

Fauna of Arunachal Pradesh

(Part-1)



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FAUNA OF ARUNACHAL PRADESH (PART-1)

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FAUNA OF ARUNACHAL PRADESH : AN OVERVIEW

RAMAKRISHNA and J.R.B. ALFRED

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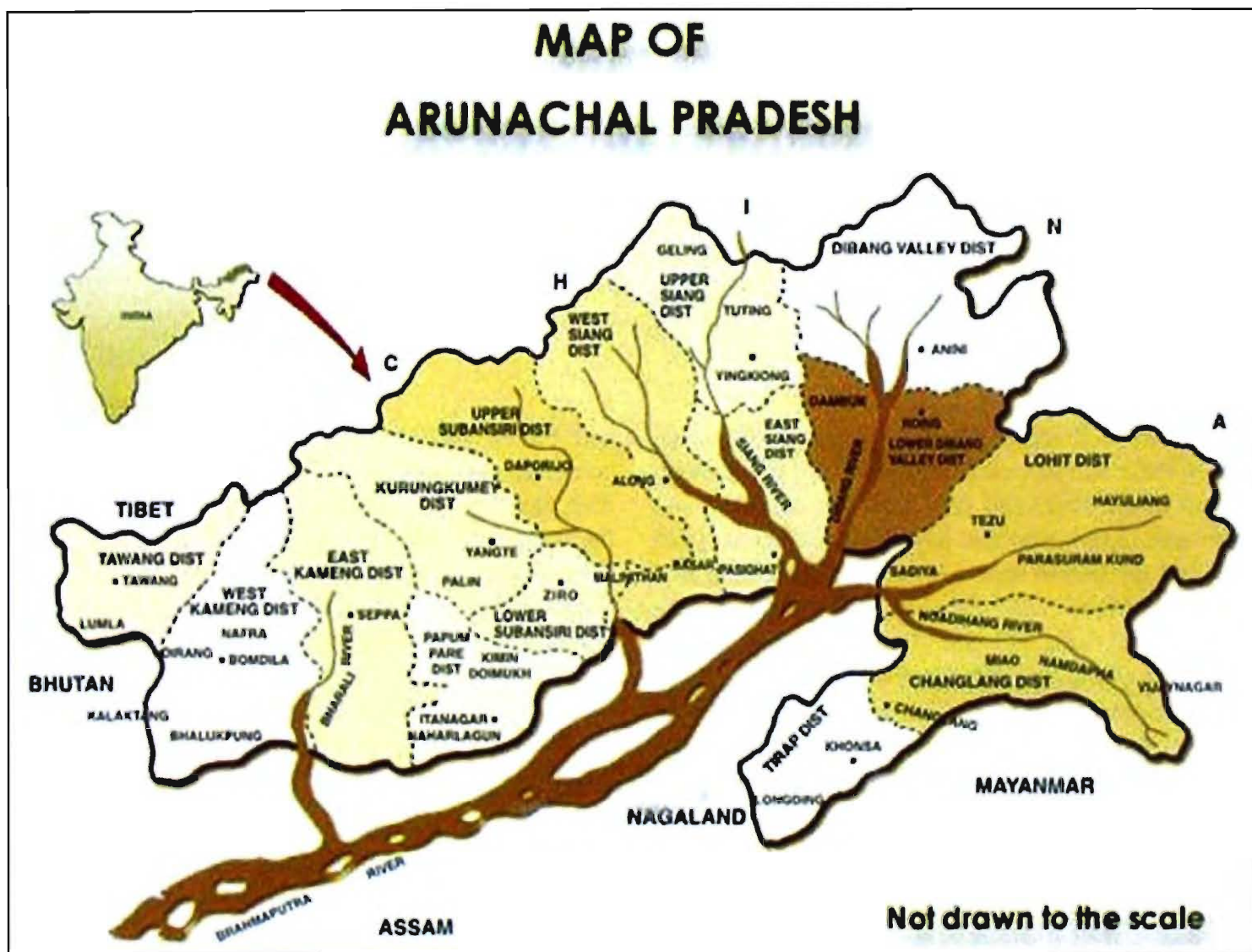
Arunachal Pradesh situated in the northeastern part of India and has a long international border with Bhutan to the west (160 km), China to the north and north-east (1,080 km) and Myanmar to the east (440 km), and the Indian state of Assam in the south. It is situated between 26° 30' and 29° 30' N latitude and 91°30' and 97°30' E longitude. Bio-geographically it is situated in the Eastern Himalayan biogeographical province. The region is extended in NE-SW direction touching the Tirap district of Arunachal Pradesh in the north-east and Chitagong Hill Tracts of Bangladesh in the south-west while the Assam valley is the southern boundary. The entire territory forms a complex hill system with varying elevations ranging from 50 m in the foot-hills and gradually ascending to about 7000 m. It stretches from snow-capped mountains in the north to the plains of Brahmaputra valley in the south.

This ancient land finds its mention even in early Indian epics of Ramayana and Mahabharata. The 6th Dalai Lama was born on the soil of Arunachal Pradesh and the present 13th Dalai Lama found refuge. This fascinating and isolated state of Arunachal Pradesh was once known as the "Hidden Land", as this has been completely closed to all outsiders. During the 200 years of British rule in India, the British Government closed the borders to all outsiders, even to their own colonial administrators. On 15th August 1947 when India became independent, North East Frontier Agency commonly known as NEFA became an integral part of the Union of India. It was administrated by the Ministry of External Affairs with the Governor of Assam acting as advisor to the President of India. The administrative head was the Advisor to the Governor. In 1972, the NEFA became a Union Territory and acquired the name of Arunachal Pradesh. After 3 years, in 1975, it acquired legislature,

and finally, on 20th February 1987 Statehood was conferred on Arunachal Pradesh and it became the 25th State of the Union of India. Administratively, the State is divided into sixteen districts, viz., Tawang, West Kameng, East Kameng, Papumpare, Lower Subansiri, Upper Subansiri, East Siang, West Siang, Upper Siang, Dibang Valley, Lower Dibang Valley, Lohit, Changlang, Tirap, Kurung Kumey, Anjaw. Itanagar is the State capital located in Papumpare district.

The state of Arunachal Pradesh has a predominantly mountainous landscape with nearly 64 % of the total area lying above 1200 m, 13% located between 300-1200 m and 8.87% below 300 m (Gopalakrishnan, 1994). The SFRI (2003) has grouped the state physiography into four distinct regions based on the elevation from plain and lower hilly elevation to the snow capped mountains. This includes 1. Siwalik and foot hills with lower hills forming the eastern continuity of the Assam plains. 2. The Sub Himalyan belt including the Siwalik hills upto 1700 m. 3. Lesser Himalaya ranging between 1700-3500 m and 4. The Greater Himalayas with snow capped montane areas above 3500 m. The highest point is being located in the Upper Siang district (Namche Borwa peak, 7756 m).

The topography of Arunachal Pradesh forms a complex hill system of Siwalik and Himalayan origin and is crisscrossed by six major rivers and streams flowing from west to east. These divide the State into five river valleys from the river Kameng (formed by Bichom and Dirang tributary), the Subansiri river known as Sinyik (Sigen, Sinyum, Kamla tributaries), the Siang river (Nyigong, Siring, Sigong, Sike, Siyom, Yamne tributaries), the Dibang locally known as Sikang or Talon (with Dri, Ahui, Emra, Endra as its tributaries); Lohit river (Noa Dihing, Dichu, Kamlang



Tengapani, Melung, Ghalum, Tidding, Dree tributaries) and the Tirap river. These rivers are fed by snow from the Himalayas. Countless deep gorges and fast flowing streams and rivulets form the tributaries of the mighty Siang River, called the Tsangpa in Tibet, which becomes the Brahmaputra after it is joined by the Dibang and the Lohit in the plains of Assam. The Siang River flows through the heart of the Upper Siang district running into Indian territory at a point near Gelling in the Indo-China border. In the early days of geographical exploration, the Siang River was referred to as the "Missing Link" - the unexplored channel that formed link between the Tsangpo of Tibet and the Brahmaputra of Assam.

