

**SOME SELECTED FAUNA  
OF  
GOBIND PASHU VIHAR**



**ZOOLOGICAL SURVEY OF INDIA**

*Conservation Area Series 18*

**SOME SELECTED FAUNA**  
*of*  
**GOBIND PASHU VIHAR**

*Edited by the Director, Zoological Survey of India, Kolkata*



सत्यमेव जयते

**Zoological Survey of India**  
**Kolkata**

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October, 2003

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**SOME SELECTED FAUNA OF  
GOVIND WILDLIFE SANCTUARY  
(Uttarkashi : Uttaranchal)  
CONSERVATION AREA SERIES**

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**No. 18**

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## **GOBIND PASHU VIHAR AN OVERVIEW**

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### **INTRODUCTION**

The Govind Wildlife Sanctuary, a part of Himalayan highland, was notified in the year 1954, when its name was changed from Tons to Govind Pashu Vihar. The Government of Uttar Pradesh notified its intention to constitute a part of the sanctuary as National Park in 1991.

#### **Location and Area**

The Sanctuary is situated in Purola Teshil of Uttarkashi district (Uttaranchal) and lies between latitude 31° 02' – 31° 20' N and longitude 77° 55' – 78° 40' E. The nearest town is Purola. The altitude varies from 1290 to 6323 m, the highest point being the Banderpunch peak. The sanctuary covers a total area of 953.12 sq kms, of which 472.08 sq kms has been demarcated as National Park, encompassing the upper Catchment area of river Tons.

#### **Boundary**

The sanctuary is bounded in the north by Himachal Pradesh, in the east by a chain of mountain peaks along the main snowline, in the south by Banderpunch – Kedarkanta ridge and in the west by Kedarkanta Changsil peak.

#### **Drainage**

Two major rivers and their tributaries, viz, the Rupin and the Supin flow through the Sanctuary joining at Naitwar, forming the river Tons there after. The area is also dotted with ponds and tanks.

#### **Climate**

The climate of the area is typical himalayan with rainfall during July-August at lower altitudes. The average rainfall is 1500 mm. Extreme cold with three to four months snowfall in winter with permanent snowline in higher reaches.

#### **Human Habitations**

The human population in the sanctuary is very thin and scattered in to about 47 villages (Annon, 1986). The people sustain mainly on lives stock (such as Sheep, Goats and Cattles),

cultivation and forest products. Gujjars frequently visit the sanctuary with their buffalos during summer. Har-ki-dun and other tourist sites are regularly visited by tourists / trekkers.

### Vegetation

The vegetation pattern in the sanctuary resembles the broad pattern of vegetational zones of North West Himalaya. According to elevation the vegetation of the sanctuary can be divided into the following zones :

- (i) *Sub Tropical Zone* (up to 1500 m)
- (ii) *Temperate Zone* (1500 – 2400 m)
- (iii) *Sub Alpine Zone* (2500 – 3000 m)
- (iv) *Alpine Zone* (3000 – 5500 m)

(i). *Sub Tropical Zone* : Here the tree species like Toon (*Toona ciliata*), Rohini (*Mallotus philippensis*), Utis (*Alnus nepalensis*), Chirpine (*Pinus roxburghii*) etc. are common. The shrubby habit is dominated by *Colebrooka oppositifolia*, *Pyracantha crenulata*, *Ziziphus mauritiana* etc.

(ii). *Temperate Zone* : Here the tree species like Banj (*Quercus leucotrichophora*), Akhrot (*Juglans regia*), Bhotia Badam (*Corylus jacquemontii*), Burans (*Rhododendron arboreum*) etc. are common. The shrubs like *Viburnum continifolium*, *Hippophae rhamnoides* and *Berberis* spp. are common.

(iii). *Sub Alpine Zone* : Here the dense coniferous forests are represented by Kail (*Pinus wallichiana*), Himalayan Yew (*Taxus wallichiana*) etc. and intermixed broad leaved by Kharsu (*Quercus semecarpifolia*) etc. The common shrubs are *Rosa webbiana*, *Cotoneaster* sp. and *Berberis* sp. etc. The herbaceous species like *Delphinium* sp., *Swertia* sp. and *Pedicularis* sp. are common.

(iv). *Alpine Zone* : Here the herbaceous plants of different size, forms and color are prevalent. Common herbs are *Cyananthus* sp., *Gentiana* sp. and *Potentilla* sp. The medicinal plants like *Picrorhiza scrophulariflora*, *Nardostachys grandiflora*, *Aconitum heterophyllum* are common.

### Fauna

The fauna of the sanctuary is poorly known. Only a few scattered references on the Mammals, Birds, Butterflies and Moths are available. Dang (1968) published a report on the preliminary ecological survey of Har-ki-dun and adjacent valleys, with special reference to Bharal and Red (Brown) Bear.

Calcutta Mountaineering Club "DUTAGAR" organised a joint expedition to the Tons Valley of Western Garhwal Himalaya (Uttaranchal) in collaboration with Anthropological Survey of India, Kolkata and Zoological Survey of India, Kolkata, Mondal (1984), a delegate from Z.S.I., Kolkata, published an annotated list of 17 species of Lepidoptera of which 14 species were recorded from the areas falling under the sanctuary.

Wildlife Institute of India, Dehra Dun conducted a survey in the sanctuary during 1986, as a part of an Indo-U.S. snow leopard survey and reported sightings of 11 species of Mammals.

Sathyakumar (1994) reported about 20 species of mammals and 100 species of birds from the sanctuary.

In the light of findings of the above Surveys a working plan was proposed by the Scientists of the Zoological Survey of India, Dehra Dun, to undertake systematic exploration of Invertebrate as well as Vertebrate fauna of the Sanctuary. Consequently four extensive surveys were conducted in the years 1993, 1994 and 1996 (Table - I). During these surveys faunal samples were collected and observed from different localities and altitudes.

An annotated list of 257 taxa belonging to nine faunal groups is included in this document, the details of which are as under; Invertebrates 98 species, Vertebrates 159 species. Of the 98 forms of Invertebrates there are 12 species of Odonata, 55 species of Lepidoptera, 25 species of Hymenoptera and six species of Chilopoda. Among vertebrates two species of Pisces, four species of Amphibia, six species of Reptilia, 115 species of Aves and 32 species of Mammalia have been recorded.

**Table :** Summary of Faunistic Surveys and Research studies carried out in Govind Wildlife Sanctuary by Zoological Survey of India, Dehra Dun.

Task Force	Year	Duration
Arun Kumar & Party	1993	04.x.1993 – 15.x.1993
N.K. Sinha & Party	1994	08.vi.1994 – 22.vi.1994
Akhlaq Hussain & Party	1996	19.iii.1996 – 02.vi.1996
J.P. Sati & Party	1996	26.x.1996 – 07.xi.1996

#### LIST OF THE LOCALITIES SURVEYED

- |                    |                                    |                      |
|--------------------|------------------------------------|----------------------|
| 1. Chhibara khad   | 13. Himri                          | 24. Putri village    |
| 2. Dhaula          | 14. Istra gad                      | 25. Sabror village   |
| 3. Dumri village   | 15. Jakhol                         | 26. Sakhrola village |
| 4. Duni            | 16. Jura Tal                       | 27. Sankri village   |
| 5. Fafrala gad     | 17. Kedarkanta                     | 28. Saruka Tal       |
| 6. Fafrala village | 18. Landhora village (Manora khad) | 29. Satta village    |
| 7. Ghuniyan ghati  |                                    | 30. Sirga village    |
| 8. Gia gad         | 19. Masri                          | 31. Soud village     |
| 9. Giyan gad       | 20. Motar village                  | 32. Sunkundi village |
| 10. Halara gad     | 21. Naitwar village                | 33. Taluka village   |
| 11. Har-ki-dun     | 22. Obera gad                      | 34. Targon village   |
| 12. Har-ki-dun gad | 23. Osla village                   |                      |

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## **INSECTA : ODONATA**

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### **INTRODUCTION**

The Odonata fauna of Himalayan Ecosystem has been extensively studied by Kumar & Prasad (1981). Consequently about 240 species, out of a total of 550 known Indian forms, have been recorded from Himalaya, which include a number of new species and new records subsequent to the publication of Fauna of British India : Odonata (1-3) (Fraser 1933-36).

The present study is based on the collection of Odonata from the Wildlife Sanctuary in the Northern Regional Station of Zoological Survey of India at Dehra Dun. The present communication records only twelve species of Odonata from the Sanctuary.

### **SYSTEMATIC ACCOUNT**

A. Suborder ZYGOPTERA

I. Family PLATYENEMIDIDAE

1. *Calenemia eximia* Selys

*Material Examined* : India : Uttaranchal, Uttarkashi Dist., Rupin Valley, 16 ♂, Rupin river, 3 ♂, 7.x.1993, around F.R.H. Taluka, 5 ♂, 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal, West Bengal, Sikkim.

*Elsewhere* : Nepal, Myanmar, Malaysia, Java, Indo-China, Taiwan.

II. Family COENAGRIIDAE

2. *Pseudogrion rubriceps* Selys

*Material Examined* : India : Uttaranchal, Uttarkashi Dist., Chibbara Khad near Sanctuary gate 1 ♂, 6.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Himachal Pradesh, Uttarakhand, West Bengal.

*Elsewhere* : Nepal, Myanmar, Malaysia, Java, Indo-China, Taiwan.

### 3. *Ceriagrion coromandelianum* Fabricius

*Material Examined* : India : Uttarakhand, Uttarkashi Dist., Rupin river and vicinity, Sabror 1 ♂, 10.vi.1994, coll. *N.K. Sinha & party*. Rupin river, 1 ♂, 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttarakhand, West Bengal.

*Elsewhere* : Nepal, Myanmar, Sri Lanka, Malaysia, Java, Indo-China, Taiwan.

### 4. *Ishnura aurora aurora* Hagen

*Material Examined* : India : Uttarakhand, Uttarkashi Dist., San Khud, 2 ♂, 8.x.1993, Around F.R.H. Taluka, 3 ♂, 11.x.1993, Taluka Sankri Trek, 1 ♂, 12.x.1993, Taluka Osla Trek, 6 ♂, 13.x.1993, coll. *Arun Kumar & party*. Hallara Gad 3 ♂, 27.x.1996, Chibbra gad near Sanctuary gate 1 ♂, 6.x.1996, coll. *J.P. Sati & Party*.

*Distribution* : India : Himachal Pradesh, Uttarakhand.

*Elsewhere* : Myanmar, Throughout Southern Asia, Malaysia, Philippine, Samoa, Sundaic Archipelago, New Guinea, Australasia.

## III. Family LESTIDAE

### 5. *Lestes praemorsa praemorsa* (Selys)

*Material Examined* : India : Uttarakhand, Uttarkashi Dist., Saruka tal, Jakhol, 9 ♂, 13.vi.1994, Gia gad & vicinity, Taluka 1 ♀, 16.vi.1994, Taluka-Osla road, 2 ♂, 17.vi.1994, Himri-Istra gad, 4 ♂, 19.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Himachal Pradesh, Uttarakhand, West Bengal.

*Elsewhere* : Nepal, Myanmar, Malaysia, Java, Indo-China, Taiwan.

### 6. *Celonlestes cyanea* (Selys)

*Material Examined* : India : Uttarakhand, Uttarkashi Dist., Saruka tal, Jakhol, 2 ♂, 13.vi.1994, on way to Taluka Osla Road, 1 ♂, 17.vi.1994, on way to Himri- Istragad, 1 ♂, coll. *N.K. Sinha & party*.

*Distribution* : India : Punjab, Himachal Pradesh, West Bengal.

*Elsewhere* : Myanmar.

Suborder ANISOPTERA  
IV. Family CORDULEGASTERIDAE

*Material Examined* : India : Uttaranchal, Uttarkashi Dist., Osla Hari-ki-dun Trek, 1 ♂, 12.x.1993, coll. *Arun Kumar & party*, Saruka Tal Jakhol, 1 ♂, 13.vi.1994, Sirga vill. Jakhol, 5 ♂, 14.vi.1994 coll. *N.K. Sinha & party*; Fafrala gad 1 ♀, 29.x.1994; Kedarkanta trek, 3 ♂, 2.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Kashmir, Himachal Pradesh, Uttaranchal, Assam.

*Elsewhere* : Nepal.

**8. *Orethrum chrysostigma luzonicum* (Braver)**

*Material Examined* : India : Uttaranchal, Uttarkashi dist., around F.R.H. Taluka, 3 ♂, 11.x.1993, Taluka – Osla Trek, 1 ♀, 13.x.1993, coll. *Arun Kumar & party*. Rupin & vicinity Sabror, 1 ♂, 10.vi.1994, road side Taryan vill, 1 ♂, 11.vi.1994, road side vill. Motar, 1 ♂, 11.vi.1994, on way to Taluka – Osla road, 2 ♂, 17.vi.1994, Around F.R.H. Netwar, 1 ♂, 18.vi.1994 on way to Himri-Istragad, 2 ♀, 19.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal, Tamil Nadu, Andra Pradesh, West Bengal, Assam.

*Elsewhere* : Nepal, Myanmar, Sri Lanka, Philippines, Java, Sumatra.

**9. *Palpopleura sexmaculata sexmaculata* (Fabricius)**

*Material Examined* : India : Uttaranchal, Uttarkashi dist., around F.R.H. Taluka, 1 ♂, 11.x.1993, coll. *Arun Kumar & party*; Manora Khad & Landhora Village on Netwar – Sankri road, 16 ♂, 5.xi.1996, Chhibara Khad Sanctuary gate, 11 ♀, 6.x.1996, coll. *J.P. Sati & party*.

*Distribution* : Nepal, Sri Lanka, Malaysia, Indo-China, China.

**10. *Acisoma panorpoides panorpoides* Rambur**

*Material Examined* : India : Uttaranchal, Uttarkashi dist, Taluka – Osla Trek, 1 ♂, 14.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal, Madhya Pradesh, Assam, Sikkim, West Bengal.

*Elsewhere* : Nepal, Sri Lanka, Philippines, Malaya, Archipelago, Java, Bali, Sumatra, Sulawesi, Sumba, Lesser Sunda Island, China, Japan, Thailand, Malaya, Singapore.

### 11. *Crocothemis servilia sevilia* (Drury)

*Material Examined* : India : Uttaranchal, Uttarkashi dist., Rupin valley, 1 ♂, 7.x.1993, Taluka – Osla Trek, 3 ♂, 13.x.1993 Taluka – Sankri Trek, 2 ♂, 14.x.1993; coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal, Madhya Pradesh, Bihar, West Bengal.

*Elsewhere* : Mesoptomia, South Asia, Iraq, Nepal, Myanmar, Sri Lanka, Philippines, Sumba, Australia, Southwards to Sundaic Archipelago, Japan.

### 12. *Neurothemis fulvia* (Drury)

*Materials Examined* : India : Uttaranchal, Uttarkashi dist., around F.R.H. Taluka 1 ♂, 11.x.1996, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal, Throughout India.

*Elsewhere* : Nepal, Myanmar, Sri Lanka, Old World Tropics & Sub Tropics South Asia, Taiwan, Thailand, Ryukus, Timor, Sumba, Seychelles to Pacific, Japan, Australia, Sunda Island, Micronesia Philippines.

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## INSECTA : LEPIDOPTERA : RHOPALOCERAS

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### INTRODUCTION

The butterflies always attracted attention of both the entomologists and the naturalists because of their aesthetic, economic and scientific value.

Arora *et al.* (1995) published on the butterflies of Western Himalaya (U.P.) and prepared a list of 223 taxa from eight districts of Kumaon and Garhwal.

So far as earlier records of butterflies from the sanctuary is concerned, Mondal (1984), identified and recorded 11 species (10 families) of butterflies based on the material collected during Tons Valley Expedition (1972), of these nine species were recorded from the area falling under the sanctuary viz. *Eurema hecaube contubernalis* (Moore), *Colias electo fieldi* (Menetries), *Aulocera brahminus brahminus* (Blanchard), *A. swaha swaha* (Kollar), *Callerebia scanda scanda* (Kollar), *Ypthima sakra nikaia* Moore, *Celastrina argiolus kollari* (Westwood), *Zizeeria maha maha* (Kollar), *Lycaena phaleas stygianus* (Butler).

The present study is based on the material collected from the sanctuary by four field task forces of this Regional Station in the years 1993, 1994 and 1996. As a result 48 species of butterflies belonging to 7 families have been identified. This includes two species, viz. *Callerebia scanda scanda* (Kollar) and *Zizeeria maha maha* (Kollar), recorded earlier by Mondal (1984). Thus a total of 55 species of butterflies are now known from the sanctuary.

### SYSTEMATIC ACCOUNT

The systematic account deals with 48 species of butterflies under 7 families :

#### I. Family PAPILIONIDAE

##### 1. *Papilio protenor protenor* Cramer Spangel

*Material examined* : India : Uttaranchal, Uttarkashi dist., higher bank from vill. Naitwar (Rupin Valley), 1300-1350 m, 1 ex., 7.x.1993, coll. Arun Kumar & party.

*Distribution* : India : Kashmir to Kumaon. *Elsewhere* : Nepal.

2. *P. polyctor polyctor* Boisduval  
Common Peacock

*Material examined* : India : Uttaranchal, Uttarkashi dist., higher bank from vill. Naitwar (Rupin valley), 1300-1350 m, 1 ex., 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Kashmir to Kumaon.

*Elsewhere* : Pakistan (Chitral).

3. *P. polytes romulus* Cramer  
Common Mormon

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sabror vill., ca 5 km from vill. Naitwar along river Rupin, 1325 m, 1 ex., 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : Widely distributed in India.

*Elsewhere* : Nepal; Myanmar and Sri Lanka.

4. *Sephisia dichroa* (Kollar)  
The Western Courtier

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakhrola vill., ca 17 km from Naitwar, 1 ex., 8.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Kashmir to Kumaon.

*Elsewhere* : Pakistan (Chitral).

II. Family PIERIDAE

5. *Pieris canidia indica* Evans  
Indian Cabbage White

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha & party*, Istragad, 1 ex., 27.iii.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : Himalayas, Nilgiris, Kerala, Karnataka.

*Elsewhere* : Pakistan (Baluchistan and Chitral); Myanmar and Nepal.

6. *P. brassicae nepalensis* Doubleday  
Large Cabbage White

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Common from Terai to 12000 feet in Himalayas.

*Elsewhere* : Nepal.

7. *Pontia daplidice moorei* (Rober)

**Bath White**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka-Osla road, up to 5 km, 2 exs., 17.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Kashmir to Punjab, Western Himalaya.

*Elsewhere* : Nepal and Pakistan (Chitral).

8. *Catopsilia pomona* (Fabricius)

**The Lemon Emigrant**

*Material examined* : India : Uttaranchal, Uttarkashi dist, higher bank from Naitwar, 1300-1350 m, 1 ex., 07.x.1993, Sabror vill., ca 5 km from Naitwar, 1325 m, 1 ex., 07.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Throughout.

*Elsewhere* : Sri Lanka and Myanmar.

9. *Gonepteryx rhamni nepalensis* (Doubleday)

**Common Brimstone**

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha & party*; Purti vill., ca 7 km from Sankri on Taluka road, 1875 m, 1 ex., 28.x.1996; Naitwar-Himri trek, 1 ex., 04.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Throughout Himalayas.

*Elsewhere* : Nepal and Pakistan (Chitral).

10. *Eurema blanda silhetani* (Wallace)

**The Three-Spot Grass Yellow**

*Materials examined* : India : Uttaranchal, Uttarkashi dist., Naitwar-Himri trek, 1400-1500 m, 1 ex., 4.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Peninsular India to Sikkim and Assam.

*Elsewhere* : Myanmar.

11. *E. laeta laeta* (Boisduval)

**Spotless Yellow**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakhrola vill., ca 17 km from Naitwar, 1350 m, 1 ex., 8.x.1993, coll. *Arun Kumar & party*, Himri-Istragad road, 1ex.,

20.vi.1994, coll. *N.K. Sinha* & party; Naitwar, 1400 m, 1 ex., 3.xi.1996, coll. *J.P. Sati* & party.

*Distribution* : India : Peninsular to Western Himalaya.

