KEEPING BEES IN FIXED-COMB AND MOVABLE-COMB FRAMELESS HIVES

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Movable Comb Frameless Hive

The invention of the movable-comb hive is the work of the ancient Greeks (Georgantas, 1957). "Anastomo confini", a skep with its mouth above and covered with movable bars, has been in use in Greece from antiquity until the present day.

It is acknowledged to be the fore-runner of the modern hive with movable frames. The Greek beekeeper learned to direct honey comb construction so that he could remove the combs from the hive and replace them as required. Bars are adjusted across the top of the hive to provide attachment and support for the combs. The hives narrow and combs assume this trapezoidal shape as in nature. Such combs are attached only to the top bar and not to the hive body, and therefore can be removed and returned. This hive is, nevertheless, not convenient or sufficient mainly because, since the mouth of the skep is circular, each comb hangs from a bar of different length, hence it has a unique position in the comb system and lacks interchangeability which is an important element in modern beekeeping.

The Tanzania Transitional Hive(Ntenga, 1972) uses bars 2½ inches (62 mm) wide provided with double grooves spaced 1¼ inches (31 mm) apart, or African bee natural comb spacing. This hive is transitional between fixed-comb and movable-comb frameless hives, since the combs are moved in pairs.

In Kenya, a modification of the Greek basket hive with movable, interchangeable bars, which is referred to as the Kenya Top Bar Hive (KTBH),is successfully replacing the traditional log hive with fixed combs (Kigatiira, 1974). The bar is cut from the two angles to meet at the centre, forming a V-shaped starter, which is dipped into melted wax. Combs are built along this wax starter on each bar. Working with this hive it is important to handle the combs carefully, because the attachment is delicate and combs are easily broken. As long as the top bar is held upward or in a vertical position the combs will not break, but it should never be rotated sideways or horizontally, or the weight of the comb will cause it to break away from the top bar. The capped honey comb is removed from the hive, scored with an uncapping fork, and after cutting it from the top bar, is placed in a basket hand extractor and the honey removed.

The "David Hive" (Linder, 1972) is more or less like the KTBH. Full honey combs are carefully removed with the bars, and

after scoring with an uncapping fork are introduced into a wire net where they are firmly held, then placed in a hand extractor and honey removed. Still attached to the bars, the combs are returned to the hive for the bees to refill.

The hive developed by William Bielby (USA, 1972) is a good example of transition between movable-comb frameless and movable-frame hive. It has a brood chamber with a sectional internal contour; the vertical elevation has the shape of a catenary curve which corresponds to the natural shape of the comb of the honeybee. Across the top of this brood chamber are movable combs hanging from standard bars correctly spaced. The hive may have a number of detachable supers designed to accommodate frames of orthodox rectangular shape.

By shifting to movable-comb frameless hives, much better quality honey is obtained than when all types of combs, and bees, are mixed up together. When honey is extracted using basket extractors, instead of the combs being crushed together, the pollen remains with the comb, and a product free from pollen is obtained.

Pros and Cons Of Fixed-Comb Hives

The barrel hives with fixed combs are cheaper than the top-bar hives. Their construction requires simple tools such as traditional chisels. When suspended from a suitable tree, they are protected from overheating, predators, some pests and savanna fires. During harvesting a reasonable quantity of wax is obtained. The shape of the barrel is unique and not very attractive to many people; this reduces theft. The hives are light and are placed in trees which themselves attract the bees.

Coupled with the above, management is difficult in that it is impossible to examine combs in the light and return them to the hive. Climbing trees during manipulation is a great risk to the beekeeper. The quantity of wood required for the construction of a log hive is massive. There are no facilities for controlling bees during the operation, and it is very difficult, though not impossible, to improve or modify operation by the use of modern hive accessories.

Advantages of the Movable-Comb Hive

1. The combs can be removed from the colony for inspection and replaced. This enables the beekeeper to observe the condition of the queen and the health of the colony.

2. Honey combs can be removed from the colony without disturbing the brood nest. No harm is done to the colony, and the bees are left to gather additional honey.

3. Honey quality is improved, since pollen and brood combs are not included with the harvested honey.

4. A fairly high yield of beeswax is maintained, since the honey combs are not returned to the hive, as they are with the frame hive.

5. The hive is simple, easy to construct and relatively cheap, in comparison to the frame hive.

6. If necessary a queen excluder, made of coffee wire with five squares per inch, can be used in the centre of the hive to separate the honey from the brood. The worker bees can pass through this, but the queen cannot.

7. A frame type feeder can be used.

8. The colony can be examined with the least opening necessary, thus affording easy control of the colony with smoke.

Conclusion

It should be realised that modern beekeeping encourages more intelligent management and aims at higher success than can be hoped for by the exclusive use of the straw skep or other fixed-comb hive. Mobility of combs alone is not enough; it must be coupled with interchangeability and support, which are greatly required in modern bee management. Honey production can be a large business if the outside interest and information are adapted in principle by the developing countries.