TRIBES

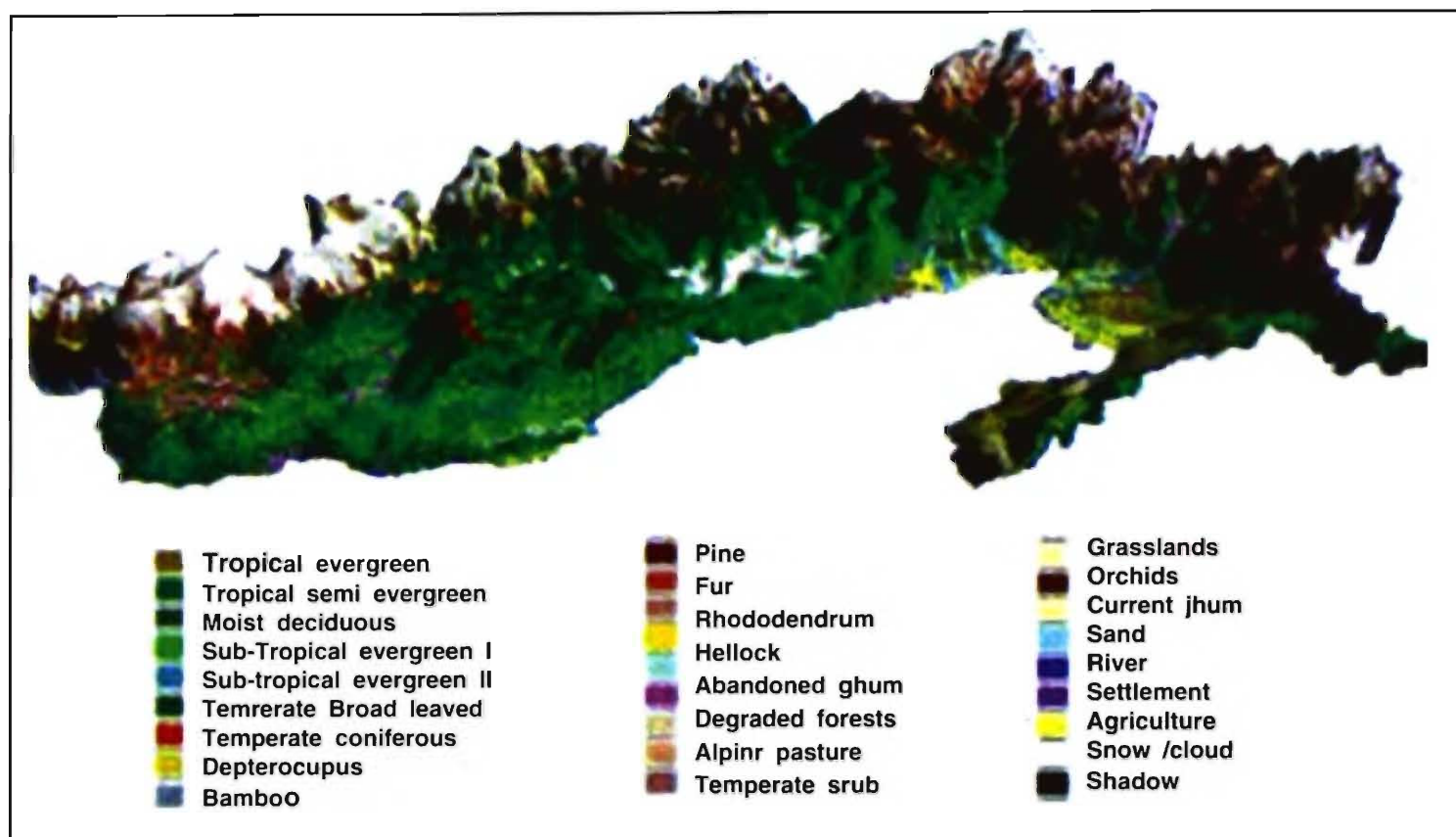
Arunachal Pradesh is not a linguistic state. It is an ethnic state inhabited by tribal people who are of Paleo-Mangoloid stock, speaking Sino-Tibetan language. They have their own unique culture, traditions and lifestyle. They also have customary laws and a time tested dispute resolution mechanism. Although as many as 25 tribal groups recorded in the state, nearly 20 major groups such as *Adi*, *Nyishi* (including *Bangru & Puroik*), *Apatani*, *Bugun*, *Galo*, *Hrusso*, *Koro*, *Meyor*, *Monpa*, *Tagin*, *Mishmi* (including *Idu*, *Taroan & Kamman*), *Sajolang*, *Sartang*, *Tai Khamti* (including *Khamyang*), *Tangshang* (including *Muklom*, *Monchang*, *Tutsa*, *Tikhak*, *Hawoi*, *Longri*, *Mungrey*, *Mushaung*, *Lungphi*, *Joglai*, *Ngaimong*, *Ponthai*, *Khalak*, *Lunghai*, *Halley*, *Chellim*, *Shechu*, *Shiangwal*, *Rera*, *Shiangtee*, *Dohe*, *Moital*, *Hatseng*, *Gajee*, *Gaja*, *Kochong*, *Lowchang*, *Laki*, *Gallon*, *Chamchang*, *Ringkhu*, *Shohra*, *Bowngtai*, *Rongrang etc.* of Changlang district and *Nocte*, *Wanchoo* and *Tutsa* of Tirap district), *Yobin*, *Singpho*, *Sherdukpen*, *Khamba*, *Memba* make up the population of the area. The population density is only about 8 persons per kilometer square. High mountains and dense forests have prevented intercommunication between tribes living in different river valleys. The traditional land use pattern is unique for the tribes, as the entire land belongs to them and it is used either for residential purpose, land used for hunting or the agricultural land used additionally for grazing. The impact of the land use pattern by these tribes is the shifting cultivation i.e., slash and burn, during and after jhum,

which leaves behind a large tract of barren and unproductive area, such areas are clearly visible even on the satellite imagery.

The rich traditional knowledge of these tribes is of importance in terms of conservation, as the people have the right to harness the bioresource of the area. The philosophy of conservation in the minds of the different tribes can be gauged by the setting up of many Protected Areas all over the state for the scientific management of the different species of wildlife and their habitats, ranging from the high mountains of Himalayas to the flood plains of tributaries of Brahmaputra. The tribe's do not harness entire biodiversity and are selective in gathering animal resource. The tribes also encourage the sacred groves, and never kill birds such as Laughing Thrush and Indian Roller as it is believed to cause epilepsy and graying of hair, when consumed. The tribal area is also the area of highest biological diversity, besides the area of distribution of highly endangered and threatened species of birds such as *Spelaornis badeigularis* (Mishmi Wren), *Lophophorus sclateri* (Mishmi Monal Pheasant), *Ithaginis cruentus kuseri* (Mishmi Blood Pheasant), *Stachyris oglei* known only from the Lohit and Tirap Frontier Divisions of eastern Arunachal Pradesh, Mammals like *Budorcas taxicolor* (Mishmi Takin), etc.

FOREST AND PLANT RESOURCE

With over 87% accuracy, a total of 21 vegetation and land cover classes were mapped by Roy & Behera (2005) using satellite imagery, included under five major categories of vegetation viz., 1. Tropical Forests (located at an elevation of 900 metres above MSL. They are present in all the districts along the foothills including tropical evergreen forest, tropical semi evergreen forest, low hills and plains semi evergreen forest and riverine semi evergreen forest). 2. Sub-tropical Forests (located in districts between altitudes 900m to 1900 m. These are essentially evergreen and dense in nature. The trees attain large dimensions (25-40 m high). The forests are rich in species diversity and dominated by Fagaceae members and further classified into subtropical broad leaved forest, subtropical pine forest). 3. Temperate forest (present in all district as a continuous belt and can be divided into two subtypes Temperate broad leaved forest, Temperate conifer forest). 4. Sub alpine (altitudinal



Vegetation type map of Arunachal Pradesh.

(Source : Indian Institute of Remote Sensing, Dehradun)

range 3500-4000 feet) and 5. Alpine forests (vegetation occurs on the peaks of higher hills above an altitude of 4000 m up to 5500 m above timber line. For major part of the year, both the sub alpine and alpine area is covered by snow and plant activity is restricted to a few months when snow melts. In comparison to above, Kaul and Haridasan (1987) have classified various forest types with respect to six altitudinal zones, viz. (I) tropical, (II) sub-tropical, (III) temperate broad-leaved, (IV) temperate coniferous, (V) sub-alpine and (VI) alpine. [I. Up to 900 m. II. 900–1800 m. III. 1800-2800 m. IV. 2800-3500 m. V. 3500–4000 m. VI. 4000-5500 m]

Besides above, Kaul and Haridasan (1987) identified the secondary forests in the state consisting of Degraded forest, Bamboo forest and Grassland. Degraded forests includes common trees such as *Machranga denticulata*, *Mallotus tetracoccus*, *Callicarpa arbnorea*, *C. vestita*, *Bauhinia* sp., *Glochidion* spp, and shrubs like *Clerodendrum* spp. *Randia* sp. *Rubus* sp., *Viburnum* sp. *Croton caudatus*, *Capparis* spp., *Eurya acuminata*, *Dalbergia* sp. etc. and also obnoxious weeds like *Mikania micrantha*, *Eupatorium odoratum*, etc. Bamboo forests are seen as bamboo breaks up to 2000m altitude throughout

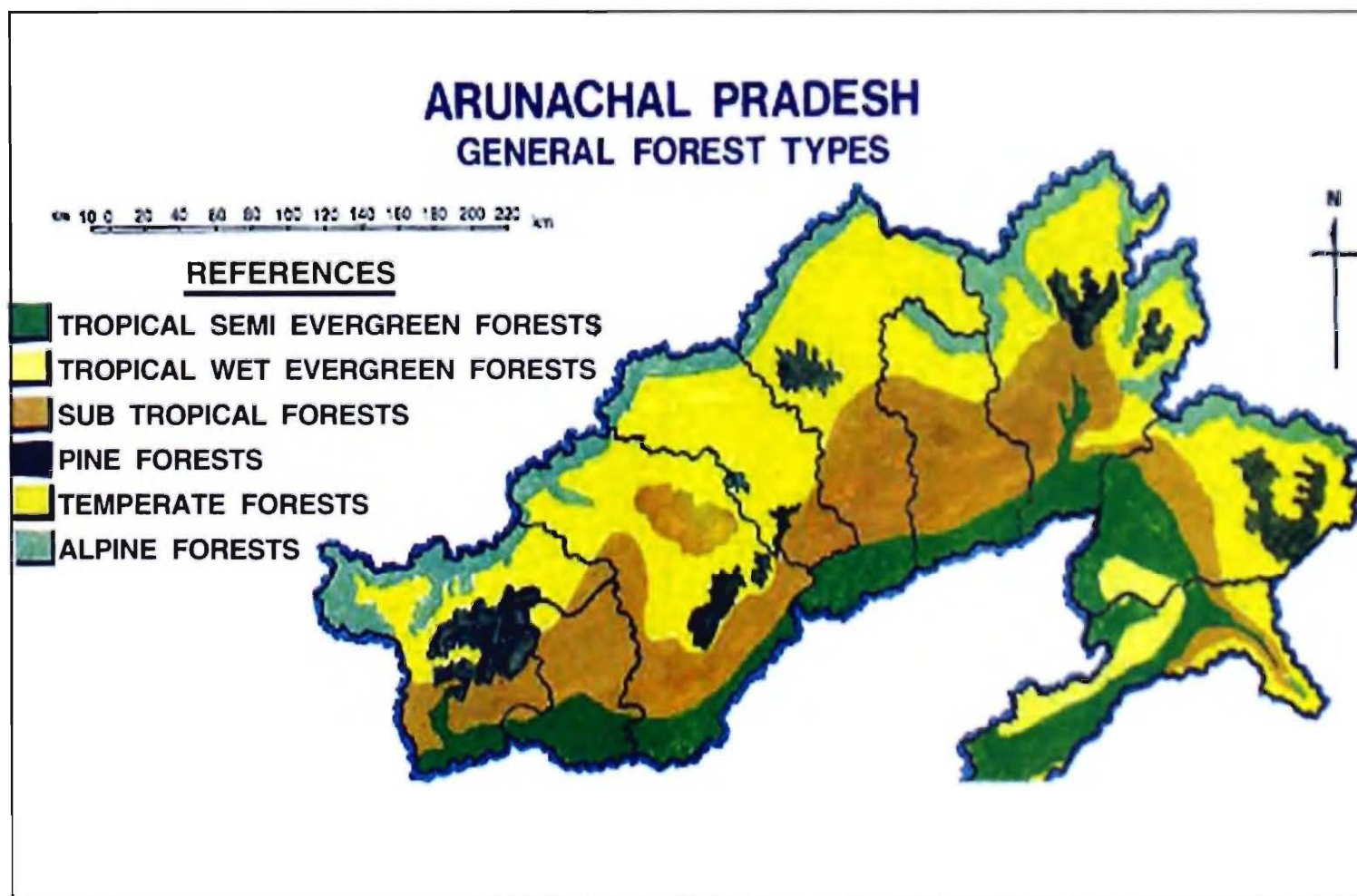
the State. Normally bamboos appear in areas abandoned after shifting cultivation, where they colonise fast. Bamboos of Arunachal Pradesh are *Bambusa tulda*, *B. pallida*, *Dendrocalamus hamiltonii*, *D. hookerii*, *Pseudostachyum polymorphum*, *Chimonobambusa* sp. *Cephalostachyum* sp. and *Arundinaria* spp. *Phyllostachys* sp. (both single stem bamboos) occur in higher elevation 1000-2000m. Grasslands form main feature of vegetation in riverine plains and at higher elevations. In lower elevation, *Saccharum spontaneum*, *S. arundinaceum*, *Neyraudia reynaudiana*, *Chrysopogon aciculatus*, *Chrysopogon aciculatus*, *Imperate Cylindrica*, etc. associated with a few sedges like *Cyperus* sp., *Scirpus* sp., *Fimbristylies* sp., etc. A few trees scattered at lower elevations, like *Macranga denticulata*, *Bombax ceiba*, *Duabanga grandiflora* make the grassland prominent in pine belt. Such grasslands support gregarious tall grasses viz., *Thysanolaena maxima*, *Imperata cylindrical*, *Sporobolus* sp., *Paspalum* sp., etc.

