

the first place marked influence of change of temperature upon chemical reaction is almost universal, and as a rule an increase of 10° centigrade in temperature will more than double the rate of a chemical change.<sup>1</sup> Secondly all living organisms contain both chemical substances and physico-chemical structures or systems which begin to be altered, and usually irreversibly altered, at a temperature which is very little above that of the human body.<sup>2</sup> It is perhaps imaginable that

<sup>1</sup> If the velocity of a chemical reaction be represented by a coefficient,  $k$ , the increase in its magnitude with rising temperature is unlike that of ordinary physical coefficients, and in many cases amounts to a two or threefold rise for a temperature increase of 10° centigrade. The well-known data concerning the transformation of dibromsuccinic acid into brommaleic acid and hydrobromic acid in aqueous solution illustrate a typical case.

$t$	$k$
15°	0.00000967
40°	0.0000863
50°	0.000249
60.2°	0.000654
70.1°	0.00169
80°	0.0046
89.4°	0.0156
101°	0.0318

<sup>2</sup> This is attested not only by the low temperature at which many proteins coagulate, but also by the action of temperatures between 50° and 60° to inactivate enzymes, and