Chemicals—Preserving Powders.

Many brands of so-called "Preserving Powders" are found on the market. Small doses may not be immediately harmful to the healthy adult, but continued doses may have detrimental effect on the health. With a child or an invalid the effect may be dangerous. For these reasons, though in many cases the powders do prevent spoilage, their use is not recommended.

Why Some Products Need More Heat to Sterilise Them Than Others.

Different products demand different periods of exposure to heat to be sterilised. This fact is due to several causes which work hand in hand.

(1) Some are cleaner than others, therefore contain fewer spore forms. Those products taken from the soil, such as beans, peas and asparagus, are much more difficult to sterilise, because the soil is the source of many very resistant spore-forming organisms. Thorough washing and blanching does not remove all the spores.

(2) The character of the fruit or vegetable itself. Some are more acid than others, as tomatoes. Bacteria and yeasts do not develop as well in materials so high in acid. The acidity and heat together have a tendency to destroy the organisms more easily. Products such as asparagus, peas, beans, and some of the sweeter fruits, afford a splendid medium for the development of organisms.

Firm fruit and vegetables are less open to the entrance of organisms to the tissues. Soft and easily-broken products, as tomatoes and grapes, are often found cracked when picked. Soil or dust gaining entrance to the tissues by these cracks is washed out only with great difficulty. Protection to the organisms by the tissues thus entered makes sterilisation more difficult.

(3) *Density of the Syrup.* The amount of sugar in the syrup of canned fruits has a great influence on the time necessary for sterilisation.

When the concentration of sugar in a syrup reaches a certain point, bacteria, moulds and yeasts do not develop readily. This is due to the absence of sufficient moisture. The concentration of sugar used with most fruits is so high that bacteria are unable to develop, but is not high enough to prevent the growth of yeasts and moulds. This being the case the most difficult part of sterilisation, the destruction of bacteria, is eliminated. Yeasts and moulds, which can develop in such concentrated solutions, are killed by less exposure to heat than are the bacteria. Thus fruits canned with heavy syrups are sterilised more easily than products in which the bacteria can develop.