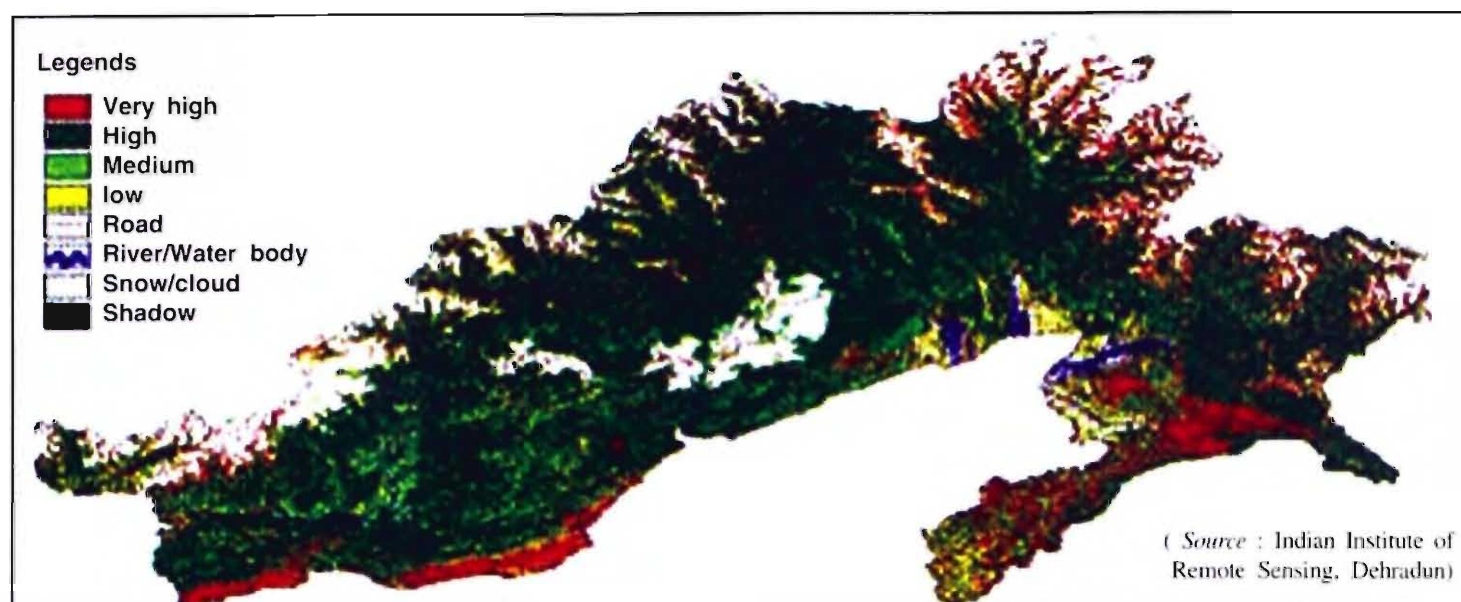
The climate of Arunachal Pradesh varies with elevation. Areas with very high elevation in the Upper Himalayas near the Tibetan border enjoy an alpine or Tundra climate. Middle Himalayas, experience

a temperate climate. The climate of the state varies from temperate in the northern part to warm and humid in southern part of the state, the variation in the temperature is significant, the upper stretches recording as low as 0°C while the plain experiences a maximum of 31°C. 38°C being the highest record of the state. Rainfall is influenced by the southwest monsoon and the annual rainfall being 2000 to 8000 mm, spread over a period of nearly five months, the maximum being the months of June–September. Summers are hot and humid in the lower elevations, the humidity varying from 65-80%.

Of the total area of 83,743 km², the state has 68,621 km² of forest occupying nearly 82% of the total geographic area, i.e., a major part of the state is under forestry as can be seen from the table given below. This includes 54,510 km of closed forest, 14,151 km of open forest, but the true picture of recorded forest cover appears to be around 51,540 km comprising 61.5% of the total area of the state (FSI, 1999). Out of this, unclassified forest is 70.25% and the protected forest is merely 0.02% (FSI, 1999).

Forest tree plantation has remained a low key activity due to rich natural resource. However, plantations started in the early 1950's with native species of *Terminalia myriocarpa*, and subsequently by *Bombax ceiba*, *Dipterocarpus macrocarpus*, and to little extent with *Tectona grandis*. An area of 9285.48 km² representing nearly 11% of the geographic area of the state has been brought under Protected Area Network for conservation and development of biodiversity resource, which includes two National Parks (i. Namdapha NP and ii. Mouling NP), seven Wildlife Sanctuaries (i. Eaglenest WLS, ii. Pakke WLS (earstwhile Pakhui WLS), iii. Itanagar WLS, iv. D'Ering Memorial WLS, v. Mehao WLS, vi. Dibang WLS and vii. Kamlang WLS), one Biosphere Reserve (Dihang Dibang Biosphere Reserve), one Orchid Sanctuary (Sessa Orchid Sanctuary), two Proposed Wildlife Sanctuaries (i. Kane WLS and ii. Yordi Rabe Supse WLS), two Tiger Reserves (i. Namdapha TR in Namdapha National Park and ii. Pakke Tiger Reserve in Pakke Wildlife Sanctuary) and one Proposed Elephant Reserve in Arunachal Pradesh.





Biological richness map of Arunachal Pradesh calculated as a function of ecosystem uniqueness, species diversity, biodiversity value, terrain complexity and disturbance index. Biological richness is scaled to four groups.

Division	Total Area (In Hectare)
Along forest division	1245800.00
Anini social forestry	366800.00
Bomdila forest division	2030.00
Bunderdewa forest division	328670.00
Changlang social forest divn	163200.00
Daporijo forest division	703200.00
Deomali forest division	79760.00
Dering wildlife sanctuary	24500.00
Dhergaon forest division	151000.00
Dibang forest division	493050.00
Hapoli forest division	924600.00
Itanagar wildlife sanctuary	47730.00
Khellong forest division	160000.00
Khonsa forest division	141700.00
Khonsa project division	14740.00
Lohit forest division	570279.00
Mehao wildlife sanctuary	443050.00
Miao project division	35866.00
Miao sanctuary division	276824.00
Mouling national park division	48300.00
Nampong forest division	39228.00
Namsai forest division	491800.00
Pakui wildlife sanctuary	117895.00
Pasighat forest division	350000.00
Seppa forest division	365700.00
Towang social forestry	208500.00
Yingkiong forest division	186500.00

Floristic Diversity : According to the reports available from Botanical Survey of India, 77% families recorded from India are represented in the state. The floristic diversity indicated the preponderance of the members of the Orchid family (monocot) with 545 species followed by the dicot members of Leguminosae (196 species), Asteraceae (186), Rubiaceae (159), Ericaceae (158), Poaceae (153), Urticaceae (129 species) and Rosaceae (111 species). Nearly 238 species of Angiosperms are endemic to the state. According to Sahni (1969) the Abhor Hills forms a phytogeographical node for mingling of Chinese, Malaysian and Himalayan flora and hence Mani (1974) considers the state of Arunachal Pradesh as the "Indo-Chinese Amphitheatre". However, Rao (1974) considers Arunachal Pradesh as a part of the Assam and established close affinities with the flora of Myanmar. The detailed list of recorded flora from the state from different sources of BSI, is given below :

Floral groups	Number		
	Families	Genera	Species
Angiosperms	192	1295	4117
Dicotyledons	165	970	2986
Monocotyledons	27	325	1131
Gymnosperms	8	21	39 (21 Wild+18 introduced)
Pteridophytes	43	133	452
Bryophytes			300 (206 moss+ 94 liverworts)
Lichens	41	72	331
Algae		23	54

