containing approximately equal amounts of potash felspar and soda felspar, showing a blue schiller, and resembling sanidine in its glass-clear appearance and in having an abnormally low optic axial angle. Ito concludes that this crystal is an intimate intergrowth of a (monoclinic) potash felspar having the sanidine structure, and a corresponding high-temperature *monoclinic* form of soda felspar.

We have carried out by X-ray methods a preliminary general survey of potash-soda orthoclase felspars with microperthitic structures, and (with D. L. Smare) have described the results of our investigation in a paper read before the Mineralogical Society in January last, and to appear in the *Mineralogical Magazine* of June 1939.

More recently, we have examined in greater detail specimens representing each of the two types of structure the existence of which was suggested by our previous survey. One of these structures occurs when the proportion of soda felspar does not exceed 30 per cent approximately, the other when a greater amount of soda felspar is present, and it appears that our data are most easily explained on the following hypothesis. The low-soda microperthitic structure contains (i) a monoclinic potash felspar component, and (ii) triclinic soda felspar lamellæ which are either actually twinned on the *pericline law* or arranged in the same mutual orientation. The high-soda structure contains (i) monoclinic potash felspar, and (ii) triclinic soda felspar lamellæ twinned on the *albite law* (or arranged in the same mutual orientation). It is not yet certain whether the triclinic lamellæ which occur in the low-soda structures are structurally identical with those which occur in the high-soda structures, nor is it certain that lamellæ of either type are identical with ordinary albite, though all three structures are very similar if not actually identical. The experimental evidence on which this hypothesis is based, and its implications for the theory of microperthitic structures, will be discussed elsewhere; but in the meantime we may note that there now appears for the first time a fairly definite prospect of obtaining by X-ray methods a *structural* classification of the microperthitic felspars.

We have also examined Spencer's specimen of Korean blue moonstone (from the same locality as Ito's material), and find to our surprise that it is structurally exactly similar to the low-soda microperthites already described, that is, it contains monoclinic potash felspar and triclinic soda felspar twinned on the pericline law (or correspondingly oriented). The difference between our conclusions and Ito's with regard to the structure of the soda felspar component may be due *either* to a real difference between Ito's material and ours, *or* to the fact that our suggested structural scheme is adequate to explain at least a part, perhaps the whole, of Ito's published data. (Some of our X-ray photographs are in fact identical with some published by Ito.) These points are also discussed in detail in a paper to be published elsewhere.

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[1] Ito, T., *Z. Krist.*, **100**, 297 (1938).
[2] Spencer, E., *Min. Mag.*, **22**, 291 (1930); **24**, 453 (1937); **25**, 87 (1938).

A New Method for the Conservation of Milk

THE conservation of milk without drastic heat treatment is perhaps the most important problem in the dairy industry. Numerous attempts have been made to solve this problem, mostly with only partial success and necessitating elaborate and expensive apparatus. It has been found possible to conserve milk for about a fortnight by the simple process of adjusting the *p*H to 5·2 and holding at a temperature of 36–38° F. During the first week the bacterial count actually decreases but rises abruptly in two to three weeks coincident with 'going off'. The following is a typical experiment:

Milk adjusted to *p*H 5·15

Age in days	Colony count per ml.
0	2,560
2	460
7	240
21	∞

Milk requires about 4 ml. normal hydrochloric acid per 100 ml. to reduce the *p*H to 5·2. In practice it is sufficiently accurate to titrate a portion of the milk with *N* hydrochloric acid until casein precipitation is observed and then to add 95 per cent of this quantity *pro rata* to the bulk. The acid must be added with vigorous stirring and the milk later neutralized with an equivalent amount of normal caustic soda before use. The only effect on the milk is a slight dilution and the production of a very slight salty taste, not detectable by casual tasting. The micro-organisms ultimately responsible for the deterioration of the milk are coloured cocci and yeasts. Milk can be conserved for longer periods by holding under 'anærobic' conditions at lower temperatures and adjusting to lower *p*H values. Although casein precipitates at *p*H values below 5·2, the milk sol can be reformed on neutralization by prolonged stirring.

The method would appear to offer possibilities for industrial purposes. The chief advantages are that no expensive plant is required and that the milk retains in full the original fresh milk flavour. Although enzymic changes are undoubtedly proceeding under these conditions, the rate is so small that they cannot be detected by taste.

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Bacterial Antigens

THE results of recent work on the nature of certain of the bacterial antigens of gram-negative micro-organisms suggest that these substances are essentially polysaccharide-phospholipin complexes[1]. A further component, however, which contains 10 per cent nitrogen, has also been found[2]. Utilizing preparations of antigenic material which had been obtained by the trichloracetic acid method of Boivin[1] or by the diethyleneglycol extraction method[3], we have succeeded in removing the phospholipin component[2] (N : P, 1 : 1) from the antigenic complex of *B. dysenteriæ* (Shiga) without employing acid, alkaline or enzymic hydrolysis. The phospholipin component cannot be removed by extracting the complex with acetone, ether or ether-alcohol mixture, but is readily eliminated on treatment with a strongly polar solvent such as formamide (dielectric constant 84 at 20°). The antigen dissolves readily in this solvent to give