owner can personally look after.

In countries like Tasmania, where there is a large amount of swarming, it might be safe to say that from 100 to 150 colonies would be as much as the average man

could manage profitably without assistance. In giving figures of returns from bee-keeping, care should be taken that the sources of information are reliable, or a false estimate may easily be made. Two examples of what has been done are here given, as an indication of what is possible. Mr. ——— keeps a number of hives as a side-line to farming, and during the last five years has averaged rather more than the amount stated above. He would probably have done much better than this if he could have had a little assistance at the right time, but is well satisfied so far. Mr. ———, during the last six to eight years, has obtained from £90 to £220, an average of about £150 per annum, working the bees along with another business, and values his apiary, with plant to work same, now at close to £500; running from a little under 100 colonies eight years ago to 180 colonies the present season. Referring to the almost certainty of reasonable returns, the writer has kept bees in the modern style and with modern methods for 35 years, and during that time has only once experienced a failure to obtain a payable return, and against that could be placed five or six seasons of really good returns.

Beekeeping, if adopted as a calling by one having an aptitude and real love of it, combined with good business methods, is a reasonably profitable one, and becomes a very fascinating occupation. If carried on in connection with some other form of rural industry, such as fruitgrowing, poultry farming, &c., it is a valuable side issue, and even if carried on as a hobby it is highly interesting.

Bee culture is, above all else, a healthy outdoor occupation, and not of an especially laborious kind, to which many might turn with whom an indoor occupation does not agree, or who do not possess the physical strength to engage in a more laborious occupation.

Beekeeping has an advantage over most other rural occupations, in that there are several months of the year in which practically there is nothing to be done, and the beekeeper can turn his attention to other branches of industry entirely. For the purposes of becoming conversant with the habits of bees, to get some practice in handling, and confidence, beekeeping may be commenced almost anywhere, but when taken up as a business a suitable site should, if possible, be secured. In selecting a site consideration should be given to at least two main factors; namely, the amount and variety of honey-producing flora within a radius of from 2 to 3 miles of the site chosen for the apiary.

The permanence of the flora is, however, the most important consideration, and, with most other industries, water is an important item, as bees, like all forms of animal life, require a constant supply of water; and it would probably surprise many people the quantity 50 to 100 colonies of bees can dispose of.

#### SITE OF APIARY.

Though hives can be placed almost anywhere (even on the roofs of buildings in cities), it is best to have them on the ground—an even, gently-sloping surface of gravelly or sandy soil for preference—sheltered if possible from the cold windy side by artificial or natural means, and sloping to the east or north. Details of this nature must be left somewhat to circumstances.

If a honey house is built on purpose for the apiary, it is best put at the lower end of the apiary, as a better view of the yard can be obtained, and the carrying of heavy supers of combs would be down-hill. It is not advisable to place the hives right under evergreen trees, such as pines or eucalypts. Colonies in permanently shaded hives do not thrive well, but if convenient they could with advantage be placed under deciduous trees. They would then have shade in summer, and have the benefits of sunshine in winter.

When laying out the apiary, if the lay of the ground permits, the group system would be better than single rows, as in groups of three or four they can be placed

with the entrances in different directions, and more hives can be placed on the same amount of ground than in single rows, also the groups can be placed some distance from each other. It is advisable not to place the hives facing the south.

### HANDLING BEES.

The sting of the bee is an important factor in preventing the over-production of honey, as there are so many persons who have an unreasonable fear of getting stung. Still there are few people to whom the sting of the bee gives more discomfort than just the sharp pain at the moment. The pain and any swelling usually becomes less and less after a little while, and the seasoned beekeeper usually takes little notice of the sting, except to remove same. To reduce the effect of a sting to a minimum it should be removed as quickly as possible by scraping it off the skin with the finger-nail, or, if both hands are engaged, rubbing it off against the clothing.