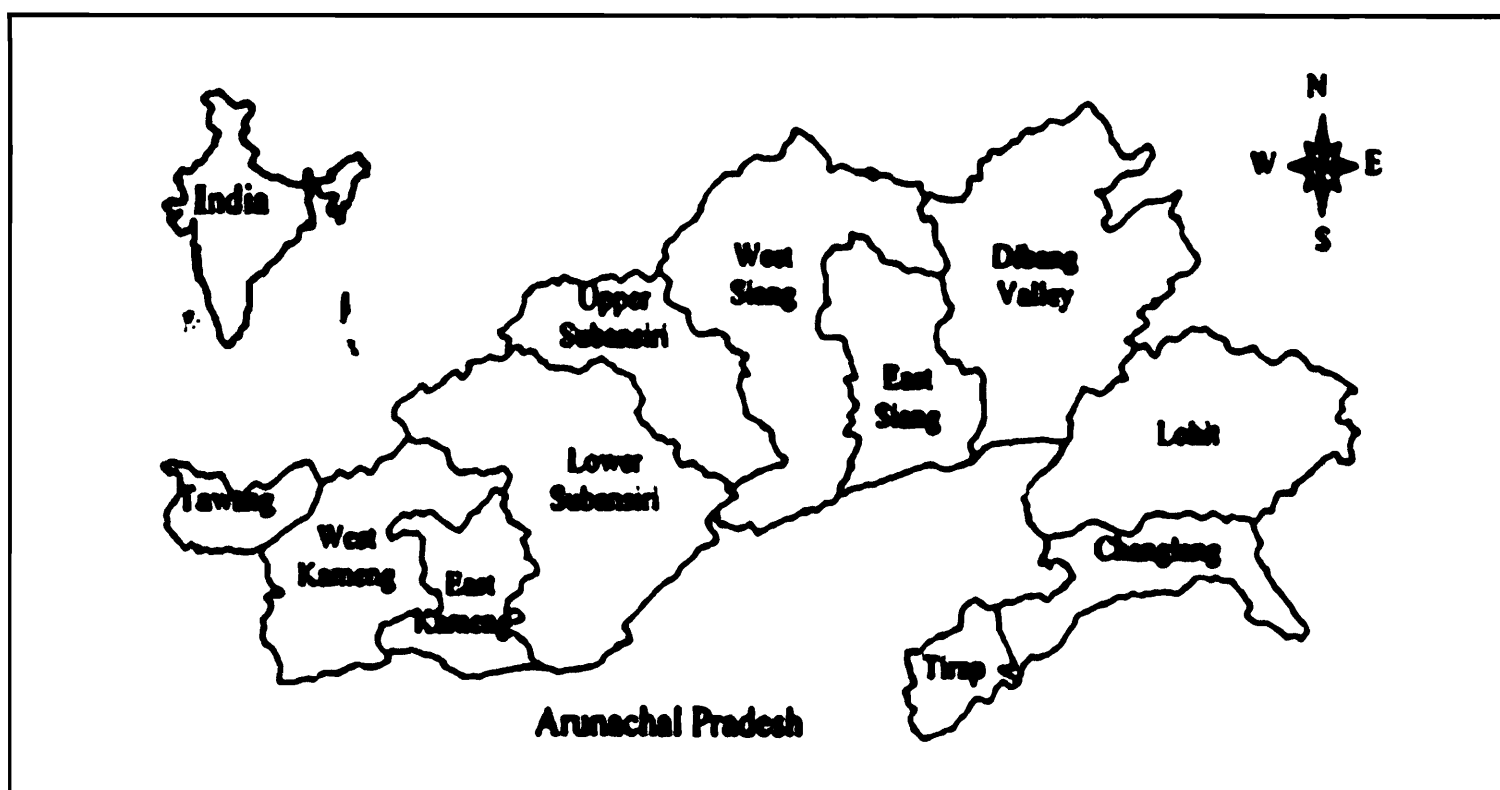
EXPEDITIONS

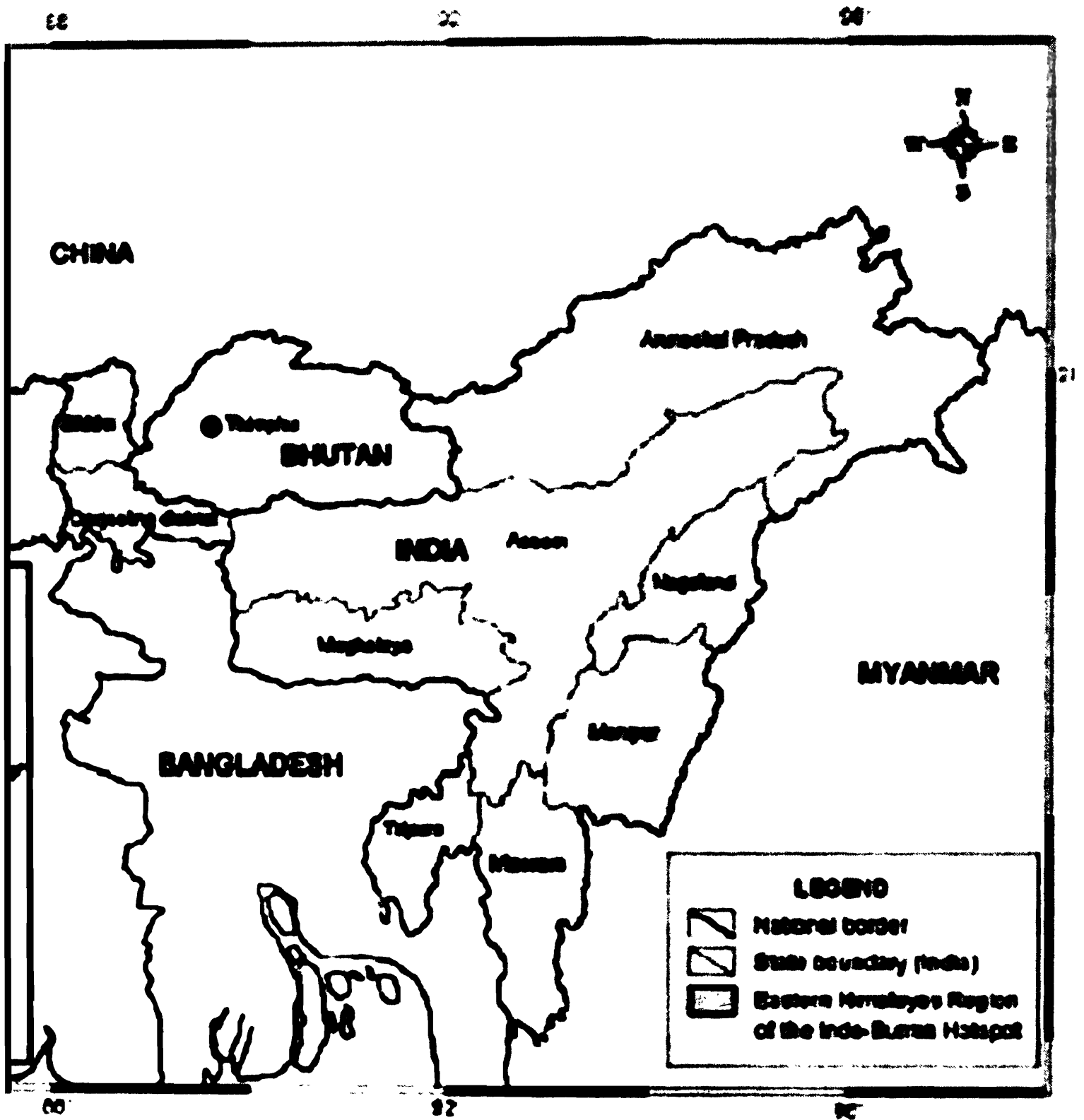
Literature on the expeditions abounds from the area. Mention may be made of North East Frontier Expedition (1825-28) by European explorers in of the 19th Century by Buchnan-Hamilton (1820), Robinson (1841), Griffith (1847), Hooker (1854), Thompson (1855), Clarke (1889). It was Burkill (1924-25) who first published Botanical expeditions in the Abhor Hills; Kingdom and Ward (1929) on Flora of Mishmi Hills and during 1953 on Flora of Lohit Valley, Flora of Aka Hills by Biswas (1941) are significant. The earliest available literature on the faunal exploration dates back to 1780 on the Mammals of Nepal, Bhutan and India especially in the areas of Assam-North Kamrup including Dafla hills. Subsequently a number of naturalists and explorer undertook survey and inventorisation of the faunal elements such as mammals by Mc Clelland (1839-1840), Jerdon (1869), Dobson (1876), Anderson (1881), Blanford (1889-1919), Sclater (1891), Annandale (1911-1912), Wroughton (1916), Thomas (1908, 1921), Hinton and Lindsay (1926), Pocock (1931, 1941), Horsfield (1940), Mills (1923) etc. Though, the records on mammals are patchy, the first authenticated record from Arunachal Pradesh comes from the work of Wells (1921), from the survey conducted on the Mammal Survey of India, Burma and Ceylon by the BNHS and ZSI at Mishmi

Hills during 1911-1921 Studies on the Environmental Impact Assessment of several Hydroelectrical Projects during 1981, Joint venture survey by ZSI-BNHS-Smithsonian Institute under Man and Biosphere Project and the opening of the Regional centre of Zoological Survey of India at Itanagar during 1986 are the significant features of the survey organizations.

The first authenticated record of birds of Arunachal Pradesh comes from the publication of Mishmi Monal Pheasant (*Lophophorus sclateri*) by Jerdon (1870). This is followed by the expedition by Godwin-Austen (1875-76) on Dafla, Mishmi and Naga hills, Cran (1887), Ogilvie-Grant (1895) on Dafla Hills, Abor Hills by Coltart (1902), Baily (1915), Baker (1913), expeditions on Mishmi Hills by Baily (1913), Baker (1915), Parson (1935, 1938), Ludlow and Kinnear (1937, 1944), Deignam (1946), Ali and Ripley (1948), Ripley (1952), Betts (1954, 1956) are significant.

