Life history and secondary production of *Ephemera ignita* (PODA) (Ephemeroptera, Ephemerellidae) in a north Iberian stream

J. M. González, A. Basaguren and J. Pozo

With 3 figures and 2 tables

Abstract: Life history and secondary production of *E. ignita* were determined in two reaches of the Agüera stream (northern Spain). Production was much higher (>×2) at the reach where the nymphs hatched earliest. However, there was no evidence to support a link between *E. ignita* production and timing of the recruitment, as in both reaches it achieved similar mean individual weight and biomass turnover rate. Thus, the site-dependence of *E. ignita* production was a consequence of spatial changes in density.

Introduction

The habitat templet theory (Southwood 1977), and the studies to test it (e.g. Statzner et al. 1997), promoted an increasing interest on life histories of stream invertebrates. This theory hypothesizes that the habitat provides the templet for life history traits. Subsequent research has related spatial and temporal variation of the habitat with some aspects of life histories linked to population resistance or resilience to disturbances. As a consequence, numerous studies on life histories of stream invertebrates can be found in the recent literature. Most of these studies are descriptive (e.g. Kukula 1997) or deal with the immediate causes of certain life history traits (e.g. Newbold et al. 1994).

*Ephemera ignita* (PODA) is a species well known in Europe: when Clifford (1982) reviewed life histories of mayflies he found 88 reports, more than 12% of the total, concerning this species. Jazdewska (1980) and Rosillon (1988) stressed its great adaptability, which results in widespread geographical distribution and environmental breadth. Previous work has shown that *E. ignita* is a detritivore which appears at higher densities in downstream reaches.

Authors’ address: Laboratorio de Ecología, Departamento de Biología Vegetal y Ecología, Facultad de Ciencias, Universidad del País Vasco/EHU, Apdo. 644, 48080 Bilbao, Spain.

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