

2-6. Life History Aspects of a Burrowing Mayfly *Ephemera orientalis* (Ephemeroptera: Ephemeridae) from a Lowland Stream in Korea

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The burrowing mayfly *Ephemera orientalis* McLachlan (Ephemeridae) is common and widespread throughout Korea inhabiting from the mid to lower reaches of streams and large rivers as well as lentic areas such as lakes and reservoirs. Because of its common occurrence and large body size (20~30 mm), the insect is regarded as a keystone aquatic insect species in freshwater ecosystems in Korea and is getting ecologically and environmentally more important as a use of monitoring freshwater environment. Our casual field observations indicated that all size groups of the larvae are found throughout the year and its emergence period is widespread from early spring to late summer, but its detailed life history phenomena have not been studied. The purpose of this study is therefore to elucidate the life history of *E. orientalis* for the population of Gapyeong stream, ca. 60 km Northeast Seoul. Samplings were taken monthly (for the emergence period 3~4 times per month) from the lower reach of the stream from March 1998 to May 1999. Water temperature was monitored one-hour interval for the study period.

As a result, body size distribution analysis showed that two distinct cohorts were perceived during the emergence period appearing the first cohort (spring cohort) in late March and the second cohort (summer cohort) in late June. Their emergences were taken place from May to September, but peaks were observed in June and August. Adults of summer cohort were, however, larger than those of spring cohort in body size. Detailed life history aspects were discussed in relation to temperature change, e.g. degree-day analysis. Discussions on their life history strategies comparing with other *Ephemera* species in Korea, *E. strigata* and *E. separigata*, are provided.