Monumental works on the Abor expedition by Kemp (1871-1911) and Annandale (1911-1912), Fauna of British India by Smith (1935, 1943), collection of Snakes by Wall (1923, 1925, and 1926) are significant work on the Reptilian diversity. Recently, diversity and distribution of Reptiles from Namdapha Biosphere by Sanyal & Gayen (1985) is equally important. Earliest record on the amphibian





fauna comes from the work of Annandale (1912), Boulenger (1920), Smith (1929), and recently by Munsukhani et.al. (1976), Sarkar and Sanyal (1985), Frost (1985), Inger and Dutta (1986), Chanda (1992) and Dutta (1997). Major work in respect of fishes of Arunachal Pradesh comes from the studies by McClelland (1839), Chaudhuri (1913), Hora (1921) and recently from the work of Jayaram & Muzumadar (1964) and Dutta & Burman (1984, 1985). Swiss Entomological expedition during 1961, Daphabum expedition in 1969-70, Subansiri expedition during 1974-75 and Namdapha Expedition by a group of scientists from Zoological Survey of India (1981-87) has given impetus to the studies on distribution of insects from Arunachal Pradesh. The present investigation was taken during the period when Arunachal Pradesh was having only 11 (Refer Map) districts and hence the faunal analysis slightly differs, as the district boundaries have been changed due to the reorganization and bifurcation of certain districts in the state.

VERTEBRATE DIVERSITY

Arunachal Pradesh forms a complex hill system of Siwalik and Himalayan origin and is crisscrossed by six major rivers and streams flowing from west to east. Besides, a good number of beels in the lower belt and lakes in the middle and higher belts add up to the natural resources of the state. The state has 7000 ha and 2000 Km of lentic and lotic water resources respectively. Of which, 30-40% is falling in the cold water zone of the state. A complete and a comprehensive picture of the fish fauna of the state is undertaken in the present case reveal the presence of 143 species, under 61 genera, 21 families included in 8 orders. The list also includes 50 new records to the state. The family Cyprinidae forms the largest group with 65 species followed by Homalopteridae (17 species), Sisoridae (12 species), Bagridae (7 species), Channidae and Cobitidae (6 species each) and the rest with one, two or three species. Of the 50 new records, 12 species are recorded exclusively from the state of Arunachal Pradesh viz., *Barilius jayaramai*, *Danio (Brachydanio) horai*, *Garra gravellyi*, *Garra tirapensis*, *Puntius stevensonii*, *Semiplotus modestus*, *Kryptopterus indicus*, *Echinoglossus kamengensis*, *Exostoma berdmorei*,

Exostoma stuarti, *Noemacheilus arunachalensis* and *N. tikadari*. From the present investigation, it is clear that nearly 47 species of fishes share with the other eastern Himalayan states of northeast India.

An interesting pattern of distribution of fishes has been noticed from the recent survey that the Tirap district adjacent to Myanmar, Assam and Nagaland exhibits highest diversity of fishes with 83 species followed by Changlang (47 species), Lohit (37 species), East Kameng (36 species), West Kameng (28 species), East Siang and Lower Subansiri (21 species each), Upper Subansiri (14 spp.), West Siang (12 spp.), Dibang Valley (4 spp.) and the least in Tawang district with 8 species. From the above studies, it is also clear that the distribution of fishes in the upper stretches of Himalaya are limited as evidenced from the species diversity in Dibang valley, Tawang, West Siang and upper Subansiri districts. Nearly 55 species are hill stream cum torrential forms in the montane areas of the state represented by the distribution of species such as *Erethistoides montana*, *Euchiloglanis hodgarti*, *Exostoma berdmorei*, *Gagata cenia*, *Botia rostrata*, *Botia berdmorei*. It is for this reason that Cold Water fishery—especially the Trout fishery both Brown and Rainbow Trout variety being cultured for stocking. The cold water resources has gained popularity in recent years for providing recreation to the Defence personnel posted in the forward areas of West Kameng & Tawang district. The occurrence of certain fish species which are traditionally not found in the area are mainly due to the Fish Breeding through Hatcheries for the Indian major Carps (Rohu, Mrigal, Catla, Gonius) & Exotic Carps (Silver Carp & Grass Carp) at Emchi, Papumpare District and Lathao in Lohit District and Trout Breeding (Brown & Rainbow) in West Kameng & Tawang districts. The state fisheries have also resorted to Composite Fish Culture of six species, the combination has been very successful in foot-hill area of the State through beneficiary participation in many of the district viz. Balijan, Doimukh & Kimin Circle in Papumpare district; Ziro & Raga in Lower Subansiri district; Dimpurjo & Barirjo in Upper Subansiri district, East & West Siang district, Namsai & Jairampur in Changlang district etc. The state fisheries also conduct International Angling Festival of sport fishes especially the Mahaseer for furthering the tourism.

Amphibia : The present record of Amphibian diversity from the state is 39 species belonging to 11 genera, 6 families and 2 orders, in comparison to the earlier record of 24 species by Boulenger (1920), Smith (1929), Sarkar and Sanyal (1985) and Chanda (1994). Present study also includes the description of a new species of Amphibia from the state viz., *Philautus sahai* (sp.nov.) and five new records viz., *Megaphrys lateralis*, *Rana erythraea*, *Rana nicobarensis*, *Rana keralensis* and *Rana andersonii* for the first time from India. It is interesting to note that the Salamander (*Trilogitriton verrucosus*) was also recorded previously from the Daphabum Scientific Survey Expedition (1969-70) by the scientists of Zoological Survey of India at an altitude of 1248 m in the Lohit district in an hibernating condition. District wise distribution indicates the maximum diversity in Tirap (21 species), East Siang (20 species), West Kameng (9 species), Lower Subansiri (7 species), East Kameng (4 spp.), West Kameng and Changlang (3 species each), Lohit and Dibang Valley (2 species each). As in the case of several other groups such as fishes, the diversity is low in higher stretches and highest in the areas adjacent to Myanmar, Assam and Nagaland i.e., Tirap and East Siang districts. Species such as *Bufo macrotis*, *Mycrohyala berdmorei*, *Microxalus borealis*, *Theloderma moloch*, *Chiraxalus shyamrupus*, *Chiraxalus doriae*, and *Rhacophorus naso* (no further addition since the first collection by Annandale, 1912) is restricted to Arunachal Pradesh. As many as 14 species share in common with the distribution in eastern Himalayan states.

Reptilia : Abor expedition by Annandale (1912), Swiss Entomological expedition during 1961, Daphabum expedition in 1969-70, Subansiri expedition during 1974-75 and Namdapha Expedition by a group of scientists from Zoological Survey of India (1981-87) is the starting point in respect of the studies on distribution of reptiles from Arunachal Pradesh. The present study indicates the distribution of 78 species under 46 genera and 12 families of reptiles, of this two species viz., *Ophites laoensis* and *Xenochrophis punctulata* are the first records to the country. The present study also indicative of the restricted distribution of snake (*Boiga gokool*) to the eastern Himalayas and wider distribution of *Trimeresurus monticola* in Southeast Asian countries

extending upto Malaysia. The systematic list includes 4 species of testudines, 19 species of lizards and 55 species of snakes.

Among the four testudines recorded, *Pyxidina mouhoutii* is a Malayan element distributed in the state, *Kachuga tecta* becoming vulnerable due to over exploitation, *Kachuga sylhetensis*, endemic to northeastern India distributed in north and south of Brahmaputra River. Species such as *Kachuga smithi*, *Kachuga dhongoka* and *Cyclomys dentata* are on record from the state, but not included as they are not collected during the survey. Among the order Squamata, the family Gekkonidae includes *Cyrtodactylus khasiensis*, *Cosymbotus platyurus*, *Ptyctolaemus gularis*, *Mictopholis austeniana*, *Oriocalotes paulus*, *Japalura andersoniana*, *Calotes jerdoni*, *Sphaenomorphus indicum*, *S. maculatum*, *S. courcyanum*, *Scincella sikkimensis*, *Tarkydromus sexlineatus khasiensis*, which are the eastern Himalayan representatives distributed in the state. Among snakes family Typhlopidae represented by 3 species, Boidae (1 species), Colubridae (42 species), Elapidae (5 species) and Viperidae (4 species).

Species of snakes such as *Pareas monticola*, *Elaphae taeniura*, *E. cantoris*, *E. porphyracea*, *E. prasina*, *Ptyas korros*, *Zaocys nigromarginatus*, *Leopeltis frenatus*, *L. stoliczkae*, *Oligodon albocinctus*, *O. melanozotus*, *O. erythrocharis*, *Dendrolaphis ahaetulla*, *D. cyanochloris*, *D. gorei*, *Ahaetulla prasina*, *Pseudoxenodon macrops*, *Amphiesma modesta*, *Trachyschium monticola*, *T. tenuiceps*, *Rhabdophis himalayanus*, *R. bicolor*, *Blythia reticulata*, *Boiga ochracea*, *B. gokool*, *B. quincuciata*, *B. cyanodon*, *Psammodynastes pulverulentus*, *Bungarus niger*, *Trimeresurus mucrosquamatus*, *T. monticola*, *T. stejnegeri* are the eastern Himalayan representatives distributed in the state of Arunachal Pradesh. In other words, out of 55 species of snakes, nearly 33 species (60%) are the eastern Himalayan representatives distributed in the state. Besides above, *Elaphae mandarina* restricted to Arunachal Pradesh (recorded in the subcontinent after a lapse of nearly 75 years), *Ophites jara* and *Xenochrophis punctulata* recorded for the first time from Indian subcontinent from the study. *Oligodon (Prox) cinereus* is the other species exclusive to Arunachal Pradesh.