A number of remedies can be suggested to neutralise the effects of a sting. The blue-bag is quite a popular one. I am not quite sure that *yellow or green* would not do as well. Ammonia is certainly more effective, but is more likely to irritate the bees and cause more stings. Applying a saturated solution of washing soda is the writer's usual remedy. For the average person the best thing is to remove the sting as quickly as possible, and think no more about it.

### HOW TO MAKE A START.

In beekeeping this depends a good deal upon whether the beginner is taking up bee culture as a business or as a side issue to some other occupation. If it is intended to adopt it as a chief calling, a good plan would be, if at all possible, for the prospective beekeeper to go as a working pupil to an established and up-to-date apiarist for at least one season, even if a premium had to be paid for that season, as the experience gained would be less costly in all probability than the experience gained by failure. When the above is not practicable, then a start could be made with two or three hives, and as experience was gained by practice, also taking advantage of the knowledge gained by reading, and, where possible, visits to the apiaries of practical men, the number of hives can be quickly increased to what the circumstances or the ability of the beekeeper warrant. Right here I would say every opportunity should be seized to personally consult an apiarist of some standing. Much may be learned in this way, there being a kind of freemasonry among beekeepers, and if asked for, most of them will willingly give a novice the benefit of any knowledge he possesses.

Everybody handling bees requires two things to start with, viz.: A smoker and a bee-veil. A good black-net veil will cost about 3s. 6d. to 4s. A smoker, according to whether made of brass or tin, varies from about 6s. 6d. to 15s. Prices for all kinds of apiarist's requirements have increased very much in the last three or four years. A rather cheaper veil than the above can be obtained of a white net with a black face piece; the all-black is the best. There are two kinds of smokers—the straight and the bent nozzle. The bent nozzle is to be strongly recommended, as the burning fuel is not likely to fall out when the smoker is directed on to the frames in a downward direction. Dry decayed wood or bark makes the best fuel, as it causes a good volume of cool smoke and does not foul the smoker with tar or soot to such a degree as old sacking or rags do; though, excepting this, old chaff or other bags make good fuel, but they must be decayed enough to tear up readily, and be quite dry.

There are two or three ways of making a start—(1) full colonies, (2) swarms, (3) nuclei.

(1) *Full Colonies*, that is, hives with finished combs and brood and bees to cover them, is the best way to start, if such can be obtained, and mostly they can if a little trouble is taken and inquiries made. A full hive, containing, say, eight frames, with bees and laying queen and a good supply of honey, ought to be purchasable at about 25s. to 30s. per hive for black or hybrid bees, to about 40s. or a little more for Italians with a tested queen. A beginner should be careful as to buying any very cheap lots, as they often are in a diseased or neglected condition; these kinds of colonies are for sale cheap, and it is mostly the neglected hives that are likely to be infected with disease or have very poor combs.

(2) *Natural Swarms*.—Where starting with natural swarms and new, clean hives, the risk of introducing disease is avoided. Swarms can sometimes be obtained from about the middle of October to the middle of January, the price varying from 5s. to 10s. per swarm, according to weight of bees; 2s. 6d. per pound is not too much to pay for swarms. If the swarms are procured from a distance, the boxes in which they are sent should be nearly the size of a kerosene case, with about one-third of each side cut out and covered with wire cloth, and securely fastened so that the bees cannot get out. Bees will travel a fair distance in boxes of this character. Hives and frame should be ready beforehand. When the swarms arrive they should be placed in a cool spot until the evening. About sundown a bag or cloth can be spread in front of the hive, and the bees dumped in front, where they will usually at once commence running into the hive. If, however, they cluster outside without entering, some should be brushed off as near to the hive entrance as possible with a small wing or large feather, and a little smoke used on them will generally start them running in. If the swarms are emptied out of the boxes in which they arrive early in the day, they may cluster in some very awkward place, or even rise up, or abscond altogether. For this reason the evening is best, and they will usually be quite settled down to housekeeping by morning. If comb-foundation be used for the newly-hived swarm, full combs not being available, the frames should have full-sized sheets of foundation in them, as much drone comb will likely be built if half-sheets or strips of foundations are used. Full sheets are much the cheapest in the end. To ensure combs being built fairly in the frames the hives must be placed quite level from side to side, but may have a little dip to the entrance, so that any water that may drift in would readily find its way out again. When the combs are almost built out and are being filled with eggs, brood, and honey, a second super or storey must be put on, fitted out with combs (if on hand), or full sheets of foundation, and to induce the bees to enter the top storey one comb from the bottom storey should be lifted up into the top one, the empty space below being filled with the extra one from the top. The super may be of the same depth as the lower storey, or it may be a shallow one. In case of a shallow one being used, there is not as a rule much trouble in getting the bees, if the colony is fairly strong, to ascend to the new addition. If further room is needed, a second super can be, and should be, placed on when the first one is being fairly well occupied by the bees, a good plan being to put the second one in between the hive body and the first super put on, leaving the first one still in the top position. If it is not the intention of the beekeeper to allow the queen to take possession of the supers, a queen-excluding honey board should be placed on the top of the brood chamber when the supers are put on.

