The most common substance added to butter as a preservative is salt. The use of salt, together with the practice of storing butter in such a manner as to exclude air and light to prevent oxidation of the unsaturated fats, and at a low temperature to retard the action of ferments, has been, on the whole, fairly successful in retaining the good qualities of butter. In our export trade, however, new conditions are arising, and the dairyman has now to cater to a market which demands practically a saltless butter. To meet these new conditions he is compelled to cease using the only preservative with which he is familiar. Further, many creameries are not provided with cold storage plants, and are thus not able to use even this method of lengthening the commercial life of butter. Under these conditions it is not strange that butter-makers have commenced to use some of the brands of preservatives which are now so extensively advertised, especially when their use is advised by the wholesale dealers to whom they sell.

Chemical Preservatives.

It is only in comparatively recent times that the real nature of fermentation, decay, and all such cases has been clearly understood. From time immemorial foods have been preserved by drying, smoking, placing in strong brine, in alcohol, or in vinegar, but it was not until after the work of Pasteur and others had shown that fermentation and decay are primarily caused by minute organisms, and that these organisms could not grow without moisture, in salt solutions, alcohol, or vinegar, that the true nature of these methods of preserving foods was understood.

Concurrently with the development of the science of bacteriology the study of chemistry has made known many chemical compounds which will destroy or retard the growth of these organisms. Many of these, such as bichloride of mercury, sugar of lead, etc., while powerful preservatives, are very poisonous, and for obvious reasons could not be utilized as food preservatives. In order to be used for this purpose, a substance must be almost without taste or smell, it must not be so poisonous as to cause any immediate or serious results to the health of the consumer, it must be comparatively cheap, and yet so strong in its action on the lower organisms that only a small amount need be added to the food which it is desired to preserve. It is evident that the presence of small quantities of such substances in food would not be noticed by the consumer. In this they differ from the old preservative agents, such as sugar, salt, etc., which are condimentary in character, and reveal themselves by taste to the consumer.

At the present time the chief chemical compounds, other than salt, sugar, and alcohol, used in the preservation of foods are as follows:

1. Boric or boracic acid and borates.
2. Formalin or formaldehyde.
3. Salicylic acid.