HB's Guide to . . .

BACKYARD BEEKEEPING

Here's an outdoor hobby that absorbs the interest of hundreds of enthusiasts throughout the country – and would probably attract many others, if they only knew more about it.
So in this Centre Section, HB sets out in picture and story all that the beginner needs to know about the subject.

We enlisted the aid of an expert apiarist, Colonel G. H. Pulling, president of the NSW Amateur Beekeepers' Association, and he gives comprehensive and authoritative advice on such aspects as:

- **Building hives.**
- **Selecting and handling bees.**
- **Collecting the honey.**

Of course, bees — being what they are — need careful handling. But you can reduce the danger of being stung to an absolute minimum by following the simple, sensible precautions set out in this feature.

So, if you're looking for a fascinating, inexpensive and educational outdoor pursuit, you'll find beekeeping a "honey of a hobby."

Beekeeping

A HONEY OF

A leading NSW apiarist joins with HB in this Centre Section to introduce to the layman . . .

By GERALD STEWART

IF you're looking for an absorbing, outdoor hobby with a difference — try your (gloved) hand at beekeeping. You're literally "on a sweet thing" for a modest outlay.

For an outlay of about £10, you can experiment with two or three hives, and expand later if you have enough room and energy.

You don't need any flowers in the garden to supply the bees with nectar and pollen. Most Australian bees get their needs from eucalypts or native shrubs. If you live in an area where houses are surrounded by trees, or near a forest or reserve, your busy buzzing bees should find enough food to develop a colony of 60,000 or more!

If you keep bees merely as a hobby, don't expect any great profit. You'll get enough honey for your family and friends, but the sale of any surplus will net you only a few pounds which you'll need to re-invest in your hobby to keep your bees happy and productive.

Your cost of production begins with a few thousand bees in a "nucleus box." After a few weeks you transfer the wax-coated frames to an ordinary hive box. A year later — or sooner, if conditions are favorable — you should have such a strong colony that one hive box will be too small. To prevent them swarming (of which more later) you'll have to add a second "storey." Later still you may have to add yet a third apartment.

In each hive are three types of bee — workers, drones, and (most important of all) the queen. A queen can live three years or longer and may, if conditions are most favorable, lay 3000 eggs in 24 hours. A queen not mated by drones lays eggs which produce only drones. Fertilised eggs become worker bees. Queen bees come from the same eggs which have received special attention during their larva stage.

The life of a bee has four stages — egg, larva, pupa (a larva which has spun a cocoon around itself or in a sealed cell), and the adult. Twenty-one days pass between the laying of an egg and the emergence of a bee. A queen is made in 16 days, and a drone in 24 or 25 days.

MEET YOUR GUIDE

HB's picture guide to beekeeping was compiled with the direction of the president of the New South Wales Amateur Beekeepers' Association, Colonel G. H. Pulling. After serving with the First AIF on Gallipoli and in France, he served for many years as a regular officer of the British Army in India.

He took to beekeeping because he wanted an open air hobby after his retirement. He studied the subject at the Hawkesbury Agricultural College (NSW) and gained practical experience by travelling with migratory beekeepers who move with caravans and tents.

Colonel Pulling, who lives at Turramurra (Sydney), set up his own beehives in 1948 and later began to breed queen bees — a highly scientific hobby.

Amateur beekeepers are beginning to organise themselves and, in the past four years, associations have been formed in three States. The secretaries are:

NSW: Mr R. V. Gallop, 43 Meadow-cres., Meadowbank, NSW.

Victoria: Mr W. L. Thompson, 61 Grange-rd., Toorak, Vic.

WA: Mr A. W. G. Richards, 19 Briggs-st., Bassendean.

The equipment described in this series is available from distributors in all mainland States — NSW: Pender Bros., Elgin-st., Maitland; Victoria: Producers' Co-operative Distributing Society, 539 Flinders-lane, Melbourne; Queensland: Producers' Co-op. Distrib. Socy., 65 Turbot-st., Brisbane; SA: Australian Honey Producers' Co-operative Society, 1 Reese-ave., Richmond, Adelaide, and SA Farmers' Co-op. Union, 36 Franklin-st., Adelaide. WA: James Goss, 133 William-st., Perth.

