



Adult caddisflies (Trichoptera) attracted to artificial lights in the middle reaches of the Shinano River from 2005 to 2007

KIMIO HIRABAYASHI*, GORO KIMURA & EISO INOUE

Division of Applied Biology, Faculty of Textile Science and Technology, Shinshu University, 3-15-1 Tokida, Ueda 386-8567, Japan

(* Corresponding author. E-mail: kimio@shinshu-u.ac.jp)

Abstract

The species composition and abundance of adult caddisflies attracted to the illuminated showcase of a vending machine set along the middle reaches of the Shinano River were investigated every Sunday night from April to November in 2005 to 2007. A total of 1,405 adult caddisflies was collected during the investigation periods. We identified a total of 13 species belonging to 11 genera of 8 families. The most abundant species was *Psychomyia acutipennis* (Ulmer 1908) each year. *Psychomyia acutipennis* adults were collected from mid-May to the beginning of October (the range of mean air temperature was 13.8 to 27.7°C), with its seasonal abundance divided into several peaks, *i.e.*, the end of May, the beginning of June, and the end of August to the beginning of September in both 2006 and 2007. On the other hand, in 2005 when there was no large-scale summer flood and there were no marked abundance peaks. The present study suggests that the mean air temperature and summer floods impacted the seasonal abundance of *P. acutipennis* adults.

Key words: air temperature, annual trend, flood, light trap, *Psychomyia acutipennis*, seasonal abundance

Introduction

Members of the order Trichoptera are widely distributed and are frequently one of the most abundant taxa of insects in freshwater (Wiggins & Currie 2008). Since the work of Parlato (1929), the hairy wings of the caddisfly have been known as an inhalant allergen throughout the world. However, there have been few previous reports on the abundance and seasonal trend of adult caddisflies in freshwater Japanese habitats. Therefore, the present study is intended to describe the adult caddisfly fauna associated with air temperature and floods during the years from 2005 to 2007, with the aim of obtaining valuable information for the control of public health pests in the middle reaches of the Shinano River.

Materials and methods

Adult caddisflies were collected every Sunday night from April to November of 2005 to 2007, by attracting them to the illuminated showcase of a vending machine set along the middle reaches of the Shinano River. Information about the Shinano River, details of the study site and the vending machine, and identification of adult caddisflies were provided by Kimura *et al.* (2008). Daily mean air temperatures and daily mean water levels during our study period were obtained from the Japan