Acidosis and Off-flavoured Milk

VETERINARIANS have assisted in explaining one cause of taint of milk when showing that in cases of acidosis the body fluids, including the milk, contain acetone and acetone-bodies. It was stated that the milk would react to Rothera's test¹.

As a result of recent experiences with samples of milk from cows suffering from acidosis, we can commend this very simple test to the dairy industry (it appears at present to be quite unknown) as a rapid and certain means of diagnosis, offering an explanation of many cases where the milk is mildly, but to a skilled palate, definitely of abnormal flavour even at the time of milking. Such cases have hitherto been somewhat vaguely ascribed to 'indigestion'.

Furthermore, we find that for more accurate work, quantitative estimations may be made by the method of Van Slyke². Several samples from cows giving tainted milk have been so examined, and in addition more than 98 per cent recovery has been obtained from samples of milk to which small amounts of acetone have been added.

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¹ Beaumont, G. E., and Dodds, E. C., "Recent Advances in Medicine" (1931), p. 70 (sixth edition).

² Van Slyke, D. D., *J. Biol. Chem.*, **32**, 3, 455 (1917).

Points from Foregoing Letters

COMPARISON of the change in the intensity of cosmic rays for a period of nine days (April 23–May 1, 1937) during a magnetic storm at Innsbruck (Austria), Cheltenham (Maryland, U.S.A.) and Huan-cayo (Peru), shows very good agreement in the general trend, according to Prof. V. F. Hess and A. Demmel-mair. There is also a close parallelism to the change in the horizontal component of the earth's magnetic field during this period, and the authors conclude that cosmic ray ionization was influenced simultaneously all over the earth by the magnetic disturbances, and that the study of the magnetic storm effects will give valuable information on the distribution of energy in the spectrum of the cosmic radiation.

Chemical analysis of a sample of duckweed (*Lemna*) shows, according to Prof. W. I. Vernadsky, B. K. Brunowsky and C. G. Kunasheva, that the plant contains about one hundred times more mesothorium-I (10×10^{-15} per cent) than the water in which it grows (Orangery Pond, near Leningrad). On the other hand, although isotopes of thorium are present in water, they are not assimilated by the duckweed. The authors conclude that the plant assimilates radioactive elements in strict accordance with their chemical properties.

K. Hall and Dr. V. Korenchevsky find that the increase in the size of the adrenals in castrated rats is due to increase in the width of certain zones (fasciculata and reticularis) resulting chiefly from an increase in the size of the cells. They return to normal if sufficiently large doses of sex hormones (androsterone, testosterone, etc.) are administered. In a similar way, the large numbers of lipid granules which invade the 'demarcation zone' upon castration may be made to disappear.

From the effect of critical concentrations of sodium azide or 2:4-dinitrophenol on the rate and extent of oxidation of acetate or butyrate by bacteria, Dr. C. E. Clifton deduces that these agents block the assimilatory process observed in association with the respiration of widely different non-proliferating cells under normal conditions. This blocking of the assimilatory process is accompanied by a complete oxidation of the substrate, at an approximately normal rate. He suggests that the weight-reducing action of the dinitrophenols in man may be due in part to a suppression of assimilatory processes.

By feeding rats with diets as used in Northern India, by well-to-do and by poor Hindus respectively, and observing the effects upon the teeth, the fertility and the health of the young, D. N. Mullick and Dr. J. T. Irving find that the Northern Indian diet is superior to both Hindu diets and that the poor Hindu diet is seriously defective as shown by both chemical and biological tests.

A table giving the amount of silica dissolved by a 1 per cent sodium bicarbonate solution and by acetic fluid from silica dusts (quartz, sericite) after various periods of time, is given by Dr. E. J. King. The author states that many of the values reported by Emmons and Wilcox for the solubility of finely powdered silicates are too high, because their method does not eliminate completely the fine particles in suspension.

The presence of a minute hole in a polished glass disk enables it to make 'optical' contact with another polished plate by application of slight pressure at a single point, according to Dr. J. W. French. The contact spreads spontaneously, due apparently to the surface tension effect of a grease-like film (less than one millionth of an inch thick) present at the glass surface.

D. Porret and Dr. E. Rabinowitch find that the reversible bleaching of chlorophyll by light is proportional to the square root of the light intensity. Formic acid causes a considerable increase in the reversible bleaching, while oxygen and ferrous chloride suppress it.

The interference in the two segments of the X-chromosome of *Drosophila melanogaster* is characterized by Prof. K. de Kőrösy by two constants, the *transitive* interference from one segment on the other by a third. The average deviation between the calculated and observed data is 0.6 per cent, with a maximum of 1.8 per cent.

A table showing the Raman spectra of various heavy-hydrogen substituted ethylenes is given by Prof. M. de Hemptinne, J. Jungers and Dr. J. Delfosse. Some of the lines were determined by using pure compounds (C_2D_4 , $C_2H_2D_2$) and the remainder from a mixed sample. The authors find a slight discrepancy between the experimental results and the theoretical calculations carried out by Manneback and Verleisen.