tering material, its object being to remove any sediment or floating organic matter which would otherwise clog the converters. From the filters it runs into the generators. The liquid is run through a screen at the top of the generator to break it up into drops and distribute the liquid evenly over the surface of the shavings. The generator consists of a round tank of wood six to ten feet high, with a diameter of 35 inches at the top, and 45 inches at the bottom, thus giving it the form of a truncated cone. The generator is divided into three parts one above the other; the upper one containing a screen to distribute the alcoholic liquor; the center one containing beech shavings, and the lower one serves for the collection of the vinegar. Air is let in by holes bored through the sides of the tank below the false bottom on which rest the beech shavings. The amount of air is regulated by wooden stops placed in these holes. After passing through the generator, if it contains any unconverted alcohol, the vinegar is passed through a second time, and then is finished vinegar. Many substances have been prepared for filling the generators, but at present beechwood shavings are considered the best. They are now made especially for this purpose, being cut and curled by machinery. They are prepared for the generator by being washed in water and steamed to remove the woody taste and impurities which they would otherwise give the vinegar. The shavings are dried and saturated with old vinegar and are then ready for use.

Brannt states that the surface exposed in a generator three feet by six, filled with shavings, is over 22,000 square feet.

Material for Vinegar Making.—The substances from which vinegar is made at the present time are beer, wine, glucose, alcohol, molasses, and fruit juices. Wine vinegar is chiefly used in Europe. It is made from grape juice, inferior wines and from the second and third pressings of the grapes called “lees.” Wine vinegars vary in color from pale yellow to red, and have a specific gravity of from 1.014 to 1.022. Most of the vinegar used in Great Britain is derived from the fermentation of a wort made
from a mixture of barley and malt. Malt vinegar is of a
decided brown color, and in specific gravity varying from
1.017 to 1.019, the strongest known as proof vinegar, con-
taining from 4.6 to 5 per cent. of acetic acid. Glucose
vinegar is prepared from a mixture of glucose and water,
by allowing it to undergo alcoholic fermentation, and then
running it through the generator in the usual way. The
vinegar sometimes contains large quantities of dextrine
and sulphate of lime, left in the glucose as an impurity
during the process of manufacture.

Molasses vinegar is made in the same way as glucose
vinegar.

The larger part of the vinegar now on the market is
made from a dilute alcohol. This vinegar as it comes
from the converters is colorless as water. It is colored by
the addition of burnt sugar (caramel) and sold as cider
vinegar.

*Characteristics of Different Vinegars.*—Cider vinegar
should have a yellow color and a cider-like odor. Evap-
orated to dryness on a water bath it leaves a dark brown resi-
due, having a taste of burnt apples. The amount of ex-
tract is from 1.5 to 5 per cent., depending on the age of the
sample and method of manufacture. Cider vinegar made
by the old process contains malic acid, and on the addition of
acetate of lead gives a heavy yellowish precipitate of malate
of lead. The ash from cider vinegar contains considerable
quantities of alkaline phosphate. The residue from wine
vinegar contains the salts found in wine. It is dis-
tinguished from other vinegars by containing cream of tar-
tar. According to the Edinburgh Pharmacopœia, it may
be distinguished from malt vinegar by adding ammonia in
slight excess, which causes in wine vinegar a purplish
muddiness and slowly a purplish precipitate, but in malt
vinegar no precipitate or only a slight one.

Spirit vinegar made from dilute alcohol should leave only
a very small residue; if caramel has been added to color it
the residue will be of a dark black brown and leave no ash
on burning.

Beer vinegar is yellow and has an odor of sour beer. It