*Elsewhere* : Sri Lanka and Myanmar.

12. *Colias electo fieldi* Menetries  
Dark Clouded Yellow

*Material examined* : India : Uttaranchal, Uttarkashi dist, Sunkundi vill., ca 27 km from Naitwar on road to Jakhol, 1 ex., 8.x.1993; on way from Taluka to Osla, 1 ex., 11.x.1993; on way to Har-ki-dun from Osla, 4 exs., 12.x.1993, coll. *Arun Kumar* & party; on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : North West Himalaya.

*Elsewhere* : Nepal; Myanmar and Pakistan.

13. *C. erate* (Esper)  
Pale Clouded Yellow

*Material Examined* : India : Uttaranchal, Uttarkashi dist., on way to Har-ki-dun from Osla, 12 exs., 12.x.1993, coll. *Arun Kumar* & party.

*Distribution* : India : Himalaya (Kashmir to Kumaon), hills of southern India.

*Elsewhere* : Paksitan (Baluchistan and Chitral).

14. *C. myrnmidone* Danube  
Clouded Yellow

*Materials examined* : India : Uttaranchal, Uttarkashi dist., Sunkundi vill., ca 5 km from Jakhol, 2000 m, 1 ex., 15.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : Western Himalaya.

15. *Aporia aganthon caphusa* (Moore)  
The Great Black Vein

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sunkundi vill., ca 5 km from Jakhol, 2000 m, 1 ex., 13.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : Uttaranchal (Mussoorie to Kumaon).

16. *A. leucodyce saracta* Moore  
The Himalayan Black Vein

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : Ladhak and Kashmir to Kumaon.

*Elsewhere* : Pakistan (Baluchistan).

### III. Family DANAIDAE

#### 17. *Danaus genutia genutia* (Cramer)

##### The Common Tiger

*Material examined* : India : Uttaranchal, Uttarkashi dist., Higher bank from vill. Naitwar, 1300-1350 m, 1 ex., 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Uttaranchal (Western Himalaya), Andaman & Nicobar Islands.

*Elsewhere* : Nepal; Myanmar; Sri Lanka; Vietnam; Thailand; South China; Hong Kong; Pakistan; Afganistan.

### IV. Family SATYRIDAE

#### 18. *Lethe verma verma* (Kollar)

##### The Strighted Banded Tree Brown

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka - Osla road up to 5 km, 1 ex., 17.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Kashmir to Assam (4000-9000 feet Altitude).

*Elsewhere* : Myanmar.

#### 19. *Lethe insana insana* (Kollar)

##### Common Forester

*Material examined* : India : Uttaranchal, Uttarkashi dist., Gia gad, ca 10 km from Sankri on road to Taluka, 1 ex., 10.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal (Himalayas).

#### 20. *Lethe jalaurida jalaurida* (deN)

##### Small Silver Fork

*Material examined* : India : Uttaranchal, Uttarkashi dist., on Taluka-Sankri road, ca 4 km from Taluka, 1 ex., 12.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh, Uttaranchal (Himalayas).

#### 21. *Pararge schakra schakra* (Kollar)

##### Common Wall

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka, 1900 m, 1 ex, 11.x.1993;

Taluka on road to Osla, 1 ex., 14.x.1993, coll. *Arun Kumar & party*; Sunkundi vill., Jakhol - Naitwar road, 2000 m, 1 ex., 13.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Uttaranchal (Himalayas).

*Elsewhere* : Nepal, Pakistan.

22. *Aulocera saraswati* (Kollar)

**Triated Satyr**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakhrola vill., ca 17 km from Naitwar, 1 ex., 8.x.1993; Sankri vill., ca 12 km from Naitwar, 1 ex., 9.x.1993, Taluka, 1900 m, 1 ex., 11.x.1993; Taluka-Sankri road, ca 4 km from Taluka, 1 ex., 12.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Western Himalayas, Sikkim.

*Elsewhere* : Nepal.

23. *Callerebia nirmala nirmala* (Moore)

**Common Argus**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Motar vill., ca 8 km from Naitwar on Sankri road, 1 ex., 11.vi.1994; Sunkundi vill., Jakhol-Naitwar road, 2000 m, 1 ex., 15.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Kashmir to Kumaon.

*Elsewhere* : Nepal.

24. *C. scanda scanda* (Kollar)

**Pallid Argus**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Gia gad, ca 2 km from Taluka on Sankri Road, 2100 m, 2 exs., 16.vi.1994; Taluka Osla road, up to 5 km, 1 ex., 17.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Kashmir to Kumaon, Sikkim.

*Elsewhere* : Nepal.

V. Family ERYCINIDAE

25. *Dodona durga* (Kollar)

**Common Punch**

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way from Taluka to Osla, 11.x.1993, coll. *Arun Kumar & party*; Himri-Istragad road, 1 ex., 20.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Western Himalaya (800-2500 m).

26. *Libythia lepita* Moore

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way from Taluka to Osla, 1 ex., 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Kashmir to Assam, Southern India.

*Elsewhere* : Myanmar and Sri Lanka.

## VI. Family NYMPHALIDAE

27. *Athyma opalina opalina* (Kollar)  
Himalayan Sergeant

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sunkundi vill., ca 27 km from Naitwar on Road to Jakhol, 1 ex., 8.xi.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Kashmir to Kumaon.

28. *Neptlis hylas astola* Moore  
Common Sailor

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1400 m, 1 ex., 3.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India.

*Elsewhere* : Myanmar.

29. *N. yerburyi yerburyi* (Butler)  
Yerburyis Sailor

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakhrola vill., ca 17 km from Naitwar, 1 ex., 8.x.1993. *A. Kumar & party*.

*Distribution* : India : Kashmir to Kumaon.

30. *Cyrestis thyodamas ganescha* (Kollar)  
Map Butterfly

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar-Himri Trek, 1400-1450 m, 1 ex., 4.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Kashmir to Kumaon.

31. *Precis iphita siccata* (Stichel)  
Chocolate Solider

*Material examined* : India : Uttaranchal, Uttarkashi dist., higher bank from vill. Naitwar, 1300-1350 m, 1 ex., 7.x.1993; Sunkundi vill., ca 27 km from Naitwar on road to Jakhol, 1

ex., 8.x.1993, coll. *Arun Kumar & party*; Fafrala gad, ca 3 km from Sankri on Naitwar road, 1900 m, 1 ex., 28.x.1996; Chhibara Khad, ca 2 km from Naitwar on Mori road, 1375 m, 1 ex., 6.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Kashmir to Kumaon.

### 32. *Cyanthia cardui* (Linn.)

#### Painted Lady

*Material examined* : India : Uttaranchal, Uttarkashi dist., Bedgad Nala, up hill near Naitwar, 1 ex., 22.iii.1996; Saruka Tal, ca 2 km up hill from Jakhol, 2825 m, 1 ex., 31.iii.1996, coll. *Akhlaq Husain & party*; Gia gad, 2 km from Taluka on Sankri road, 2100 m, 1 ex., 16.vi.1994, on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Common throughout.

*Elsewhere* : Sri Lanka and Myanmar.

### 33. *Vanessa indica indica* Herbst

#### Indian Red Admiral

*Material examined* : India : Uttaranchal, Uttarkashi dist., Halara gad, ca 2 km from Sankri vill, 1800 m, 1 ex., 6.xi.1993; Sunkundi vill, ca 27 km from Naitwar on road to Jakhol, 1 ex., 8.xi.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himalaya (Kashmir to Eastward).

*Elsewhere* : Nepal, Myanmar, China and Thailand.

### 34. *V. egea* (Cramer)

#### The Comma

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Har-ki-dun from Osla, 1 ex., 12.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : North West Himalaya.

*Elsewhere* : Pakistan (Baluchistan) and Bhutan.

### 35. *Kanisha canace himalaya* Evans

#### Blue Admiral

*Material examined* : India : Uttaranchal, Uttarkashi dist., Ghuinyan Ghati, ca 20 km from Naitwar on way to Jakhol, 1 ex., 8.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : North West Himalaya.

*Elsewhere* : Pakistan (Chitral).

36. *Aglais cashmiriensis aesis* Fruhstofer  
**Indian Tortoise Shell**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Halara gad, ca 2 km from Sankri vill. on way to Taluka, 1800 m, 1 ex., 6.x.1993; on way to Taluka from Osla, 1 ex., 11.xi.1993, coll. *Arun Kumar* & party; on way to Sirga vill. from Jakhol, 2500 – 3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha* & party; Taluka, 2150 m, 1 ex., 30.x.1996, coll. *J.P. Sati* & party.

*Distribution* : India : Himachal Pradesh (Kullu) to Sikkim.

37. *Symbrenrthia niphanda* Moore  
**Blue Tail Jester**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Gia gad, ca 2 km from Taluka on Sankri Road, 2100 m, 1 ex., 16.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : Kashmir to Assam Hills.

38. *Fabriciana kamala* (Moore)  
**Common Silver Stripe**

*Materials examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : North West Himalaya.

*Elsewhere* : Pakistan (Chitral) and Nepal.

39. *Chilodreia childreni sukontala* Kollar  
**Large Silver Stripe**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakhrola vill., ca 17 km from Naitwar, 1 ex., 8.10.1993, coll. *Arun Kumar* & party.

*Distribution* : India : Kashmir to Kumaon.

*Elsewhere* : Pakistan (Chitral).

40. *Argyreus hyperbius hyperbius* (Johanssen)  
**Indian Fritillary**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Saruka Tal, ca 2 km up hill from Jakhol, 2825 m, 1 ex., 13.vi.1994, coll. *N.K. Sinha* & party.

*Distribution* : India : Himalayas.

*Elsewhere* : Nepal, Pakistan (Chitral).

41. *Issoria lathonia issoea* Doubleday  
Queen of Spain Fritillary

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill. from Jakhol, 2500 – 3000, 1 ex., 14.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Himalayas.

*Elsewhere* : Pakistan (Chitral) and North Myanmar.

42. *Kalima inachus* Boisduval  
The Orange Oak Leaf

*Material examined* : India Uttaranchal, Uttarkashi dist., Sabror vill., ca 5 km from vill. Naitwar, 1325 m, 1 ex., 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himalayas, Assam, Southern India (Eastern Ghats) and Bihar.

43. *Atella phalantha* (Drurry)  
The Common Leopard

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sakrola vill., ca 17 km from Naitwar, 1 ex., 8.x.1993; Sankri vill., ca 12 km from Naitwar, 1 ex., 9.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himalayas.

*Elsewhere* : Sri Lanka, Myanmar.

VII. Family LYCAENIDAE

44. *Lycaena pavana* (Kollar)  
White Bordered Copper

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka-Osla Road, ca up to 5 km, 1 ex., 17.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Kashmir to Kumaon.

*Elsewhere* : Nepal.

45. *Heliphorus andocles coruscans* Moore  
Green Sapphire

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka, 2150 m, 1 ex., 30.x.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Kashmir to Assam.

*Elsewhere* : North Myanmar.

46. *Heliphorus brahma* Moore  
**Golden Sapphire**

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way from Taluka to Osla, 1 ex., 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Kumaon to Assam.

*Elsewhere* : Nepal; Myanmar and West China.

47. *Celastrina huegelli huegelli* Moore  
**Large Hedge Blue**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sankhi vill., ca 12 km from Naitwar, 1 ex., 4.x.1993, coll. *Arun Kumar & party*; Gia gad, ca 2 km from Taluka on Sankri road, 2100 m, 1 ex., 16.1x.1994, coll. *N.K. Sinha & party*; Fafrala gad, ca 3 km from Sankri on Naitwar road, 2900 m, 1 ex., 29.x.1996; Naitwar, 1400 m, 1 ex., 3.xi.1996; Manora khad and Landhora vill. on Naitwar-Sankri road, 1500 m, 1 ex., 5.xi.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : Kashmir to Kumaon.

48. *Zizeeria maha maha* (Kollar)  
**The Pale Grass Blue**

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Sirga vill., from Jakhol, 2500-3000 m, 1 ex., 14.vi.1994, Motor vill., ca 8 km from Naitwar on Sankri Road, 1 ex., 11.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Throughout.

*Elsewhere* : Myanmar, Pakistan (Blauchistan).

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## INSECTA : HYMENOPTERA : ACULEATA

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### INTRODUCTION

The aculeate hymenopteran insects are considered to be one of the most beneficial group of insects, due to their economic and biological importance. Majority of these insects make food, pollinate crops and destroy insects pests of crops and forests.

Bingham's (1897, 1903) two volumes of "The Fauna of British India, including Ceylon and Burma" are valuable contributions on aculeate Hymenoptera. Gupta (1995) recently studied the hymenopteran fauna of western Himalaya (U.P.), and prepared an annotated list of 200 species belonging to 12 families from the eight districts of Kumaon and Garhwal.

The present studies is based on the material of collected by the field survey task forces of Zoological Survey of India, Dehra Dun gives an account of 25 species belonging to six families. The genus *Passaloecus* Schuckard, belonging to the family Sphecidae, is recorded for the first time from India on the basis of two female specimens. *Odontomachus puntulatus* Forel (family Formicidae) and *Odynerus sikkimensis* Bingham (family Eumenidae) are new distributional records from western Himalaya and Uttaranchal.

### SYSTEMIC ACCOUNT

#### I. Family TIPHIIDAE

##### 1. *Tiphia (Tiphia) implicata* Cameron

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sankri vill., ca 12 kms from Naitwar, 2200 m, 1 ♂, 9.x.1993, coll. Arun Kumar & party; Hallara gad, ca 3 kms form Sankri on Taluka Road, 1 ♂, 27.x.1996, Taluka Osla road, 2150 m, 1 ♂, 31.x.1996, Jakhol, 2150 m, 1 ♂, 1.xi.1996, Kedarkanta trek, 1900-2800 m, 3 ♂, 2.xi.1996, coll. J.P. Sati & party.

*Distribution* : India : Uttaranchal (Kumaon and Garhwal Hills).

*Remarks* : Previously unknown female has been recorded.

##### 2. *Tiphia (Tiphia) pulchaukae* Allen

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1900 m, 2 ♂, 18.vi.1994, Taluka – Osla road, 2100 m, 4 ♂, 17.vi.1994, coll. N.K. Sinha & party.

*Distribution* : India : Uttaranchal (Kumaon and Garhwal Hills).

*Elsewhere* : Nepal.

## II. Family SCOLIIDAE

### 3. *Campsomeriella (Campsomeriella) collaris collaris* (Fabricius)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1900 m, 3 ♂, 3.xi.1996, Sankri, 1900 m, 1 ♂, 31.xi.1996, Manora khad & Landhora vill. on Naitwar-Sankri Rd., 1 ♂, 5.xi.1996, Taluka, 2150 m, 7 ♂, 30.x.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Widely distributed.

*Elsewhere* : Nepal, Bangladesh and Sri Lanka.

### 4. *Megacampsomeris asiatica himalayana* (Betrem)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Chibbara Khad, ca 2 km from Naitwar on Mori road., 1375 m, 1 ♂, 6.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : H.P., Meghalaya, Uttar Pradesh.

*Elsewhere* : Nepal.

### 5. *Megacampsomeris prismatica* (Smith)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Taluka, 1900 m, 2 ♂, 11.x.1993, coll. *Arun Kumar & party*; Sankri, 1900 m, 1 ♂, 31.x.1996, Fafrala gad, 1900 m, ca 3 km from Sankri on Naitwar road, 5 ♂, 29.x.1996, Soud vill., 1900 m, ca 2 km from Sankri on Taluka road, 1 ♂, 13.x.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Arunachal Pradesh, Meghalaya, Sikkim, W. Bengal, Uttaranchal, Himachal Pradesh and Jammu & Kashmir.

*Elsewhere* : China; Japan; Korea; Nepal; Myanmar; Indonesia; Philippines and Taiwan.

## III. Family FORMICIDAE

### Subfamily PONERINAE

### 6. *Odontomachus punctulatus* Forel

*Material examined* : India : Uttaranchal, Uttarkashi dist., Manora Khad & Landhora vill., 1500 m, 2 workers, 5.xi.1996 coll. *J.P. Sati & party*.

*Distribution* : India : Assam, Sikkim, Uttaranchal.

*Elsewhere* : Myanmar.

*Remarks* : This is the first record of this species from Uttaranchal and western Himalaya.

#### Subfamily MYRMECINAE

##### 7. *Myrmica rugosa* Mayer

*Material examined* : India : Uttaranchal, Uttarkashi dist., Gian gad on Sankri - Taluka Rd., 1900 m, 10 workers, 30.x.1996, Jakhol, 2150 m, 11 workers, 1.xi.1996, coll. *J.P. Sati* & party.

*Distribution* : India : Himalayas along their whole length and above 1300 m.

##### 8. *Messor himalayanus* (Forel)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Motar vill, ca 8 km form Naitwar, 70 workers, 11.v.1994, *N.K. Sinha* & party; Naitwar-Himri trek, 14 workers, 4.xi.1996, *J.P. Sati* & party.

*Distribution* : India : Himachal Pradesh & Uttaranchal.

#### IV. Family EUMENIDAE

##### 9. *Delta dimidiatipennis* (Saussure)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sunkundi vill., ca 5 km on Jakhol – Naitwar Rd., 2000 m, 1 ♂, 15.vi.1994, *N.K. Sinha* & party.

*Distribution* : India : Punjab, Maharashtra, Gujarat, Uttar Pradesh and Uttaranchal.

*Elsewhere* : Pakistan, Arabia and Africa.

##### 10. *Odynerus sikkimensis* Bingham

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar – Himri trek, 1400-1450 m, 1 ♂, 4.x.1996, coll. *J.P. Sati* & party.

*Distribution* : India : Sikkim and Uttaranchal.

*Remarks* : This is the first record of the species from Uttaranchal and western Himalaya.

V. Family VESPIDAE

Subfamily POLISTINAE

11. *Polistes tenebricosus sulcatus* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sabror vill., ca 5 km from Naitwar, 1325 m, 1 ♂, 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Jammu Kashmir, Uttaranchal, Sikkim, West Bengal, Assam and Meghalaya.

*Elsewhere* : China and Japan.

12. *Parapolybia varia* (Fabricius)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sabror vill., 1325 m, ca 8 km from Naitwar, 3 ♂, 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : H.P., Punjab, Delhi, Uttaranchal, Uttar Pradesh, Sikkim, West Bengal, Assam, Meghalaya and Manipur.

*Elsewhere* : Nepal; Myanmar; Philippines; Malaysia; Indonesia; China and Japan.

Subfamily VESPINAE

13. *Vespa velutina auraria* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, Rupin Valley higher bank, 1300-1350 m, 3 workers, 7.x.1993, Sabror vill., ca 5 km from Naitwar 1325 m, 5 workers, 7.x.1993, coll. *Arun Kumar & party*; Naitwar, 1350 m, 3 workers, 3.xi.1996, Naitwar – Himri trek, 1400-1450 m, 4.xi.1996, coll. *J.P. Sati & party*; Sankri vill., ca 12 km from Naitwar, 1 worker, 1.x.1993, on road from Taluka to Sankri, ca 4 km from Taluka, 2 workers, 12.x.1993, from Taluka – Osla road, ca 4 km from Taluka, 2500 m, 1 worker, 13.x.1993, coll. *Arun Kumar & party*; Gian gad, ca 8 km from Sankri on Taluka road, 2 workers 30.x.1996, coll. *J.P. Sati & party*; on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, 1 worker, 12.x.1993, Guiyan Ghati on Jakhol road, ca 20 km from Naitwar, 1300-1400 m, 1 worker, coll. *Arun Kumar & party*.

*Distribution* : India : Uttaranchal (Kumaon & Garhwal Hills), Himachal Pradesh and Meghalaya.

*Elsewhere* : Myanmar and Nepal.

14. *Vespula flaviceps flaviceps* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist, Har-ki-dun gad at bridge, ca 8 km from Sankri on Jakhol road, 1 ♂, 29.x.1996, Giyan gad, ca 8 km from Sankri on Taluka

road, 1900 m, 1 ♂, 30.x.1996, Kedarkanta trek, 1900-2800 m, 3 ♂, 2.xi.1996, coll. *J.P. Sati* & party; Taluka Sankri road, 1800 m, 2 ♂, 12.x.1993, on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, 5 ♂, 7 ♀, 12.x.1993, *Arun Kumar* & party.

