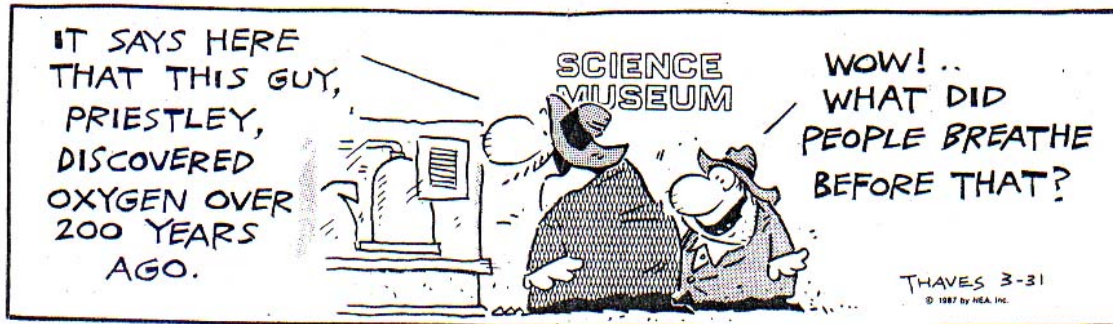


Life without Oxygen

CHEM-643 Intermediary Metabolism

Case Study Problem Written by Harold B. White



Page 1 - Understanding the basics of glycolysis.

"Man's interest in alcoholic fermentation needs no explanation in itself. Understandably, stimulus for scientific discovery has often come from aims less exalted than the disinterested pursuit of knowledge. Many of the alchemists who prepared the way for modern chemistry were motivated by the greed for gold. Biochemistry owes at least as much to man's thirst for alcohol as chemistry does for his appetite for money. Early impetus came from the worldly quest for liquor in the one case, for lucre in the other."

F. R. Jevons (1964) p. 55 in *The Biochemical Approach to Life*

"...how slight is the twist of biochemical fate which determines that it should be lactate and not alcohol that is poured into the blood under stress. Were the enzyme make up of human muscle just that little bit different, hard physical exercise might be more popular than it is - the opposite of a sobering thought."

F. R. Jevons (1964) p. 67 in *The Biochemical Approach to Life*

Compare the reactions of glucose fermentation as it occurs in your muscles during strenuous exercise and in yeast? What does Jevons mean in the second quote above?

What distinguishes fermentation from respiration?