the decreasing induced E.M.F. as time goes on and loss of coherence between the nuclei. However it is seen that effects of the methods of observation are very important as regards nuclear–paramagnetic–radio-frequency experiments. Here it is found that this part of the time depends upon the Q of the circuit and so experiments may be devised to test the influence of the Q of the circuit.

Indian Institute of Science, Bangalore, *March* 11, 1949. G. SURYAN.

* *Proc. Ind. Sci. Cong.*, Allahabad, Jan. 1949, p. 15.

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PURITY OF MILK

THE surface tension of milk and its dilutions with water and the effect of starch on their surface tension have been studied in order to find out a suitable physical method for determination of purity of milk, as the Lactometer (commonly used at present) hopelessly fails to detect (*i*) presence of water in the diluted milk when some suitable quantity of starch or similar substance is added to it as an impurity or (*ii*) skimmed milk when a suitable quantity of water is added to it.

The surface tension was determined by the weighing drop method at a fairly constant temperature. The surface tension of milk varied with its dilutions with water as follows:—

Temp.	% water in milk	Surface tension in dynes/cm.	Remarks
17·5° C.	0	56·3	The bazar milk was used.
,,	20	56·7	
,,	40	57·4	
,,	60	58·4	
,,	80	60·7	
,,	100	73·4	

The starch and similar other impurity have no effect on their surface tension. A set of observations is given below for reference.

Temp.	% starch in pure milk	Surface tension in dynes/cm.	Remarks
215·5° C.	0	57·3	The new sample of bazar milk used.
,,	1	57·3	
,,	2	57·4	
,,	5	57·4	
,,	10 (saturated)	57·5	

Thus the purity of milk can easily be detected by measurement of its surface tension. An instrument (the patent applied) based upon the above results serves well for the purpose of finding purity of milk.

Furthur work in detail is in progress and shall be published in due course of time.

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ELASTIC CONSTANTS OF SODIUM CHLORATE AND SODIUM BROMATE

THE behaviour of sodium chlorate and sodium bromate is peculiar in many ways. The relatively larger bromate ion indicates according to Bragg's contact law for ionic distances that the elastic constants of the bromate should be lower than those of the chlorate. Nevertheless, the very much higher melting point of the bromate ($381 \pm 6°$ C.) over that of the chlorate (248° C.) indicates larger forces of affinity in the bromate. The elastic data provided by Bridgman (1929) and Mason (1946) show that the elastic constants of the bromate are higher. Because of this peculiar behaviour, it is considered desirable to repeat the measurements on the two substances. The results are given below.

The two substances crystallise in the cubic tetartohedral space group T and are piezo-electric. The necessary sections are cut out from well-grown good crystals of the same and the ultrasonic method described by the author (1948) is used. The values obtained in the investigation along with those of other experimenters wherever available are given in the following table.