FAUNA OF PROTECTED AREAS - 12:

BEETLES OF KALATOP-KHAJJIAR WILDLIFE SANCTUARY, HIMACHAL PRADESH

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Kalatop-Khajjiar Wildlife Sanctuary (30^{0}32'-32^{0}37'N & 75^{0}58'- 76^{0}07'E; ca. 20km^2; 1185-2768m) is in the catchment of river Ravi on the western extremity of Dhauladhar Range of western Himalaya in Dalhousie subdivision, Chamba District. It receives about 2468mm rainfall and 672mm snowfall annually. Temperature ranges between -10^{0}C and 35^{0}C. The name Khajjiar is derived from the Khajji Nag temple located near the unique saucer shaped alpine meadow of approximately 18ha with the presence of a lake in the centre and canopy of Deodar (*Cedrus deodara*) trees. The floristic composition varies from Cheer Pine (*Pinus roxburghii*), Ban Oak in the lower zone and pure Deodar in the middle reaches. Fir (*Abies pindrow*) and Spruce (*Picea smithiana*) with some alpine pasture and dense cover of grass as undergrowth are some of the features of the area.

Other than birds (Thakur *et al.,* 2002), butterflies (Thakur *et al.,* 2002) and grasshoppers (Mehta *et al.,* 2002) no information is available on other faunal groups from this Sanctuary. With this view, a preliminary study was conducted and qualitative sampling done during June 2002 in the Sanctuary to ascertain the beetle fauna, which resulted in the enumeration of 18 species belonging to 16 genera spread over nine familes (Table 1).

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Table 1. List of beetles of Kalatop-Khajjiar Wildlife Sanctuary

Coleoptera: Adephaga
Carabidae
1. *Carabus boysi* Jatum

Dytiscidae
2. *Agabus debillipes* (Reg.)
3. *Rhantus sikkimensis* Reg.

Polyphaga
Scarabaeidae
4. Brahmina coriacea Hope
5. *Brahmina* sp.
6. *Clinteria* sp.
7. *Mimela pictoralis* Blanchard
8. *Mimela* sp.
9. *Oxyoetonia* sp.
10. *Popilla* sp.

Hydrophilidae
11. *Helochares* sp.

Cantharidae
12. *Themus* sp.

Coccinellidae
13. *Coccinella septempunctata* (L.)

Tenebrionidae
14. *Sphenariopsis* sp.

Meloidae
15. *Denierella* sp.
16. *Myllabris* sp.

Chrysomellidae
17. *Cleorina* sp.
18. *Dercetina* sp.

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FAUNA OF PROTECTED AREAS - 13:

HERPETOFAUNA OF DESERT NATIONAL PARK, RAJASTHAN, INDIA

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Desert National Park (DNP), a unique and the only habitat of its type in South Asia is present in the most arid zone of the Thar Desert. It covers an area of 3162km^2 spreading partly over Jaisalmer and Barmer districts of Rajasthan. Desert National Park (25^{0}47'-26^{0}46'N & 70^{0}15'-70^{0}45'E). The entire area is plain grassland with a few hills in its northwestern side and is dominated by sand dunes. Most of the dunes are of *burchan* (shifting & devoid of vegetation) type but fixed, tall and parallel dunes are also present. Inter-dunes, sandy plains, gravelly and stony areas with a few isolated ridges are other topographic units.

The climate of this region is characterized by extremes of temperature which sometimes touches 50^{0}C during daytime at summer and falls up to 2^{0}C during chilly winter nights. Dust-stroms or *aandhi* are quite frequent in summer and may be as strong as 136km/hr. Droughts, very strong winds, low relative humidity, evaporation far exceeding precipitation, aridity index of 80% are characteristic features. The rainfall pattern is extremely erratic and annual rainfall is about 100-150mm, but it rains only about a period of three to seven days in a year, mostly during the months of July to September.

Despite extreme environmental conditions, some parts of the Desert National Park appear as vast expanses of grassland intermixed with shrubs and trees. The common grasses of this region are *Lasiurus sindicus*, *Aristida mutabilis*, *Enneapogon brachystachya*, *Cenechrus biflorus*, *Oropaeteium thomeum*, *Indigofera cordifolia* and *Farsetia jacquemontii*. The common shrubs are *Euphorbia caducifolia*, *Ziziphus nummularia*, *Leptadenia pyrotechnica*, *Haloxylon salicornicum*, *Calligonum polygonoides*, *Areva pseudotomentosa*, *Crotolaria burhia* and *Calotropis procera*. The common trees are *Acacia senegal*, *Capparis decidua*, *Prosopis cineraria*, *Salvadora oleoides* and *Tocomella undulata*. *Albezia lebbek* and *Azardirachta indica* is also noticed in the area. Besides, a large number of climbers such as *Coculus pendulus*, *Asparapus racemosus*, *Sarcostemma acidum*, *Ephedra foliata*, *Rivea hypocrateriformis*, *Rhynchosia minima*, *Sarcostemma acidum* and *Coccinia grandis* are also found in association with shrubs and trees.