Prices quoted here are for Victoria as a guide. To these should be added freight.

SELECTING YOUR BEES

Easiest to look after are Italian bees. These originally came from Italy, hence the name. Others you can buy in Australia are:

- Caucasian (sometimes loosely called "black") bees, which also fly on wet and cold days when others stay put; and
- Carniolan bees, natives of Yugoslavia, which are dark grey with comparatively white bands of hair across the stomach. These are the largest of the hive bees, long-lived, gentle, easy to handle and, unlike the Italian, not prone to robbing other hives.

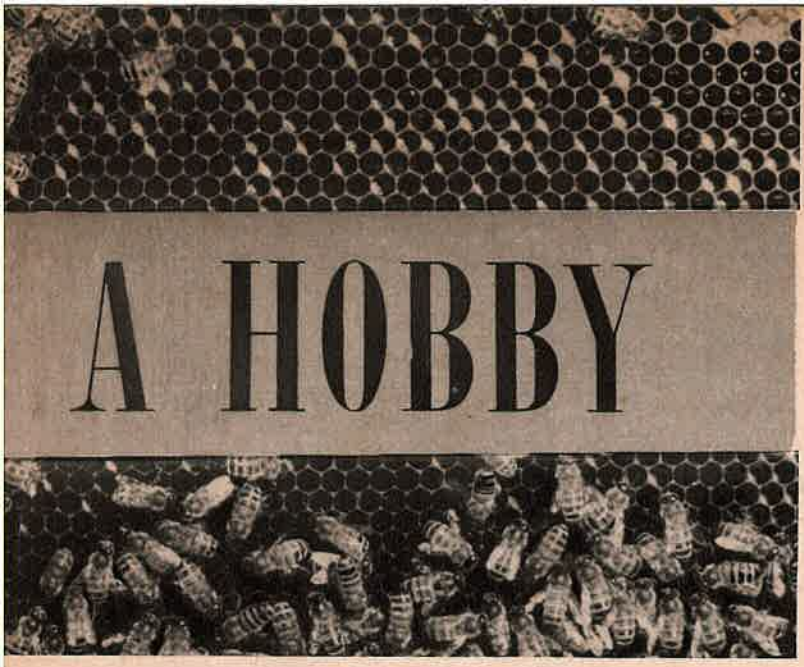
Most professional beekeepers in Australia prefer the Italian strain.

You must be particularly cautious if you approach or inspect a hive without a queen or a hive which has lost some of its honey to robber bees. These are bees which find it more convenient to steal honey from other, weaker colonies than to gather nectar and pollen to produce their own.

SAFEGUARDS AGAINST STINGS

At this point, it will be convenient to discuss the aspect of beekeeping which usually springs to most minds first — stings.

Bee experts say that there are many persons who have an almost unreasonable fear of bees — or, rather, of getting stung — yet there are few to whom a sting causes more than a sharp pain for a short time and some discomfort from the swelling of the affected part. Both pain and swelling



A HOBBY

become less and less after a number of stings have been received. The seasoned beekeeper, while reducing the number of stings to a minimum by observing certain rules, takes little notice of the stings he does receive beyond removing them promptly.

There are, of course, individuals to whom a sting causes serious pain and protracted discomfort. There are a few persons to whom bees have a lasting dislike, attacking them whenever they come near hives. Obviously such people should have nothing to do with bees. The same applies to those who may be allergic to bee venom and in whom a sting could set off a serious reaction. On the other hand, antihistimine creams like Anthisan will "take the sting" out of any *minor* allergic tendency.

Most persons, however, become more or less immune after being stung a number of times, even though the first few stings caused considerable pain and swelling.

As one authority puts it: "The best cure for bee stings is to avoid them." With the right strain of bees, an understanding of their habits, correct methods of handling, and a knowledge of the chief things which irritate bees, the largest apiary can be run without the operator receiving more than an occasional sting. "An attitude of indifference is not wise," as one writer phrases the obvious.

Bee poison contains formic acid and a poison which does not give the usual protein reactions. It is a blood poison which operates in much the same way as does cobra poison. The sting produces marked local reaction, but only in cases of marked susceptibility does it give rise to general effects or death. This lack of severity is due chiefly to the small amount injected, and the resistance of professional beekeepers to the stings is probably due to repeated stings leading to development of an immunity.

