Effects of prey and turion size on the growth and turion production of the carnivorous bladderwort, *Utricularia vulgaris* L.

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With 2 figures and 1 table

**Abstract:** In an outdoor experiment in northern Sweden total length of unfed *Utricularia vulgaris* plants and plants fed copepods and cladocerans peaked in the middle of August in two consecutive years. In both years, during a three week period in July/August, average length growth of fed plants was about twice that of unfed bladders. In both plant categories, turion length and the resulting plant length in the middle of August were positively correlated in both years. Irrespective of turion length, the fed plants grew about 13 cm longer than the unfed ones. Fed plants produced longer turions than did unfed ones. “Offspring” turion length was positively related to “parent” turion length.

**Introduction**

Carnivory in plants is generally thought of as an evolutionary adaptation to nutrient-poor habitats, especially those poor in nitrogen (Strasburger 1965). Benefits from prey should be greater for plants growing in poor compared with rich environments (Givnish et al. 1984). Recent experimental results from terrestrial plants support these statements. Animal food supply substantially increased growth and chance of survival of *Pinguicula vallisneriifolia* inhabiting nitrogen-poor rocky substrates (Zamora et al. 1997). Also in *Drosera intermedia* and *D. rotundifolia* growing in their natural habitat, growth has been shown to markedly increase upon feeding with *Drosophila melanogaster* (Thum 1988). In *D. rotundifolia* Schulze & Schulze (1990) obtained a similar result. Karlsson & Pate (1992) concluded that the highly nutrient-poor conditions typical of the habitat of pygmy species of *Drosera* seemed to have promoted carnivory in these plants. On the other hand, *Drosera intermedia* grown by itself on nutrient rich sediment did not benefit from insectivory.

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