

4. Sulphurous acid and sulphites.
5. Benzoic acid or benzoates.
6. Fluorides.

The boron preservatives are apparently the most commonly used, and are preparations of boric acid and borax, with or without admixture of other preservative ingredients, such as salt, saltpetre, sugar, sodium carbonate, etc. They are used largely in milk, cream, and butter for preserving meat food generally, and to a smaller extent in beverages.

Formalin is a 40 per cent. solution of formaldehyde. As a preservative it is used chiefly in milk. In concentrated solutions it has a strong irritant odor, but when added to milk in quantities sufficient to retard fermentative action, it cannot be detected by taste or smell. The addition of formalin to milk is undoubtedly objectionable, as it interferes with digestion.

Salicylic, sulphurous, and benzoic acids and the fluorides are apparently used to some extent in dairy products, but more commonly in meat, fruit, vegetable preparations, beverages, etc. Salicylic acid is a powerful preservative, but it has a sufficiently characteristic taste to prevent it being used except in very minute quantities as a butter preservative.

Nearly all the preservatives now on the market are advertised as being "entirely wholesome," or that "its ingredients are all as healthful as salt," "capable of keeping the various articles of food perfectly sweet and fresh for any length of time, without the use of ice," etc. They are sold under a great number of fancy names, which, as a rule, give no clue to their real nature. On account of the perishable nature of foods, it is obvious that a substance having the properties claimed for the various commercial food preservatives would be of incalculable value. At the same time, we must recognize the fact that authorities differ as to the correctness of these claims, even for the boron compounds, which are possibly the least harmful of all the newer preservatives. While it would be very convenient to preserve foods by their use, it is important that nothing be added to foods which is toxic in itself, or which interferes even to the slightest extent with the process of digestion. This last point is especially important in dealing with the food of children and invalids.

The preservatives now in use may be divided into two classes: those which are undoubtedly injurious, such as formalin, the fluorides, salicylic and sulphurous acids, and those whose toxic action is disputed. The boron compounds belong to this latter class, and because of their extensive use in preserving dairy products, are of especial importance to dairy-men.

Numerous methods have been made to ascertain whether the use of boric acid or borax in small quantities was or was not injurious, but no definite conclusions have been reached. Many distinguished English, German and French scientists have performed elaborate experiments with