WEAR LIGHT CLOTHES

To avoid stings one should dress in light-colored clothes. Bees object to anything black — and more so when it is rough and fuzzy. Odors of camphor, kerosene, turpentine, eucalyptus oil, lysol, meat, dogs, horses or ants on the hands or clothes of operators, or anywhere near a hive, will cause the bees to sting.

In their attacks on trespassers, as in their search for nectar, bees largely are guided by their sense of smell. The odor of flowers attracts them to the spot where the flowers grow, while the sense of sight locates the blossom.

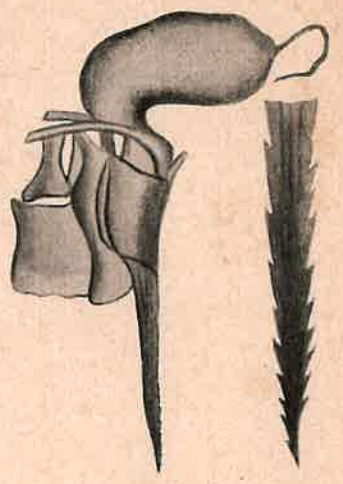
When approaching a hive, one should walk lightly and avoid standing in the line of flight of bees leaving the hive or returning to it. Before opening the hive, blow a whiff of smoke from a smoker in at the entrance, and another one or two over the top of the frames as soon as the hive cover is raised sufficiently.

When these precautions are taken there is little need to fear stinging unless the bees are of a vicious strain, in which case you should remove the queen and introduce a gentler stock.

There are, however, occasions when even the best-tempered bees will sting more or less viciously — for instance, when a honey-flow has suddenly ceased, or when bees have had access to honey other than the nectar in flowers, or when a colony has become hopelessly queenless (which means that they have no queen and no brood from which to raise one).

The remedy in the first case is never to let bees have access to honey outside the hive and not to open hives when robber bees are seen hovering around. In the latter case, give the queenless colony a comb of brood from another hive, or introduce a queen.

To reduce the effect of a sting to a minimum, remove the sting quickly so that as little poison as possible enters the puncture.



The sting itself is a sharp-pointed and barbed hollow shaft connected with the poison sac on the body of the bee. When the sting has entered the rubber-like human skin, it can't be withdrawn because of the barbs. As the bee strives to free itself, the sting, with the poison bag and the actuating muscles attached, is torn from the abdomen.

The muscles sometimes may be seen to go on working for many seconds after the sting has become detached from the bee. It is therefore advisable to remove it from the skin at once.

This is best done by scraping it away with the fingernail — or, if both hands are engaged, by brushing it off on to one's clothes with the forearm. On no account should a sting be picked off with the fingertips — you will press the poison bag and inject the whole of its contents into the skin.

To neutralise the effects of a sting, several remedies are recommended. A blue bag is the most commonly advocated cure. Ammonia is certainly more effective, but it has the disadvantage of irritating the bees and more stings are likely to result from its use.

Washing the stung part with soap and water eases the irritation, while if many stings have been received, bathing with hot water will diffuse the poison, lessen the pain, and reduce the swelling. For the average person (the experts say) the best thing to do is to remove the sting quickly in the way suggested, then think no more about it.

If the spot itches, don't scratch it. Friction will stimulate circulation and then diffuse the poison over a bigger area, spreading the swelling and increasing the pain. For the same reason, don't use any remedy or ointment that calls for rubbing. Also, don't try to suck out the venom — your natural reaction to it won't be reduced and your digestive system may be disorganised. Headaches have sometimes been further results of this approach.

HANDLE THEM GENTLY!

Don't slap a bee — its angry note or cry of pain will arouse dozens or even hundreds of other bees to fury. Resistance will bring out even more. The best procedure at this point is to retreat to shelter in a screen of smoke.

Ironically, the very weapon which Nature provides for a bee's protection is the instrument of its own destruction. In tearing loose from the punctured human skin, the bee must leave behind the barbed shaft and its attachments. Its death follows.

