# THE HOME MODIFICATION OF COW'S MILK

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The Home modification of cow's milk by Various

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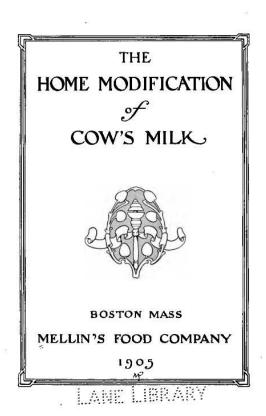
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T IS agreed by all authorities that fresh cow's milk must furnish the basis of operations in preparing a substitute for human milk. Cow's milk, however, even when

Necessity
for
Modification

fresh and pure, is, in its undiluted state, of such a nature that the infant cannot digest it, the difficulties arising from the large amount and peculiar properties of the casein. Casein being present in too large a proportion in cow's milk to be digested by the infant's stomach, the proportion of casein must be reduced by dilution with water.

There is a wide difference, moreover, between the properties of and the results pro-

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#### THE HOME MODIFICA-

Properties of Casein duced by the casein of human milk, on the one hand, and the casein of cow's milk, on the other. The casein of mother's milk, when coagulated by the acids of the stomach forms a soft, flocculent clot, readily disintegrated, easily digested. The casein



of unmodified cow's milk, on the contrary, is digested with difficulty, and, when coagulated in the infant's stomach, forms tough, coherent curds which cause constipation and indigestion.

Mother's Milk Alkaline Mother's milk when received by the infant is alkaline in reaction. Cow's milk, on the other hand, though it may be neutral in reaction or, at the best, only slightly alkaline when drawn from the udder, soon, from exposure to the air, loses its alkalinity and

### TION of COW'S MILK



shows an acid reaction.

As a result of reduc- Effects of ing the amount of Dilution casein in cow's milk by dilution with water, the carbohydrates, originally less in amount than in mother's milk, become still further reduced and the deficiency

must be made up by the addition of a suitable sugar.

Dilution of cow's milk with water also decreases the proportion of fat, a deficiency which must be overcome by the use of top milk or cream, in amounts to be determined by the needs of individual cases.

These differences suggest the following: -



## TION of COW'S MILK

## RULES FOR THE MODIFICATION OF COW'S MILK

- 1. Reduce the proportion of casein.
- Soften the casein in order to make it more easily digestible and to arrest its tendency to form tough and tenacious curds.

Fundamental Rules for Modification

- 3. Make the milk alkaline.
- Increase the carbohydrates, originally insufficient in amount and made still more so by the necessary dilution.
- Adapt the quantity of fat to the individual case.