*Distribution* : India : Assam, Manipur, Sikkim, Jammu & Kashmir, Himachal Pradesh, Uttaranchal.

*Elsewhere* : Nepal; Myanmar; China; Korea and southern Primores.

### 15. *Vespula structor* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, 2 ♂, 12.x.1993, coll. *Arun Kumar* & party.

*Distribution* : India : Jammu & Kashmir, Himachal Pradesh, Sikkim and Uttaranchal.

*Elsewhere* : Nepal and China.

## VI. Family SPHECIDAE

### Subfamily SPHECINAE

### 16. *Ammophila atripes* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1400 m, 1 ♂, 3.xi.1996, coll. *J.P. Sati* & party.

*Distribution* : India : Uttaranchal and Himachal Pradesh.

*Elsewhere* : Myanmar, Sri Lanka and China.

### 17. *Ammophila punctata* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1400 m, 3 ♂, 3 ♀, 3.xi.1996, Chibbara Khad, ca 2 km from Naitwar on Mori road, 1375 m, 2 ♂, 1 ♀, 6.xi.1996, coll. *J.P. Sati* & party; Sabror vill, ca 5 km from Naitwar, 1325 m, 4 ♂, 7 ♀, 7.X.1993, Sankri vill, 1420 m, 1 ♂, 9.x.1993, Sakhrola vill., ca 17 km from Naitwar, 1 ♂, 8.x.1993, coll. *Arun Kumar* & party, Manora Khad & Landhora vill., Naitwar – Sankri road, 1500 m, 2 ♂, 1 ♀, 5.xi.1996, *J.P. Sati* & party; Taluka, 1900 m, 1 ♂, 1 ♀, 11.x.1993, Taluka – Osla road, ca 4 km from Taluka 2 ♂, 2 ♀, 13.x.1993; coll. *Arun Kumar* & party; Har-ki-dun gad at bridge, ca 8 km from Sankri on Jakhol road, 1 ♂, 1 ♀, 29.x.1996; coll. *J.P. Sati* & party; Jakhol, 2525 m, 1 ♂, 16.vi.1994, Sirga vill., 2500-3000 m, 1 ♂, 10 ♀, 14.vi.1994, Sunkundi vill, ca 5 km from Jakhol, 2000 m, 2 ♂, 18 ♀, 15.vi.1994, coll. *N.K. Sinha* & party; Kedarkanta trek, 1900-2800 m, 1 ♂, 2.xi.1996, coll. *J.P. Sati* & party; on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, coll. *Arun Kumar* & party.

*Distribution* : India : Uttarakhand, Himachal Pradesh and Sikkim.

*Elsewhere* : Myanmar.

### 18. *Podalonia* sp.

*Material examined* : India : Uttarakhand, Uttarkashi dist., on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, 3 ♂, 12.x.1993, coll. Arun Kumar & party.

*Remarks* : This undescribed species, represented by three female specimens, superficially resembles *Podalonia laeta* (Bingham) of Afghanistan in having, more or less, similar body coloration. It can, however, be easily differentiated by having propodeal vestiture black instead of yellowish white and propodeal dorsum transversely striated instead of being punctate.

## Subfamily PEMPHREDONINAE

### 19. *Psen orientalis* Cameron

*Material examined* : India : Uttarakhand, Uttarkashi dist., Taluka – Sankri road., ca 4 km from Taluka, 1800 m, 3 ♂, 12.x.1993, Taluka – Osla road, ca 4 km from Taluka, 2500 m, 1 ♂, 13.x.1993; Taluka, 1 ♂, 11.x.1993, coll. Arun Kumar & party; Har-ki-dun at bridge, ca 8 km from Sankri on Jakhol road, 1 ♂, 29.x.1996, coll. J.P. Sati & party.

*Distribution* : India : Uttarakhand and Himachal Pradesh (Shimla Hills).

### 20. *Pemphredon fuscipennis* (Cameron)

*Material examined* : Uttarakhand, Uttarkashi dist., Sankri vill., 1420 m, 2 ♂, 1 ♀, 9.x.1993, coll. Arun Kumar & party; Soud vill, ca 2 km from Sankri on Taluka road, 1900 m, 1 ♂, 30.x.1996, coll. J.P. Sati & party; Saruka Tal, ca 2 km from Jakhol, 2825 m, 1 ♂, 13.vi.1994, on way to Sirga vill. from Jakhol, 2500-3000 m, 3 ♂, 14.vi.1994; Taluka – Osla road, ca 5 km from Taluka, 1 ♂, 17.vi.1994, coll. N.K. Sinha & party.

*Distribution* : India : Uttarakhand (Garhwal Hills).

### 21. *Passaloecus* sp.

*Material examined* : India : Uttarakhand, Uttarkashi dist., Taluka, 2150 m, 1 ♂, 30.x.1996, Jakhol, 2150 m, 1 ♂, 1.xi.1996, coll. J.P. Sati & party.

*Remarks* : The genus *Passaloecus* Schuckard, previously unknown from India, is recorded here with female specimens belonging to an undescribed species.

The genus with 21 known species is primarily Holarctic, with one of the species reaching to Taiwan in the Orient.

## Subfamily ASTINAE

22. *Dryudella* sp.

*Material examined* : India : Uttaranchal, Uttarkashi dist., on way to Har-ki-dun, ca 19 km from Osla, 3000-3480 m, 3 ♂, 6 ♀, 12.x.1993, coll. *Arun Kumar & party*.

*Remarks* : This undescribed species, represented by series of both sexes, is close to *Dryudella maculifrons* (Cameron) known from Mussoorie (Uttaranchal). Both sexes, however, differ in lacking transverse yellow mark in front of anterior ocellus and having the tegulae black. In addition the enclosed space of the propodeum is coracious instead of being punctate.

## VII. Family APIDAE

23. *Megachile disjuncta* (Fabricius)

*Material examined* : India : Uttaranchal, Uttarkashi dist., Sunkundi vill., 2000 m, ca 5 km from Jakhol on Jakhol – Naitwar road, 1 ♂, 15.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Widely distributed.

*Elsewhere* : Myanmar.

24. *Apis (Apis) cerana indica* (Fabricius)

*Materials examined* : India : Uttaranchal, Uttarkashi dist., Naitwar, 1400 m, 4 workers, 3.xi.1996, Manora Khad & Landhora vill. on Naitwar-Sankri Rd., 1500 m, 1 worker, 5.xi.1996, Taluka, 2150 m, 7 worker, 30.x.1996, coll. *J.P. Sati & party*; Sankri vill. ca 12 km from Naitwar, 2 workers, 9.x.1993, *Arun Kumar & party*.

*Distribution* : India : widely distributed.

*Elsewhere* : Nepal; Sri Lanka and Bangladesh.

25. *Apis (Megapis) laboriosa* Smith

*Material examined* : India : Uttaranchal, Uttarkashi dist., higher Bank from village Naitwar, 1300-1350 m, 1 worker, 7.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Arunachal Pradesh, Sikkim, West Bengal (Darjeeling dist.) and Uttaranchal.

*Elsewhere* : Nepal, Myanmar and China.

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**CENTIPEDES**  
(Chilopoda : Scolopendromorpha)

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**INTRODUCTION**

The centipede fauna of the Himalayan Ecosystem, U.P., has been extensively studied and published by Khanna (1987, 1994, 1995, 1997, 1998a and 1998b) and Khanna and Kumar (1984) while the fauna of Himalayan Ecosystem, Himachal Pradesh has been studied by Khanna and Tripathi (1985, 1986) and Khanna (in press). The perusals of these references reveal the occurrence of 23 species of the Order Scolopendromorpha, including one belonging to the family Cryptopidae from Western Himalaya, Uttaranchal. With the record of *Rhysida longipes simplicior* Chamberlin during the present studies of the material from Gobind Pashu Vihar, Uttaranchal, the total of known species of Scolopendrid centipedes has been raised to twenty-four from Western Himalaya, Uttaranchal.

The collection of the centipedes made from the sanctuary on identification was found referable to the following six species. All are first records from the sanctuary.

1. *Rhysida monalii* Khanna and Kumar
2. *Rhysida longipes simplicior* Chamberlin
3. *Otostigmus pooname* Khanna and Tripathi
4. *Otostigmus politus quadrispinosus* Khanna
5. *Cormocephalus dentipes* Pocock
6. *Scolopendra morsitans* Linnaeus

Family SCOLOPENDRIDAE

Subfamily OTOSTIGMINAE

Tribe Otostigmini

1. *Rhysida monalii* Khanna and Kumar

*Material examined* : India : Uttaranchal, Uttarkashi dist., Osla, 2 exs., 11.x.1993, coll. Arun Kumar & party.

*Distribution* : India : Himachal Pradesh, Jammu and Kashmir, Maharashtra and Uttaranchal.

## 2. *Rhysida longipes simplicior* Chamberlin

*Material examined* : India : Uttaranchal, Uttarkashi dist. : Dewal Nursery, Himri, 3 exs., 28.iii.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : Delhi and Tamil Nadu.

*Remarks* : First record of the species from Uttaranchal.

## 3. *Otostigmus poonamae* Khanna and Tripathi

*Material examined* : India : Uttaranchal, Uttarkashi dist. : Osla, 3 exs., 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh and Uttaranchal.

## 4. *Otostigmus politus quadrispinosus* Khanna

*Material examined* : India : Uttaranchal, Uttarkashi dist., Satta F.R.H. and around, 7 exs., 25.iii.1996; Dhaula-Istragad Trek, 3exs., Naitwar near confluence of Rupin and Supin rivers, 1 ex., 21.iii.1996, Sankri, 5 exs., 30.iii.1996; Naitwar, 18 exs., coll. *Akhlaq Husain & party*; Purti vill., ca 7 kms from Sankri, 2 exs., 28.x.1994; Har-ki-dun, 2 exs., 29.x.1996, coll. *J.P.Sati & party*; Taluka, 3 exs., 13.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Himachal Pradesh and Uttaranchal.

*Remarks* : Additional records from the area.

Subfamily SCOLOPENDRINAE

Tribe Scolopendrini

## 5. *Cormocephalus dentipes* Pocock

*Material examined* : India : Uttaranchal, Uttarkashi dist. : Sankri trek, 9 exs., 12.x.1993; Osla, 2 exs., 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : India : Andaman & Nicobar Islands, Bihar, Delhi, Himachal Pradesh, Meghalaya, Mizoram, Madhya Pradesh, Orissa, West Bengal, Uttaranchal and Uttar Pradesh.

*Remarks* : Additional distribution records from the area.

## 6. *Scolopendra morsitans* Linnaeus

*Material examined* : India : Uttaranchal, Uttarkashi dist., Halara gad on Sankri-Taluka Trek, 1 ex., 6.x.1993, coll. *J.P. Sati & party*; Osla, 2 exs., 11.x.1993, coll. *Arun Kumar & party*.

*Distribution* : Cosmopolitan.

## SUMMARY

One species *Rhysida longipes simplicior* Chamberlin has been recorded for the first time from Uttaranchal while species *Rhysida monalii*, Khanna and Kumar, *Otostigmus poonamae* Khanna and Tripathi and *Cormocephalus dentipes* Pocock are already known from Uttarkashi district of the Western Himalaya, Uttaranchal. The species *Otostigmus politus quadrispinosus* and *Scolopendra morsitans* though already known widely from Western Himalaya, Uttaranchal are an addition to the known centipedes fauna of district Uttarkashi from Gobind Pashu Vihar.

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## PISCES

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### INTRODUCTION

In spite of the best efforts, no local fish species could be collected from the Sanctuary area. However *Salmo frutta fario* Linnaeus, the Brown Trout, an exotic fish, washed down from Himachal Pradesh through the Tons where it has been introduced and *Catla catla* (Hamilton-Buchanan), the Katla, one of the major Indian carps, probably being tried for culture by local people, are the only fishes which have been collected during 1994 and 1996 surveys. *Schizothorax richardsonii* (Gray) is reported to ascend the area during rainy and breeding seasons but surprisingly not a single specimen of this too was collected.

Earlier Husain (1995) enlisted 27 species from Uttarkashi, the Sanctuary district and Prasad & Pant (1980) studied the propagation of trout in the district.

### SYSTEMATIC ACCOUNT

Class OSTEICHTHYES

Order CYPRINIFORMES

I. Family CYPRINIDAE

1. *Catla catla* (Hamilton - Buchanan)  
**Katla**

*Material examined* : India : Uttaranchal, Uttarkashi dist., Saruka tal, alt. ca 2825 m., ca 2 km up hill from Jakhol, 1ex., 13.vi.1994, coll. *N.K. Sinha & party*.

*Distribution* : India : Northern India and up to Krishna river in south, introduced into Kaveri river system.

*Elsewhere* : Pakistan; Nepal; Bangladesh; Myanmar; Thailand. Introduced in China and Sri Lanka.

*Remarks* : The species is not naturally found in the area. Being one of the renowned major carps it must have been introduced in the tank for experimental culturing.

Order SALMONIFORMES

II. Family SALMONIDAE

2. *Salmo trutta fario* Linnaeus  
Brown Trout

*Material examined* : India : Uttaranchal, Uttarkashi dist., Rupin river, Sabror vill., alt. 1325 m, 1 ex., 10. vi. 1994; Tons river (called Rupin river here), Taluka-Osla road, 28 exs. (35 - 110 m), 17. vi. 1994, coll. *N.K. Sinha & party*; Taluka-Osla road, alt. *ca* 1900 m, 1 ex., 31.x.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Introduced.

*Elsewhere* : Naturally found in Eurasia. Introduced into Pakistan; S. Africa; Australia; N. America; New Zealand; Japan etc.

*Remarks* : Brought to India from U.K. in 1899 and 1901 and introduced in Himalayan region for sport.

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## AMPHIBIA

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### INTRODUCTION

The amphibian fauna is scarcely known in general. During the present study four species, two each of frogs and toads were collected from the Sanctuary area and the occurrence of *Rana limnocharis* Boie and *R. leibigii* Gunther is being reported for the first time from the district itself. Earlier Ray (1995) recorded six species from the district, out of which the *Bufo* spp. are common to the present find. Waltner (1974) studied the geographical and altitudinal distribution of amphibians in Himalayan region.

### SYSTEMATIC ACCOUNT

Order ANURA

I. Family RANIDAE

#### 1. *Rana leibigii* Gunther Mountain Frog

*Material examined* : India : Uttaranchal, Uttarkashi dist., Saruka tal, alt. ca 2500 m, Jakhol, 18 exs. (2 adults, 16 tadpoles in various stages), 13.vi.1994, coll. *N.K. Sinha* & party; Saruka tank, ca 1.5 km up F.R.H., Jakhol, 42 exs. (2 adult, 40 tadpoles), 31.iii.1996, coll. *Akhlaq Husain* & party.

*Distribution* : India : Himalaya between 1219 and 3048 m. Common in Sikkim. First record from Uttarkashi district, Uttaranchal.

*Remarks* : In the present material the glandular fold on each side of the back is not well defined. The species appears breeding before monsoon.

#### 2. *Rana limnocharis* Boie Paddy-field Frog

*Material examined* : India : Uttaranchal, Uttarkashi dist., F.R.H., Naitwar, 3 exs., 7.x.1993, coll. *Arun Kumar* & party; Confluence of Chhibara khad and Tons river, ca 3-4 km from Naitwar, Mori road, 1 exs., 20.iii.1996; Khad, ca 3 km from Naitwar, Sankri road, 4 exs, 21.iii.1996; High School building compound, Naitwar, 5 exs., 22.iii.1996, coll. *Akhlaq Husain*

& party; Soud vill., ca 2 km from Sankri, Taluka road, 2 exs (tadpoles), 30.x.1996; Naitwar-Himri trek, alt. ca 1450-1500 m, 1 ex., 4.xi.1996; Manora khad, Landhora vill., alt. ca 1500 m, 12 exs. (5 adults, 7 tadpoles), 5.xi.1996; Chhibara khad nr. G.V.J. Vihar Gate, alt. ca 1375 m., 11 exs., 6.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Plains and Himalaya up to 2500 m.

*Elsewhere* : Japan, China, Pakistan, Sri Lanka, Malay Peninsula, Phillipines, Borneo, Lombok.

*Remarks* : A highly variable species as regard colour pattern.

## II. Family BUFONIDAE

### 3. *Bufo himalayanus* Gunther Mountain Toad

*Material examined* : India : Uttaranchal, Uttarkashi dist., Confluence of Chhibara khad and Tons river, ca 3-4 km from Naitwar, Mori road, 1 ex., 20.iii.1996; Fish tank, Taluka, 2 exs., 31.iii.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : all along Himalaya.

*Elsewhere* : Nepal.

*Remarks* : Largest toad of India. Parotid gland low and almost concealing the tympanum.

### 4. *Bufo melanostictus* Schneider Common Toad

*Material examined* : India : Uttaranchal, Uttarkashi dist., F.R.H., Naitwar 1 ex., 7.x.1993, coll. *Arun Kumar & party*; Tons river, Taluka-Osla road, Taluka, 26 exs. (1 adult, 25 tadpoles), 17.vi. 1994, coll. *N.K. Sinha & party*; Naitwar - Himri trek, Rupin valley, 340 exs (tadpoles), 23.iii.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : Plains to about 2000 m.

*Elsewhere* : Pakistan, Nepal.

*Remarks* : It can be easily differentiated from *B. himalayanus* in the presence of black edged cranial ridge.

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## REPTILIA

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### INTRODUCTION

The study of reptiles, particularly that of snakes has always been a difficult task due to various suppressions and the of fear being bitten. During the present study three species each of lizards and snakes were collected from the Sanctuary area of which *Eumeces taeniolatus* (Blyth) and *Boiga* spp. are new to the known fauna of the district. Earlier Husain & Ray (1995) listed seven and eleven species of lizards and snakes respectively. Waltner (1974) gave geographical and altitudinal distribution pattern of reptiles in Himalaya in general.

### SYSTEMATIC ACCOUNT

Class REPTILIA  
Order SAURIA  
I. Family AGAMIDAE

#### 1. *Agama tuberculata* Hardwicke & Gray Common Rock Lizard

*Material examined* : India : Uttaranchal, Uttarkashi dist., Fafrala vill. alt. ca 2000 m, ca 9 km from FRH, Naitwar, 1 ex., 6.x.1993; Rupin valley, alt ca 1300-1350 m, Naitwar, 2 ex., 7.x.1993; ca 4 km from Taluka FRH, on way to Osla, 1 ex., 13.x.1993, coll. Arun Kumar & party; Dhaula-Duni trek, 6 exs., 24.iii.1996; vill., Dumri, 25.iii.1996; 2 exs., Himri, 3 exs., 28.iii.1996, coll. Akhlaq Husain & party.

*Distribution* : India : Jammu & Kashmir, Himachal Pradesh, Uttaranchal.

*Elsewhere* : Pakistan; Nepal; Afghanistan.

*Remarks* : Most common lizard of Western Himalaya.