(3) *Nuclei*.—The *beginner* would not perhaps get on well in building up colonies from nuclei, though it is often done, but requires some little knowledge of what is required to ensure success in this way, and either of the first-named plans would be preferable until a little practice has been had in handling. Beekeeping may be started with nuclei as stated above, and for the beginners' information perhaps a little might here be said of that method. A nucleus is a small colony of bees, with a queen, and two or three frames of comb with brood and some honey as food. When the purchaser of these small nuclei receive them, the combs, bees, brood and all,

should be transferred to a full-sized hive, and the hive filled up with full combs if on hand, full sheets of foundation, or even starters of comb-foundation. Full sheets are best if full combs are not available. These nuclei may often be purchased at a much smaller price than full colonies, and if obtained early in the season and under favourable conditions, they may be built up to full colony strength and have the advantage that usually no swarming will trouble the owner that season. The first cost of hives, comb-foundation, &c., will often seem high to a beginner, but it should be remembered that if properly looked after both hives and combs will last many years, and it would be wisdom for any beginner to start with a standard make of hive and good combs. Some may think they can save money by making their own hives, but when the cost of timber and time taken in the making, and the fact that not many can make up such materials as exact as is necessary, is realised, it will be found that machine-made hives are much the best. Whatever style of hive is used, whether home-made or of standard make, it is strongly recommended to have the frames for combs of one size. Hoffman or any full-depth frame should always be wired, as without wires new combs are apt to break out in handling, or melt down in very hot weather, especially so if thin material is used in making up the hive. Shallow frames in supers need not be wired. Bees may be transferred from box hives to frame hives. A full description of the method, though rather lengthy for an article of this nature, can be given, as also how to induce bees to transfer themselves.

#### SPRING MANAGEMENT OF BEES.

During the early part of September, in most districts, all hives should be examined for the purpose of ascertaining if each one has sufficient food, a laying queen, and bees enough to work up to a full colony later on. This examination should take place only on fine mild days, otherwise harm may be done to weak stocks by letting the warmth of the hive escape, and causing the bees to fly and become chilled. The smoker should be in good working order, and a whiff or two of smoke blown in at the entrance. Remove the cover of the hive at one end and blow a few puffs of smoke over the tops of the frames. If a mat is used between the top of frames and the cover the hives may be opened with less disturbance, less smoke is needed, and in consequence the queen may be, and mostly is, much easier to find. The first consideration at this time is the amount of stores on hand. No hard and fast rule as to the amount or weight of honey required to maintain and develop the colony can be given. The quantity depends on the number of bees in the hive, the length of time which will usually elapse before a new supply of honey may reasonably be expected, and the weather conditions prevailing normally during the five or six weeks following. There should, however, not be less than 6 or 8 lb. of honey at this time (say, about two fairly well filled combs of full size) as the consumption of stores greatly increases as the spring advances and brood-rearing develops. Any shortage of food should be made good by feeding, either with combs of honey, free from disease, held over for that purpose, or with sugar syrup. If feeding is found necessary, and sugar syrup is to be fed and no suitable feeders are on hand, a good idea is to use empty combs.

