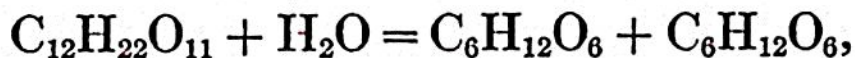


This reaction corresponds exactly to the simple case first discussed, and so causes an inconsiderable change in the concentration of ionized hydrogen. The free carbonic acid then passes out through the lungs, and the salt is excreted in the urine. Other processes are involved, including a device for final retention of a part of the alkali which has neutralized acid,¹ but in the whole complex function nothing is more important than the simple reaction written above.

The hydrogen ion concentration exerts a marked influence upon the rate of progress of chemical reactions. Thus, for example, the so-called inversion of cane sugar by a process of hydrolytic cleavage into glucose and fructose,



is commonly accomplished by warming a solution of sugar to which a little acid has been added. It was shown by the classical investigation of Wilhelmi that the velocity of this process depends upon the strength of the acid, or, according to the modern view, upon

¹ Henderson, *Journal of Biological Chemistry*, IX, 403, 1911.