You will have to inspect your hives regularly and often by taking out the frames one by one. Avoid jerky movements so that the bees on the frames won't be disturbed. This regular inspection ensures that the bees are free from disease, that there is no overcrowding, that your bees have enough food stored for winter, and that they have a queen in their hive. (The queen is bigger and longer than the other bees, as you'll see from our picture series).

Potential beekeepers are advised to write for the free booklet which the apiary section of the Victorian Department of Agriculture, Treasury Place, Melbourne, has produced on bee diseases.

Continued overleaf.

Beekeeping

If the queen grows old and inefficient, you'll have to remove her and get a new one. Bees which have been without a queen for a day or two will take to a new one readily. But if you delay the introduction of a new queen, the bees may begin their own queen cells and raise a brood of new queens from which one will be chosen. Any new queen then introduced from outside will be given a hostile reception.

You can buy a new queen in a tiny cage. She will be accompanied by a few worker bees as escorts. Just place the cage horizontally between two frames in the bottom hive box and remove the cover or cork. The queen will not be able to slip out immediately — there's a piece of candy stuck in the cage. The bees must first eat through this to release her.

In October-November, bees like to leave their hives, taking the old queen and leaving a batch of young queen cells behind in the hive. This splitting of colonies can best be prevented by adding another box to your hive. Overcrowding is the prime cause of this movement.

"Swarming" is the beekeepers' term for the bees' springtime walkabout. If you find a swarm of bees in a cluster, shake or brush them into a box. Having made sure there's ample room for them in your hive, open the box and shake the bees down on to the ramp outside and let them walk in. Make sure, too, that the hive has a good supply of combs of brood (or foundation wax). Our picture series refers to this in detail.

There are various ways of dealing with robber bees. The usual one is to make the hive entrance smaller so that the home bees can defend themselves more successfully. Another is to swap the hives around a little so that the robbers eventually find themselves robbing their own. This piece of human trickery usually puts them off their thieving for a while. If you want to find which colony robs which, put some flour in the entrance of the hive being robbed and watch the other hives for flour-covered bees "returning to base."

Other brief, but important, points worth noting are:

- Registration — most State agriculture departments require all keepers of bees to register with them for a small fee each year. This applies equally to amateurs with only one or two hives.
- Disposal of hives — don't abandon them. The authorities know of many cases where amateurs have "taken a beating" from their bees and given up their hobby. The hives have been abandoned, become more and more crowded, and in time diseased. This infection has spread to the swarms of professionals' bees, leading to serious losses. Just advertise that you have hives for sale. You'll soon find a taker.
- Advice — is freely available from departments of agriculture. The apiary section in Victoria, for example, has two series of evening lectures each year. The next begins in October. For a small fee (about 5/-), the hobbyist and small breeder is given a complete course by experts.

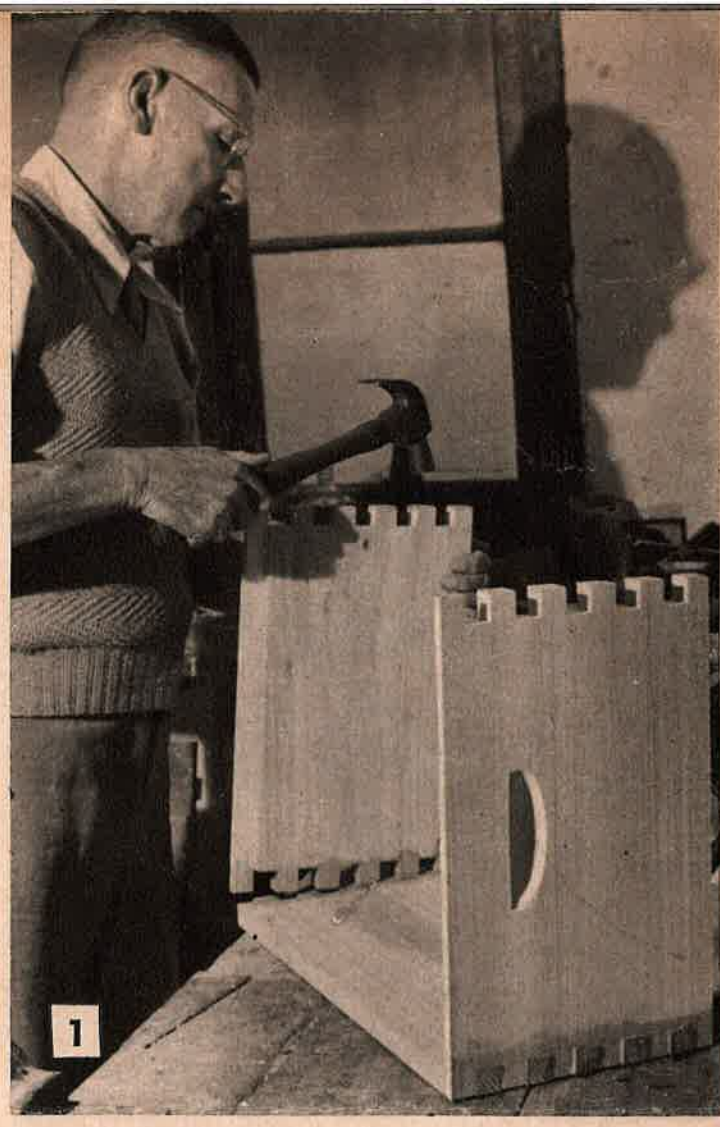
Now follow our picture guide:

