

up in disgust in consequence. Indeed, it is not so long since I made a failure myself of my attempts to make honey vinegar. I think it is quite right that a knowledge of what **not** to do is of just as much importance to many as any further instruction in processes. If you have decided to make vinegar, the first step is to get something to make it in. Usually the best and most convenient receptacle for this purpose is a barrel, and here is where the first mistake is usually made. Nine out of ten people, in getting a barrel to make vinegar in, will select an old vinegar barrel, with the idea that something is necessary to start the vinegar-making process. To understand why this is wrong we must glance briefly at the chemistry of vinegar-making.

Ordinarily the process of vinegar-making consists of two distinct steps. In the first, sugar in some form is by fermentation changed into alcohol. In the second, this alcohol is by a somewhat similar process changed into acetic acid. The alcoholic fermentation must always precede the acetic, and should be allowed to become complete before the acetic fermentation begins. They may be carried on together, but it is usually at the expense of both time and quality, as the presence of acetic acid in even small quantities greatly retards the alcoholic fermentation, and sometimes a degenerative fermentation sets in and spoils the entire product.

Accordingly, your barrel should be one that has never contained vinegar. A whiskey or wine barrel is good. If it is necessary to use a vinegar barrel, it should be scalded out very thoroughly before it is used. For a small quantity of vinegar a jug or small jar is all right.

Next comes the question of the proper strength of the mixture to be made into vinegar. Whilst this may vary considerably I think the best results will be obtained when there is not less than a pound and a quarter or more

than a pound and a half to the gallon of water. If you have the honey in bulk, simply measure your water and add the proper amount of water or vice versa. Usually, though, the beekeeper will want to use the rinsings of cans or the honey soaked from cappings, etc., and for this some means of testing the strength of the solution must be used. A hydrometer is best and most convenient for this. One made for the purpose can be bought for about fifty cents. A photographic hydrometer can be had for half this. Any hydrometer will do, but you may need to test it by a solution of known strength, as they are graduated differently for different purposes. Mine was made for testing silver solutions, and on it a pound of honey to the gallon registers 20 degrees on the scale; and a pound and a half, which is the strength I prefer, 30 degrees, which makes it easy to judge of the amount of honey or water that must be added to make the solution the right strength. You can make a hydrometer of a homeopathic vial, or any tall bottle, corked and weighted so that it will stand upright in the solution. Mark with a file where it stands in a solution of known strength. Or make a ball of beeswax with a small piece of lead imbedded, so that it will just float in a solution of the right strength. Or you can use a fresh egg, which should float or show a spot not larger than a dime above the surface. I have always used rain water, and this is usually recommended.

Put your barrel in a place where a temperature of as near 80 degrees possible will be maintained. If the place is too hot, alcohol is wasted; but if too cool, fermentation is retarded.

Never add fresh solution to vinegar partly made. I think this is a very common cause of poor success. If you

want to make
ar stock, keep
til they have
holic ferment

For the a
barrel with o
closed barrel
hole in each e
not be quite
course, must
cloth or very
insects, and
as possible.
begin promptl
of a cake of
water to a ba
alcohol ferment
should be in
you can use yo
good advantag
add a few galle
taining a little
Usually this is
hastens matter
sults. Give it
as nearly as po
perature, and
vinegar inside

How
& C

Before opening
hive to hive an
little smoke at
hive. This will
time from comin
to bother you w
open and are e
When you take o
it, turn your bac
the comb on a s