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Facultative Paedomorphosis in the Alpine Newt, *Triturus a. alpestris* : Feeding and Spatial Advantages of Paedomorphs in an Alpine Lake

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Paedomorphosis in newts and salamanders is defined as the retention of larval morphology in reproductive adults. In *Triturus*, Paedomorphosis is facultative because some larvae transform while other retain larval characteristics such as gill slits and mature as Paedomorph. This heterochronic process is thought to be an important micro- and macroevolutionary mechanism. In a population of a French alpine lake (le lac de la Cabane), Alpine newt Paedomorphs (*Triturus a. alpestris*) are abundant and coexist with a Metamorph minority. The coexistence of both morphs and the dominance of one on the other beg a few questions such as what ecological factors favour the paedomorph strategy.

In this study, we analysed the feeding and spatial distribution of the Paedomorphs and Metamorphs of the Lac de la Cabane in June, July, August and October 1998. Newts were caught in the main four microhabitats of the lake : the shore, the bottom (3-7 meters deep), the water column and the surface, at dawn, during the day and in the evening. In this way, we caught 1481 newts to record their spatial position. We flushed the stomachs of 822 of these newts (the total prey number identified is more than 60 thousand).

The feeding strategies of Metamorphs and Paedomorphs are very different : while Paedomorphs prey principally on plankton (*Daphnia*, *Chydorus*, ...), Metamorphs prey on a lot of exogenous invertebrates (flyes, aphids, ...). This characteristic is observed for males, females and juveniles. Cladocerans are also eaten by Metamorphs, but in much smaller quantity.

The Paedomorph newts live in all the microhabitats of the lake while Metamorphs are hardly ever found on the deep bottom and in the water column. The spatial niche of Metamorphs is thus smaller than that of Pedomorphs.

The data presented here suggest that the success of both morphs can be strongly influenced by environmental conditions, and that Paedomorphosis may be maintained and favoured by the spatial and feeding advantages of Paedomorphs into a deep lake.

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