

It is seen that there is a general correspondence between rate and temperature. But that the rate does not follow any law based on temperature is apparent from the observations for Aug. 27 and Sept. 7 (first record), where the rates are the same with a difference of temperature of over nine degrees. Furthermore, comparison of Aug. 27 and Aug. 28 shows that of two records the higher rate may accompany the lower temperature. The five records for Sept. 7 were made within an area of two square rods in the same blackberry patch. The crickets were chirping simultaneously, and the observations were made within a period of 15 minutes; the temperature did not change perceptibly, yet the rate in different individuals is from 93 to 110. Other records made outside of this area on the same evening showed even greater extremes, the lowest rate being 84 per minute, the highest 126. These observations are of interest in the light of Dolbear's observation of accurate synchronism.

It will be noted that the crickets of Sept. 7 were at different elevations, and that those at the greater height chirped the more rapidly. While there were numerous exceptions to this correlation of rate with elevation, the higher crickets chirped at rates which on the average were markedly higher than the average of individuals nearer the ground. Dolbear might have explained this difference of rate at different elevations by the fact that the greater elevations have the higher temperatures. Even if temperature is the cause of the variations at different altitudes, the synchronism existing among "all the crickets in a field" would be destroyed, for to produce such synchronism it would be necessary to have, not merely a level field, but all the crickets in the same horizontal plane over the field. Granting for the moment that temperature alone is responsible for these differences in rate, Dolbear's formula, which is not much in error in making the rate increase by 4 per degree rise in temperature, does not state the proper relation between the difference of temperature and the difference of rate. The observed difference of temperature between elevations of 2 ft. and 10 ft. was usually about 1° at the time of making these observations, 7.30 to 8 p.m. Hence, according to Dolbear's formula, or any formula based on crickets at the same elevation, the difference in rate between elevations of 2 ft. and 10 ft. should have been about 4, whereas it will be seen from the table that the difference was 17.

Evidently individual rates are not closely correlated with temperature. If any accurate correlation exists, it ought to be apparent from average rates. A few averages, covering, with some additions, the same period