Of the 19 species of lizards recorded from the state, distribution in East Siang (17 species) followed by Changlang (9 species), Lohit, East and West Kameng (3 each), Lower Subansiri (2 species) and a lone species from Tirap districts. In contrast, of the 55 species of snakes distributed in the state, again East Siang dominates (26 species), Lower Subansiri (21 species) Changlang (15 species), East Kameng (10 species), Papumpare (9 species), West Siang (6 species), West Kameng (5 species), Lohit (2 species) and a lone species of *Trimeresurus monticola* (Blotched pit viper) from the district of Tirap. In conclusion, it may be said that the distribution of snakes are in the southern and lower elevations along the Brahmaputra River and its tributaries.

Aves (Birds) : Collections made by Ogle from the Lohit River Area of Arunachal Pradesh are the first description from the area, which is compiled by Godwin-Austen (1878). Collections made by Baily and Kennedy from Mishmi hills during 1913 were published by Stuart Baker in 1913 as Birds from Mishmi Hills in the Records of Indian Museum. Stevens Publication on the Birds of Upper Assam in BNHS (1914-15) and Bates publication on Birds of Subansiri are important from the point of description of the distributional pattern of birds from the state of Arunachal Pradesh. The ornithological work by Salim Ali, Dillon Ripley (1968-74) is the basis for the present understanding on the diversity and distribution, besides first hand information gathered through various surveys. The present study includes 964 species and subspecies of birds from the state of Arunachal Pradesh divided into four parts the first one includes 473 species authentically collected and reliably sighted in the field by the scientists of the survey, out of this 416 are resident, 42 are winter visitors, 11 are summer visitors and 4 uncertain. The second list of birds includes 282 species and subspecies of birds distributed in the state of Arunachal Pradesh based on further observation and data collected from various sources. Of these, 235 are resident, 42 winter visitors, 3 species are partly resident and partly winter visitor, 1 species each of winter vagrant and summer visitor birds.

The third list includes 43 species and subspecies of birds which are likely to occur in the state of Arunachal Pradesh (Distribution doubtful, needs confirmation). Of these 5 birds are winter visitors,

32 are residents, lone species of straggler and passage migrant, 4 are uncertain species of birds. The last list includes 157 species and subspecies of birds of birds of these 97 are residents, 51 are winter visitors, 2 partly resident and partly winter visitor and 7 birds have uncertain status. Most of these birds are from the adjacent countries of Bhutan, Myanmar and China, however, a few of them are also from the Western Himalayan country (Pakistan). The study enumerates the distribution pattern of birds in different ecologically significant areas, wildlife sanctuaries and other protected areas of the state.

Mammals : The order carnivora in India is represented by 7 families, 26 genera and 55 species; of this the state has a share of nearly 13 species under 10 genera. The family Felidae represented by 15 species, of which the state of Arunachal Pradesh has 9 Species thus constituting nearly 60 % of the total Indian species. Among them *Panthera tigris*, *Panthera pardus* are found in the lower elevations and foot hills and are common in Namdapha National Park, Dihang-Dibang Biosphere Reserve, Itanagar WLS, Pakke and Tale WLS. Stray cases in other parts of the state are also on record. According to Karanth and Nichols (1998) the alluvial grasslands, delineated as the Terai-Duar Savanna and Grassland ecoregions of northeast India, support some of the highest densities of tigers in the world. Same is true in case of *Panthera pardus* also. *Neofelis nebulosa* (Groves (1982) retains still under the genus *Panthera*) and *Uncia uncia* are recorded from the upper stretches of Subansiri, Dibang Valley. Although the *Uncia uncia* has a wide distribution across the Himalayas range, and into the Trans-Himalaya, the population in the Eastern Himalayas especially from Arunachal Pradesh is very important because this high-altitude predator occurs at low densities. Cats such as *Prionailurus bengalensis* (subspecies *charltoni* occurs in India), *Felis chaus* (subspecies *affinis* found in Arunachal Pradesh), *Pardofelis marmorata*, *Catopoma temminckii* are found distributed in the state while the fishing cat *Prionailurus viverrinus* is comparatively rare and found in marshy areas. Family Canidae represented by 3 genera and 5 species in India, while the state of Arunachal Pradesh accounts for all the five species thus the representation is 100% in the state. The Indian wolf is represented by *Canis lupus pallipes* the common jackal *Canis aureus* a scavenger survive on smaller prey and the

Indian wild dog or Dhole (*Cuon alpinus*) distributed in the scrub jungles of the state. According to Jhonsingh (1985), the wild dog of Arunachal Pradesh is believed to be *Cuon alpinus adjustus*, as this subspecies is found in northern Myanmar. Of the two species of genera *Vulpes*, *Vulpes bengalensis* are found in the foot hills and at elevations above 2500 m, and species *Vulpes vulpes* are reported as authentic records are not available, excluded in the present report.

The family ursidae represented by 4 genera and 4 species in India, the state is represented by all the two species viz., *Melursus ursinus* (Sloth bear), *Selenarctos thibetanus* (*Ursus thibetanus* according to Corbet and Hall, Himalayan Black bear), and *Helarctos malayanus* (Malayan Sun bear) distributed in Tirap & Changlang adjoining Burma. *Ursus arctos* (Brown bear) is not recorded in the present investigation, though recently reported by several workers.

The monotypic family Ailuridae represented by the Red Panda is a Himalayan species (*Ailurus fulgens*) found in altitude varying from 2800–3500 m, records of this are available in old growth subalpine conifer and mixed forests with a bamboo understory and Rhododendron and Oak forests. The family Mustellidae represented by 7 genera and 15 species are included under 4 subfamilies. The amphibious Otters under subfamily Lutrinae includes *Lutra perspicillata*, *Lutra lutra* and *Amblyonyx cinerus* (*Aonyx cinera*) but represented by the latter two species in the state. The subspecies of *Amblyonyx cinerus* reported from Arunachal is *concolor*. The subfamily Mustellinae includes martens, weasels and pole cats and represented by 8 species under 3 genera. Arunachal Pradesh has the distinction of having 2 genera and 2 species (*Martes flavigula* (Indian nominate subspecies is *flavigula*) keeps to forest limits and are not found above tree line, *Mustela strigidiosa* in temperate forests above 1500 m. *Mustela altaica* and *Martes foina* is reported in Tawang and Kameng districts, *Mustela kathaiia* distributed in the districts of Tirap & Changlang adjoining Burma, not included as the representative collections have not been available with the department.

The subfamily Melinae includes badgers represented by 2 genera and 3 species. In Arunachal

Pradesh it is fully represented by two species viz., *Arctonyx collaris* (subspecies present in Arunachal is *collaris*) and *Melogale moschata* (The Indian subspecies is *millsi*). The subfamily Mellivorinae represented by a lone species *Mellivora capensis* in India but doubtful in Arunachal. The family Viverridae includes 14 species under 7 genera and 3 subfamily and the state is represented (50%) by 5 species viz., *Viverra zibetha* (Arunachal Pradesh subspecies *zibetha*), *Viverricula indica*, *Pardoxurus hermaphroditus*, *Paguma larvata*, *Arctictis binturong*. The subfamily Herpestinae includes only one genus *Herpestes* with 6 species. The state represented by *Herpestes urva* and *Herpestes javanicus*.

The order Proboscidea represented by the lone species *Elephas maximus indicus*, the elephant population present in small habitat patches along the north bank of the Brahmaputra River in Arunachal Pradesh is very important from the point of distribution (Sukumar, 1982). The eventoid Artiodactyles are represented by four families in Arunachal Pradesh; the family Suidae represented by *Sus scrofa cristatus*; the family Cervidae represented by *Muntiacus muntjak* (subspecies *vaginalis*), *Axis porcinus* (subspecies *porcinus* in Arunachal Pradesh and the genus *Axis* is kept under the genus *Cervus* by Hanacki, 1982); *Cervus unicolor* (subspecies *equines* present in Arunachal) are important prey species distributed in the lower elevations of the state. The family Bovidae represented by *Bos frontalis* (a domesticated stock especially in northeastern Chittagong, Bangla Desh. Hanacki, 1982 considers *Bos gaurus* as a synonym of *Bos frontalis*), *Bubalis bubalis* and the *Budorcas taxicolor* especially distributed in the Mishmi hills of Arunachal Pradesh, *Naemorhedus goral*, *Naemorhedus sumatrensis* are extensively distributed in the state.

There are large herbivores of Eastern Himalayas especially Arunachal Pradesh play critical ecological roles in maintaining the integrity of the ecosystem. Further more, according to Centre for Education in Northeastern India and BNHS, the landscape includes a variety of ecosystems, from the wetlands and riverine habitat along the Brahmaputra River, and alluvial grasslands and subtropical broadleaf forests, to temperate broadleaf forests, mixed conifer forests, and even alpine habitats in Arunachal Pradesh, the

species diversity is high. Some of the Juvenile and sub-adult mammals show seasonal migration especially the tigers disperse from natal areas to establish territories elsewhere, and elephants exhibit seasonal movements along the length of the mountains. In the Higher up the mountain landscape, blue sheep and Takin undertake seasonal migrations from the alpine meadows in the summer to the mixed conifer forests below in the winter. Such ecological phenomenon is also important components of biodiversity that should be included in conservation strategy.

