

EIGHTH LABORATORY PERIOD

URINE

CRYOSCOPY

Cryoscopy.—Note the construction of the two forms of apparatus for determining freezing points, viz., the Beckmann Heiden-hain and its modification for the cryoscopy of urine.

Each consists of the following parts :

1. A heavy glass jar to hold the freezing mixture, with ring-shaped stirrer.

2. An air jacket (sometimes alcohol or glycerine is used instead of air) shaped like a large test tube and held in position by the metal cover of the outer jar.

3. An inner tube with a short side arm to carry the liquid to be tested. This also carries through its cork a stirrer and a thermometer.

4. The thermometer fitting the cork of the innermost tube, which is graduated in hundredths of a degree centigrade.

For very exact determination of the lowering of the freezing point of water by the constituents in solution, the mercury in the stem of the Beckmann differential thermometer should be adjusted so that 0° C. corresponds to a point about half way up the stem. (Demonstrated.)

A freezing mixture—salt, fine ice, and water—is made, giving about -3° C.