Ant-proofing the apiary

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DURING the warmer months the infiltration of ants into an apiary can provide the beekeeper with some serious problems. At a time when his thoughts should be on extraction and honey crop problems, the hive-owner is little interested in studying the habits of various attacking ants, and cannot afford to waste valuable time in devising methods of ant eradication.

The normal reaction being to look for the cheapest and quickest way out, encourages the thought of moving the bees on to another site. For a migratory apiarist, this may be the obvious solution but there are many beekeepers today who are establishing permanent sites within their own properties.

A queen breeder, may require a permanent breeding apiary site, or the orchardist a permanent apiary for experiments on insect pollination. Neither the small mixed farmer developing a honey sales sideline, nor the backyard beekeeper are in the position to change their bee sites at will, and many commercial apiarists can ill afford to move at short notice because of ant invasions.

It is intended herein to discuss some of the many anti-ant measures seen used in the field. No individual method of ant prevention is necessarily recommended as it will be understood that measures may differ according to type of country and the ant species involved. It remains for the beekeeper to achieve control by trial and error.

On some occasions it is sufficient to raise the hives off the ground by placing stones or rocks under the bottom boards. Strong colonies will often resist attack by ants if suitably protected, but weak colonies may soon succumb to the invaders.
Probably the most effective action for the eradication of ants in the apiary is to move the hives a little farther away than bee-flying distance of one and a half miles; spray the desired apiary area on a grid system, with one of the commercial insecticides and then, after seven days or more, return the bees to the original site. Attention to individual ant nests within the apiary area from then on will keep the problem down to a minimum.

**FUMIGATION AND POISONING**

Where ant nests are prominent and not too numerous to treat, a hole may be made in the centre of the nest, a little carbon-bisulphide CS2, sheep dip or cyanogas applied and the hole covered in. These three materials must be used with caution. CS2 is most dangerous as it is very inflammable; sheep dip is a poison that should be handled with respect, and as cyanogas is intensely poisonous it must be used with utmost care.

A very effective and simply-made gadget used in the fight against ant infestation is what may be described as the poison smoke pressure chamber. (See Fig. 1.) It is made up by soldering a truck-tube valve into the bottom of a one gallon cylindrical tin. The top of the tin is cut out leaving a clean edge on the perimeter. A car pump is attached to the valve, and one of the insecticidal smoke generators is lit and placed under the tin, which in turn is placed over one of the well established ant nest holes and pressed down.
By applying air pressure to the cylinder, the insecticide smoke is forced to follow the ant tunnels leaving a residual of insecticide on all surfaces with which it makes contact. In heavy ground it is claimed that the smoke may be seen faintly issuing out of other nests connected by tunnels over an eight foot radius. On sandy soils, it is less effective but is well worth a trial.

A further precaution in discouraging ants from nesting beneath the hives is suggested by some beekeepers who recommend painting the undersurface of the bottom boards with creosote or one of the commercial tyre paints. This helps greatly.
in keeping the undersides of hives fairly free of most troublesome insects. It is not wise to paint too close to the alighting board as the bees may be roused to the extent of absconding.

It is claimed that the use of bottles to stand hives on is in many cases very effective. The bottles are either placed flat or are worked neck first into the ground. (See Figs. 2 and 3.) With the bottom board placed on top of the bottles the hive is raised above ground level which also helps to prevent white ants from attacking the timber.

An old motor car tyre used as a stand will often hinder the ants from gaining access to a hive as a peculiarity of some ant species is that they object to passing over a rubber surface. (See Fig. 4.) As rubber burns with intense heat it is unwise to use such stands in districts subject to bush fires.

Some apiarists build permanent hive-stands fitted with ant capping and/or oil baths to act as ant barriers. Care should be taken not to make these too elaborate as superfluous timber costs money, takes time to fit and often provides extra pathways for the invading ants (see Figs. 5 and 6).

Long hive-stands save construction time and timber as they can carry several hives, but they add to the difficulty of manipulating the hives and over the years they are apt to become a barrier to complete efficiency. If long stands are used, it should be remembered that the individual hives should be about six feet apart.
Whether for the large-scale commercial apiarist, the orchardist or the backyard beekeeper, the individual single-hive stands are undoubtedly the best in the long run.

They allow the hives to be approached easily from any angle and provide no obstructions for the busy apiarist. Whether designed as permanent fixtures or as movable stands, they have many advantages and although the initial costs for material and labour may be higher than those for the multiple-hive stands their ease of handling makes for comfort and efficiency.

The “Floating H” stand (see Figs. 7, 8 and 9) is a deservedly popular pattern. It is simple to construct and lends itself to mass production. Its main feature is that it has only a single support to provide an approach for the ants. By occasionally spraying the base of the upright with a commercial ant spray, or even painting it frequently with sump oil, the ants are kept at bay.

The angle-legged stand shown in Fig. 10 is designed as a collapsible unit and consists of ten separate straight timbers in the flat. The length is optional but we prefer the single-hive stand. Nails are not required in assembling as the joints fit tighter as the weight on the cross-members is increased.

There is an infinite variety of hive-stands and many incorporate ant-caps and/or oil baths to serve as ant barriers.

An effective low stand is shown in Fig. 11. It consists of a 14in length of 3in. x 2in. jarrah surmounted by an ant-cap made from a rectangle of galvanised iron approximately 16in. x 5in.

Resting upon this is a shallow trough made from another piece of galvanised iron approximately 16in x 3 3/4in. This carries the oil and a 14in. length of 2in. x 1 1/2 in. jarrah. Neither the ant-cap nor the oil-bath need be soldered, being simply bent to shape and the corners crimped or folded.

Fig. 10.—Constructional details of the angle-legged hive-stand

Fig. 11.—An effective low-level stand
Two of these stands are used for each hive, although if desired, they could carry cross-bars to accommodate two or more hives.

Fig. 12 shows different types of ant-proof stands. Jam-tins soldered on to galvanised water pipe are used as ant-caps or oil baths, in some patterns, and cut-down bottles serve as oil-containers for hive bearers suspended on wires.

To cut the bottoms off bottles, bend thick wire or round iron into a circle that fits snugly over the bottom of the bottles, leaving a long handle. Heat the wire to red heat and place it over the base of the bottle for a few seconds, then remove the wire and plunge the bottle into cold water. It will crack round the heated portion and if the sharp edges are smoothed with an old file the bottles may be handled safely.

The wire passes through a tightly-fitting cork.

**GENERAL PRECAUTIONS**

Keeping the apiary site clean and free from grass and rubbish will help in controlling ants as well as safeguarding the hives against fire risks.

Ant nests in the vicinity of the apiary should be treated regularly by poisoning or fumigating and it is a good idea to keep a bottle of prepared insecticide close at hand so that any ant colonies known to be active may be treated immediately.
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