#### II. Family SCINCIDAE

#### 2. *Scincella himalayanum* (Gunther) Himalayan Skink

*Material examined* : India : Uttaranchal, Uttarkashi dist. Fafrala vill., alt. ca 2000 m, ca 9 km from FRH, Naitwar, 1 ex., 6.x.1993; Sakhrola, ca 17 km from Naitwar, 1 ex., 8.x.1993;

Ghuinyan ghati, ca 20 km from Naitwar, 3 exs., 8.x.1993; Sankri vill., ca 12 km from FRH, Naitwar, 1ex., 9.x.1993; on way Sankri vill. to Halara gad, 3 exs., 9.x.1993; on way from Taluka to Osla, 1ex., 11.x.1993; on way to Har-ki-Dun from Osla, 7 exs., 12.x.1993, coll. *Arun Kumar & party*; Saruka tal, alt. ca 2825 m, ca 2 km up hill from Jakhol, 1 ex., 13.vi.1994; Taluka-Osla trek, 1 ex., 17.vi.1994, coll. *N.K. Sinha & party*; Bedgad nala, up hill nr. FRH Naitwar, 5 exs., 22.iii.1996; vill. Dumri, 4 exs., 25.iii.1996; vicinity of Satta FRH, 4 exs., 25.iii.1996; vicinity of Masri, vill. Duni-Masri, 12 exs., 25.iii.1996; Dhaula, 2 exs., 26.iii.1996. Dhaula-Istragad trek, 5 exs., 27.iii.1996; Giwani gad and Istragad area, 1ex., 27.iii.1996; Dewal Nursery, Himri, 2 exs., 28.iii.1996; Sankri, 1ex., 30.iii.1996; nr. Bridge, Taluka, 6 exs., 30.iii.1996; Saruka tank, ca 1.5 km up FRH, Jakhol, 1 ex., 31.iii.1996, coll. *Akhlaq Husain & party*; Halara gad, alt. ca 1850 m, ca 3 km from Sankri FRH, Taluka road, 10 exs., 27.x.1996; Perti vill., alt. ca 1875 m, ca 7 km from Sankri, Taluka road, 5 exs., 28.x.1996; Har-ki-Dun gad, Taluka road, 3 exs., 29.x.1996; Taluka, 2 exs., 30.x.1996; Soud vill., ca 2 km from Sankri, Taluka road, 3 exs., 30.x.1996; Sankri, alt. ca 1900 m, 5 exs., 31.x.1996; Jakhol, alt. ca 2150 m, 2 exs., 1.xi.1996; Kedarkanta, alt. ca 1900-2800 m, 3 exs., 2.xi.1996, coll. *J.P. Sati & party*.

*Distribution* : India : Jammu & Kashmir, Himachal Pradesh, Uttaranchl, Uttar Pradesh (ascending up to 3658 m, common between 1219 m and 2734 m).

*Elsewhere* : Pakistan; Nepal and Turkistan.

The study of reptiles, particularly that of snakes has always been a difficult task due to various superstitions and the fear of being bitten. During the present study three species each of lizards and snakes were collected from the Sanctuary area of which *Eumeces taeniolatus* (Blyth) and *Boiga* spp are new to the known fauna of the district. Earlier Husain & Ray (1995) listed seven and eleven species of lizards and snakes respectively. Waltner (1974) gave geographical and altitudinal distribution pattern of reptiles in Himalaya in general.

*Remarks* : Small Skink, preferring damp areas or open grassy patches generally between 400 and 1200 m.

### 3. *Eumeces taeniolatus* (Blyth) Yellow-bellied Mole

*Material examined* : India : Uttaranchl, Uttarkashi dist., Himri, 1 ex., 28.iii.1996; Himri, 2 exs., 29.iii.1996, coll. *Akhlaq Husain & party*.

*Distribution* : India : Jammu & Kashmir, Uttaranchal, Rajasthan, Gujarat.

*Elsewhere* : Pakistan, Arabia to Transcaspia.

*Remarks* : Most secretive and agile lizard. Generally found in sandy burrows and understones in rocky habitats. First record from Uttarkashi district, Uttaranchal.

Order SERPENTES

III. Family NATRICIDAE

4. *Amphiesma platyceps* (Blyth)  
Mountain Keelback

*Material examined* : India : Uttaranchal, Uttarkashi, dist., Sunkundi vill., ca 27 km from Naitwar, 1 ex., 8.x.1993; on way Taluka to Sankri, 1ex., 12.x.1993, coll. *Arun Kumar & party.*

*Distribution* : India : Himalaya, generally between 1524 m and 1829 m.

*Elsewhere* : Nepal; Myanmar up to 3048 m.

*Remarks* : Males comparatively longer than females. Colouration variable.

IV. Family HOMALOPSIDAE

Subfamily BOIGINAE

5. *Boiga multifasciata* (Blyth)  
Himalayan Cat Snake

*Material examined* : India : Uttaranchal, Uttarkashi dist., FRH compound, Taluka, 1 ex., 31.iii.1996, coll. *Akhlaq Husain & party.*

*Distribution* : India : Himalaya, 900 m to 2700 m generally above 1524 m.

*Elsewhere* : Nepal. First record from Uttarkashi district, Uttaranchal.

*Remarks* : Nocturnal and arboreal in habit. Extremely vicious in disposition and rattle tail when agitated. Kills the prey by constriction.

6. *Boiga trigonata* (Schneider)  
Common Cat Snake/Indian Gamma

*Material examined* : India : Uttaranchal, Uttarkashi, dist., Jakhol, 1 ex., 1.xi.1996, coll. *J.P. Sati & party.*

*Distribution* : India : Throughout, plains to 1500 m.

*Elsewhere* : Pakistan; Sri Lanka. First record from Uttarkashi district, Uttaranchal.

*Remarks* : Arboreal and nocturnal in habit. Males comparatively shorter than females. Acts offensively on the least provocation. Often mistaken for deadly Saw-scaled Viper.

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## AVES

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### INTRODUCTION

The working plan for the Tons Division (1965-66 to 1974-75) by Pandey mentioned over 50 names of birds. Govind Pashu Vihar (GPV) forms a part the Tons Division in district Uttarkashi of the state Uttaranchal. Prasanna and Bagchi (1994) provided observations for more than 30 species of birds along the trek from Sankri (1500 m) to Harkidun (3557 m) in GPV. Sathyakumar (1994) gave an indication of occurrence of more than 100 species of birds, but without any list. Sathyakumar (in press) detailed seven species of Galliformes (game birds) along with their encounter rates etc. in GPV. The present communication is primarily based on the various faunistic surveys (1994-96) of GPV area. It also incorporates 11 exclusive species of birds recorded by Prasanna and Bagchi (1994) and two species (Chir Pheasant and Woodcock) of the above mentioned working plan. Thus, the present systematic list provides 115 species of birds. The list also provides status, localities within GPV, and the altitudinal range for each bird species. The altitudinal range explored during the present surveys varied from *ca* 1300-3600 m. However, the existing knowledge on zoogeography of birds suggest that the GPV, an area of 957.97 sq. km., may support more than 300 species of birds. This invites further intensive ornithological surveys in the area.

### ANALYSIS AND RESULTS

These 115 species of birds belong to 82 genera, 31 families and 11 orders. The nomenclature followed is after Ali and Ripley (1968-78). The subspecific level is included on the basis of the reported range of the subspecies. For convenience, the Handbook number has been given within bracket following the common English name of each bird species (Table).

The status of 115 species is as follows (after Ali & Ripley, 1968-78) (Table) :

Status	Species (Nos. only)
R = Resident (including Rbr+, R/Sbr+, br+ & R/M)	48
R/LM = Resident with local movements	10
R/AM = Resident with altitudinal movements	29

Status	Species (Nos. only)
AM = Altitudinal migrant	10
WV = Winter visitor	03
SV = Summer visitor (including SV/R)	12
UnC = Uncertain	03
Total	115

A familywise analysis revealed that the family Muscicapidae (the most crowded family of the passerine or song birds) predominates (30 species); followed by Phasianidae – the game birds (11); Accipitridae (9); Corvidae (8); Columbidae (7); Picidae (6); Paridae, Ploceidae and Fringillidae (4 each); Pycnonotidae and Sittidae (3 each) and so on (Table).

The altitudinal records as documented in Ali & Ripley (1968-78) are presented against each bird species. The present observations revealed that as many as eight species (out of 102 species observed during the present surveys) have been recorded beyond their documented altitudinal range. This has been indicated with the sign of plus (+), wherever applicable, in column for the altitude (Table). This does not include 11 exclusive species of Prasanna and Bagchi (1994) and two species of the working plan. The eight species are as follows :

Sl. No.	Species	Altitudinal Range (m)	
		Documented	* Observed
1.	Indian Shikra (138)	1400	2200
2.	Himalayan Redbilled Blue Magpie (1027)	1000-2100	1300-2500
3.	West Himalayan Tree Pie (1037)	600-2100	1300-2800
4.	Pale Blue Flycatcher (1439)	Foothills-1200	1300-2100
5.	Northern Pied Bush Chat (1700)	up to 1500	1300-2800
6.	Western Chestnutbellied Nuthatch (1827)	300-1500	2500-2800
7.	Indian White-eye (1933)	up to 1500	2500-2800
8.	Himalayan Greenfinch (1990)	1300-2700	1500-3000

= For localities *vide* Table.

The most notable feature about the avifauna of GPV is the survival of the much-depleted populations of the following six threatened species of birds.

Sl. No.	Species	Red Data Book		W(P) Act
		ZSI 1994	IUCN 1990	1972
1.	Himalayan Bearded Vulture	Endangered	-	Sch. I
2.	Western Tragopan	Endangered	Vulnerable	Sch. I
3.	Satyr or Crimson Horned Tragopan	Vulnerable	-	Sch. I
4.	Impeyan or Himalayan Monal Pheasant	Endangered	-	Sch. I
5.	Koklass Pheasant	Vulnerable	-	Sch. I
6.	Cheer Pheasant	Endangered	Vulnerable	Sch. I

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## SYSTEMATIC LIST

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
I. Order FALCONIFORMES				
1. Family ACCIPITRIDAE				
1.	<i>Accipiter badius dussumieri</i> (Temminck) <b>Indian Shikra</b> (138)	R	Sankri	+ 1400 m
2.	<i>A. trivirgatus indicus</i> (Hodgson) <b>North Indian Crested Goshawk</b> (144)	R	Himri	2000 m
3.	<i>Aquila chrysaetos daphanea</i> Severtzov <b>Himalayan Golden Eagle</b> (166)	R	Naitwar, Dhaula	1850-snowline
4.	<i>Ictinaetus malayensis perniger</i> (Hodgson) <b>Black Eagle</b> (172)	R	Naitwar, Himri	up to 2700 m
5.	<i>Gyps himalayensis</i> Hume <b>Himalayan Griffon Vulture</b> (181)	R	Naitwar, Jakhol, Saruka Tal, Himri, Dhaula, Duni, Satta,	600-2500 m
6.	<i>Gyps bengalensis</i> (Gmelin) <b>Indian Whitebacked Vulture</b> (185)	R	Naitwar, Himri	1500-2500 m
7.	<i>Neophron percnopterus ginginianus</i> (Latham) <b>Indian Scavenger Vulture</b> (187)	R	Naitwar, Himri	up to 2000 m
8.	<i>Gypaetus barbatus aureus</i> (Hablizl) Harkidun <b>Himalayan Bearded Vulture</b> (188)	R	Taluka, Osla,	1200-4000 m
9.	<i>Spilornis cheela cheela</i> (Latham) <b>Crested Serpent Eagle</b> (196)	R/LM	Dhaulta	up to 2000 m
2. Family FALCONIDAE				
*10.	<i>Falco subbuteo subbuteo</i> Linnaeus <b>Hobby</b> (212)	WV	Sankri	1220-2135 m
11.	<i>Falco tinnunculus tinnunculus</i> Linnaeus <b>European Kestrel</b> (222)	Rbr+	Naitwar	700- 3300 m
II. Order GALLIFORMES				
3. Family PHASIANIDAE				
12.	<i>Lerwa lerwa</i> (Hodgson) <b>Snow Partridge</b> (227)	R	Harkidun, Jura Tal	2500-5000 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
13.	<i>Tetraogallus himalayensis himalayensis</i> J.E.Gray <b>Himalayan Snowcock</b> (232)	R	Harkidun	2400-5000 m
14.	<i>Alectoris chukar chukar</i> (J.E.Gray) <b>Chukar Partridge</b> (236)	R	Jakhol	1200-5000 m
15.	<i>Francolinus francolinus asiae</i> Stephens <b>Indian Black Partridge</b> (238)	R	Naitwar, Sankri, Sunkhundi	up to 2500 m
16.	<i>Arbophila torqueola torqueola</i> Hodgson <b>Common Hill Partridge</b> (267)	R	Istragad	1500-4000 m
17.	<i>Tragopan melanocephalus</i> (J.E. Gray) <b>Western Horned Pheasant</b> (285)	R	Pustara peak area above Giyan gad, Obera gad- Manjeevan peak area in Supin valley	1350-3600 m
18.	<i>T. satyra</i> (Linnaeus) <b>Crimson Horned Pheasant or Satyr Tragopan</b> (286)	R	Sympatrisism reported by Prasad (1993)	1800-4250 m
19.	<i>Lophophorus impejanus</i> (Latham) <b>Impeyan or Himalayan Monal Pheasant</b> (290)	R	Saruka Tal	2600-5000 m
20.	<i>Lophura leucomelana hamiltonii</i> (J.E.Gray) <b>Whitecrested Kaleej Pheasant</b> (293)	R	Naitwar, Taluka, Himri, Dhaula, Istragad	400-3600 m
21.	<i>Pucrasia macrolopha macrolopha</i> (Lesson) <b>Koklas</b> (305)	R	Osla, Sirga, Saruka Tal	1500-4000 m
**22.	<i>Catreus wallichii</i> (Hardwicke) <b>Chir Pheasant</b> (307)	R	**	2135-3050 m
III. Order CHARADRIIFORMES -				
4. Family CHARADRIIDAE				
**23.	<i>Scolopax rusticola rusticola</i> Linnaeus <b>Woodcock</b> (411)	br+	**	2000 -3800 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
IV. Order COLUMBIFORMES				
5. Family COLUMBIDAE				
24.	<i>Treron phoenicoptera</i> (Latham) <b>Green Pigeon</b> (493-505)	R/LM	Naitwar	Gangetic plains to himalayan foothills
25.	<i>Columba leuconota leuconota</i> Vigors <b>West Himalayan Snow Pigeon</b> (513)	R	Taluka, Osla, Harkidun, Saruka Tal	1500-5000 m
26.	<i>C. livia intermedia</i> Strickland <b>Indian Blue Rock Pigeon</b> (517)	R	Naitwar, Jakhol, Himri, Dhaula, Istragad	up to 3000 m in Himalayas
*27.	<i>Streptopelia orientalis orientalis</i> (Latham) <b>Rufous Turtle Dove</b> (530)	WV	Seema	150-3660 m
28.	<i>Streptopelia orientalis meena</i> (Sykes) <b>Western Turtle Dove</b> (531)	Rbr+	Naitwar, Taluka, Sunkhundi, Jakhol, Sirga	up to 4000 m
29.	<i>S. decaocto decaocto</i> (Fridvaldszky) <b>Indian Ring Dove</b> (534)	R/LM	Naitwar	up to 2400 m
30.	<i>S. chinensis suratensis</i> (Gmelin) <b>Indian Spotted Dove</b> (537)	R/AM	Naitwar, Sankri, Taluka, Dhaula, Duni, Satta	up to 2400 m in Himalayas
V. Order PSITTACIFORMES				
6. Family PSITTACIDAE				
31.	<i>Psittacula cyanocephala bengalensis</i> (Forster) <b>Northern Blossomheaded Parakeet</b> (557)	R/LM	Sankri, Taluka, Himri, Dhaula, Duni, Istragad	up to 1500 m in Himalayas
32.	<i>P. himalayana</i> (Lesson) <b>Himalayan Slatyheaded Parakeet</b> (562)	R/AM	Naitwar	600-2500 m
VI. Order STRIGIFORMES				
7. Family STRIGIDAE				
33.	<i>Strix leptogrammica newarensis</i> (Hodgson) <b>Himalayan Brown Wood Owl</b> (658)	R	Duni	750-2450 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
VII. Order CAPRIMULGIFORMES				
8. Family CAPRIMULGIDAE				
34.	<i>Caprimulgus indicus hazarae</i> Whistler & Kinnear <b>Himalayan Jungle Nightjar (670)</b>	R/AM	Sirga	Foothills to 3300 m
VIII. Order APODIFORMES				
9. Family APODIDAE				
35.	<i>Apus pacificus leuconyx</i> (Blyth) <b>Blyth's or Himalayan Whiterumped Swift (700)</b>	UnC	Taluka	600-3600 m in Himalayas
IX. Order CORACIIFORMES				
10. Family ALCEDINIDAE				
36.	<i>Ceryle lugubris continentalis</i> Hartert <b>West Himalayan Pied Kingfisher (717)</b>	R	Himri	Terai-2000 m
11. Family UPUPIDAE				
37.	<i>Upupa epops epops</i> Linnaeus <b>European Hoopoe (763)</b>	R / SVbr+	Jakhol	Foothills-4600 m
X. Order PICIFORMES				
12. Family CAPITONIDAE				
38.	<i>Megalaima virens marshallorum</i> Swinhoe <b>Himalayan Great Barbet (777)</b>	R/AM	Sankri, Taluka, Sunkhundi, Jakhol, Dhaula, Mashri, Istragad	Foothills-3000 m
13. Family PICIDAE				
39.	<i>Picus squamatus squamatus</i> Vigors <b>Himalayan Scalybellied Green Woodpecker (807)</b>	R/AM	Duni	1000-3000 m
40.	<i>P. canus sanguiniceps</i> Baker <b>Indian Blacknaped Green Woodpecker (809)</b>	R	Naitwar, Dhaula	Terai-2400 m
41.	<i>P. flavinucha kumaonensis</i> (Koelz) <b>Kumaon Large Yellownaped Woodpecker (812)</b>	R	Naitwar	Foothills-1700 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
*42.	<i>Hypopicus hyperythrus marshalli</i> (Hartert) <b>Western Rufousbellied Woodpecker (832)</b>	R	Sankri	1600-3000 m
43.	<i>Picoides himalayensis himalayensis</i> (Jardine & Selby) <b>Garhwal Pied Woodpecker (837)</b>	R	Naitwar, Jakhol, Sirga, Saruka Tal	1000-3000 m
44.	<i>P. auriceps auriceps</i> (Vigors) <b>West Himalayan Brownfronted Pied Woodpecker (842)</b>	R	Naitwar, Dhaula, Satta	700-3300 m
XI. Order PASSERIFORMES				
14. Family HIRUNDINIDAE				
*45.	<i>Delichon urbica</i> (Linnaeus) <b>House Martin (931, 32 ?)</b>	R	Sankri	1500-5000 m
46.	<i>Hirundo rupestris</i> Scopoli <b>Crag Martin (913)</b>	br+	Duni	1600-5000 m
15. Family ORIOLIDAE				
47.	<i>Oriolus traillii traillii</i> (Vigors) <b>Indian Maroon Oriole (961)</b>	R/LM	Istragad	Lower Himalayas to 2400 m
16. Family DICRURIDAE				
48.	<i>Dicrurus adsimilis albirictus</i> (Hodgson) <b>North Indian Black Drongo or King Crow (962)</b>	R/LM	Naitwar, Dhaula, Istragad	Plains-2100 m
49.	<i>D. leucophaeus longicaudatus</i> Hay <b>Indian Ashy Drongo (965)</b>	br+	Naitwar, Sankri, Jakhol	Foothills-3300 m
17. Family STURNIDAE				
50.	<i>Acridotheres tristis tristis</i> (Linnaeus) <b>Indian Myna (1006)</b>	br+	Naitwar, Sankri, Taluka, Jakhol, Duni	up to 3000 m
18. Family CORVIDAE				
*51.	<i>Garrulus glandarius bispecularis</i> Vigors <b>West Himalayan Redcrowned Jay (1020)</b>	R/AM	Seema	1000-2500 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
52.	<i>Cissa flavirostris cucullata</i> (Gould) <b>Western Yellowbilled Blue Magpie</b> (1025)	R/AM	Naitwar	1600-3300 m
53.	<i>C. erythrorhyncha occipitalis</i> (Blyth) <b>Himalayan Redbilled Blue Magpie</b> (1027)	R/AM	Naitwar, Jakhol	+ 1000-2100 m
54.	<i>Dendrocitta formosae occidentalis</i> Ticehurst <b>West Himalayan Tree Pie</b> (1037)	R/AM	Naitwar, Sankri, Osla	+ 600-2100 m
55.	<i>Nucifraga caryocatactes hemispila</i> Vigors <b>Himalayan Nutcracker</b> (1043)	R	Naitwar, Sankri, Jaura Tal	2000-3300 m
56.	<i>Pyrrhocorax graculus digitatus</i> Hemprich & Ehremberg <b>Yellow-billed Chough</b> (1045)	R/AM	Harkidun	1800-5000 m
57.	<i>P. pyrrhocorax centralis</i> Stresemann <b>West Himalayan Redbilled Chough</b> (1046)	R/AM	Taluka, Osla	1600-3500 m
58.	<i>Corvus macrorhynchos intermedius</i> Adams <b>Himalayan Jungle Crow</b> (1054)	R/AM	Throughout	1800-4500 m
19. Family CAMPEPHAGIDAE				
*59.	<i>Hemipus picatus capitalis</i> (Horsfield) <b>Brwonbacked Pied Flycatcher-Shrike</b> (1064)	R	Seema	Plains-2100 m
60.	<i>Pericrocotus ethologus favillaceus</i> Bangs & Phillips (1085) <b>West Himalayan Longtailed Minivet</b> (1085)	SV	Taluka, Sunkhundi, Jakhol, Sirga	1800-2400 m
20. Family PYCNONOTIDAE				
61.	<i>Pycnonotus leucogenys leucogenys</i> (Gray) <b>Whitecheeked Bulbul</b> (1125)	R/LM	Naitwar, Sankri, Dhaula	300-2100 m
62.	<i>P. cafer intermedius</i> Blyth <b>Punjab Redvented Bulbul</b> (1126)	R	Naitwar	Plains-1500 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
63.	<i>Hypsipetes madagascariensis psaroides</i> Vigors <b>Himalayan Black Bulbul</b> (1148) 21. Family MUSCICAPIDAE	R/AM	Sankri, Taluka, Dhaula, Duni, Satta, Istragad	1000-2400 m
*64.	<i>Garrulax albogularis whistleri</i> Baker <b>Western Whitethroated Laughing Thrush</b> (1273)	R/M	Sankari	1200-2900 m
65.	<i>Minla strigula simlaensis</i> (Meinertzhagen) <b>Western Barthroated Siva</b> (1358)	R/AM	Jakhol, Saruka Tal	1300-3600 m
66.	<i>Yuhina gularis vivax</i> Koelz <b>Western Stripethroated Yuhina</b> (1371)	UnC	Duni	2500 m
67.	<i>Heterophasia capistrata capistrata</i> (Vigors) <b>Western Blackcapped Sibia</b> (1396)	R/AM	Sankri, Dhaula	1800-2700 m
68.	<i>Muscicapa strophciata strophciata</i> (Hodgson) <b>Orangeorgeted Flycatcher</b> (1414)	R/AM	Taluka	2400-3600 m
*69.	<i>M. westermanni collini</i> Rothschild <b>Western Little Pied Flycatcher</b> (1419)	AM	Taluka	Plains-2500 m
70.	<i>M. superciliaris superciliaris</i> Jerdon <b>Whitebrowed Blue Flycatcher</b> (1421)	SV	Naitwar, Sankri, Taluka, Saruka Tal, Istragad	2100-2500 m
71.	<i>M. leucomelanura leucomelanura</i> (Hodgson) <b>Wetsern Slaty Blue Flycatcher</b> (1423)	AM	Taluka	1800-3000 m
72.	<i>M. sundara whistleri</i> (Ticehurst) <b>Western Rufousbellied Niltava</b> (1431)	AM	Satta	1600-2700 m
73.	<i>M. unicolor unicolor</i> (Blyth) <b>Pale Blue Flycatcher</b> (1439)	UnC	Naitwar, Himri, Satta, Istragad	+ Foothill-1800 m
74.	<i>M. thalassina thalassina</i> Swainson <b>Verditer Flycatcher</b> (1445)	SV	Naitwar, Jakhol	1200-2700 m
75.	<i>Culicicapa ceylonensis calochrysea</i> Oberholser <b>Northern Greyheaded Flycatcher</b> (1448)	SV/R	Sankri, Taluka, Himri, Duni	1500-2400 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
76.	<i>Rhipidura hypoxantha</i> Blyth <b>Yellowbellied Faintail Flycatcher</b> (1450)	AM	Naitwar, Dhaula	Plains-2400 m
77.	<i>Orthotomus sutorius guzuratus</i> (Latham) R <b>Indian Tailor Bird</b> (1535)	R	Naitwar	up to 1400 m in Himalaya
78.	<i>Phylloscopus affinis affinis</i> (Tickell) <b>Tickell's Leaf Warbler</b> (1579)	SV	Jakhol	2700-3300 m
79.	<i>P. inornatus humei</i> (Brooks) <b>Hume's Yellowbrowed Leaf Warbler</b> (1590)	SV	Jakhol	2100-3600 m
80.	<i>P. maculipennis virens</i> Ticehurst <b>Western Grayfaced Leaf Warbler</b> (1597)	AM	Sunkhundi, Jakhol	1200-1500 m
81.	<i>P. occipitalis occipitalis</i> (Blyth) <b>Large Crowned Leaf Warbler</b> (1606)	SV	Istragad	1800-3200 m
*82.	<i>Erithacus cyanurus pallidior</i> (Baker) <b>Kashmir Redflanked Bush Robin</b> (1654)	Am	Seema	1200-3600 m
83.	<i>Copsychus saularis saularis</i> (Linnaeus) <b>Indian Magpie-Robin</b> (1661)	R	Naitwar, Sankri	up to 2000 m in Simla
84.	<i>Phoenicurus erythrogaster grandis</i> (Gould) <b>Gouldenstadt's Redstart</b> (1678)	R/AM	Saruka Tal	3600-5200 m
85.	<i>Rhyacornis fuliginosus fuliginosus</i> (Vigors) <b>Plumbeous Redstart</b> (1679)	R/AM	Naitwar, Sankri, Taluka, Himri, Dhaula	1200-2100 m
86.	<i>Enicurus scouleris scouleris</i> Vigors <b>Little Forktail</b> (1684)	R/LM	Jakhol	1800-3300 m
87.	<i>E. maculatus maculatus</i> Vigors <b>Western Spotted Forktail</b> (1688)	R	Sankri	1200-3000 m
88.	<i>Saxicola caprata bicolor</i> Sykes <b>Northern Pied Bush Chat</b> (1700)	SV	Naitwar, Sankri, Taluka, Saruka Tal, Dhaula, Istragad	+ up to 1500 m
89.	<i>Chaimarrornis leucocephalus</i> (Vigors) <b>Whitecapped Redstart or River Chat</b> (1716)	AM	Naitwar, Taluka, Istragad	1800-3600 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
90.	<i>Monticola cinclorhynchus</i> (Vigors) <b>Blueheaded Rock Thrush</b> (1723)	SV	Sankri	1200-2200 m
91.	<i>Myiophonus caeruleus temminckii</i> (Vigors) <b>Himalayan Whistling Thrush</b> (1729)	R/AM	Naitwar, Sankri, Taluka, Himri, Dhaula, Istragad	1000-3600 m
*92.	<i>Zoothera wardii</i> (Blyth) <b>Pied Ground Thrush</b> (1731)	SV	Sankri	1500-2400 m
93.	<i>Z. mollissima whiteheadi</i> (Baker) <b>Western Plainbacked Mountain Thrush</b> (1738)	AM	Jakhol, Saruka Tal	900-3600 m
22. Family CINCLIDAE				
94.	<i>Cinclus pallasii tenuirostris</i> Bonaparte <b>West Himalayan Brown Dipper</b> (1775)	R	Naitwar, Taluka, Himri, Dhaula	2700-3900 m
23. Family PARIDAE				
95.	<i>Parus major</i> Linnaeus <b>Gray Tit</b> (1792, 93)	R/AM	Naitwar, Istragad	1000-1800 m
96.	<i>P. monticolus monticolus</i> Vigors <b>Greenbacked Tit</b> (1799)	R/AM	Sankri, Taluka, Jakhol, Himri, Dhaula, Duni, Mashri, Istragad	Foothills-2400 m
97.	<i>P. melanolophus</i> Vigors <b>Crested Black Tit</b> (1802)	R/AM	Taluka	1600-2000 m
*98.	<i>Aegithalus concinnus iredalei</i> (Baker) <b>Western Redheaded Tit</b> (1818)	R	Sankri	900-2400 m
24. Family SITTIDAE				
99.	<i>Sitta castanea almorae</i> Kinnear & Whistler (1827) <b>Western Chestnutbellied Nuthatch</b> (1827)	R	Jakhol, Saruka Tal	+ 300-1500 m
100.	<i>S. leucopsis leucopsis</i> Gould <b>Western Whitecheeked Nuthatch</b> (1832)	R/AM	Taluka, Jakhol, Saruka Tal	1800-3000 m
101.	<i>Tichodroma muraria nepalensis</i> Bonaparte <b>Wall Creeper</b> (1839)	R/AM	Sunkhundi	Foothills-3300 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
25. Family CERTHIIDAE				
102.	<i>Certhia himalayana limes</i> Meinertzhagen <b>West Himalayan Tree Creeper</b> (1845)	AM	Taluka, Himri, Dhaula, Duni, Satta	br 2100+ m
26. Family MOTACILLIDAE				
103.	<i>Motacilla caspica caspica</i> (Gmelin) <b>Gray Wagtail</b> (1884)	SV	Naitwar	1500-3900 m
104.	<i>M. alba</i> Linnaeus <b>Pied Wagtail</b> (1885-90)	WV	Naitwar, Taluka, Osla, Dhaula	Foothills to Kerala
27. Family DICAIDAE				
105.	<i>Dicaeum erythrorhynchos erythrorhynchos</i> (Latham) <b>Tickell's Flowerpecker</b> (1899)	R	Naitwar	Foothills and plains
28. Family ZOSTEROPIDAE				
106.	<i>Zosterops palpebroso palpebroso</i> (Temminck) <b>Indian White-eye</b> (1933)	R/LM	Jakhol, Sirga, Saruka Tal	+ up to 1500 m
29. Family PLOCEIDAE				
107.	<i>Passer domesticus parkini</i> Whistler <b>Kashmir House Sparrow</b> (1939)	R/AM	Naitwar, Sankri	Plains to 2000 m
108.	<i>P. montanus</i> (Linnaeus) <b>Tree Sparrow</b> (1941-44)	R/LM	Naitwar, Sankri, Jakhol, Himri, Dhaula, Duni, Mashri, Istragad	450-2200 m
109.	<i>P. rutilans cinnamomeus</i> (Gould) <b>Himalayan Cinnamon Tree Sparrow</b> (1946)	R/AM	Naitwar, Taluka, Sunkhundi, Jakhol, Sirga, Saruka Tal	500-2700 m
110.	<i>Lonchura punctulata punctulata</i> (Linnaeus) <b>Indian Spotted Munia</b> (1974)	R	Naitwar	up to 1800 m
30. Family FRINGILLIDAE				
111.	<i>Mycerobas affinis</i> (Blyth) <b>Allied Grosbeak</b> (1983)	R/AM	Sankri	1800-3900 m

