The method consists of heating the products to be canned, in jars, at boiling point for a given period of time, on one, two, or three successive days, the times advised having been determined by actual experiment.

The advantages of this method over any others open to the housekeeper are:

(*a*) Sterilisation is thorough. The product once in the jar is not open to contamination with spores or active organisms, as it is when the product is stewed in open kettles and then filled into the jar.

(*b*) The exposure to temperature may be more satisfactorily varied, so that over or under cooking is minimized.

(*c*) Tender fruits, as raspberries, have a minimum amount of handling, and heating is not so violent. The berries, therefore, retain their natural shape, color and appearance more satisfactorily.

(*d*) Experiments have determined the amount of heat necessary to destroy these organisms, some products needing much less time than others.

(*e*) It enables the canning of vegetables, as peas, beans, corn and tomatoes, which were previously canned only with difficulty.

Explanation of Intermittent Sterilisation.

As previously stated, intermittent sterilisation means heating the products in the container for a definite period of time, on one, two or three successive days.

The method is based on the fact that certain bacteria form very hardy spores. These spores are so resistant to ordinary boiling temperature that in some instances they are not killed by three or four hours, or more, exposure. If fruit and vegetables are exposed to such long heat the texture and shape is apt to be materially changed, the tender fruits especially are reduced to a more or less pulp, and the attractive appearance of the natural fruit is lost.

To overcome this difficulty the process of intermittent sterilisation is advised. The heat applied the first day kills all moulds, yeasts, and active (vegetative) bacterial cells, but not the spores. In the twenty-four hours elapsing between the first and second heating most of the spores germinate, that is, they form the active vegetative cells, and are killed by the second application of heat. A third heating is given after another twenty-four hours' interval, to kill any cells which have formed from spores which had not germinated when the second heating was given.

Thus in three comparatively short periods of heating (15-30 minutes) results are obtained which by constant boiling would require several hours. This form of sterilisation demands more care and attention, but is the only method offering success with vegetables. Most fruits demand only one heating for a brief interval.

Long Exposure to Boiling.

Boiling for extended periods of time has been advised by some writers for vegetables, but experiments conducted in the Department of Bacteriology have shown a large percentage of failures in every case. This is explained by the presence of very resistant spore forms, which are common in the soil. Therefore, exposure of vegetables or fruit to long periods of boiling cannot be advised, such products are more successfully canned by the intermittent method.