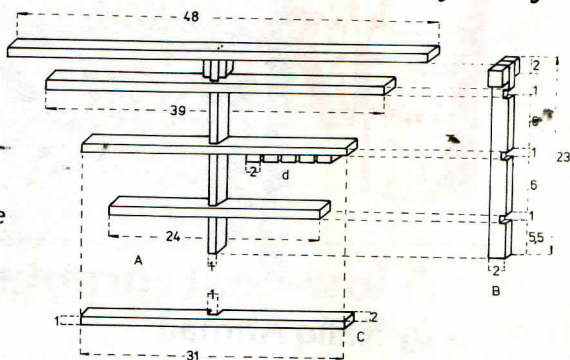


# A T-shaped frame for queen rearing in Kenya top-bar hives

by J Woyke

Figure 1. T-shaped queen cell frame for Kenya top-bar hives.

- A: General view
- B: Central vertical bar of the frame
- C: Horizontal queen cell bar
- D: Wooden blocks attached to the cell bar.



Various designs of top-bar hives are used throughout Africa. The Kenya top-bar hive has sloping sides and contains top-bars instead of frames. It is easy to construct and offers some advantages over frame hives and traditional hives. It is very good for beekeepers switching from traditional beekeeping in hives with unmovable combs, to movable-comb hives. Control of the (sometimes) aggressive African honeybee is much easier in top-bar hives than in Langstroth ones. Because the top-bars are wide enough to touch each other, the bees cannot fly out of the top of the hive when the roof is taken off. When a top-bar is taken out from one side of the hive, the bees can be driven by smoke to the other side of the hive. During examination of combs only one open space exists at any time and the bees can be relatively easily controlled.

African bees vary greatly in their behaviour: there are aggressive ones and gentle ones, productive as well as unproductive ones, those with a high tendency to abscond and those with a low tendency, some that migrate, others that are stable, and so on. It is therefore advisable to rear queens from colonies with desirable characteristics. When queens are reared on a small-scale, emergency queen cells may be used, or Miller, Alley or other methods.

Modern methods of queen rearing involve the grafting of bee larvae into queen cups, which are attached to bars in a frame.

The rectangular frames used to rear queens in Langstroth hives do not fit into the trapezoid Kenya top-bar hive. Trapezoid frames should be constructed for such a hive, but it would be difficult and furthermore the three queen cell bars would be of different lengths and non-interchangeable.

Therefore a T-shaped queen cell frame with three horizontal bars for queen cells (Figure 1) has been developed. The bars are removable and can be exchanged.

The dimensions of the parts of the frame presented below must be adjusted for the hive you are using. The sizes given here are for a Kenya hive with internal dimensions: 28.0 cm deep, 44.5 cm wide at the top and 19.0 cm at the bottom.

The frame is constructed of wooden bars measuring 1.0 x 2.0 cm. The top-bar of the frame is 48.0 cm long *ie* the same length as all other bars of the hive. Another bar 23.0 cm long (Figure 1B) is nailed perpendicularly downwards in the middle of the top-bar. Three excisions 1.0 x 1.0 cm are cut in the vertical at a distance of 2.5 cm from the top-bar and then 6.0 cm from each other (Figure 1B). Three horizontal bars; 39.0, 31.0 and 24.0 cm long are also prepared. An excision 1.0 x 1.0 cm is cut from one side in the middle of each bar (Figure 1C). The longest bar is put with its excision in the upper excision of the vertical bar, the middle bar in the middle excision, and the shortest in the bottom excision.

Queen cell cups may be fixed with melted wax directly to the horizontal bars, although it is more convenient to attach them first to small square blocks of wood. The blocks 2.0 x 2.0 x 1.0 cm are cut from wooden bars 1.0 x 2.0 cm. Melted wax serves to fix both the queen cell cups to the blocks and the blocks to the bars (Figure 1D).

Several series of African queen bees (*Apis mellifera adansonii*) were reared using the frame in Ghana. The results were very good. It was easy to introduce mature queen cells or young queens into colonies, after the old or undesirable queens were removed. But problems occurred with mating nuclei, because most of them absconded. Therefore, it is recommended that to requeen colonies of African bees, it is best to replace with a mature queen cell or virgin queen, rather than with a laying queen, to avoid the problem of absconding by mating nuclei.

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