

the former containing sodium bi-carbonate and some acid (usually tartaric acid or calcium phosphate); the latter consists of sodium bi-carbonate alone, the acid being furnished by the lactic acid in the sour milk. Sodium bi-carbonate, when moistened and mixed with an acid, forms a gas, carbon dioxide, which is the same gas as is formed by the yeast cell; but besides the gas there are other substances formed which remain in the bread and which may or may not be injurious, according to the nature of the acid used, and the proportions of the chemicals to one another. If hydrochloric acid is used, as in the case of the manufacture of aerated bread, then only the substances sodium chloride, or common salt, and the gas are formed, if the proportions are correct; but when tartaric or lactic acid is used, a substance is formed, called sodium carbonate, which remains in the bread and is consumed,—which substance has been condemned as injurious to the health when used as a preservative in milk or butter. It is one of the most common remedies in cases of acidity of the stomach and for this reason alone cannot be considered a desirable substance for a healthy person. Every one is familiar with the disagreeable taste and yellowish brown color given to cake when too much soda is used, both the color and taste being due to sodium carbonate which has not been neutralized. But apart from this reason, the flour in bread or cakes so made, is not so digestible as that from yeast-fermented bread; because the starch and other substances are not acted upon by the chemicals in the same manner that they are when subjected to the prolonged fermentative action of the yeast and the diastase contained in the flour; the gluten does not undergo the softening changes that it does under the action of the yeast; and the particles of flour are not so finely divided. Consequently baking-powder cakes are not so light and spongy as bread made in the usual way; and for this reason they are not so readily digested, the coarse particles not offering so large a surface to the action of the digestive fluids as the finely divided particles of well fermented bread.

**AERATED BREAD.** The aerated bread referred to above was first made by Dr. Daughlish. The process adopted by him consists of kneading the dough by mechanical means in an air-tight metal compartment, the dough being thoroughly mixed with carbonic acid gas under pressure while in the kneading trough. The dough is put into the oven immediately after it has been kneaded and rises during the process of baking. The chief advantage of this method is that time is saved, as it is not necessary to wait for the prolonged fermentation of the yeast; and no opportunity is given for undesirable germs to grow and cause sour or bad-flavored bread. Aerated bread is very light, and a uniform quality and good color can always be produced; but it has a raw insipid flavor, which causes the consumer to tire of it.

**SALT BREAD.** There is another method of making risen bread, that is, the method called salt-rising. It is the result of a spontaneous fermentation, and it is therefore a matter of chance whether good bread will be produced, although in places where such bread has been