The order Pholidota represented by two species in India viz., *Manis pentadactyla*, *Manis crassicaudata*, the former is well distributed in the state. The order Rodentia is the largest order next to Chiroptera, characterized by chisel like incisors in each jaw and in Arunachal Pradesh they are represented by three family, 19 genera and 31 species. The Order includes the lone endemic species Namdapha flying squirrel (*Biswamoyopterus biswasi*) restricted to the temperate broadleaf forests of the Eastern Himalayas. The family Sciuridae includes 10 species including *Biswamoyopterus biswasi*; the family Muridae represented by 19 species and the the family Hystricidae represented by 2 species. Among the members of the order Sciuridae, *Ratufa bicolor gigantia* lives on high trees in dense forests and never comes to ground. The monotypic genus *Belomys* includes only one species *Belomys pearsoni*. The subfamily Arvicolinae under the family Muridae includes *Eothenomys melanogaster*, which according to Wilson and Reeder (1993) did not include Indian within the scope of distributin of this species. However, Corbet and Hill (1992) on the basis of Hinton (1923), kept the state of Arunachal Pradesh within in its range. Among the subfamily Murinae, *Berlymys bowersi* is a nocturnal fossorial species commonly found in the primary forests and in the highlands above 600 m. *Vandeleuria oleracea*, on the basis of the examination of the material by Agrawal (2000) recognized the *olearacea* species to be distributed in Arunachal Pradesh. On the basis of the collections made Agrawal (2000) confirmed the taxonomic status of *Rattus nitidus*, that there is no difference between the *R. nitidus nitidus* and *R. nitidus obsoletus* and hence the subspecies *R. nitidus obsoletus* is considered as the synonym of *R. nitidus*

nitidus. The Bamboo rats in Arunachal Pradesh in particular and northeastern Himalyan states is very important as they are related to the flowering seasons of the bamboo shoots belongs to the subfamily Rhizomyinae of Muridae. These rats are heavily built provided with strong claws for digging and have adapted for fossorial habits in the hilly terrains of the state. The subfamily represented by *Cannomys badius*. The family Hystricidae commonly includes porcupines includes two genera and two species viz., *Atherurus macrourus* and *Hystrix brachyura subcristata*.

Insectivores are small, with pointed snout with body covered with closely set fur and short limbs. The family represented by two families Soricidae which includes *Suncus murinus soccatus* and *Suncus murinus griffithi*. Both the species includes a number of genetically distinct populations resembling that of a semi species. The other one is a monotypic genus represented by *Anourosorex squamipes*. The family Talpidae includes animals with short velvety fur represented by a lone species *Euroscaptor micrura* which was earlier treated under the genus *Talpa* by Ellerman and Morrison-Scot (1951), revised by Abe *et al.* (1991) as *Euroscaptor*. The family Scandentia represented by a lone species *Tupaia belangeri assamensis*. The state of Arunachal Pradesh is known for the distribution of flying mammals under the order Chiroptera which includes 14 genera and 22 species out of 112 species known from India.

Primates : The present compilation includes 7 species and subspecies of primates from Arunachal Pradesh. The family Loricidae represented by the *Nycticebus coucang bengalensis*; the family Cercopithicidae represented by *Macaca assamensis assamensis*, *Macaca arctoides*, *Macaca mulatta*, *Macaca nemestrina*, the genus *Trachypithecus* represented by *T. pileatus pileatus*. The family Hylobatidae represented by the lone species of *Bunopithecus hooleck (Hylobates hooleck)*. Survey conducted by Alfred *et al.* (2004), on the Tawang districts of Arunachal Pradesh gives an interesting distribution of primates. According to these authors, Assamese macaques are common in south and northwestern part and are bigger in size, dark coat colour in comparison with the distribution of species at lower elevations. It is for this reason several authors including the recent report in the news paper

by Dutta et.al. (2005) confused for a new species of macaque from Arunachal Pradesh. Further more, Alfred et.al is also of the opinion, the people of Tawang are much tolerant about the monkey menace, as most of the people living in the area are of Buddhists in faith.

Altogether, the mammalian fauna of the state is represented by 105 species and subspecies under 58 genera, 25 families and 9 orders are discussed in the present study. Of these 4 species are new records to the state and also includes the lonely endemic species described earlier by the scientists of the Namdapha Biosphere Reserve Expedition party during 1985. Records of several species are also available but as those species were not sighted nor any collection made by the scientists of the Survey they are not included in the present description. These mammals includes *Platenista gangetica*, *Golunda ellioti*, *Hemitragus jemlachicus*, *Taphozous nudiventris*, *Episticus tatei*, *Tylonycteris pachypus*, *Ursus arctos*, *Pseudois nayaur*, *Caprolagus hispidus*, *Mustela kathiah*, *Manis crassicaudata*, *Sus salvinus* and a few others.

Several species are of very significant as they are collected by various expeditions as can be seen from the distribution of the following species: *Soriculus nigriscens*, (First recorded from Mishmi hills by Thomas 1922), *Soriculus leucops* (First record by Thomas 1914), *Suncus murinus*, *Suncus etruscus*, *Crocidura attenuata*, *Anourosorex squamipes*, *Chimarrogale himalayica*, *Tupaia belangeri* (first record by Thomas, 1922), *Callosciurus pygrythrus* (originally recorded by Thomas 1908), *Eothenomys melanogaster* (First recorded by Hinton 1923), *Dacnomys millaridii* (First recorded by Thomas 1922 from Mishmi hills), *Niviventer brahma*, (First recorded by Thomas 1914) and few others.

INVERTEBRATES

No earlier record of free living protozoa exists in the state. Several publications are available on the parasitic protozoan, especially in respect of transmission of malarial parasites, besides several cases of coccidian in the livestock causing severe damage to the bioresource. The present study indicates the distribution of 72 species (43 species of

free living, 20 parasites and 9 species are symbionts) distributed in 11 districts, of which 3 species are new records to the country and 62 species are new records to the state. Distribution pattern of protozoans indicates the preponderance of free living in Debang valley, parasitic in Changlang and symbionts in Tirap districts. In comparison to the above, Lower Subansiri dominates in species distribution followed by West Siang, East Siang, Debang Valley, Lohit, Tirap and Changlang. The free living ones are associated with moss plant, parasitic ones are in frogs, toads, birds, livestock and man while the symbionts occur on the termite hosts.

Leeches constitute the major group of annelids recorded from the state, the earliest record dates back to Moquin-Tandon (1826), Moore (1924) and Chandra (1991), presently includes 7 species. The trematode fauna of the state consists of 8 species distributed under 6 genera and 6 sub-families parasitizing the amphibians distributed in 9 districts.

Arthropods are represented by members belonging to Crustacea, Arachnida and Insecta. Wood-Mason (1872), Alcock (1910) and Bott (1972) are the pioneer workers in the systematics of crustaceans from various parts of the country including Arunachal Pradesh. The present study includes seven species of palemonid prawns and six species of potamonid crabs, of which 8 species are first records from the state. Abor Expeditions by Kemp (1911), pioneering works of Pocock (1900) from Assam frontier, Northeast Arachnid fauna by Gravely (1911-1925), recently by Tikader (1959-86), Tikader and Bastwade (1983) are significant contributions in the field of Arachnid taxonomy of the northeast India in particular. The present study includes the new description of three species of scorpions from Namdapha Biosphere Reserve. Besides the distribution of 3 species from the lower foothills of the state, the present investigation also includes the description of a new species of scorpion (*Chaerilus dibangvalleyicus* sp.nov.) from the family Chelicerilidae and a new species from Scorpiopsidae (*Euscorprios kamengensis* sp.nov.). From among the family Thalyphonidae, the present account includes the authentic confirmation of the distribution of *Uropoctus assamensis* from 4 districts of the state. The present investigation also includes the description of a new species of Schizomidae (*Schizomus arunachalicus* sp.nov.) and

a species of Opalinida (*Gnomulus roingii* sp.nov.) from the state thus totaling 4 new additional species of arachnida. 58 species of spiders are presently found distributed in the state, under 28 genera and 11 families of which 4 species belonging to 4 genera are new to the science (*Storena dibagensis* sp. nov., *Phidippus tirappensis* sp. nov., *Neoscona bomdilaensis* sp. nov., and *Nephila dirangensis* sp. nov) and 25 species are first records from the state and 15 species exclusively from eastern Himalayan states. The present study deals with the description of 21 species of Ixodid mites belonging to 8 genera of a single family. Of the 21 species, 2 species are new records to the state, 7 are restricted to Northeastern state, one exclusive restricted to Arunachal Pradesh and the rest are widely distributed in the country. Among the Oribatid mites, 35 species are known from the state belonging to 30 genera and 20 families. All species are reported for the first time from the state of Arunachal Pradesh, besides 3 species which are likely to be new species awaiting confirmation. Of the 35 species, 21 are restricted to the eastern Himalayan foothills.

Insects : The eastern Himalayas and hills of Assam and Arunachal Pradesh in the northeast India with tropical evergreen forests form a paradise of maximum number of species and populations of species. The present account is of a small group of insects from the state and when fully explored the diversity of the state in particular and the country in general is likely to go beyond the present day estimate. Though the earliest Collembolan studies in India dates back to the work of Ritter (1911), Imms (1912), Carpenter (1913), Handschin (1920), but the account on Arunachal Pradesh comes from Mitra (1975) from Namdapha Biosphere Reserve. The present contribution enumerates the description of 27 species under 15 genera and 3 families. Of these, several of them are widely distributed (*Xenylla obscura*, *Dicranocentrus simplex*, *Siera indica*, *Cyphoderus javanus*, *Tomocerus mitrai*, *Dicranocentroides flaviscens*, *D. fasciculatus*, *Salina indica*, *S. Montana*, *Isomurus balteatus*), a few of them are exclusively known from Northeast Indian states (*Lobella kraepilini*, *Lepidocyrtus caudatus*, *L. magnificus*, *L. heterolepis*, *L. cyaneus*, *Lepidosira unguiserrata*, *Sinella curviseta*, *Homidia cingula*, *Dicranocentroides salmoni*, *Salina striata*, *Callyntrura japonica*, while *Lepidocyrtus curvicollis* is known exclusively from Arunachal Pradesh.

The first record of Odonata from Northeastern India dates back 1768 by Linne and Johansson and the earliest record available from Arunachal Pradesh is from Lahiri (1977) and later on by various workers. The present record reveals 92 species and subspecies distributed over 50 genera, 11 families and 2 suborders. Of these, 65 species are widely distributed, 24 species are having records from Northeast India and 3 species are exclusively recorded from Arunachal Pradesh and are known by types. An interesting pattern of distribution of odonates recorded in the present study, a maximum number of species found in Subansiri district followed by Siang, West Kameng and Dibang valley districts. Among these districts the middle reaches of tree line show maximum diversity than the lower reaches of the state. Another interesting pattern of distribution recorded is as many as 25 species from Tirap district which is adjacent to Myanmar, Assam and Nagaland trijunction.