Bee hives are sold "in the flat" (as self-assembly kits) and in various sizes. The best for a beginner is one that will accommodate eight frames. This is 20in. long. 14in. wide and 9⅛in. deep. The eight-frame hive box shown in this series is known as the Langstroth hive, which is popular in New South Wales and Victoria. Price is £3/10/8.

In picture 1, Colonel Pulling joins the sides of a hive box after painting their dovetailed ends with a mixture of red lead and linseed oil to preserve and seal them. The walls should be at least ⅞in. thick so that extreme variations of temperature won't harm the bees.

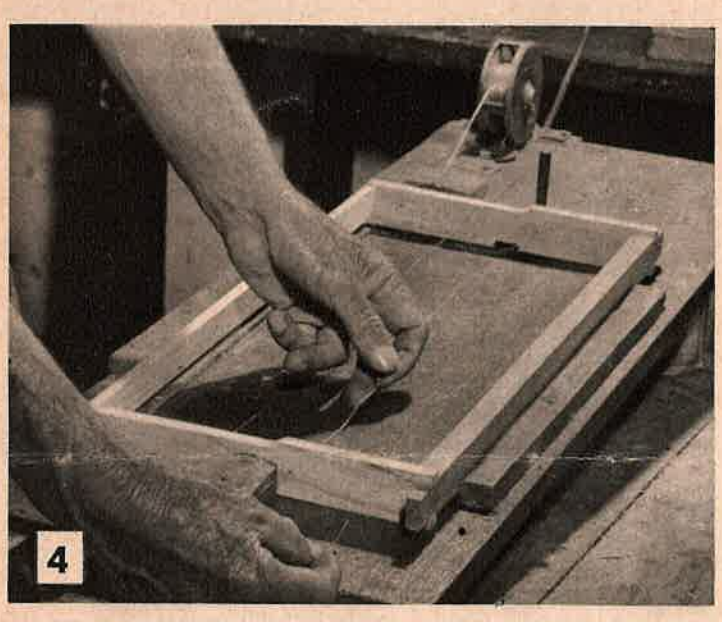
Hive boxes usually are of pine. The wall sections are placed on to the bottom board — or nailed to it if you move your hive boxes a lot (picture 2). This floor should be 21in. long, 14in. wide and from ⅞in. to ⅞in. thick. The floor also has three ⅞in. risers—the opening which results on the fourth side serves as an entrance for the bees—and rests on two cleats, preferably of red gum, which protect it against white ants.

You may put your hive on a slab of concrete as additional white ant protection. A brick foundation is not so practical. Spiders, which are among the bees' enemies, may get into the cracks.

