

The beaker test, consisting of weighing into a cup a quantity of butter, heating till foaming ceases and re-weighing, we considered a good test but open to inaccuracies when used by the ordinary creamery man. Some of its disadvantages are, the necessity of weighing very accurately, thus involving a sensitive and comparatively expensive balance; uncertainty as to the right moment to stop the heating, and to re-weigh the dehydrated butter; necessity of calculating the percentage of water from the weights.

Gray's Test involves a fragile glass contrivance and gave results from 0.5 to 1.0 per cent. too low. The test is also rather expensive to operate. The "improved" Gray's Test proved to be still more fragile and awkward to clean, but gave more accurate results due to a modification in the scale.

Other tests presented undesirable features in one form or another.

We devised a test, attempting to conform to the following requisities:

1. A rapid and reasonably accurate method.
2. An inexpensive form of apparatus both to purchase and to use.
3. A durable form of apparatus and one easy to clean.
4. A method that requires no great amount of attention or care in operating, and that can thus be used by the average factory man.
5. An apparatus that can, if damaged, be easily repaired at small cost.
6. A method equally suitable for testing butter, curd and cheese.

Our apparatus consists of a thin, copper still attached by a friction joint to an upright brass condenser fitted with a block-tin inner tube. A glass receiver reading directly in percentages and with a stop-cock near its lower end, hangs from the lower end of the condenser. This apparatus is supported on an upright brass rod to which is also attached an adjustable copper spirit lamp.

In making a moisture determination in butter, ten grams of the sample are weighed into the copper still counterpoised on a small balance. Ten cc. amyl acetate are added. The still is then connected with the condenser and heat applied by the adjustable lamp till water and amyl acetate cease to drop from the lower end of the condenser. The graduated receiver is then removed and the percentage of water read off directly at the line of demarcation between the lower layer of water and the upper layer of amyl acetate. In testing curd and cheese, five grams are used instead of ten, and the percentage read off on the scale opposite the butter scale.

For the sake of economy the amyl acetate is collected and dehydrated in the still and used over again.

The average cost per test is less than half a cent. The time required for a test, including the weighing of the sample, is about ten minutes.

The test serves also for moisture determinations in such substances as oils, fats, wood pulp, bread, flour, etc.

The results obtained by this apparatus seldom vary from the gravimetric results more than two-tenths of a per cent., and usually not more than one-tenth. The apparatus is simple in all its parts, and practically indestructible, since it is made almost entirely of metal.

Descriptive bulletins may be obtained upon application to W. O. Walker, Eastern Dairy School, Kingston, Ontario, Canada.

J. W. MITCHELL,  
W. O. WALKER.

### A CONVENIENT FUNNEL FOR INTRODUCING DRY REAGENTS OF POWDERS INTO BOTTLES AND FLASKS WITHOUT LOSS OF SUBSTANCE.

In order to avoid loss of small amounts of such finely powdered materials as flour, etc., when introducing them into bottles and flasks, after weighing on the balance, it has been found very convenient to make cones or stemless funnels from celluloid film. The celluloid film required should be transparent and about the thickness of a calling card. It can be obtained from dealers in art goods. A paper cone is first made of the proper size and then the celluloid is cut, using the paper as a pattern. The lap-joint along the side can be made perfectly tight and smooth by applying the proper amount of acetone to effect a softening or partial solution of the celluloid.

CHARLES H. BRIGGS.

THE HOWARD WHEAT & FLOUR TESTING LABORATORY,  
Minneapolis, Minn., Jan. 7, 1909.

### TILLANDSIA USNEOIDES.

*Tillandsia usneoides*, called Spanish moss, Florida moss, New Orleans moss, long moss and black moss, is very common in Louisiana. It is an epiphyte and grows on both dead and live trees. It can be found growing on trees that have been dead for years. On trees having a dense foliage it does not grow so well, as sunlight is one of its requirements for existence.

Many people claim that it kills the trees and they regard it as a parasite. Billings' says that Spanish moss does not injure the trees on which it grows and he has demonstrated that it depends wholly upon air, sunlight and rain for its life.

In the winter when the pastures are poor, farmers often chop down trees and allow the cattle to feed on the moss. In order to ascertain the feeding value and the composition of this plant the following analysis was made:

#### COMPOSITION OF TILLANDSIA USNEOIDES (SPANISH MOSS).

Complete analysis.	
Water.....	69.500
Volatile matter.....	28.905
Silicon dioxide (SiO <sub>2</sub> ).....	0.590
Iron and alumina oxides (Fe <sub>2</sub> O <sub>3</sub> and Al <sub>2</sub> O <sub>3</sub> ).....	0.286
Phosphoric acid (P <sub>2</sub> O <sub>5</sub> ).....	0.032
Calcium oxide (CaO).....	0.058
Sulphur trioxide (SO <sub>3</sub> ).....	0.184
Potassium oxide (K <sub>2</sub> O).....	0.313
Sodium oxide (Na <sub>2</sub> O).....	0.581
Total.....	100.449

Feed constituents.		Water-
Natural state.		free bases.
Protein.....	3.68	12.07
Ether extract.....	1.06	3.47
Carbohydrates.....	15.95	52.29
Fiber.....	8.24	27.02
Water.....	69.50	..
Ash.....	1.57	5.15
Total.....	100.00	100.00

<sup>1</sup> *Botanical Gazette*, 38, 99-121.