

to interfere in another with its nutritive properties. The food seem less digestible and its "livingness" seem in some way destroyed. The reasons for these subtle changes have not yet been clearly traced; that they occur is unquestionable.

We must now pass on to a review of the methods employed.

(c.) **KEEP FOOD PROTECTED FROM THE ATTACKS OF GERMS, YEASTS, AND MOULDS.**

Of these there are several, most of them being quite familiar to us.

(1.) *The Exclusion of Air.*—As air is necessary to the life of most of these micro-organisms, they cannot develop in or attack food from which all air is excluded.

A favourite domestic application of this method of food-preservation is to cover the surface of potted meat or fish, for example, with a layer of lard or other fat, which is impervious to air. Oil or paraffin-wax serve the same purpose.

Commercially, oil is also employed to preserve fish, such as sardines, herrings, or anchovies; and in Italy a few drops of oil seal the necks of wine-flasks, instead of corks.

The exclusion of air is, of course, one secret of success in jam-making or preserving fruit or vegetables, combined with a very high temperature, which destroys micro-organisms if present. We all know that if a jar is not brimful of boiling fruit and syrup, so that even the tiniest space is left for air to occupy, decay invariably follows, usually in the form of moulds.

The enormous quantity of

*Canned Foods*

on the market illustrates the wide utilization of this method of food-preservation by air-exclusion, combined with previous sterilization. Ill-effects rarely follow its consumption; nevertheless, every one who uses canned foods should never omit to practise the following precaution:—

(a.) Always turn out the contents of any tin into a glass, china, or earthenware dish immediately the tin is opened. This precaution is quite as necessary in the case of fish preserved in oil, though it is usually neglected.

This precaution is necessary, because the exact extent to which the natural acids of food corrode the inner surface of tins is not yet known; but injurious metallic salts are occasionally found, and such chemical action is more liable to occur when the tin is opened and the contents become exposed to the external air than when it is hermetically sealed. For this reason food should, when possible, be always preserved in glass or china vessels.

(FIG. 6.)



Where germs flourish and flies breed.

(b.) Form the habit of examining each tin before opening it, as to the soundness of its contents:—

(i.) *By the Eye.* Slight inward bulging, or concavities, of the surface are a good sign. Outward bulgings, or convexities, are a danger-signal, and show that the gases of putrefaction have formed: