stages of development; for example, at the tenth, twelfth and fourteenth nomadic days. This is even a more exacting test than is the one in which earlier stages are compared since in samples taken after the tenth nomadic and especially from the fourteenth nomadic day onward, inter-stage differences in the size of the leg buds become more marked. Table I shows that despite this fact there is an increase in the leg discs in all types of larvae through the more advanced stages.

In order to get a graphic representation of the relationship which the leg discs bear to body length of the larvae, values for the area of the leg discs were plotted against the body lengths for each nomadic day for five larvae in each of the three polymorphic groups. The original data was plotted on arithmetic paper. The points plotted indicated that an exponential curve of the type $y = a\ b^x$ would best fit the relationship between body length and the area of the leg disc. In this formula y represents the area of the imaginal leg disc, x represents the body length of the larva, and a and b are constants. Each polymorphic group of larvae seems to have its own exponential curve. This was further brought out when the data was plotted on semi-logarthmic paper. A linear relationship was obtained when the leg disc area for each corresponding body length was thus plotted for the three polymorphic groups (Text-figures 1, 2, and 3). The rate of growth of the leg disc area with respect to the body length clearly varied among the three polymorphic groups of larvae, and was smallest for the large larvae, greater for the intermediate larvae, and greatest for the polymorphic small larvae. The constants a and b determine the type of exponential curve for each of the polymorphic groups. These constants were determined by the least square method. The exponential equations of the forms are for the polymorphic small larvae, $y = 0.0005801\ (2.864)^x$; for the polymorphic intermediate larvae, $y = 0.0021919\ (1.785)^x$; and for the polymorphic large larvae $y = 0.0025832\ (1.636)^x$. The larger b is, the greater is the rate of increase in the leg discs with respect to body length. The larger a is, the larger is the initial leg disc area, i.e., at the earliest stages of development.

An inspection and explanation of the figures in this paper will serve to demonstrate the most important external structures