

want to make additions to your vinegar stock, keep them by themselves until they have passed through the alcoholic fermentation.

For the alcoholic fermentation a barrel with one head out is best; if a closed barrel is used, there should be a hole in each end, and the barrel should not be quite full. All openings, of course, must be covered with cheese-cloth or very fine screen to keep out insects, and yet admit as much air as possible. If fermentation does not begin promptly, add about a quarter of a cake of yeast, softened in warm water to a barrel of stock. When the alcohol fermentation is finished, which should be in from two to six weeks, you can use your old vinegar-barrel to good advantage. Or it will be well to add a few gallons of good vinegar, containing a little mother if you have it. Usually this is not necessary, but it hastens matters and insures good results. Give it plenty of air, keep it as nearly as possible at the right temperature, and you should have good vinegar inside of a year. When the

vinegar is strong enough, pour it off from the mother and bung it up tightly, otherwise a degenerative fermentation may set in that will spoil the vinegar entirely.

I have just received from the Arizona experiment station a bulletin on the subject of honey vinegar, in which some ideas that are new to me are advocated. The writer, Prof. A. E. Vinson, considers hard water preferable to soft, if not too salty. He likewise thinks that fermentation is greatly aided and hastened by the addition of small amounts of ammonium chloride and potassium phosphate. In place of the latter, which is rather hard to procure, as well as something expensive, we may use sodium phosphate and potassium sulphate. As the latter is likewise sometimes hard to get, we may use potassium bicarbonate in its place with nearly as good results. The formula he recommends is as follows: Honey, 40 to 45 lbs; water, 30 gals.; ammonium chloride, 4 oz.; potassium bicarbonate, 2 oz.; sodium phosphate, 2 oz.; yeast, $\frac{1}{4}$ cake.—G. A. Greene in *Bee Culture*.

How to Examine Apiaries & Cure them of Foul Brood

(By Wm. McEvoy, Woodburn.)

Before opening any colony go from hive to hive and give each colony a little smoke at the entrance of their hive. This will check the bees for a time from coming from other colonies to bother you when you have a hive open and are examining the combs. When you take out a comb to examine it, turn your back to the sun and hold the comb on a slant, so as to let the

sun shine on the lower side and bottom of the cells. There look for the dark scales left from the foul matter that glued itself fast when drying down, for where you find punctured cappings and ropy matter you will find plenty of cells with the dark stain marks of foul brood on the lower side of the cells. Every bee-keeper should know the stain mark of foul brood. It is