Sl. No.	Name of the species	Status	Distribution	Altitudinal range
112.	<i>Carduelis spinoides spinoides</i> Vigors <b>Himalayan Greenfinch (1990)</b>	SV	Sankri, Taluka, Sunkhundi, Jakhol, Sirga, Saruka Tal, Dhaura,	+ 1300-2700 m
113	<i>Carpodacus nipalensis kangrae</i> (Whistler) <b>Garhwal Dark Rosefinch (2014)</b>	AM	Satta, Mashri	1800-3600 m
114.	<i>Pyrrhoptes epauletta</i> (Hodgson) <b>Goldheaded Black Finch (2035)</b> 31. Family EMBERIZIDAE	R/AM	Duni	1400-3900 m
115.	<i>Emberiza cia stracheyi</i> Moore <b>Himalayan Rock Bunting (2052)</b>	R/AM	Dhaura	600-4000 m

## MAMMALIA

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### INTRODUCTION

The mammalian fauna of Himalayan Ecosystem is magnificent and well adapted to the Himalayan conditions. There are about 100 species of mammals known from the western Himalaya (Uttaranchal), of which nearly 35 species have been recorded from district Uttarkashi (Sinha, 1995).

Dang (1968) made some ecological observations on Bharal and Brown Bear from Har-ki-dun and adjacent area. Wildlife Institute of India while working for Snow Leopard survey under Indo-U.S. project reported 11 species of mammals from the sanctuary (Fox *et al.* 1986). An undated publication of the forest department, on the sanctuary reported 15 species of mammals. Thereafter Sathyakumar (1994) recorded 20 species from Rupin and Supin valley of the sanctuary.

The mammalian fauna of the GWS & NP is typical of high altitude. There are three altitudinal zones, viz., temperate broad leaf forest (1300-2500 m), Sub-alpine mixed coniferous forest (2500-3000m) and Alpine scrubs and meadows (3000 m and above).

The representative mammalian fauna of these zones were recorded and analyzed. In all, 32 species of mammals belonging to 29 genera, 16 families and 7 orders have been listed from the area either by direct or indirect sightings. Each species has been given the locality record with in sanctuary with altitude and its worldwide distribution.

The classification has been followed after Wilson and Reeder (1992) and Alfred *et al.* (2002).

Order INSECTIVORA

Family SORICIDAE

1. *Suncus etruscus* (Savi)

**Savi's Pygmy Shrew; Pygmy White-toothed Shrew**

*Remarks* : Only once seen at Naitwar (1450 m).

*Distribution* : India : Himachal Pradesh, Uttar Pradesh, Uttarakhand, Bihar, West Bengal and Northeastern states.

*Elsewhere* : North Africa, Arabian Peninsula, Asia Minor, Afghanistan, Bhutan, China, Ethiopia, Guinea, Iraq, Myanmar, Nepal, Nigeria, South Europe, Pakistan, Thailand, Turkmenistan.

2. *Suncus murinus* (Linnaeus)  
House Shrew

*Remarks* : One example was seen at Himri (1350).

*Distribution* : India : Kashmir, Pondichery, Bengal, Bihar, Tamil Nadu, Madhya Pradesh, Orissa, Uttar Pradesh, Uttaranchal, Punjab, Haryana, NE States, Sikkim, Kerala, Rajasthan, Gujarat, Western Ghats, Karnataka, Andhra Pradesh.

Order    CHIROPTERA  
Family    PTEROPODIDAE

3. *Cynopterus sphinx* (Vahl)  
Short-nosed Fruit Bat

*Remarks* : Observed at Naitwar, Himri & Duni between 1450–1900 m Altitude.

*Distribution* : India : Throughout.

*Elsewhere* : Bhutan, Southern China, Cambodia, Indo-China, Indonesia, Myanmar, Pakistan.

Family    VESPERTILIONIDAE

4. *Pipistrellus babu* Thomas  
Pipistrelle Bat

*Remarks* : Colonies of Pipistrelle seen active at dusk near Naitwar, Himri & Duni at an altitude of 1450, 1530–1900 m respectively.

*Distribution* : India : Assam, Sikkim, Kumaon, Himachal Pradesh and Madhya Pradesh.

*Elsewhere* : Afghanistan, Bhutan, China, Myanmar, Nepal and Pakistan.

Order    PRIMATES  
Family    CERCOPITHECIDAE

5. *Macaca mulatta* (Zimmermann)  
Rhesus Macaque

*Remarks* : Nearly 8 groups of 4 to 40 individuals observed at Naitwar, (1480 m), Himri

(1550 m), Dhaula (1600 m), Duni (1900 m), Masri (2150 m), Istragad (2075 m), Taluka (2100 m), Sankri (1850 m) & Jakhol (2400 m).

*Distribution* : India : North and East India above Tapti and Godavari.

*Elsewhere* : Afghanistan, Nepal, Myanmar, Indo-China, Tibet, China, Thailand, Hong Kong, Mongolia and Bhutan.

6. *Semnopithecus entellus* (Dufresne)  
**Hanuman Langur**

*Remarks* : Six groups of 8 to 25 individuals and solitary males at two places observed at Naitwar (1450 m), Dhaula (1600 m), Istragad (2075 m), Sankri (1850 m), Jakhkol (2400 m) & Kedarkanta Trek (2700 m).

*Distribution* : India : Practically throughout in suitable localities.

*Elsewhere* : Pakistan, Sri Lanka, Nepal and Tibet.

*Status* : CITES-Appendix I.

Order CORNIVORA  
Family CANIDAE

7. *Canis aureus* Linnaeus  
**Asiatic Jackal; Golden Jackal**

*Remarks* : Hawling recorded at, Taluka (2150 m), Sankri (1850 m); locals reported it from Satta (2050 m) & Masri (2150 m).

*Distribution* : India : Bihar, Gujarat, Haryana, Madhya Pradesh, Orissa, Punjab, Peninsula, North-eastern States, Uttar Pradesh, Western India and West Bengal.

*Elsewhere* : North and East Africa, South-west Asia, Central Asia, Afghanistan, South-east Europe, Nigeria, Sri Lanka, Senegal, Thailand, Tanzania, Transcaucasia.

8. *Vulpes bengalensis* (Linnaeus)  
**Common Red Fox; Red fox**

*Remarks* : Local villagers reported from Taluka (2100 m).

*Distribution* : India : Gujarat, Kashmir, Ladakh, Punjab, Sikkim and Uttar Pradesh Himalaya.

*Elsewhere* : Throughout Palaeartic region, Australia, Palaeartic Africa, Central Asia, North America, Europe, Indo-China, Japan.

*Status* : CITES-Appendix III (India) as *V. v. griffithi*, *V. v. montana* and *V. v. pusilla* (= *leucopus*).

## Family FELIDAE

9. *Felis chaus* Schreber  
Jungle Cat

*Remarks* : Reported by the villagers from Satta (2050 m).

*Distribution* : India : Gujarat, Kashmir, Madhya Pradesh, Sikkim, South of Krishna river, Rajasthan, Uttar Pradesh and West Bengal.

*Elsewhere* : Afghanistan, Algeria, Arabia, Bewin, China, CIS Countries, Egypt, Iran, Iraq, Israel, Kenya, Malani, Morocco, Mozambique, Nepal, Pakistan, Sri Lanka, Syria, Thailand, Vietnam, Yemen, Zambia, Zimbabwe.

*Status* : CITES-Appendix II.

10. *Prionailurus bengalensis* (Kerr)  
Leopard Cat

*Remarks* : Fecal matter was seen on Kedarkhanta trek (2550 m) & Istragad (2075 m).

*Distribution* : India : Northwestern, Central, North-eastern States.

*Elsewhere* : Afghanistan, Bangladesh, Myanmar, Cambodia, China, Indonesia, Japan, Korea, Laos, Malaysia, Nepal, Pakistan, Philippines, Taiwan, Thailand, Vietnam, C.I.S. Countries.

*Status* : CITES-Appendix I as *Felis bengalensis* (except for Chinese population); otherwise Appendix II, IUCN-Endangered, as *Felis irimotensis*.

11. *Panthera pardus* (Linnaeus)  
Leopard; Panther

*Remarks* : Local villagers reported form Satta (2050 m), Jakhol (2400 m) & Sankri (1850 m).

*Distribution* : India : throughout in suitable pockets.

*Elsewhere* : Afghanistan, Pakistan, China, Myanmar, Sri Lanka, Algeria, Angola, Arabia, Botswana, Central Africa, Congo, Egypt, Ethiopia, Guinea, Indonesia, Iran, Iraq, Kenya, Liberia, Laos, Malaysia, Nepal, Morocco, Namibia, Thailand, Vietnam, Zaire, Niger, Zambia, Nigeria, Tanzania, Turkey, South Africa, Uganda, C.I.S. countries, Zimbabwe.

*Status* : CITES-Appendix I, IUCN-Threatened.

12. *Uncia uncia* (Schreber)  
Snow Leopard

*Remarks* : Wildlife guards reported their presence on higher ridges on Kedarkhanta trek & Osla at an altitude of 2700 m & above.

*Distribution* : India : Kashmir.

*Elsewhere* : Afghanistan, Pakistan, C.I.S. countries, China, Mongolia, Nepal, China, Bhutan.

*Status* : CITES-Appendix I; IUCN-Endangered.

Family MUSTELIDAE

13. *Martes flavigula* (Boddaert)  
Yellow-Throated Marten

*Remarks* : Observed two individuals at Naitwar (1480 m) and one at Jakhol (2400 m).

*Distribution* : India : From Kashmir to North-east India along the foothills of Himalaya, Southern States in suitable pockets.

*Elsewhere* : Russia, Korea, China, Pakistan, Southeast Asian Countries, Taiwan, and Indonesia.

*Status* : CITES – Appendix III (India); IUCN – Intermediate as *M. f. chryospila*.

