

walls and an outlet to drain off the condensed water. The chamber is fitted with a perforated rack on which to place the samples and which permits free circulation of the warm air around the samples. The oven is fitted with a close-fitting door and a thermometer extending into the chamber. The temperature maintained in the oven may be regulated by the steam pressure applied in the hollow walls. In addition to the oven, a fine balance is necessary or a good moisture scale and a set of gram weights. In using the Funke moisture scale with a 10-gram sample, a reading of 39.8 per cent of moisture may be taken, but with a Torsion scale only 30 per cent may be read without the extra gram weights.

MAKING THE TEST.

The sample of cheese to be tested is secured in the same manner as for fat determination. The sample is thoroughly spread out by means of a knife and plate, or a mortar and pestle, and 10 grams are weighed into an aluminium or tin dish, which has been thoroughly dried by heating and then balanced on the scale after cooling. The cheese is spread as *thinly* and as *evenly* as possible over the dish. The work of sampling, pulverizing and weighing the cheese into the dish should be done as quickly as possible, to avoid loss of water by evaporation. The dish containing the sample is now placed in the oven, the door closed, and 45 to 50 pounds steam pressure applied to the oven. This should give a temperature of 225° F. to 250° F., which will be sufficiently high. The sample is heated until all the water has been evaporated, which point is determined by successive weighings followed by further heating in the oven, of course allowing the sample to cool before weighing each time. When the sample ceases to lose weight, the water is all evaporated and the per cent of moisture is determined from the loss in weight. The grams of moisture evaporated multiplied by 10 will give the per cent of moisture. For example, if the 10 grams of cheese lose 3.5 grams of water from evaporation, 100 grams would lose 100 divided by 10 and multiplied by 3.5, which equals 35 grams, or 35 per cent.

If steam under pressure is not available, an oven constructed of tin or copper, double-jacketed on five sides, fitted with a perforated rack and close-fitting door will answer. The oven is filled with water between the walls, which water is kept boiling by means of a gas jet or alcohol lamp. Since a lower temperature (boiling) is employed with this oven than with the high-pressure oven, longer time is required to dry to constant weight.

IN CONCLUSION.

To one who has carefully read the foregoing pages it will, no doubt, seem that the manipulation of the tests described is quite simple. While such is the case, extreme care and accuracy must be exercised in all details of the tests in order to secure accurate results. Many of the details in connection with the making of these tests seem unnecessary to the careless operator, but the neglect of a few minor details in making the tests means the difference between accuracy and inaccuracy. It is not uncommon for instructors of milk testing to find students without previous experience in testing doing more accurate work during the first few days of their training than they do some weeks later. "Freedom breeds contempt," and as some operators become more familiar with the tests, the work is less carefully and less accurately performed. To slightly change an old axiom: "Eternal care is the price of accuracy."