

## RESEARCH NOTES

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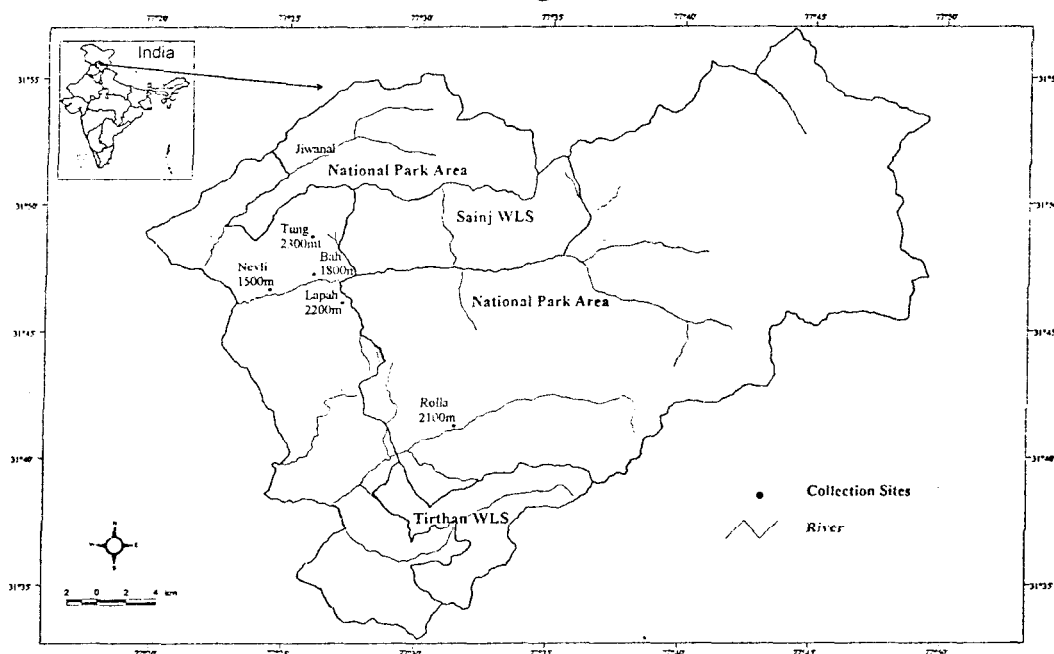
#### ALTITUDINAL DISTRIBUTION OF TIGER BEETLES (CICINDELIDAE : COLEOPTERA) IN GREAT HIMALAYAN NATIONAL PARK CONSERVATION AREA, WESTERN HIMALAYA

##### Introduction

Insects in general are particularly suited for monitoring changes in landscape because of their abundance, species richness, ubiquitous occurrence and importance in the functioning of natural ecosystems (Samways, 1994). Amongst

various groups of insects, Tiger beetles (Cicindelidae) are suited as a good indicator group for identifying areas of biodiversity conservation (Pearson and Cassola, 1992). Besides, Tiger beetles are well known, their biology well understood, they are distributed over a broad range of biotope types and geographical areas and are

Fig. 1



Tiger beetle collection sites in Great Himalayan National Park Conservation Area, H.P.

Table 1

*Altitudinal distribution of Tiger beetles in Great Himalayan National Park Conservation Area, H.P.*

Species	Altitude (m)	Forest Types
<i>Cicindela flavomaculata</i> Hope	1,500 - 2,200	Lower temperate to mid temperate
<i>Cicindela nurgula</i> Fleutiaux	1,800 - 2,300	
<i>Jansenia</i> spp.	2,300	Mid temperate

capable of existing in remnant patches of biotopes (Samways, 1994). Clark and Samways (1993) had suggested that cicindelids are useful as fast indicators of biotope quality relative to disturbance. A total 2,028 species of cicindelids have been documented from eleven biogeographical zones of the world (Pearson and Cassola, 1992). From Indian region alone a total of 747 species have been reported, out of which 82 species are endemic (Collins and Morris, 1985).

#### Study Area

Field surveys were conducted in the Great Himalayan National Park Conservation Area (GHNPCA) situated between Lat. 31°30'00" and 31°56'56" North and Long. 77°17'15" to 77°52'51" East, in Kullu District of Himachal Pradesh (Fig. 1). This area is characterised by high ridges, deep gorges and precipitous cliffs, craggy rocks, glaciers and narrow valleys. The park consists of catchments of Tirthan, Sainj and Jiwa valleys flowing into the Beas river.

#### Observations

Three species of Tiger beetles (Table 1) representing two genera viz.,

*Cicindela (Cosmodela) nurgula* Fleutiaux, *Cicindela (Cosmodela) flavomaculata* Hope and *Janenia* spp. were collected during May, between lower temperate to mid temperate forest types (Champion and Seth, 1968) in GHNPCA. *C. nurgula* and *Jansenia* spp. were found near Bah village (1,800 m) along the Sainj river in Sainj valley and also near Tung village (2,300 m) in Jiwa valley. *C. flavomaculata* was found near Lapah (2,200 m) and Nevli (1,500 m) villages along the Sainj river in Sainj valley and also near Rolla (2,100 m) in Tirthan valley of GHNPCA.

The dominant plant species that forms the suitable habitats for Tiger beetles around the collection sites were : *Cornus macrophylla*, *Rhus semialata*, *Quercus leucotrichophora*, *Aesculus indica*, *Celtis tetrandra*, *Betula alnoides*, *Ulmus wallichiana*, *Pyrus pashia*, *Pinus wallichiana*, *Rhododendron arboreum*, *Cedrus deodara*, *Picea smithiana*, *Juglans regia*, *Acer caesium*, *Prunus cornuta*, *Populus ciliata*, *Cornus capitata*, *Lyonia ovalifolia*, etc.

Collections were made along the riverbeds by aerial net method (Upton, 1991).

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