14. *Mustela altaica* Pallas  
Mountain Weasel; Alpine Weasel

*Remarks* : Reported by the villagers near Jakhol (2400 m).

*Distribution* : India : Upper Sutlej Valley (1400 m), Sikkim.

*Elsewhere* : CIS states, Mongolia, China, Tibet, Korea.

*Status* : CITES – Appendix III (India).

Family URSIDAE

15. *Ursus arctos* Linnaeus  
Brown Bear; Grizzly Bear

*Remarks* : Villagers reported the presence on higher ridges near Jakhol (2700 m); Sathyakumar (1994) has also reported from the sanctuary.

*Distribution* : India : Higher reaches of Kashmir, Himachal Pradesh.

*Elsewhere* : Sweden, Finland, Estonia, Poland, Czechoslovakia, Austria, Yugoslavia, Albania, Romania, Bulgaria, Greece, Italy, France, Spain, C.I.S. Countries, Central Asia, Mongolia, Manchuria, Japan, Tibet, China, Syria, Persia, Asia Minor, North America, Germany, Scandinavia, Switzerland, Siberia, Nepal, Afghanistan, Pakistan, Palestine, Korea.

*Status* : CITES – Appendix I as *U. arctos* (Mexico), Bhutan, China, Mongolia populations), *U. a. sabellinus* and *U. a. pruinosus*; otherwise Appendix II; IUCN – Extinct as *U. a. nelsoni*.

16. *Ursus thibetanus* Cuvier  
Asiatic Black Bear

*Remarks* : 2 cubs were seen as pet near Naitwar, brought from the local Forest near Sankri; Sathyakumar (1994) reported them from the sanctuary.

*Distribution* : India : Lidder Valley, Kashmir, Himachal Pradesh, Darjeeling in West Bengal.

*Elsewhere* : Siberia in Russia, Japan, Manchuria, China, Myanmar, Afghanistan, Indo-China, Korea, Laos, Pakistan, Nepal, Taiwan, Thailand, Vietnam.

*Status* : CITES – Appendix I; IUCN – Endangered as *U. t. gedrosianus*, otherwise Vulnerable.

Order ARTIODACTYLA

Family SUIDAE

17. *Sus scrofa* Linnaeus  
Wild Boar

*Remarks* : Villagers of Satta (2050 m) Masri (2150 m) and Sankri (1850 m) reported that the wild boar damages their potato crops frequently. Sathyakumar (1994) has also reported it from sanctuary.

*Distribution* : India : Throughout.

*Elsewhere* : Europe, Southern Russia and China to middle east, Sri Lanka, Indonesia, Norway, Sweden, South Africa, Lesser Sunda Islands, Australia, U.S.A., West Indies, Central and South America, Numerous Oceanic Islands, Mauritius, Hawaiian, Galapagos and Fiji Islands, Moluca Island, New Guinea and Solomon Islands.

*Status* : IUCN – Vulnerable as *S. s. riukiuanus*.

Family MOSCHIDAE

18. *Moschus chrysogaster* Hodgson  
Forest Musk Deer; Kastura

*Remarks* : Sathyakumar (1994) reported it from sanctuary. Local villagers reported the presence on upper ridges of Har-ki-dun.

*Distribution* : India : Kashmir, Uttaranchal Himalaya, Sikkim, North-east Himalaya.

*Elsewhere* : Himalayas of North Afghanistan, North Pakistan, Nepal, Central Tibet to Central China.

*Status* : *CITES* – Appendix I in Afghanistan, Bhutan, India, Nepal and Pakistan; otherwise Appendix II.

Family CERVIDAE

19. *Cervus unicolor* Kerr  
Sambar

*Remarks* : Local villagers reported from Sankri (1850 m), Taluka (2100 m), Jakhol (2400 m) & Osla (2550 m); Sathyakumar, (1994) has also reported Sambar in the sanctuary

*Distribution* : *India* : Peninsula, Kumaon, North-east States, Northern India, Coromondal, Bengal.

*Elsewhere* : Sri Lanka, Southern China, Hainan Islands, Taiwan, Peninsular Malaysia, Sumatra, Borneo, Siberut, Sipora and Pagi and Nias Islands, Australia, New Zealand.

20. *Muntiacus muntjak* (Zimmermann)  
Indian Muntjak; Barking Deer

*Remarks* : Widely distributed in Naitwar, Sankri, Masri, Taluka, Satta, Jakhol, between from 1450 m to 2400 m altitude the villagers says from Istragad & Duni during present surveys. Sathyakumar (1994) has reported the species from sanctuary.

*Distribution* : *India* : North, Peninsula, Kumaon, Bengal, Maharashtra, Deccan plateau, Nagarhole, Karnataka, Malabar coast.

*Elsewhere* : Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh, Southern China, Indo-China, Peninsular Malaysia, Sumatra, Borneo, Java, Bali, Lombok, Indonesia.

Family BOVIDAE

21. *Hemitragus jemlahicus* (H. Smith)  
Himalayan Tahr; Tahr

*Remarks* : Forest officials and villagers report their availability in the Taluka and Jakhol area. Sathyakumar (1994) has reported this from sanctuary.

*Distribution* : *India* : Himalayas from Kashmir through northern India to Sikkim.

*Elsewhere* : Nepal, Southern Tibet.

22. *Nemorhaedus goral* (Hardwicke)  
Goral

*Remarks* : During recent surveys Gorals were observed at Himri (1550 m), Dhaula (1600 m) and Istragad (2075 m). Sathyakumar (1994) reported Goral from sanctuary.

*Distribution* : India : Himachal Pradesh, Kashmir, Kumaon, Assam, Sikkim.

*Elsewhere* : Siberia, Manchuria, Korea, China, Tibet, Myanmar, Nepal, Bhutan and Pakistan.

*Status* : CITES – Appendix I.

23. *Nemorhaedus sumatraensis* (Bechstein)

**Mainland Serow; Serow**

*Remarks* : Local villagers reported Serow from Jakhol (2400 m) while Sathyakumar (1994) reported it from sanctuary.

*Distribution* : India : Kashmir, Lahul (Himachal Pradesh), Kumaon, Sikkim, Kalimpong (West Bengal).

*Elsewhere* : Nepal, China, Myanmar, Indo-China, Malay Peninsula, Sumatra, Thailand.

*Status* : CITES – Appendix I, IUCN – *Endangered*.

24. *Pseudois nayaur* (Hodgson)

**Bharal, Blue Sheep**

*Remarks* : Villagers reported them from the higher ridges near Taluka (2100 m) and Jakhol (2400 m). Sathyakumar (1994) has also reported Bharal from the sanctuary.

*Distribution* : India : Ladakh, Sikkim.

*Elsewhere* : Pamir range in Tadzhikistan, Northern Pakistan, Tibet, China, Mongolia, Nepal.

Order LAGOMORPHA

Family LEPORIDAE

25. *Ochotona roylei* (Ogilby)

**Royale's Pika, Large-eared Pika**

*Remarks* : Local information says that, they were seen at Osla area on Kedarkanta trek.

*Distribution* : India : Himalayas in Ladakh, Kashmir, Himachal Pradesh, Uttaranchal – Garhwal and Kumaon.

*Elsewhere* : Russian central Asia, Himalayan Mountains in North and West Pakistan, Tibet, China, Nepal and Myanmar.

26. *Lepus nigricollis* F. Cuvier

**Indian Hare; Black-naped Hare**

*Remarks* : Once it was sighted near Naitwar (1450).

*Distribution* : India : Throughout.

*Elsewhere* : Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Java.

Order RODENTIA  
Family SCIURIDAE

27. *Petaurista petaurista* (Pallas)  
**Red Giant Flying Squirrel; Common Giant Flying Squirrel**

*Remarks* : At dusk it was seen gliding on pine trees near Naitwar (1450).

*Distribution* : India : Nagaland, Assam, Punjab, Kashmir, Peninsula, Himachal Pradesh, Kumaon, Tamil Nadu, Bihar, Maharashtra.

*Elsewhere* : Afghanistan, China, Myanmar, Thailand, Indo-China, Malaysia, Indonesia, Borneo.

Family MURIDAE

8. *Microtus leucurus* (Blyth)  
**Blyth's Vole**

*Remarks* : Once seen near Istragad (2075).

*Distribution* : India : Upper Sutlej Valley, Himachal Pradesh, Ladakh, Kashmir.

*Elsewhere* : Tibet, Chinese Turkistan, Nepal.

29. *Apodemus wardi* (Wroughton)  
**Field Mouse**

*Remarks* : A few individuals were seen near Naitwar (1480 m), Sankri (1850 m) and Taluka (2100 m).

*Distribution* : India : Himachal Pradesh, Kashmir, Kumaon (Uttar Pradesh).

*Elsewhere* : Nepal, Pakistan, Afghanistan, Iran.

30. *Millardia meltada* (Gray)  
**Soft-furred Field Rat; Metad**

*Remarks* : Once seen at Naitwar (1450 m).

*Distribution* : India : Maharashtra, Peninsula, Gujarat, Rajasthan, Himachal Pradesh, Bihar, West Bengal, Nilgiri Hills, Tamil Nadu, Haryana, Punjab.

*Elsewhere* : Sri Lanka, Pakistan, Nepal.

31. *Mus musculus* Linnaeus  
**House Mouse**

*Remarks* : On many occasions they were seen at Naitwar F.R.H. (1450 m and Sankri area (1850 m)).

*Distribution* : India : Practically throughout.

*Elsewhere* : Worldwide.

Family HYSTRICIDAE

32. *Hystrix indica* Kerr

**Indian Crested Porcupine; Short-tailed Porcupine**

*Remarks* : Many occasions the quills were seen near Sankri (1850 m), Dhaula (1600 m), Istragad (2075 m).

*Distribution* : India : Peninsula, Rajasthan, Punjab, Haryana, Himachal Pradesh, Kashmir, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Gujarat, Karnataka, Kerala.

*Elsewhere* : Sri Lanka, Pakistan, Nepal, Tibet, Transcaucasus, Asia Minor, Israel, Arabia to Kazakhstan, Palestine, Syria, parts of U.S.S.R.

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## SUMMARY OF FAUNA

Order ODONATA

Suborder ZYGOPTERA

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Family	Name of the species
PLATYENEMIDIDAE	1. <i>Calenemia eximia</i> Selys
COENAGRIIDAE	2. <i>Pseudagrion rubriceps</i> Selys 3. <i>Ceriagrion coromandelanium</i> Fabricius 4. <i>Ishnura delicata</i> Hagen
LESTIDAE	5. <i>Lestes pramorsa pramorsa</i> (Selys)
Suborder ANISOPTERA	6. <i>Ceylonlestes cyanea</i> (Selys)
CORDULEGASTERIDAE	7. <i>Cordulegaster brevistigma brevistigma</i> (Selys) 8. <i>Orthetrum chrysostigma luzonicum</i> (Braver) 9. <i>Palpopleura sexmaculata sexmaculata</i> (Fabricius) 10. <i>Acisoma panorpides panorpides</i> Rambur 11. <i>Crocothemis servilia servilia</i> (Drury) 12. <i>Neurothemis fulvia</i> (Drury)

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Order LEPIDOPTERA

Suborder RHOPALOCERA

Family	Name of the species	Common Name
I. PAPILIONIDAE	1. <i>Papilio protenor protenor</i> Cramer	Spangle
	2. <i>Papilio polyctor ployctor</i> Boisduval	Common Peacock
	3. <i>Papilio polytes romulus</i> Cramer	Common mormon
	4. <i>Sephisia dichroa</i> (Kollar)	The Western Courtier
II. PIERIDAE	5. <i>Pieris canidia indica</i> Evans	Indian Cabbage White
	6. <i>Pieris brassicae nepalensis</i> Doubleday	Large Cabbage White
	7. <i>Pontia daplidice moorei</i> (Rober)	Bath White
	8. <i>Catopsilia pomona</i> (Fabricius)	The Lemon Emigrant
	9. <i>Gonepteryx rhamni nepalensis</i> (Doubleday)	Common Brimstone
	10. <i>Eurema blanda silhetani</i> (Wallace)	The Three-spot Grass yellow
	11. <i>Eurema laeta laeta</i> (Boisduval)	Spotless Yellow
	12. <i>Colias electo fieldi</i> Menetries	Dark Clouded Yellow
	13. <i>Colias erate</i> (Esper)	Pale clouded yellow
	14. <i>Colias myrnmidone</i> Danube	Clouded Yellow
	15. <i>Aporia aganthon caphusa</i> (Moore)	The Great Black Vein
	16. <i>Aporia leucodyce saracta</i> Moore	The Himalayan Black Vein
III. DANAIDAE	17. <i>Danus genutia genutia</i> (Cramer)	Common Tiger
IV. SATYRIDAE	18. <i>Lethe verma verma</i> (Kollar)	Straight-Banded Treebrown
	19. <i>Lethe insane insane</i> (Kollar)	Common Forester
	20. <i>Lethe jalaurida jalaurida</i> (deN)	Small Silverfork
	21. <i>Pararge schakra schakra</i> (Kollar)	Common Wall

Family	Name of the species	Common Name
	22. <i>Aulocera saraswati</i> (Kollar)	Striated Satyr
	23. <i>Callerebia nirmala nirmala</i> (Moore)	Common Argus
	24. <i>Callerebia scanda scanda</i> (Kollar)	Pallid Argus
V. ERYCINIDAE	25. <i>Dodona durga</i> (Kollar)	Common Punch
	26. <i>Llibythia lepita</i> Moore	
VI. NYMPHILIDAE	27. <i>Athyma opalmia</i> (Kollar)	Himalayan Sergeant
	28. <i>Neptis hylas astola</i> Moore	Common Sailer
	29. <i>Neptis yerburyi yerburyi</i> (Bulter)	Yerburgiis sailer
	30. <i>Cyrestis thyodamas ganescha</i> (Kollar)	Map Butterfly
	31. <i>Precis iphita siccata</i> (Stichel)	Chocolate Soldier
	32. <i>Cynthia cardui</i> (Linn.)	Painted Lady
	33. <i>Vanessa indica indica</i> Herbst	Indian Red Admiral
	34. <i>Vanessa egea</i> (Cramer)	The Comma
	35. <i>Kaniska canace himalaya</i> Evans	Blue Admiral
	36. <i>Aglais cashmirensis aesis</i> Fruhstofer	Indian Tortoise Shell
	37. <i>Symbrenthia niphanda</i> Moore	Blue Tail Jester
	38. <i>Fabriciana kamala</i> (Moore)	Common Silver Stripe
	39. <i>Childrena childreni sukontala</i> Kollar	Large Silver Stripe
	40. <i>Argyreus hyperbius hyperbius</i> (Johanssen)	Indian Fritillary
	41. <i>Issoria lathonia issoea</i> Doubleday	Queen of Spain Fritillary
	42. <i>Kallima inachus</i> Boisduval	The Orange Oakleaf
	43. <i>Atella phalantha</i> (Drurry)	The Common Leopard
	44. <i>Lycaena pavana</i> (Kollar)	White Bordered Copper
	45. <i>Heliphorus andocles coruscans</i> Moore	Green Sapphire
	46. <i>Heliphorus brahma</i> Moore	Golden sapphire
	47. <i>Celestrina huegelli huegelli</i> Moore	Large Hedge Blue
	48. <i>Zizeeria maha maha</i> (Kollar)	The Pale Grass Blue

Order HYMENOPTERA  
Suborder ACULEATA

Family	Subfamily	Name of the species
I. TIPHIIDAE		1. <i>Tiphia implicata</i> (Cameron) 2. <i>Tiphia pulchaukae</i> (Allen)
II. SCOLIIDAE		3. <i>Campsomeriella collaris collaris</i> (Fabricius) 4. <i>Megacampsomeris asiatica himalayana</i> (Betrem) 5. <i>M. prismatica</i> (Smith)
III. FORMICIDAE	PONERINAE	6. <i>Odontomachus punctulatus</i> Forel
	MYRMECINAE	7. <i>Myrmica rugosa</i> Mayer 8. <i>Messor himalayanus</i> (Forel)
IV. EUMENIDAE		9. <i>Delta dimidiatipennis</i> (Saussure) 10. <i>Odynerus sikkimensis</i> Bingham
V. VESPIDAE	POLISTINAE	11. <i>Polistes tenebricosus sulcatus</i> Smith 12. <i>Parapolybia varia</i> (Fabricius)
	VESPINAE	13. <i>Vespa velutina auraria</i> Smith 14. <i>Vespula flaviceps flaviceps</i> Smith 15. <i>Vespula structor</i> Smith
VI. SPHECIDAE	SPHECINAE	16. <i>Ammophila atripes</i> Smith 17. <i>A. punctata</i> (Smith) 18. <i>Podalonia</i> sp.

Family	Subfamily	Name of the species
	PEMPHREDONINAE	19. <i>Psen orientalis</i> Cameron 20. <i>Pemphredon fuscipennis</i> (Cameron) 21. <i>Passaloecus</i> sp.
VII. APIDAE	ASTINAE	22. <i>Dryudella</i> sp. 23. <i>Megachile disjuncta</i> (Fabricius) 24. <i>Apis cerana indica</i> (Fabricius) 25. <i>Apis laboriosa</i> Smith

### CENTIPEDES

(CHILOPODA SCOLOPENDROMORPHA)

Family	Name of the species
SCOLOPENDRIDAE	1. <i>Rhysida monalii</i> Khanna & Kumar 2. <i>R. longipes simplicior</i> Chamberlin 3. <i>Otostigmus poonamae</i> Khanna & Tripathi 4. <i>O. politus quadrispinosus</i> Khanna 5. <i>Cormocephalus dentipes</i> Pocock 6. <i>Scolopendra morsitans</i> Linn.

