

## LAC FERMENTATUM N. F.—FERMENTED MILK N. F.\*

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Prohibition legislation has brought into the lime-light many preparations which had previously but little claim for popular attention. Among these might be mentioned beverages similar in nature to the subject of our paper, namely, koumiss, kephir, matzoon, etc. While there had been many investigations into the character of these so-called health beverages they did not, at the time, gain much attention, and very little excitement was created when koumiss was stated to contain over two and one-half percent of alcohol. Now, however, the attitude is different; any preparation easily made and containing alcohol is considered worthy of notice, even by the laity. The object of this paper is not to call particular attention to a palatable alcoholic drink, because this is indeed not a very palatable beverage, but rather to submit definite data in regard to the nature of the finished product. Incidentally, fermented milk made according to the N. F. IV is not comparable with koumiss since the latter, if genuine, is made from mare's milk without the addition of saccharose, and using a lactic as well as an acetic ferment. Mare's milk is used because of its affluence of lactose, containing as it does from 6 to 7 percent of that sugar, while cow's milk contains usually from 5 to 6 percent, and often less.<sup>1</sup> Fermented milk is made with cow's milk, saccharose, and compressed bakers' yeast. It might be stated here that ordinary bakers' and brewres' yeasts have no pronounced influence on lactose.<sup>2</sup> The yeasts used in the production of native European drinks, like koumiss and kephir, are the so-called lactose yeasts belonging to the *Torulaceae* which ferment lactose with the production of ethyl alcohol.

In the following recorded tests, material was used which had been prepared strictly in accord with the present N. F. formula and stored in a refrigerator. The cow's milk used in its manufacture was examined, and it was found that better results were obtained with the use of non-pasteurized or unsterilized milk. Hence our suggestion that the N. F. specify fresh cow's milk.

## METHOD OF ANALYSIS.

*Alcohol.*—The alcohol was estimated by distilling 200 or 250 mls and collecting 100 mls of distillate. Occasionally it was necessary to redistil; although precaution had been taken in advance to neutralize any volatile acidity, the first distillate was turbid, but the second condensate was always clear. The alcohol content was then estimated by the usual method, calculating from its exact specific gravity. Checks were always made on these determinations and the average computed, even though the variance was generally very negligible.

*Polarimetric Readings.*—These were established in the usual manner after the clarification of the sample with alumina cream or by the lead method. The samples were all read at the uniform temperature of 25° C. The only important information obtained from these data was to establish the fact, that the lactose

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<sup>1</sup> Handbook of Sugar Analysis, Brown, pp. 249 and 714.

<sup>2</sup> Tymowski's Analysis of Koumiss, p. 12.

remained apparently unaltered throughout the period of fermentation, and that all the carbonic acid gas and the alcohol are supplied by the saccharose.

*Reducing Sugars.*—These were obtained by the gravimetric method, using Fehling's solution, and collecting the oxide on asbestos in a Gooch crucible. For the purpose of legibility and better means of comparison the data is given in tabular form.

Samples.	Polarimetric readings.	Reducing sugars by Fehling's solution, gravimetric method.	Alcohol, Percent.
Fresh Milk	Plus 14	2.15 as invert 2.57 as lactose	None
After addition of saccharose	Plus 27.7	3.52	None
After 6 hours	.....	3.52	0.56
After 24 hours	Plus 13.6	2.28	1.74
After 48 hours	Plus 13.8	2.28	1.97
After 72 hours	Plus 14.3	2.5	1.98
After 96 hours	Plus 13.3	2.72	1.99
After 120 hours	Plus 13.3	2.55	2.02
Sample four weeks old	.....	2.47	2.03

In regard to the palatability of this beverage we have been very much puzzled, for it assuredly has no pleasant taste, and it is one that lingers long. The predominating taste is that of yeast, of which it unquestionably contains too much. The writers believe that half, or less, of the prescribed yeast would suffice and produce a liquid that might possess a better claim to the title of beverage. As now prepared, there is no great likelihood that the laity will make this fermented drink at home for popular consumption, nor are we convinced that it can ever harmonize with the gastric nerves of the invalid. We have tasted some genuine koumiss and it is quite a different product.

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### PRESCRIPTION CLINIC.\*

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The few prescriptions which will be discussed in the paper are all original prescriptions, and not concoctions merely prepared to stimulate discussion. The greater number of them were received in the dispensary of the Stetson Hospital and a few from students at the College. This statement is made in order to discount the remarks so often heard that most incompatible prescriptions are never met with in actual practice, but simply devised by some imaginative person solely to afford a pretext for arguments and pseudo-scientific discussion. However, it can be said with safety and with some emphasis that not all incompatible prescriptions are impractical and impossible of being compounded, for those of us who have had an extensive prescription dispensing experience know full well that a so-called therapeutically, or even a chemically, incompatible prescription is very often considered valuable medicine by the doctor. After all it is the doctor who

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