distillery, one from a compressed yeast (sold for bread-making and ordinarily produced at a distillery), and the third from a home-grown yeast which had been started with a compressed distillery yeast.

The beer yeasts in several instances gave better results than yeasts sold specially for bread-making. Some of the latter gave very poor results, indeed, showing that sufficient care had not been taken when starting the growth of the yeast at the factory to obtain one which was well adapted to bread-making. The experiments show the superiority of distillery yeasts over brewery yeasts for the fermentation of flour. They seem to act upon the starch of the flour more energetically than do the beer yeasts.

In experiments made on mixtures of flour and water in fermentation tubes, the distillery yeasts always produced considerably more gas than did the other kinds; they also produced the gas more quickly. (See Fig. 4.)

ACTION OF YEAST.

The most striking change in dough after the addition of good yeast is the rising or swelling of the mass. This is caused by the action of the yeast upon the sugar which is present in the flour, and to a slight extent upon the starch, which has been changed into a kind of sugar called dextrin, chiefly by the diastase in the flour. These sugars are converted into alcohol and carbonic acid gas. The alcohol may usually be plainly smelt by making an opening in the dough at the end of the doughing stage ; but it is evaporated on heating the dough in the oven during the process of baking. Small quantities of it, however, are said to be retained in the bread. The gas which is formed in the dough during fermentation is unable to get away, owing to the sticky nature of the flour. It is held in small bubbles, the form of which can be seen on looking at a piece of bread, the small holes representing the spaces occupied by the gas bubbles in the dough. The effect of the heat in the oven upon these bubbles is to cause them to expand, and thus force the particles of flour farther apart, so that the loaf when baked is much larger than the piece of dough before baking.

Other changes occur which are not clearly understood, and which result in the production of "grain" or texture in the loaf. If a dough is set and a portion is taken off and baked at the end of, say six hours, and other portions taken at eight and ten hours, respectively, those which have been taken too early will not produce bread of so good texture, flavor, or color as those taken later; but if any portions are left too long the bread made from these will be erunbly and brittle, owing to the fact that the gluten has been stretched so much by the gas that it is unable to hold the particles firmly together.

PROPERTIES OF YEAST.

FERMENTATIVE POWER. The most important function of yeast is to form gas and thus raise the dough; and some yeasts form very