

is cut to the right size with a tin cutter as here shown.

USING OLD FOUNDATION.

After exposure to the air for a length of time the sheets harden on the surface and bees will not work on old foundation as readily as on freshly made. Where the bee keeper carries over foundation to the second year, it should, before using, be dipped in water as warm as the wax will bear, about 120° F., which will restore it at once to its original softness.

WEIGHTS OF FOUNDATION.

Manufacturers make three kinds of foundation, light and heavy for use in brood frames, and very light for sections. The light brood will require two dips and runs about seven square feet to the pound, while the heavy runs four and five feet to the pound, and needs three dips. Section foundation is very thin, made with one quick dip, and runs from eight to twelve feet to the pound. This is the run of average section foundation, but some writers speak of its running fourteen and fifteen feet to the pound, but I think there is very little shipped lighter than ten. With this weight the base can be made as thin as the septum of natural comb and the extra wax being in the cell walls, the bees draw it out with more facility. Bees usually thin down the base of the foundation to their liking, but when honey is coming in rapidly and nights are cool they will sometimes neglect this working more upon the side walls. This is the cause of the "fish bone," so called, occasionally found in sections of comb honey.

WORKER AND DRONE FOUNDATION.

Foundation can be impressed with either worker or drone cells so that the apiarist can have the bees build whichever comb he desires. Drone foundation was formerly used largely in sections, but its use has been abandoned owing to the non-attractive appearance of the capping and also from its great liability to break down in shipment; the cells being larger than the worker, contain more honey, whilst the cell walls are only the same thickness, lessening the stability of the comb about twenty per cent.

About 1876 I bought from A. I. Root the second roller foundation mill made. The cells it impressed were slightly larger than worker, a medium between that and drone. I with others had an idea that by constantly breeding in these large cells the size of the bees would be increased and sometimes I imagined there was a slight gain in size, but not sufficient to counter-balance the disadvantages. When the foundation sagged a little, drone eggs were laid in the elongated cells, and even without sagging some queens would lay a larger proportion of drone eggs than in regular worker foundation. This mill was used for a number of years and superseded by one which turned out regular worker sized base.

FLAT BOTTOMED FOUNDATION.

Some foundation is made with flat bottoms to the cells but the bulk of the fdn. used has the base of natural shape. The bees, I believe, change the flat bottoms and consequently, it is said, take longer to complete the comb. Mr. Thomas Cowan and several eminent apiarists do not coincide with this view. I prefer the rhomboidal base.

CLEANING THE ROLLS.

Should the wax stick, turn the rolls, and let a stream of hot water fall on them from a height of about two feet. The wax becomes softened and dislodged, or a jet of steam from a boiler will remove it even more rapidly.

MILLING THE WAX.

It is a simple matter to feed the sheets into the mill, but the rolls must be kept constantly wet with soap suds or some other lubricant. On passing through the end will be embedded in the wax, but this may be loosened with a flat pointed stick. As the sheet rolls out the operator supports it with two narrow strips of wood flat on one side and oval on the other. Formerly we ran sheets only three feet in length but latterly we have joined the sheets just as they are going between the rolls and are thus enabled to run sheets of brood foundation ten to twenty-five feet and section (four inches wide) of a hundred and even two hundred feet. The sheets for the section foundation are dipped on boards 3 ft. long x 12 inches wide, and these plain sheets are cut into strips