

len, Cotton and Silk Mills, Ltd., for supplying the desized washings.

Dept. of Biochemistry,
Indian Institute of Science,
Malleswaram P.O.,
Bangalore,
December 15, 1947.

B. S. LULLA.

1. Lulla, B. S., *Curr. Sci.*, 1947, **16**, 339. 2. D'Souza, V., and Sreenivasaya, M., *J. Sci. Ind. Res.*, 1946 **4**, 647. 3. Waksman, S. A., *J. Am. Pharm. Assn. (Sci. Ed.)*, 1945, **34**, 273.

CHANGE IN NITROGEN CONTENT OF MILK ON SOURING

In this laboratory attempts were made to utilise the estimation of total nitrogen of curdled milk as a criterion of purity of the original milk samples by Kjeldahl Method as suggested by Hawley.¹ A preliminary analysis of about twenty samples on these lines showed that this method is unreliable, inasmuch as the nitrogen content of milk is subject to variation depending on the conditions under which the milk is allowed to curdle and on the initial bacterial flora of the sample.

The following table shows the increase of nitrogen on curdling, in the case of raw buffalo milk kept in different beakers and allowed to curdle in open air at room temperature (average 32° C.).

Days of storage of milk	Acidity (lactic acid %)	Nitrogen (%)	Remarks
0	0.126	0.533	Raw milk before curdling
1	0.815	0.641	After curdling
3	1.56	0.630	"
4	1.75	0.620	"
7	2.08	0.614	"

The main conclusions from experiments carried out under different conditions are:—

1. The nitrogen content of curdled milk is greater than that of the original milk.

2. The nitrogen percentage varies in the same sample of milk at different stages of souring; it attains a maximum and thereafter tends to decrease.

3. The acidity developed appears to bear little correlation with the nitrogen content.

4. The nitrogen increase appears to be caused by the action of micro-organisms present in the milk.

Since samples of milk are not collected and despatched under aseptic conditions, Hawley's method of evaluating the N₂ content of curdled milk, as a criterion for its purity, cannot be adopted for routine testing.

A detailed paper will be published elsewhere.

Laboratory of the Public Analyst
to the Government, U.P., S. C. Roy.
Lucknow, D. P. BHATNAGAR.
December 19, 1947.

1. Hawley, *Curr. Sci.*, 1937, **5**, 637.

GAMMEXANE (D.025) AND CATTLE TICKS

A SMALL-SCALE trial with "Gammexane" powder D.025 has been tried on a group of fourteen cattle heavily infested with *Boophilus australis*, a common cattle tick in India. According to the manufacturers, "Gammexane" powder D.025 contains 5 per cent. of pure "Gammexane" (hexachlorocyclohexane) and 95 per cent. of inert diluent such as French chalk or talc. A dozen cattle showing gross infestation with ticks were hand-dressed with the powder. Two animals served as controls. Up to 12 hours after application there was no appreciable destruction of ticks. After nearly 24 hours tick mortality varied from 75-95 per cent. among the treated animals. After 48 hours all the treated animals were tick-free. The residual effect of the drug lasts from 5-9 days, depending on whether the treated animals are sent out for grazing or stall-fed. It is, therefore, necessary that the application should be repeated accordingly. In view of its efficient anti-tick and non-toxic properties and the simplicity of application, the powder could be safely used under Indian conditions.

Indian Veterinary Research Inst.,
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OPTICALLY POSITIVE HYPERSTHENE FROM CHARNOCKITES OF GUNTUR DISTRICT

DURING the course of detailed optical work on the rocks and minerals of the charnockites of the Kondavidu Hills (Latitude 16° 15' 30"; Longitude 80° 19'), one of the slides of the intermediate charnockites showed a hypersthene with abnormal optical characters. The scheme of pleochroism of this mineral as determined by the Federov's Stage is as follows:—

X: Golden yellowish green.

Y: Light greenish.

Z: Bluish or greyish green.

The only marked difference that this hypersthene shows with the normal type (the usual hypersthene met with in the area) is that the pleochroism along X axis is golden yellowish green here as against pale pink for the normal type.

In one of the hypersthene pieces the extinction is straight and $2V = 74^\circ$, Z being the acute bisectrix. In the other the extinction angle (Z c) is 8° and $2V = 69^\circ$, Z being the acute bisectrix. Thus both these pieces of hypersthene are optically positive. But the normal hypersthene shows the usual negative sign with $2V$ ranging from 56° to 66° .

In the chemical analysis of the rock bearing this hypersthene, there is an excess of normative corundum. It is suggested, though it is not asserted, that this anomalous optical character of this hypersthene may be due to an aluminous variety of the mineral. Further work on the mineral is in progress, and a detailed paper will be published elsewhere.

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December 23, 1947.

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