



**Figure 1.** Daily rate (mean  $\pm$  SE) of predation by an adult water bug, *S. rusticum* on the snail, *P. bridgesi*, when the prey individuals were exposed to the predator separately ( $n = 6$ ) with regard to their size (a) and together ( $n = 39$ ), irrespective of their size (b). SE bar omitted where value is zero.

snails *P. bridgesi*, ever find their access into the open-air water bodies in India, they would definitely be victimized by *S. rusticum*. Information is available only regarding predation of water bugs on molluscs, confined to non-operculate

gastropod species<sup>13,14,18,19</sup>. This is a report of predation of bugs on an operculate species. However, to what extent *S. rusticum* would be effective in regulating the *P. bridgesi* population, if they became the member of the freshwater biotic community of the areas concerned, is left to the future.

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## Epicotyl seed dormancy and phenology of germination in *Polygonatum cirrhifolium* Royle

*Polygonatum cirrhifolium* Royle (Liliaceae) is an important medicinal plant of temperate Himalaya<sup>1</sup>. The rhizome of this plant constitutes an important ingredient of Astavarga, a group of eight drugs used extensively in Ayurveda mainly as a tonic and aphrodisiac<sup>2</sup>. In trade, its rhizome is known as Meda/Mahameda and its medicinal attributes are ascribed mainly to the presence of steroidal saponins and polysaccharides in the rhizome. The plant is also useful in the preparation of cosmetics, skin tonic and as a vegetable<sup>1,3</sup>. It is being overexploited from the

wild habitats for its medicinal properties and hence has been placed in the threatened category<sup>4</sup>.

*P. cirrhifolium* propagates both vegetatively, by rhizomatous root stock and sexually through seeds. In some of the important members of the genus *Polygonatum*, seed germination has been reported to be low and extremely slow<sup>5</sup>. This is true for *P. cirrhifolium* also, as it takes a few years to grow to a full size, beginning with a seed.

We investigated the phenological pattern of seed germination under labo-

ratory and field conditions for three years. The purple-coloured berries were collected from plants growing wild in Lahul and Spiti regions of Himachal Pradesh in October 1998.

Seeds were removed from the berries after 15 days of dehydration at room temperature, thoroughly washed under running tap water with 1 or 2 drops of Tween-20 for 30 min, rinsed twice in sterile distilled water and allowed to germinate in petri dishes lined with moist Whatman filter paper No. 1. Per cent germination, as indicated by emergence