

<sup>15</sup>Tilton, G. R. and R. H. Steiger. 1965. Lead isotopes and the age of the earth, *Science*, 150:1805-1808.

<sup>16</sup>Goulian, M. 1969. Synthesis of viral DNA, *Science Journal*, 5(3):35-42.

<sup>17</sup>Pearce, E. K. V. 1969. Who was Adam? The Patter-noster Press, Exeter, Devon, United Kingdom, p. 104.

<sup>18</sup>1 Corinthians 14:33 (Authorized Version).

<sup>19</sup>Genesis 1:11-12, 20-21, and 24-25.

## THE TWIG GIRDLER'S INSTINCTIVE BEHAVIOR

WILLARD L. HENNING\*

Among the insects that work hard to make special provision for food in a favorable state for their developing young, the twig girdler beetles should be rated highly.<sup>1</sup> Most remarkable is the habit of this type of long-horned beetle which simply girdles a twig instead of gathering food, storing it in a safe place and depositing an egg on it as many insects do.

The jaws or "mandibles" of both the larvae (round-headed borers) and adult long-horned beetles are among the most powerful of any insect, since the larvae feed on the hardest wood. However the adult female long-horned beetle (*Oncideres cingulata* Say)<sup>2</sup> of the twig girdler habit gnaws the bark and outer wood of certain hardwood twigs or branches (about one-half inch in diameter) for forty or fifty hours<sup>3</sup> so as to encircle the twig (one-eighth inch deep) and cut off the passage of sap and nutrients to and from the outer branchlets. She then lays about twelve to twenty eggs on the smaller branchlets. She repeats this on several other twigs.

Why is the girdling process essential? Really for two reasons. The larval wood borers must have the wood both dead and moistened to feed upon. In the autumn after the twigs are girdled, they easily break off in a stiff breeze or wind. Once they fall to the ground the entire branch absorbs at least some soil moisture, and partial

decay may result. The larvae feed on the wood during the following spring and summer and become pupae and adults by September or October. After mating the females repeat their labori-ous process of twig girdling.

Those who believe in evolution might account for such an instinctive habit by claiming such an act of behavior developed by some supposed evolution during the past several millenia. Yet the development of entirely new and complex patterns of instinctive behavior on the part of insects, under natural conditions, has not been demonstrated.

We know from God's Word that "without Him was not anything made that was made" (John 1:3b). This includes not only the living creatures, but their instinctive behavior patterns and acts necessary for their own survival and for their offspring. Instinctive behavior for survival is referred to by ants in Proverbs 30:25 and by migratory birds in Jeremiah 8:7. No doubt the habit of killing the outer twigs of trees came about after man first sinned and the curse fell on the entire creation (Genesis 3: 17-19, Romans 8:22).

### References

<sup>1</sup>Metcalf, C. L., and W. P. Flint. 1928. Destructive and useful insects, their habits and control. Fourth edition. McGraw-Hill Book Co., Inc., N. Y., pp. 11-12.

<sup>2</sup>*Ibid.*, p. 664.

<sup>3</sup>Metcalf, C. L., and W. P. Flint. 1962. Destructive and useful insects, their habits and control. First edition. McGraw-Hill Book Co., Inc., N. Y., p. 159.

\*Willard L. Henning, Ph.D., is professor of biology and chairman of the natural science division at Bryan College, Dayton, Tennessee.