These may be filled by placing the comb flat in a milk-dish or other suitable vessel, and pouring the syrup into the cells from a height of about 15 inches. To get a fine stream of liquid a large teapot or a jug with a pointed spout is a good thing to use. When the comb has been filled on one side, turn it over and fill the other side in the same way. The combs should be suspended over the dish for a little while to allow the surplus syrup to drain off. If this is not done the syrup dropping about or on the floor of the hive may attract robbers.

Feeding in this way is always best carried out in the evening, as any feed that may drop into the hive is usually taken care of before morning. To make the syrup

for bee food in spring, take one and a half parts of water to one of sugar. Pouring the sugar slowly into the water and stirring it till all is dissolved. Hot water is best, but it must be allowed to cool before feeding to the bees. For winter use, equal parts of water and sugar. Every hive should have a fertile queen and enough bees to fairly well cover at least two or three combs. If more than this all the better. If any hives are found queenless at this time, they should be marked for a further examination when all the colonies have been overhauled. Where a number of stocks are kept there are generally at this period of the year some which may be weak in bees, though they may have a fertile queen. These queens may often be used to replace unfertile ones in hives that contain more bees. To transfer the queen it is first of all necessary to find and remove the one which is to be replaced. The following day, towards evening for preference, the small stock with the fertile queen is placed alongside. Both lots are smoked moderately, and the combs with brood and bees from both put into one hive alternately, so that each comb from one is between two from the other hive.

The outside combs of both are put into the other hive body and then placed on top of the first, the bees brushed off the combs, and the latter and the hive body removed. If uniting is done later in the season the second body and combs may be left on as a super. Another method of uniting which the writer has practised for a long time, and with much success, is as follows:—Remove the cover of one hive and cover the frames with a sheet of paper; then place the other body, bees, frames and all, on top. This should be done at night, when the bees have ceased flying for the day. The top colony will then be confined in their brood chamber, and will commence to gnaw the paper away; and in 90 or more cases in a hundred, by the time this has been done the bees will agree without fighting. If there is any preference as to the queens, kill the one not desired before uniting, otherwise leave them alone, and the bees will settle the matter of queens themselves.

#### SWARMING.

This is a natural impulse with bees and the means of multiplying the species. In Tasmania swarming occurs from October to about the middle of January, the middle of November to end of December being the principal swarming period in most districts. Swarms will occur in some years even earlier and later than the times given above. The principal inducements for bees to swarm are generally—(1) crowded conditions of the bees, (2) the presence of large numbers of drones, (3) an old or failing queen. Swarming time is usually an exciting time both for the beekeeper and the bees. Swarms will vary in size, according to the time of the year, from say 3 lb. to as much as 8 or 10 lb. If the beekeeper is at all anxious as to the time when he expects swarms, he will need to examine his hives now and then after the spring has fairly opened, and as the population of the hive increases and honey and pollen commence to come in freely, the bees will prepare for swarming by commencing to build queen cells. These are easily seen, as they are very much larger than either drone or worker cells. The building of these cells is an indication that the bees are thinking of swarming, and this they do usually as soon as the first royal cells are completed, but not always so, as weather conditions may induce them to hold off for a day or two. If too much increase is not desired, swarming may be controlled somewhat by cutting out the queen cells every six or eight days, and giving plenty of room. The bees should never feel that they are overcrowded if honey production is the chief object. If increase of swarms is desired, too much extra room should not be given, thus crowding the bees, and, as it were, compelling them to swarm. When swarming the new colony will in most cases circle around for a short time and then settle on any small bush or limb of a tree and in a compact mass. As soon as they cluster they should be

shaken into a handy box, and as soon as most of the bees have settled down nicely, carry the box away and place it on the stand it is intended they shall occupy. In the evening they should be shaken into the hive they are to occupy, and mostly by morning they have fairly started housekeeping. If there should be a dearth of honey at this time the new swarm should be fed until same comes in, and if the weather is very hot it is well to shade the new colony for a day or two, especially if it is put on all wax foundation.