**PISCES**

Class OSTEICHTHYES  
Order CYPRINIFORMES

Family/Order	Name of the species	Common Name
Family CYPRINIDAE	1. <i>Catla catla</i> (Hamilton-Buchanan)	Katla
Order SALMONIFORMES		
Family SALMONIDAE	2. <i>Salmo trutta fario</i> (Linn.)	Brown Trout

Class AMPHIBIA

Order ANURA

Family	Name of the speceis	Common Name
RANIDAE	1. <i>Rana leibigii</i> Gunther	Mountain Frog
	2. <i>Rana limnocharis</i> Boie	Paddy Field Forg
BUFONIDAE	3. <i>Bufo himalayanus</i> Gunther	Mountain Toad
	4. <i>Bufo melanostictus</i> Schneider	Common Toad

Class REPTILIA

Order SAURIA

Family	Name of the species	Common Name
AGAMIDAE	1. <i>Agama tuberculata</i> Hardwick & Gray	Common Rock Lizard
SCINCIDAE	2. <i>Scincella himalayanum</i> (Gunther)	Himalayan Skink
	3. <i>Eumees taeniolatus</i> (Blyth)	Yellow-bellied Mole

Order SERPENTES

Family NATRICIDAE

4. <i>Amphiesma platyceps</i> (Blyth)	Mountain Kellback
5. <i>Boiga multifasciata</i> (Blyth)	Himalayan Cat Snake
6. <i>Boiga trigonata</i> (Schneider)	Common Cat Snake

Class AVES

Order FALCONIFORMES

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Family	Name of the species	Common Name
1. ACCIPITRIDAE		
	1. <i>Accipiter badius dussumieri</i> (Temminck)	Indian Shikra
	2. <i>A. trivirgatus indicus</i> (Hodgson)	North Indian Crested Goshawk
	3. <i>Aquila chrysaetos daphanea</i> Severtzov	Himalayan Golden Eagle
	4. <i>Ictinaetus malayensis perniger</i> (Hodgson)	Black Eagle
	5. <i>Gyps himalayensis</i> Hume	Himalayan Griffon Vulture
	6. <i>Gyps bengalensis</i> (Gmelin)	Indian Whitebacked Vulture
	7. <i>Neophron percnopterus ginginianus</i> (Latham)	Indian Scavenger Vulture (187)
	8. <i>Gypaetus barbatus aureus</i> (Hablizl)	Himalayan Bearded Vulture
	9. <i>Spilornis cheela cheela</i> (Latham)	Crested Serpent Eagle (196)
2. FALCONIDAE		
	*10. <i>Falco subbuteo subbuteo</i> Linnaeus	Hobby (212)
	11. <i>Falco tinnunculus tinnunculus</i> Linnaeus	European Kestrel (222)
II. Order GALLIFORMES		
3. PHASIANIDAE		
	12. <i>Lerwa lerwa</i> (Hodgson)	Snow Partridge (227)
	13. <i>Tetraogallus himalayensis himalayensis</i> J.E. Gray	Himalayan Snowcock (232)
	14. <i>Alectoris chukar chukar</i> (J.E. Gray)	Chukar Partridge (236)
	15. <i>Francolinus francolinus asiae</i> Stephens	Indian Black Partridge (238)
	16. <i>Arbophila torqueola torqueola</i> Hodgson	Common Hill Partridge (267)
	17. <i>Tragopan melanocephalus</i> (J.E. Gray)	Western Horned Pheasant (285)
	18. <i>T. satyra</i> (Linnaeus)	Crimson Horned Pheasant or Satyr Tragopan (286)

Family	Name of the species	Common Name
	19. <i>Lophophorus impejanus</i> (Latham)	Impeyan or Himalayan Monal Pheasant (290)
	20. <i>Lophura leucomelana hamiltonii</i> (J.E. Gray)	Whitecrested Kaleej Pheasant (293)
	21. <i>Pucrasia macrolopha macrolopha</i> (Lesson)	Koklas (305)
	**22. <i>Catreus wallichii</i> (Hardwicke)	Chir Pheasant (307)
III. Order CHARADRIIFORMES		
4. CHARADRIIDAE		
	**23. <i>Scolopax rusticola rusticola</i> Linnaeus	Woodcock (411)
IV. Order COLUMBIFORMES		
5. COLUMBIDAE		
	24. <i>Treron phoenicoptera</i> (Latham)	Green Pigeon (493-505)
	25. <i>Columba leuconota leuconota</i> Vigors	West Himalayan Snow Pigeon (513)
	26. <i>C. livia intermedia</i> Strickland	Indian Blue Rock Pigeon (517)
	*27. <i>Streptopelia orientalis orientalis</i> (Latham)	Rufous Turtle Dove (530)
	28. <i>Streptopelia orientalis meena</i> (Sykes)	Western Turtle Dove (531)
	29. <i>S. decaocto decaocto</i> (Frisvaldszky)	Indian Ring Dove (534)
	30. <i>S. chinensis suratensis</i> (Gmelin)	Indian Spotted Dove (537)
V. Order PSITTACIFORMES		
6. PSITTACIDAE		
	31. <i>Psittacula cyanocephala bengalensis</i> (Forster)	Northern Blossomheaded Parakeet (557)
	32. <i>P. himalayana</i> (Lesson)	Himalayan Slatyheaded Parakeet (562)
VI. Order STRIGIFORMES		
7. STRIGIDAE		
	33. <i>Strix leptogrammica newarensis</i> (Hodgson)	Himalayan Brown Wood Owl (658)

Family	Name of the species	Common Name
VII. Order	CAPRIMULGIFORMES	
8. CAPRIMULGIDAE		
	34. <i>Caprimulgus indicus hazarae</i> Whistler & Kinnear	Himalayan Jungle Nightjar (670)
VIII. Order	APODIFORMES	
9. APODIDAE		
	35. <i>Apus pacificus leuconyx</i> (Blyth)	Blyth's or Himalayan Whiterumped Swift (700)
IX. Order	CORACIIFORMES	
10. ALCEDINIDAE		
	36. <i>Ceryle lugubris continentalis</i> Hartert	West Himalayan Pied Kingfisher (717)
11. UPUPIDAE		
	37. <i>Upupa epops epops</i> Linnaeus	European Hoopoe (763)
X. Order	PICIFORMES	
12. CAPITONIDAE		
	38. <i>Megalaima virens marshallorum</i> Swinhoe	Himalayan Great Barbet (777)
13. PICIDAE		
	39. <i>Picus squamatus squamatus</i> Vigors	Himalayan Scalybellied Green Woodpecker (807)
	40. <i>P. canus sanguiniceps</i> Baker	Indian Blacknaped Green Woodpecker (809)
	41. <i>P. flavinucha kumaonensis</i> (Koelz)	Kumaon Large Yellownaped Woodpecker (812)
	*42. <i>Hypopicus hyperythrus marshalli</i> (Hartert)	Western Rufousbellied Woodpecker (832)

Family	Name of the species	Common Name
	43. <i>Picoides himalayensis himalayensis</i> (Jardine & Selby)	Garhwal Pied Woodpecker (837)
	44. <i>P. auriceps auriceps</i> (Vigors) Woodpecker (842)	West Himalayan Brownfronted Pied Woodpecker (842)
XI. Order PASSERIFORMES		
14. HIRUNDINIDAE		
	*45. <i>Delichon urbica</i> (Linnaeus)	House Martin (931, 32 ?)
	46. <i>Hirundo rupestris</i> Scopoli	Crag Martin (913)
15. ORIOLIDAE		
	47. <i>Oriolus traillii traillii</i> (Vigors)	Indian Maroon Oriole (961)
16. DICRURIDAE		
	48. <i>Dicrurus adsimilis albirictus</i> (Hodgson)	North Indian Black Drongo or King Crow (962)
	49. <i>D. leucophaeus longicaudatus</i> Hay	Indian Ashy Drongo (965)
17. STURNIDAE		
	50. <i>Acridotheres tristis tristis</i> (Linnaeus)	Indian Myna (1006)
18. CORVIDAE		
	*51. <i>Garrulus glandarius bispecularis</i> Vigors	West Himalayan Redcrowned Jay (1020)
	52. <i>Cissa flavirostris cucullata</i> (Gould)	Western Yellowbilled Blue Magpie (1025)
	53. <i>C. erythrorhyncha occipitalis</i> (Blyth)	Himalayan Redbilled Blue Magpie (1027)
	54. <i>Dendrocitta formosae occidentalis</i> Ticehurst	West Himalayan Tree Pie (1037)
	55. <i>Nucifraga caryocatactes hemispila</i> Vigors	Himalayan Nutcracker (1043)

Family	Name of the species	Common Name
	56. <i>Pyrrhocorax graculus digitatus</i> Hemprich & Ehrenberg	Yellow-billed Chough (1045)
	57. <i>P. pyrrhocorax centralis</i> Stresemann	West Himalayan Redbilled Chough (1046)
	58. <i>Corvus macrorhynchos intermedius</i> Adams	Himalayan Jungle Crow (1054)
19. CAMPEPHAGIDAE		
	*59. <i>Hemipus picatus capitalis</i> (Horsfield)	Brwonbacked Pied Flycatcher-Shrike (1064)
	60. <i>Pericrocotus ethologus favillaceus</i> Bangs & Phillips (1085)	West Himalayan Longtailed Minivet (1085)
20. PYCNONOTIDAE		
	61. <i>Pycnonotus leucogenys leucogenys</i> (Gray)	Whitecheeked Bulbul (1125)
	62. <i>P. cafer intermedius</i> Blyth	Punjab Redvented Bulbul (1126)
	63. <i>Hypsipetes madagascariensis psaroides</i> Vigors	Himalayan Black Bulbul (1148)
21. MUSCICAPIDAE		
	*64. <i>Garrulax albogularis whistleri</i> Baker	Western Whitethroated Laughing Thrush (1273)
	65. <i>Minla strigula simlaensis</i> (Meinertzhagen)	Western Barthroated Siva (1358)
	66. <i>Yuhina gularis vivax</i> Koelz	Western Stripethroated Yuhina (1371)
	67. <i>Heterophasia capistrata capistrata</i> (Vigors)	Western Blackcapped Sibia (1396)
	68. <i>Muscicapa strophciata strophciata</i> (Hodgson)	Orangeorgeted Flycatcher (1414)
	*69. <i>M. westermanni collini</i> Rothschild	Western Little Pied Flycatcher (1419)
	70. <i>M. superciliaris superciliaris</i> Jerdon	Whitebrowed Blue Flycatcher (1421)
	71. <i>M. leucomelanura leucomelanura</i> (Hodgson)	Wetsern Slaty Blue Flycatcher (1423)
	72. <i>M. sundara whistleri</i> (Ticehurst)	Western Rufousbellied Niltava (1431)
	73. <i>M. unicolor unicolor</i> (Blyth)	Pale Blue Flycatcher (1439)

Family	Name of the species	Common Name
	74. <i>M. thalassina thalassina</i> Swainson	Verditer Flycatcher (1445)
	75. <i>Culicicapa ceylonensis calochrysea</i> Oberholser	Northern Greyheaded Flycatcher (1448)
	76. <i>Rhipidura hypoxantha</i> Blyth	Yellowbellied Faintail Flycatcher (1450)
	77. <i>Orthotomus sutorius guzuratus</i> (Latham)	Indian Tailor Bird (1535)
	78. <i>Phylloscopus affinis affinis</i> (Tickell)	Tickell's Leaf Warbler (1579)
	79. <i>P. inornatus humei</i> (Brooks)	Hume's Yellowbrowed Leaf Warbler (1590)
	80. <i>P. maculipennis virens</i> Ticehurst	Western Grayfaced Leaf Warbler (1597)
	81. <i>P. occipitalis occipitalis</i> (Blyth)	Large Crowned Leaf Warbler (1606)
	*82. <i>Erithacus cyanurus pallidior</i> (Baker)	Kashmir Redflanked Bush Robin (1654)
	83. <i>Copsychus saularis saularis</i> (Linnaeus)	Indian Magpie-Robin (1661)
	84. <i>Phoenicurus erythrogaster grandis</i> (Gould)	Gouldenstadt's Redstart (1678)
	85. <i>Rhyacornis fuliginosus fuliginosus</i> (Vigors)	Plumbeous Redstart (1679)
	86. <i>Enicurus scouleris scouleris</i> Vigors	Little Forktail (1684)
	87. <i>E. maculatus maculatus</i> Vigors	Western Spotted Forktail (1688)
	88. <i>Saxicola caprata bicolor</i> Sykes	Northern Pied Bush Chat (1700)
	89. <i>Chaimarrornis leucocephalus</i> (Vigors)	Whitecapped Redstart or River
	90. <i>Monticola cinclorhynchus</i> (Vigors)	Blueheaded Rock Thrush (1723)
	91. <i>Myiophonus caeruleus temminckii</i> (Vigors)	Himalayan Whistling Thrush (1729)
	*92. <i>Zoothera wardii</i> (Blyth)	Pied Ground Thrush (1731)
	93. <i>Z. mollissima whiteheadi</i> (Baker)	Western Plainbacked Mountain Thrush (1738)
22. CINCLIDAE		
	94. <i>Cinclus pallasii tenuirostris</i> Bonaparte	West Himalayan Brown Dipper (1775)

Family	Name of the species	Common Name
23. PARIDAE		
	95. <i>Parus major</i> Linnaeus	Gray Tit (1792, 93)
	96. <i>P. monticolus monticolus</i> Vigors	
	97. <i>P. melanolophus</i> Vigors	Crested Black Tit (1802)
	*98. <i>Aegithalus concinnus iredalei</i> (Baker)	Western Redheaded Tit (1818)
24. SITTIDAE		
	99. <i>Sitta castanea almorae</i> Kinnear & Whistler (1827)	Western Chestnutbellied Nuthatch (1827)
	100. <i>S. leucopsis leucopsis</i> Gould	Western Whitecheeked Nuthatch (1832)
	101. <i>Tichodroma muraria nepalensis</i> Bonaparte	Wall Creeper (1839)
25. CERTHIIDAE		
	102. <i>Certhia himalayana limes</i> Meinertzhagen	West Himalayan Tree Creeper (1845)
26. MOTACILLIDAE		
	103. <i>Motacilla caspica caspica</i> (Gmelin)	Gray Wagtail (1884)
	104. <i>M. alba</i> Linnaeus	Pied Wagtail (1885-90)
27. DICAIEIDAE		
	105. <i>Dicaeum erythrorhynchos erythrorhynchos</i> (Latham)	Tickell's Flowerpecker (1899)
28. ZOSTEROPIDAE		
	106. <i>Zosterops palpebrosa palpebrosa</i> (Temminck)	Indian White-eye (1933)
29. PLOCEIDAE		
	107. <i>Passer domesticus parkini</i> Whistler	Kashmir House Sparrow (1939)
	108. <i>P. montanus</i> (Linnaeus)	Tree Sparrow (1941-44)

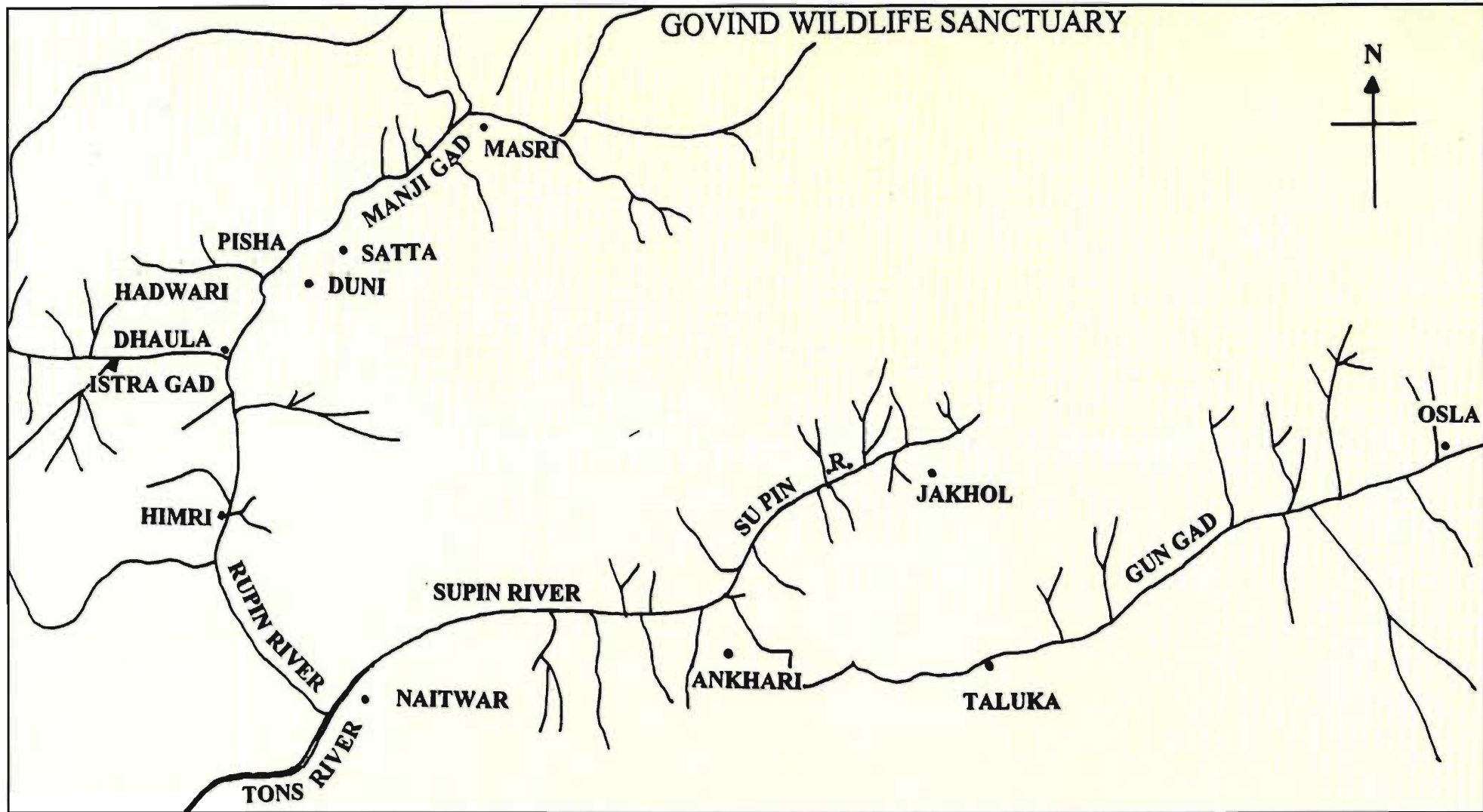
Family	Name of the species	Common Name
	109. <i>P. rutilans cinnamomeus</i> (Gould) Sparrow (1946)	Himalayan Cinnamon Tree
	110. <i>Lonchura punctulata punctulata</i> (Linnaeus)	Indian Spotted Munia (1974)
30. FRINGILLIDAE		
	111. <i>Mycerobas affinis</i> (Blyth)	Allied Grosbeak (1983)
	112. <i>Carduelis spinoides spinoides</i> Vigors	Himalayan Greenfinch (1990)
	113. <i>Carpodacus nipalensis kangrae</i> (Whistler)	Garhwal Dark Rosefinch (2014)
	114. <i>Pyrrhoplectes epauletta</i> (Hodgson)	Goldheaded Black Finch (2035)
31. EMBERIZIDAE		
	115. <i>Emberizacia stracheyi</i> Moore	Himalayan Rock Bunting (2052)

MAMMALIA

Order	Family	Name of the species	Common Name	
INSECTIVORA	SORICIDAE	1. <i>Suncus etruscus</i> (Savi)	Pygmy Whitetoothed Shrew	
		2. <i>Suncus murinus</i> (Linn.)	House Shrew	
CHIROPTERA	PTEROPODIDAE	3. <i>Cynopterios sphinx</i> (Vahl)	Short-nosed Fruit Bat	
	VESPERTILONIDAE	4. <i>Pipistrellus babu</i> Thomas	Pipistrelle Bat	
PRIMATES	CERCOPITHECIDAE	5. <i>Macaca mulatta</i> (Zimmermann)	Rhesus Macaque	
		6. <i>Semnopithecus entellus</i> (Dufresne)	Hanuman Langur	
CARNIVORA	CANIDAE	7. <i>Canis aureus</i> Linn.	Asatic Jackal	
		8. <i>Vulpes bengalensis</i> (Linn.)	Common Red Fox	
FELIDAE		9. <i>Felis chaus</i> Schreber	Jungle Cat	
		10. <i>Prionailurus bengalensis</i> (Kerr)	Leopard Cat	
		11. <i>Panthera pardus</i> (Linn.)	Panther	
		12. <i>Uncia uncia</i> (Schreber)	Snow Leopard	
	MUSTELIDAE	13. <i>Martes flavigula</i> (Boddaert)	Yellow Throated Marten	
		14. <i>Mustela altaica</i> Pallas	Mountain Weasel	
	URSIDAE	15. <i>Ursus arctos</i> Linn.	Brown Bear	
		16. <i>Ursus thibetanus</i> Cuvier	Asiatic Black Bear	
	ARTIODACTYLA	SUIDAE	17. <i>Sus scrofa</i> Linn.	Wild Boar
		MOSCHIDAE	18. <i>Moschus chrysogaster</i> Hodgson	Forest Musk Deer
		CERVIDAE	19. <i>Cervus unicolor</i> Kerr	Sambar
	20. <i>Muntiacus muntjak</i> (Zimmermann)		Indian Muntjak / Barking Deer	

