121 (817)

Experiments on the light and tactile reactions of a cave variety and an open water variety of an amphipod species.

By **A. M. BANTA.**

[*From the Station for Experimental Evolution, The Carnegie Institution of Washington.*]

The amphipod, *Eucrangonyx gracilis* (Smith), occurs in the waters of many caves in southern Indiana and is very generally and abundantly distributed in small surface streams in the same region. The individuals occurring in caves almost without exception have very little or no body pigment though possessed of the normal pigment in the eyes. Those living in surface streams have the usual amount of pigment for a crustacean. In other structural characters the forms are apparently alike.

In an attempt to determine whether there was a physiological difference between the two forms they were tested for light and tactile reactions. These amphipods are negative to all intensities of light to which they respond. Extended series of light experiments using horizontal illumination were conducted during which every effort was made to maintain as precise conditions as possible. The cave form was found to be somewhat less responsive to light than the form living outside caves, but this difference was not large and was distinctly observable only with relatively small intensities of light.

In order to test the tactile reactions a delicate camel's hair fastened to the end of a glass rod was used to stimulate various parts of the body of several individuals of the cave form and the same number (of equal size) of the surface form. Complete tabulations of the nature and vigor of each response, when a response occurred, were kept and failures to respond were likewise recorded. This data showed a greater number of failures to respond and on the average a slightly less vigorous response on the part of the surface form as compared with the cave form.

Hence the cave form appears to be less responsive to light and more responsive to tactile stimulation than its outside relative.