Beer yeast-cells in a saccharine fluid change grape-sugar into alcohol and carbon dioxide in the complete absence of free oxygen, and can continue these processes for months without either growing or multiplying themselves, when, indeed, the food-supply is abundantly present and the temperature favorable. According to certain observers, the yeast-cells do grow and multiply, but *there is no doubt that it must be admitted* that growth and multiplication are insignificant.

A portion of the same yeast-cells, brought into a saccharine fluid in the presence of oxygen, forms little or no alcohol, separates some carbon dioxide, with absorption of oxygen, grows, and, moreover, multiplies abundantly under similar conditions of temperature and nourishment.

The bacteria of decomposition [Fäulnissbacterien], brought into watery extracts of flesh in the presence of oxygen, decompose albumnous matters, creatin, sugar, and lactic acid into leucin, hydroparacumarsic acid, indol, skatol, ammonia, carbon dioxide, hydrogen, and sulphureted hydrogen.

They are motionless and do not multiply; however, the latter is denied by some observers.

The same bacteria, under precisely similar conditions but with oxygen present, form no hydrogen, no organic decomposition products; only carbon dioxide, water, and ammonia; *they multiply abundantly* and are in lively motion.

The formation of anhydrides, to be recognized in the growth of organisms and their multiplication, happens either only, in the main, in the presence of oxygen, or, at least, much more abundantly than without it. However, oxygen can neither of itself form anhydrides nor be the sole cause of the movements of the bacteria.

Though oxygen is of itself powerless to act as an oxi

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