The study was carried out from February 1995 to December 2002. Amphibians were hand collected from moist places and from temporary run-offs in artificial depressions using a net. The specimens were preserved in 4% formalin or 90% alcohol. The specimens were taken to the laboratory for identification and identified using Mansukhani *et al*. (1970), Dutta (1987) and Chanda (2002). Intensive field surveys were conducted to search for reptiles. Small lizards were collected with hands and preserved in 4% formalin or 90% alcohol for identification. Larger lizards (like *Varanus* & *Uromastix* sp.) and snakes were captured using a long stick, collected in a glass jar, identified and released back. Specimens were identified following the manuals of Smith (1935, 1943),

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Table 1. Herpetofauna of Desert National Park

Scientific name	Distribution in Thar	D/N
Amphibia: Anura		
Bufonidae		
Bufo stomaticus Lutken,1862	Turvi (Barmer), Marga (Jaisalmer)	N
Reptilia: Squamata: Sauria		
Gekkonidae		
Cyrtopodian scaber (Heyden in: Rippell,1827)	Nahar Singh Ki Dhani (Jaisalmer), Sam (Jaisalmer) Bandera (Barmer), Myajlar (Jaisalmer)	N
Hemidactylus flaviviridis Ruppell,1840	Turvi, Bandera, Myajlar	
Stenodactylus orientalis Blanford,1876*		N
Agamidae		
Calotes versicolor (Daudin,1802)	Bandera, Harsani (Barmer)	D
Trapelus agilis (Olivier,1804)	On the way from Turvi to Girab (Barmer)	D
Bufoniceps laungwalansis Sharma,1978*	Sam	D
Uromastix hardwicki Gray in: Hardwicke & Gray,1827	Barna, Sam, Pithala to Sudasari area (Jaisalmer)	D
Scincidae		
Ophiomorus raithmai Anderson and Leviton, 1966	Balewa (Barmer), Sam, Pithala	N
Lacertidae		
Acanthodactylus cantoris cantoris Gunther,1864	Bandera, Sudasari, Barna, Khuri (Jaisalmer)	D
Ophiosops jerdoni Blyth,1853	Baisala (Barmer), Nahar Singh Ki Dhani, Pithla, Bhopa (Jaisalmer)	D
Varanidae		
Varanus bengalensis (Daudin, 1802)	Khuri, on the way from Turvi to Girab, on the way from Myajlar to Khyala (Jaisalmer)	D
Varanus griseus (Daudin,1803)	Khuri	D
Serpentes		
Boidae		
Eryx johni (Russell,1801)	On the way from Sudasari to Myajlar	N
Viperidae		
Echis carinatus (Schneider,1801)	On the way fromTurvi to Girab, On the way from Sudasari to Myajlar, Khuri	N
Colubridae		
Cotyberventromaculatus (Gray & Hardwicke, 1833-1834)	Myajlar, Sam	N

* - Species endemic to Thar; D - diurnal species; N - nocturnal species.

Minton (1966) and Sharma (2002).

Herpetofauna is well represented in the Desert National Park. One species of Amphibia (belonging to family Bufonidae) and 15 species of reptiles including 12 lizards (belonging to 5 families) and three snakes (belonging to 3 families) were recorded during the study (Table 1). So far, eight species of amphibians and 51 species of snakes have been recorded from the Thar Desert of Rajasthan. Hence Desert National Park represents only 27.1 % of the total herpetofauna of this region.

From an ecological point of view, it was observed that the dry almost barren sand dunes of Sam, Jaisalmer ($26^0$49'53"N& $70^0$32'13"E) was a very good habitat to species like *Ophiomorus raithmai* (Sand Fish) and *Phrynocephalus laungwalansis* (Toad-Agama). These two species preferred loose sand and were restricted in distribution to the Thar Desert of Rajasthan, the latter being endemic to Thar. The sandy and gravelly land surrounding the Barna Village, Jaisalmer ($26^0$39'26"N & $70^0$41'39"E) was another site of attraction where *Uromastix hardwicki* (Spiny-tailed Lizard) was very easily observed and was found in large numbers at a time. Oil extract of this endangered species is believed to be of medicinal value. However, it was noticed that the sand dunes of Sam are one of the major tourist sites. The left out polythenes and plastic bottles used by tourists and noise produced by their activity is no doubt hazardous to the ecosystem. Hence, proper guidelines should be issued to tourists visiting this site.

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