MATING BEHAVIOR OF THE GLASSY-WINGED SHARPSHOOTER, *HOMALODISCA COAGULATA*

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INTRODUCTION

Mating behavior in leafhoppers is mediated by vibrational signals transmitted through plants (Claridge and de Vrijer 1994). Leafhopper calls are species-specific and have proven useful in resolving taxonomic problems. Furthermore, analysis of intra- and interspecific variation in male calls has provided clues about speciation processes. However, little is known about mate-finding tactics at the habitat level or the specific cues used by males to locate females after mate recognition. Theoretical and some experimental research on leafhoppers and planthoppers clearly indicate that seasonal patterns of abundance and dispersal are intimately linked to a species mating system (Ott 1993). Thus, determining rules that govern mating behavior may ultimately contribute an understanding of population and community level processes. Also, the application of basic knowledge of leafhopper mating behavior to an applied problem such as developing a novel monitoring device for the glassy-winged sharpshooter is unexplored.

OBJECTIVES

1. Determine the role of vibrational signals in mate recognition, attraction, courtship, and copulation. This objective will be accomplished by describing variation in vibrational signals associated with mate recognition, attraction, courtship, and copulation and by quantifying behavioral transitions that lead to mating. Playback experiments will be done to confirm the involvement of observed signals in mediating the above behaviors.

2. Assess the feasibility of developing improved monitoring traps by using vibrational signals to attract adults. This objective will be accomplished by determining the effect of sticky traps augmented with vibrational signals on the capture of glassy-winged sharpshooters.

RESULTS AND CONCLUSION

Research was initiated July 2001. Calls emitted by males have been recorded and are being characterized (Figure 1). Further progress will be reported in the symposium.

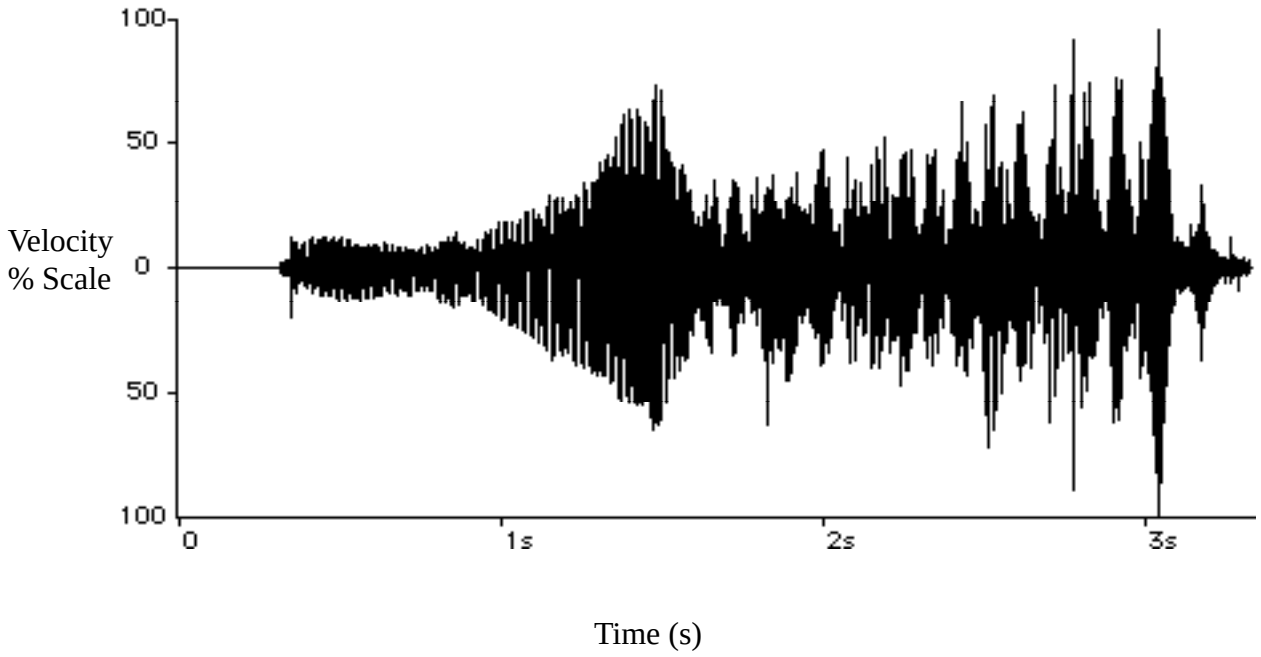

Figure 1. Oscillogram of a signal emitted by a male *H. coagulata*

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