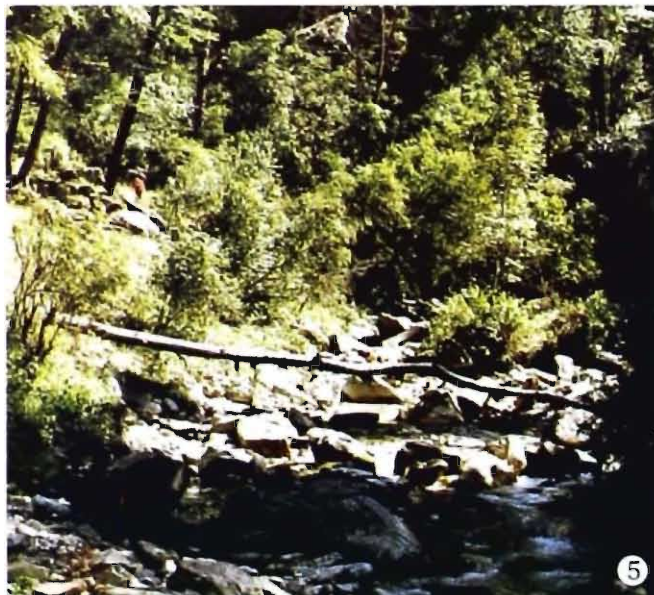
Order	Family	Name of the species	Common Name
	BOVIDAE	21. <i>Hemitragus jemlahius</i> (H. Smith)	Himalayan Tahr
		22. <i>Nemorchaedus goral</i> (Hardwicke)	Goral
		23. <i>N. sumatraensis</i> (Bechstein)	Serow
		24. <i>Pseudois nayaur</i> (Hodgson)	Bharal/Blue Sheep
LAGOMORPHA	LEPORIDAE	25. <i>Ochotona roylei</i> (Ogilby)	Royale's Pika
		26. <i>Lepus nigricollis</i> F. Cuvier	Indian Hare, Black-naped Hare
RODENTIA	SCIURIDAE	27. <i>Petaurista petaurista</i> (Pallas)	Red Giant Flying Squirrel
	MURIDAE	28. <i>Microtus leucurus</i> (Blyth)	Blyth's Vole
		29. <i>Apodemus wardi</i> (Wroughton)	Field Mouse
		30. <i>Millardia meltada</i> (Gray)	Soft-furred Field Rat
		31. <i>Mus musculus</i> Linn.	House Mouse
	HYSTRICIDAE	32. <i>Hystrix indica</i> (Kerr)	Indian Crested Porcupine





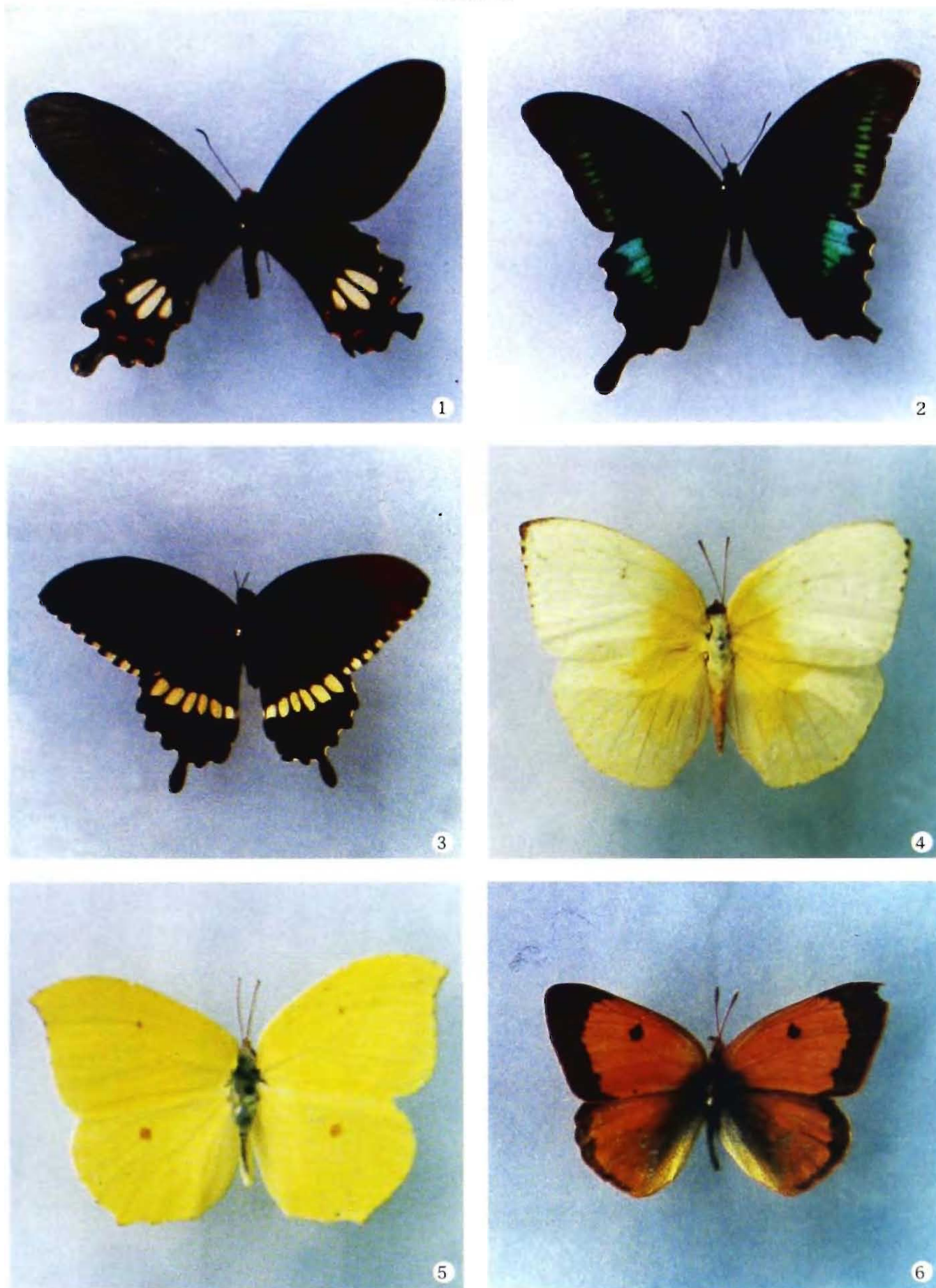
Map of Govind Pashu Vihar showing collection localities.

## Plate-I



**Fig. 1-6.** 1. A view of Har-ki-Dun Peak from Sankri; 2. Kedarkanta trek—A coniferous forest; 3. Taluka village; 4. Confluence of rivers Rupin & Supin at Netwar; 5. Taluka—A view of hill stream; 6. Jura Tal—Kedarkanta trek.

Plate-II



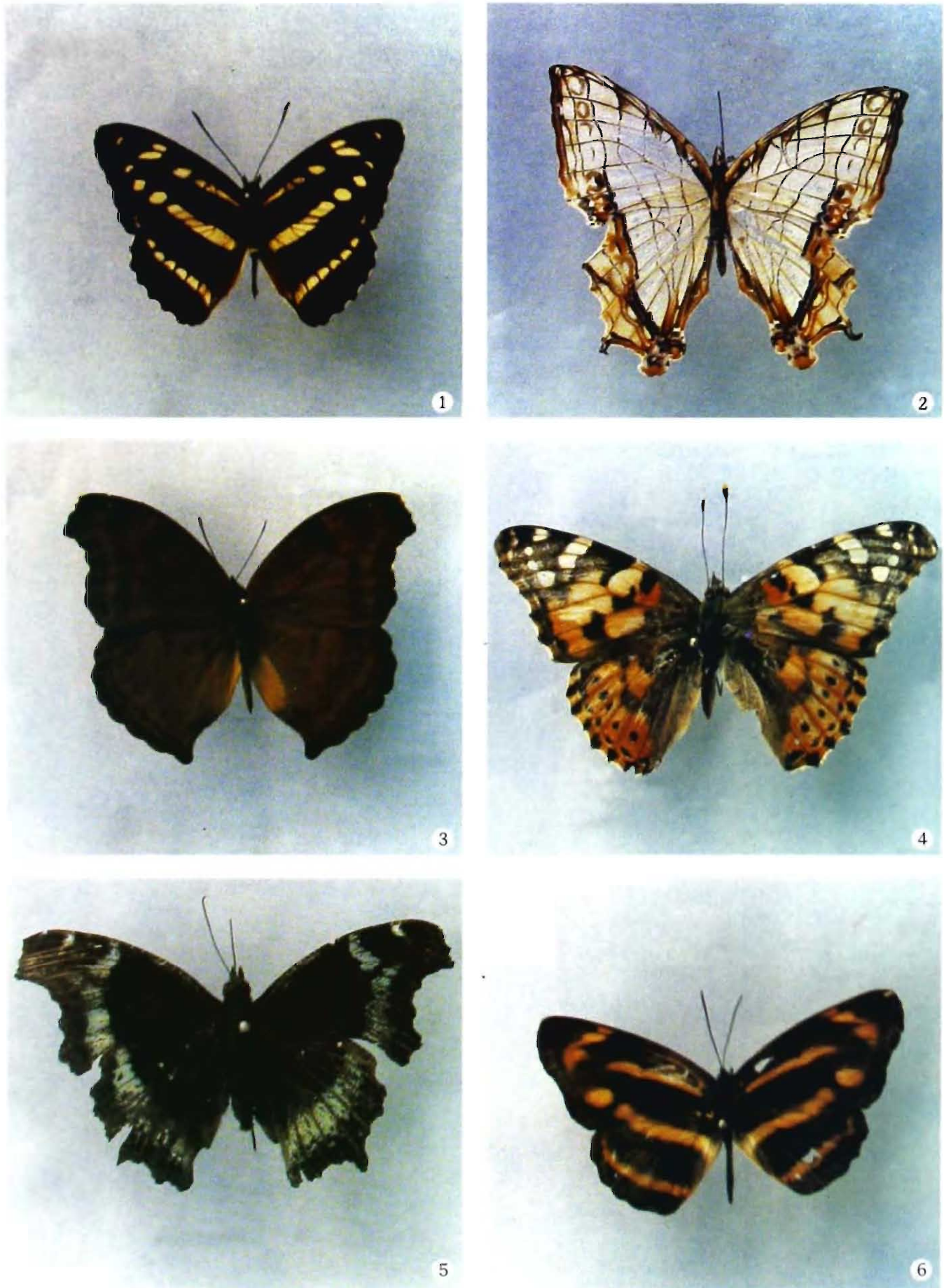
**Fig. 1-6.** 1. *Papilio protenor protenor* Cramer; 2. *Papilio polyctor polyctor* Boisduval; 3. *Papilio polyctes romulus* Cramer; 4. *Catapsilia pomona* (Fabricius); 5. *Gonopteryx rhamni nepalensis* (Doubleday); 6. *Colias electo fieldi* Menetries.

## Plate-III



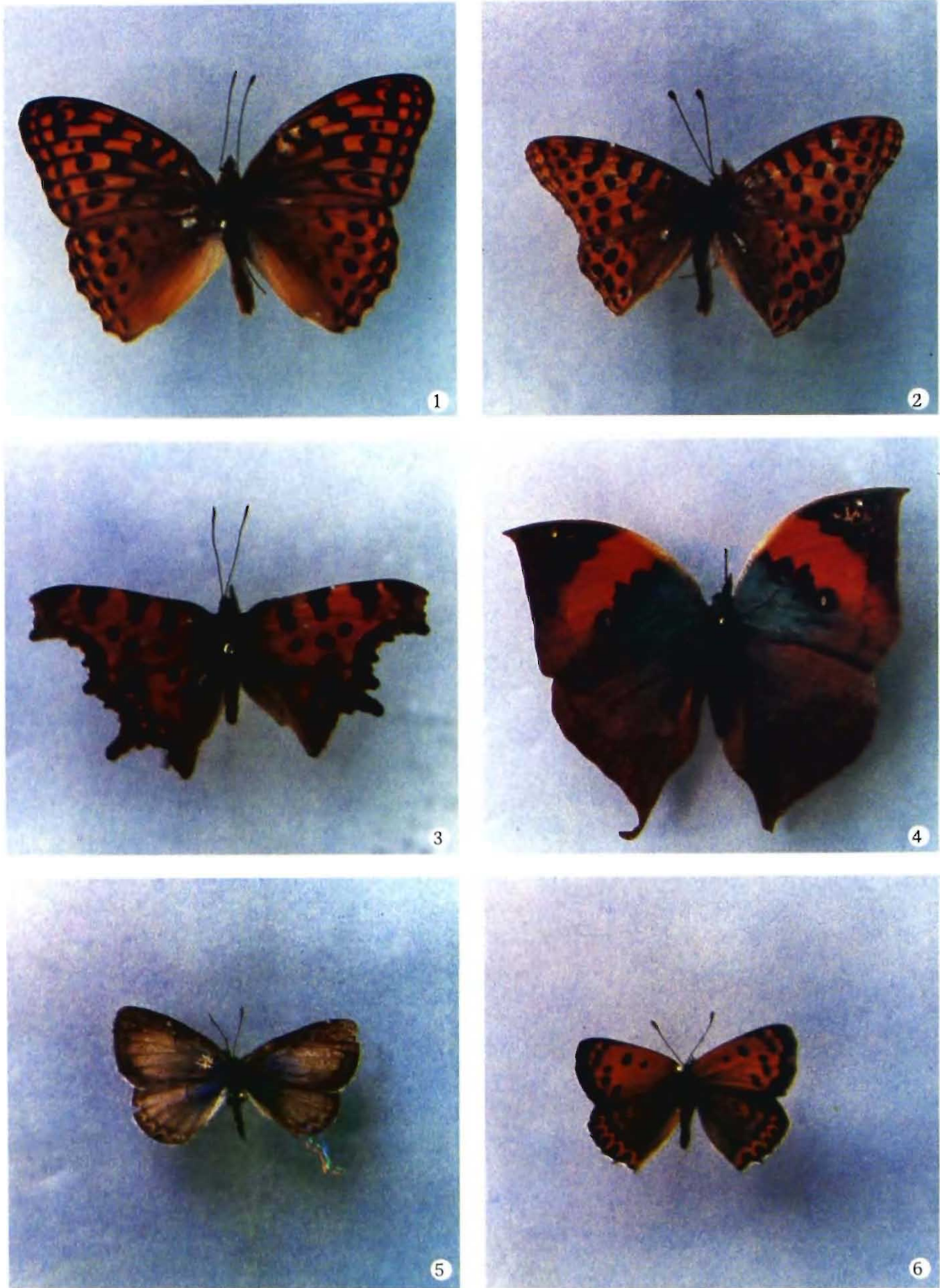
Fig. 1-6. 1. *Calias erate* (Esper); 2. *Aporia aganthon caphusa* (Moore); 3. *Aporia leucodyce saracta* Moore; 4. *Danaus genutia genutia* (Cramer); 5. *Lebythia leptia* Moore; 6. *Athyma opalina opalina* (Kollar).

Plate-IV



**Fig. 1-6.** 1. *Neptlis hyalas astola* (Moore); 2. *Cyrestis thyodamas ganescha* (Kollar); 3. *Precis iphita siccata* (Stichel); 4. *Cyanthia cardui* (Linnaeus); 5. *Kanisha canace himalaya* Evans; 6. *Symbrenthia niphanda* (Moore).

## Plate-V



**Fig. 1-6.** 1. *Argyreus hyperbius hyperbius* (Johanssen); 2. *Issoria lathonia issoea* Doubleday;  
 3. *Vanessa egea* (Cramer); 4. *Kalima inachus* Boisduval; 5. *Celastrina huegelli huegelli* (Moore);  
 6. *Lycaena pavana* (Kollar).

Plate-VI

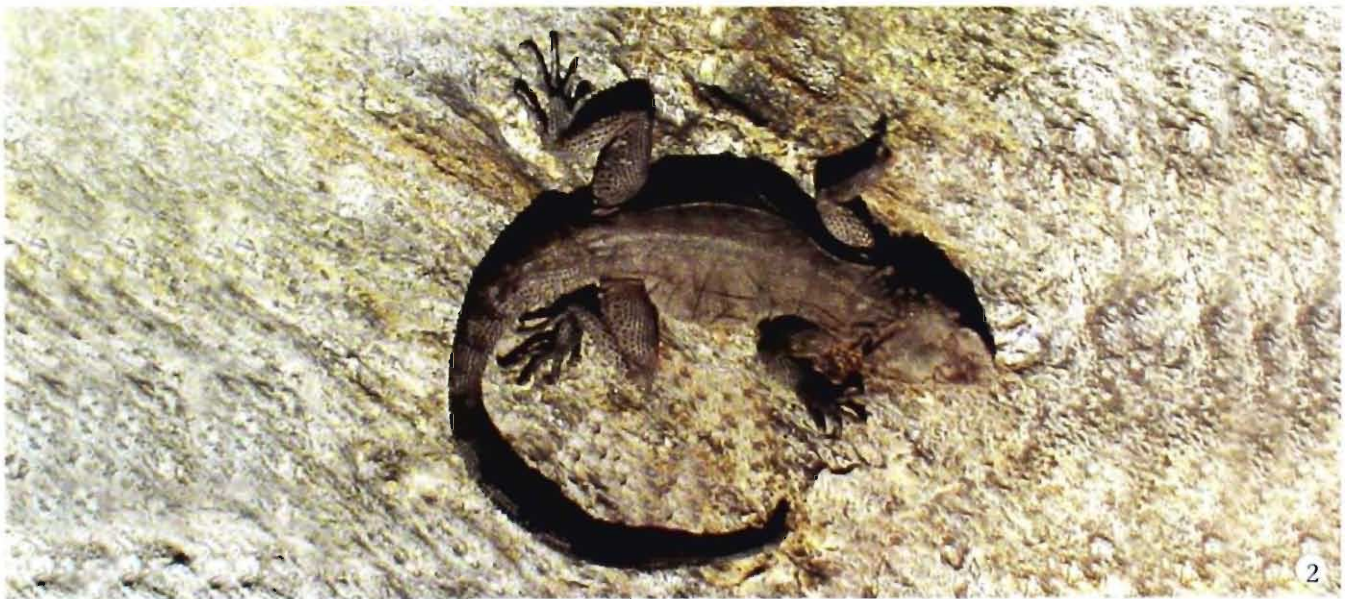
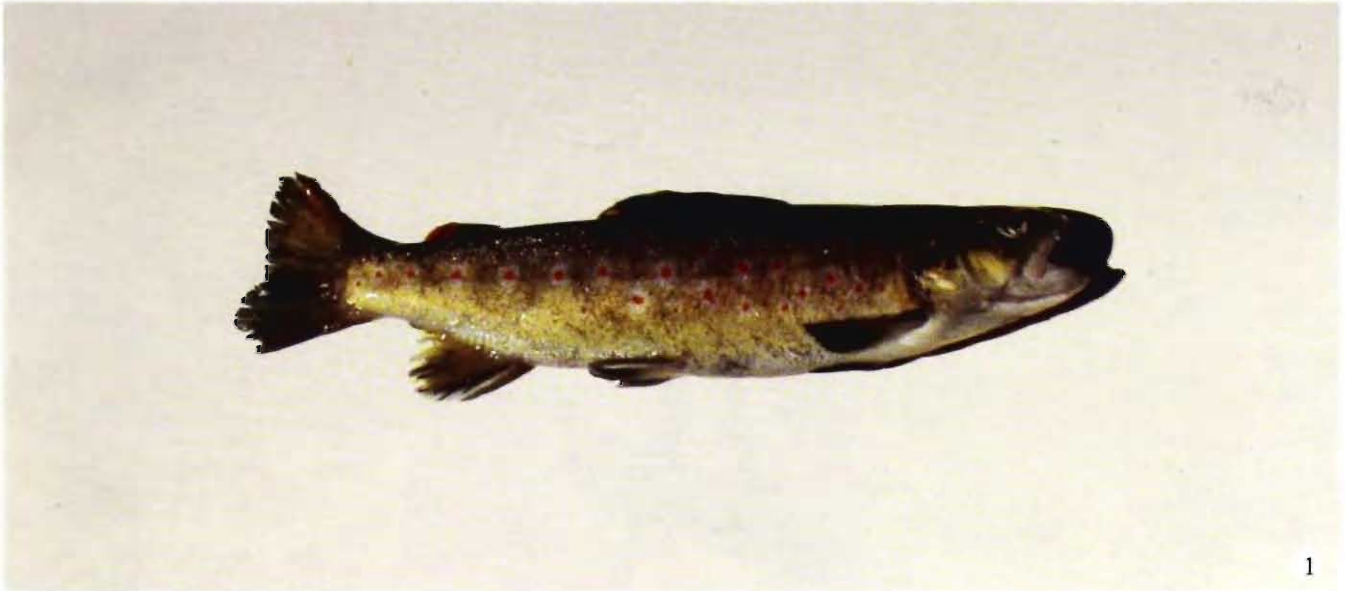


Fig. 1-3. 1. *Salmo trutta fario* Linnaeus; 2. *Agama tuberculata* Hardwicke & Grey; 3. *Scincella himalayanum* (Gunther).

## Plate-VII



Fig. 1-3. 1. *Muntiaus muntjak* (Zimmermann); 2. *Ursus thibetanus* G. Cuvier;  
3. *Semnopithecus entellus* (Dufresne).