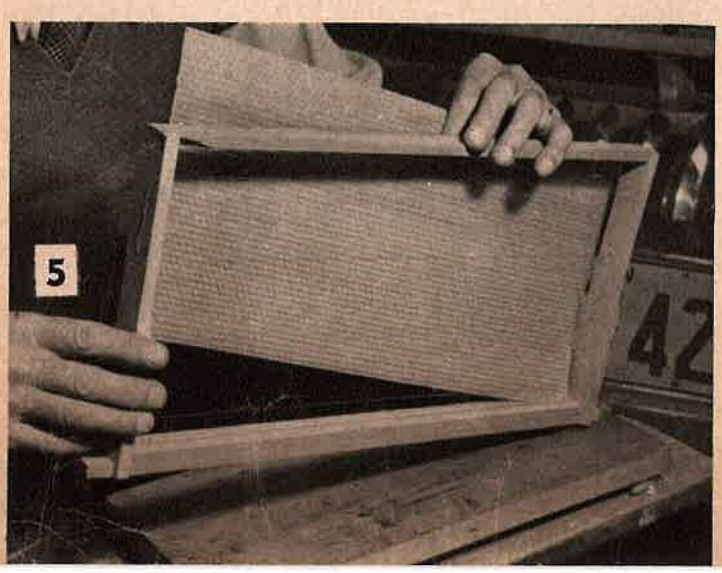


Next, slip into the box two metal runners on which to hang the frames (picture 3). These enable you to move the frames when you inspect the hive.

Now paint the outside of the hive box with red lead and silver. Silver paint tends to reflect the heat better.



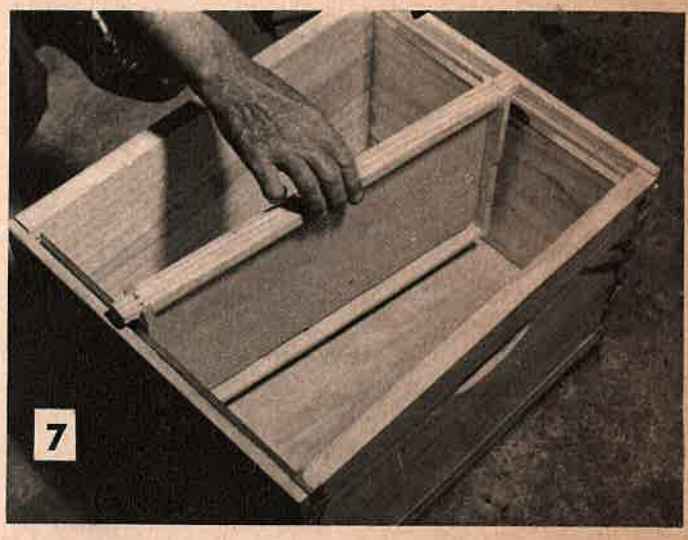
Make your own frames from pre-cut parts which you simply nail together. Use the special steel frame wire, made for and supplied with these frames, and wind it from an ordinary spindle or a fishing reel (picture 4). Devise a way of anchoring the wire so that it does not fly back after you cut it. The wire threads through holes at either end of the frame, then is pulled across it. Its purpose is to hold a sheet of foundation wax (picture 5). This is made in a factory from bees' wax and passes through a press which covers it with three-dimensional imprints shaped like hive cells. The bees later add wax to these pre-fab. cells, making them deeper. They fill some with their brood, a few with pollen to feed the nurse bees which look after the brood, and most of them with honey.



These foundation wax sheets are packed in 20lb. cartons which the distributors will break into smaller sizes — even single sheets. Medium brood wax costs 9/- a lb. (seven sheets); light brood 9/1 a lb. (eight sheets).

An electric embedder with four studs heats the wire in the frame under slight pressure and causes it to sink into the wax foundation within a fraction of a second. Many beekeepers like Colonel Pulling connect their embedders to the battery of their cars (picture 6). You can connect yours to the main if you have a transformer which breaks down the power to about 12 volts.

Electric embedders sell for 22/6. However, a hand-operated spur-wheel embedder, heated by boiling water or small spirit lamp and costing only 5/1, is a satisfactory substitute for the beginner.



Spring or early summer is the best time to hang the wax frames in the hives (picture 7). To produce a pound of wax, the bees in a hive must consume about 12lbs. of honey, which stimulates their waxmaking glands. By providing the wax foundations, you can make your beekeeping more economical. They're marked out in the pattern of worker cells and your aim will be to produce good even combs consisting almost entirely of worker cells. The wax foundations, too, allow the bees to make only a fraction of the wax they need and so begin early on honey production.

Continued overleaf.