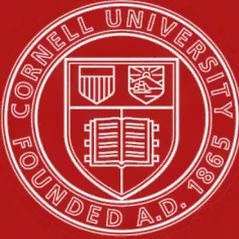
#### HONEY AND THE PROPER TIME TO START EXTRACTING.

A fair indication of the right time to start extracting will be when the combs to be operated on are at least half to two-thirds sealed over, as it is not wise to extract too much unsealed honey. This might afterwards ferment and thus be spoilt. To get the very best quality it should be well ripened in the hive, and if sealed all over all the better. Wax is a valuable article, and should be taken care of. The best wax is obtained from the cappings taken off when extracting, and this should be attended to as quickly as possible. Where a good cappings melter or reducer is used there is never a great amount of cappings lying about, as they are treated as the extracting goes on from day to day. Any broken or old combs should be melted up and put through some mode of treatment by pressure to obtain the maximum of wax. This and any refuse from the hives should be attended to as often as it accumulates, and not left lying about for any length of time, as the wax moth will soon find it and in time destroy same. It should be mentioned here that any refuse (usually called slum gum) from a hive should be either burned or buried, the former for preference, and nothing left lying about for bees to get at, as this often induces robbing, and is also liable to spread disease if there is any present. Bees, like all other forms of animal and insect life, are subject to certain diseases, and the beginner should make a study of these to be able to diagnose them at the commencement, and apply suitable treatment as promptly as possible. Foul brood is one of the worst enemies the beekeeper has to contend with, as it attacks the larvæ in the cells, and any treatment that would cure the disease would kill the bees. For the comfort of the prospective beekeeper, however, it may be said that foul brood may be eliminated, even if not cured, and it should always be taken in hand as soon as possible, if conditions are favourable for treatment when discovered, but it must not be played with. It, of course, means some work and great care in dealing with it, owing to its infectious nature. Dysentery: this is often caused by unsuitable food or long confinement to the hives through bad weather. A spell of fine weather will usually put this right. Paralysis: this is a disease more especially of hot climates, and is not very much to be feared in Tasmania.

#### IMPLEMENTS NEEDED.

As most persons thinking of engaging in bee culture will require to know as nearly as possible what special implements are required, it will be well to enumerate the principal ones, with probable cost of same. As mentioned before, a smoker and veil are needed, costing from 6s. 6d. to 15s., according to make; 3s. to 4s. 6d. for a good veil; a hive tool, costing about 2s. 6d.; an uncapping knife, or, better, two at 7s. 6d. each. An extractor: this machine is made in various sizes, from the 2-frame "Novice" to a 6 or 8 frame machine. A suitable sized one for an apiary of up to 100 colonies, or even a little more, would be a 2-framed one with 12-inch baskets. This would be suitable for the ordinary full-depth comb, one in each basket, or two combs in each basket of the "Ideal" size. A 2-frame 12-inch basket machine should be purchased for £7 to £8, with a little less for the 10-inch basket size; an uncapping box to hold the cappings as they are sliced off the combs. This need not be an expensive affair. The writer recom-

mends either a capping melter, or, if the beekeeper is intending to have anything over 40 to 50 colonies, a cappings reducer. This machine would cost at the present time about £10 10s. A cappings melter would only be about 30s. to 35s. A press for obtaining the wax out of old combs can be very cheaply made, but is an essential article. A description of same can be given. A machine for making foundation is a very useful article, and almost a necessity if more than 50 colonies are kept. Under that amount it would be better for the beekeeper to buy the foundation necessary. Incidentally it might be mentioned that foundation mills at the present time are at a prohibitive price, but sometimes a second-hand one may be obtained at a reasonable figure. A bee-proof room for an extracting room and for storage of surplus combs, honey, &c., is absolutely necessary, as, although while a good honey flow is on, extracting may be carried on with open doors and window; still, some work has often to be done when a dearth of honey occurs. Then it is imperative that the bees be entirely excluded from where operations are being carried on.



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