hour with alcohol, filtered into the crucibles, and washed with hot alcohol. The samples are then transferred from the crucible to 150 c.c. flasks and covered with about 75 c.c. of the mixture of glycerin and acetic acid and heated in an oil bath at 135 degrees C for four hours, using long glass tubes as air condensers. The material is then collected in the crucibles, washed well with hot water, and the crucibles after cooling placed in the chlorination apparatus in which they are connected with the source of chlorine in such a manner as to prevent escape of the gas into the laboratory. The gas is now passed through the crucibles for 20 minutes, after which the free chlorine is removed from the material by washing once with a cold, dilute solution of sulphurous acid in water. The crucibles are then placed in small beakers which are filled not quite to the top of the crucibles with a 3 per cent. solution of sodium sulphite and heated in a water bath for forty-five minutes. The material in each crucible is washed with hot water, using a filtering flask, and after cooling, the chlorination process is repeated in the same way three times, the periods of chlorination being first 15, then 15, and finally 10 minutes. After the last treatment with sodium sulphite the fibres, after being thoroughly washed, are dried at 105 degrees C. for four hours or to constant weight and weighed in closed weighing bottles. The residue are calculated in percentage of bone-dry wood, the moisture of the original sawdust having been determined in a separtae sample by drying about two grams of the material for four hours at 105 degrees C."

Analytical data showing cellulose content of some Canadian woods are given with comparisons of residues obtained by the two methods. Cellulose variations in balsam fir were followed from pith to bark and the analysis is given of a special disk showing normal growth. The analysis of aspen attacked by the fungus ***Fornes igniarius*** would show that the cellulose had been somewhat broken down and the furfural-yielding substances also attacked.

Samples of aspen and balsam fir were given exhaustive analysis after various special treatments. None of the reagents used extracted a single uniform substance. From the analysis made it was evident that there are striking differences in the chemical composition of balsam fir and aspen.

"The broad-leaved trees give a considerable higher yield of furfural than the coniferous woods, which latter contain much more substance yielding methylfurfural."

The paper closes with some suggestion on modifications regarding the terminology of the chemistry of wood and a short discussion of the views of Wislicenus and Klason on the relationships which may possibly exist between some constituents of wood.

MILK POWDER--ITS MANUFACTURE AND USES

By S. B. Trainer.

MILK powder to many suggests a composition of various chemicals to produce a product that can be used as a milk substitute. It is, however, one of the important articles of food produced from liquid milk. Of all the foods used today everywhere milk takes the leading position. Someone might suggest flour as the leading food but it must be considered from the point of view of food value. From the point of view of food value milk is the leading daily food of the world.

Comparative analyses of milk and milk powders are as follows:

Liquid Whole Milk		Liquid Separated Milk	
Water	88½%	Water	91.00%
Fat	3½%	Fat	.03%
Milk Solids	8½%	Milk Solids	8.97%
	100 %		100.00%