

will send warm air into it, while as the end of the hive warms up the heat will circulate between the frames. When the doorway faces east or west the noonday sun heats up a side, warming up a comb next to it, but not affecting in any way the middle frames, on which the bees are apt to be clustered.

The hive must not rest on the ground, as the moisture will rot the bottom board. So far as utility is concerned, a couple of pieces of rough 2 x 4 lumber are as good as anything. If the ground is uneven, it must be made perfectly level, for perfect combs cannot be secured if the frames are off the plumb. During the rainy season the back end of the hives should be raised an inch or two, so that water may run freely off the alighting-board.

CHAPTER IV.

Tools and Dress.

The tools essential for the practice of bee-keeping in a small way are neither numerous nor expensive, consisting practically of a smoker and a hive-tool. The latter may be disposed of in a few sentences, so will be dealt with at once. Its principal use is to force apart the frames, which are generally glued together by an adhesive known as propolis. As any piece of flat and light metal is fit for this simple work, we find the majority of bee-keepers are content to use a screwdriver or a wood-chisel an inch wide in their ordinary work. But once in a while one must



Fig. 4. Root hive-tool.

scrape away the accumulations of wax and propolis from the frames, or the deposit of dead bees and other waste matter from the bottom boards, so that a tool with a scraping-edge is a great convenience. Many hive-tools have been invented, but after trying about a dozen the writer pins his faith to the Root tool, which is illustrated in Fig 4. The bent end is used for scraping, the straight one for separating frames and hive-bodies.

THE SMOKER.

Bees have an instinctive dread of smoke, probably due to the fact that their natural home is in the hollow trunk of some forest tree, where the greatest danger that can threaten is fire. Safety lies in flight, and so when fire threatens the bees