Records of Acridid insects are known from the work of Hancock (1913), and recently by Tandon *et al.*, (1976), Tandon and Khera (1978) from Arunachal Pradesh. The present survey reveals a sizeable number of acridid insects to the extent of 47 species belonging to 33 genera and 2 families. Among them 29 species are widely distributed, 12 species are restricted to Northeastern India while 3 genera (from literature) and 3 species are recorded from Arunachal Pradesh only. Acridid distribution further indicates greater diversity in West Siang (16 species) followed by Upper Subansiri and Debang Valley (15 species each), Lower Subansiri (13 species), West Kameng (11 species), East Siang (4 species), Upper Siang (3 species), East Kameng, Tirap, Papumpare 2 species each and no records from the districts of Tawang and Changlang. Of the 47 species recorded from different districts, *Xenocatantops humilis* distributed in 6 districts, *Stenocatantops splendens* and *Phlaeoba infumata* distributed in 5 districts, *P. attenuata* and *Trilophidia annulata* in 4 districts, 10 species in 3 districts, 2 species in 9 districts, 23 species distributed either alone or in places where others have been recorded.

The order Blattaria (Dictyoptera) though well studied by various workers viz., Kirby (1904), Shelford (1910), Hanitsch (1929) and others on the Indian soil, has no comprehensive work from the

state. The present study indicates the distribution of 20 species under 14 genera and 6 families, of these 6 species are new records, and the rest are cosmopolitan in their distribution. The distribution of blattids indicate that they are recorded from ten districts of which East Siang and Papumpare dominate followed by Dibang Valley, West Siang, Lower Subansiri, Tirap, Lohit, Upper Subansiri and Changlang districts.

The present investigation includes 73 species belonging to 14 genera of Scarabaeid beetles of the subfamily Coprinae, though the total number of species of coleopterans when completed will be 10 times the present number given in the present fauna of the state. Of these 19 species are new records to the state. The distribution pattern of dung beetles indicates maximum number of species at Changlang, the district adjacent to Myanmar, followed by Papumpare (17 species), Dibang Valley, the lower Dibang showing better distribution than the upper Dibang Valley. The East Siang, West Siang and the Lower Subansiri shows the same pattern of

distribution, equally true in case of Upper Siang, Tawang, Lohit and Tirap districts in respect of the species distribution. Least number of species recorded is from East Kameng followed by West Kameng and Upper Subansiri districts.

Dipteran includes 6185 species under 1091 genera and 87 families from India and the largest group of insects next to coleoptera. The present volume includes only 19 families out of 87 families known from the country, consisting of Syrphidae with 50 species, Bombyliidae (9 species), stratiomyidae (10 species), Tabanidae (24 species), Ailidae (15 species), Empidae (1 sp.), Dolichopodidae (1 sp.), Pipunculidae (2 species), Conopidae (3 species), Tephritidae (26 species), Sciomyzidae (1 sp.), Sepsidae (6 species), Calliphoridae (15 species), Sarcophagidae (15 species), Muscidae (32 species), Tupilidae (23 species), Culicidae (19 species), Simuliidae (6 species), Bibionidae (8 species), Sciaridae (5 species) thus totaling 269 species of dipterans from the state. A comparative account of Indian fauna with the known dipterans is given below :

Sl. No.	Families	India		Arunachal Pradesh		
		Genera	Species	Genera	Species	New Records
	Nematocera (Total for India)	245	2759			
1.	Tipulidae	60	1330	13	23	
2.	Culicidae	15	3000	3	19	
3.	Simuliidae	1	57	1	6	
4.	Bibionidae	4	39	4	8	
5.	Sciaridae	8	71	4	5	
6.	Brachycera	198	1,156			
7.	Stratiomyidae	34	73	10	10	
8.	Tabanidae	12	200	7	24	
9.	Asilidae	55	482	11	15	
10.	Bombyliidae	24	118	5	9	4
11.	Empididae	19	57	1	1	
12.	Dolichopodidae	27	134	1	1	
13.	Cyclorrhapha	632	2,178			
14.	Pepunculidae	4	25	1	2	

Sl. No.	Families	India		Arunachal Pradesh		
		Genera	Species	Genera	Species	New Records
15.	Syrphidae	62	256	28	50	8
16.	Conopidae	11	48	1	3	
17.	Tephritidae	77	241	16	26	
18.	Sciomyzidae	4	10	1	1	
19.	Sepsidae	8	17	3	6	
20.	Muscidae	39	263	11	32	6
21.	Calliphoridae	26	107	8	15	
22.	Sarcophagidae	26	85	9	15	
Grand Total		1,091	6,185	137(28%.01)	270(5.19%)	18

It may be concluded that the generic representation of the family is nearly 28% while the species representation is only 5.19 from the known dipteran insects, and hence a large scope exist for the unrepresented families of the order Diptera. It is interesting to know four species of syrphids are distributed in the adjacent southeast Asian countries such as Myanmar, Borneo, Jawa and Malaya, 16% of the species are confined to India, 20% to the Oriental Region, 32% extends beyond up to Palearctic 10% each to Ethiopian and Australian and only one species appears to be cosmopolitan in distribution. The distribution of Bombylids appears to be related to the wet and hilly areas of the Himalayan state of Arunachal Pradesh. Among the 51 species under 5 families of Brachycera, 13 species are confined to Arunachal Pradesh, 4 species to India, 33 species extend up to the boundary of the Oriental Region and a lone species extend beyond up to Japan and Korea. Among the 68 species distributed in 7 families of Cyclorrhapha, a maximum number of species (26) distributed in the district of Tirap which is adjacent to Myanmar, Assam and Nagaland trijunction. 15 species are restricted to Arunachal Pradesh, 49 species are found in Oriental Region and 19 species extend their distribution to Palearctic region. Of the 32 species of Muscids, 6 species are recorded for the first time from the state, only one species restricted to the Indian soil and the rest extend to Oriental, Palearctic, Australian, Ethiopian regions of the world. Of the 61 species under five families of Nematocera, 7 species are confined to India, and nearly 44 species extend their range in the Oriental Region and 10 species beyond Oriental Region. It is also interesting to note the families Simuliidae and Bibionidae are fully represented at the generic level in the state.

Major concentration of hymenopterous species is in the hilly and densely forested areas of the country and it is estimated that nearly 80-85% of the species remain to be explored from these areas. The present account deals only with two families of Hymenoptera viz., Formicidae and Sphaecidae. 63 species of Formicidae (ants) under 30 genera and 7 subfamilies; 33 species under 20 genera, 8 subfamilies are included in the family Sphaecidae (commonly known as mud daubers and hunting wasps), of which 23 species are recorded for the first time from the state. Among the members of Formicidae, 5 species are exclusively known from Arunachal Pradesh, 12 species from eastern Himalayan states, 4 species share with Andaman and Nicobar group of Islands and the rest are widely distributed in India. District wise distribution indicates maximum in Lower Subansiri (18 species) followed by Papumpare (17 species), West Kameng (12 species), Lohit (11 species), Tirap (6 species), Upper Subansiri and East Siang with 5 species each and lowest recorded is from East Kameng with a lone species. Distribution of 33 species of Sphaecids indicate that 3 species are exclusive to Arunachal Pradesh, 9 species share with the Eastern Himalayan states and the rest are common and widely distributed and some of them extend their range in the Oriental Region, besides India.

The Eastern Himalayas in general and Arunachal Pradesh in particular is one among the 150 important botanical sites identified for conservation action by the World Conservation Monitoring Center. The region is recognized as a refugium of flowering plants and is an active centre of organic evolution. Eastern Himalaya is also one of the 34 Hotspots identified by the World Conservation Union for Conservation of Biodiversity. Because the Himalayas have a

relatively recent origin, endemism is low, especially among the better-known higher taxonomic groups. The populations of vultures, greater and lesser adjutants—some of Asia's largest birds—in the foothill grasslands and broadleaf forests are globally significant, as are the populations of several of the hornbill species and pheasants, white-winged duck (*Cairina scutulata*), white-bellied heron (*Ardea insignis*), black-necked stork (*Grus nigricollis*) and the Bengal florican (*Houbaropsis bengalensis*). Further up the mountains, the Indo-Malayan fauna transitions into a Palearctic fauna, consisting of snow leopards, Asiatic black bear (*Ursus thibetinus*) and a diverse ungulate assemblage that includes the blue sheep (*Pseudois nayur*), takin (*Budorcas taxicolor*) and Himalayas thar (*Hemitragus jemlahicus*). Many of these are not recorded in the present investigation. The red panda (*Ailurus fulgens*) is a Himalayan species that lives in old growth subalpine conifer and mixed forests with a bamboo under story. The

Namdapha flying squirrel (*Biswamoyopterus biswasi*) is restricted to the temperate broadleaf forests of the Eastern Himalayas Region. The details of the study is represented in the Annexure giving the number of species recorded under various categories as well as the new records and New species described to the state of Arunachal Pradesh is given.

Scientists of the survey undertook an expedition to the present Namdapha Biosphere Reserve, Arunachal Pradesh during the year 1981-82 under the MAB-India project for the qualitative analysis of the Faunal Resources of the proposed biosphere reserve and the publication was brought out during September 1985 (Special Issue of the Records of Zoological Survey of India : Fauna of Namdapha : Arunachal Pradesh "A proposed Biosphere Reserve") dealing with 30 chapters covering nearly 675 species. The detailed number of species included in the report is as under :

No.	Group	No. of Genera	No. of Species	Remarks
1.	Dictyoptera	9	13	
2.	Orthoptera	31	36	
3.	Mantodea	10	10	New records to Arunachal
4.	Dermaptera	10	14	2 Species new to science and one new record
5.	Isoptera	10	13	1 Species new to science
6.	Odonata	10	11	1 Species new to science
7.	Neuroptera	2	2	
8.	Lepidoptera	47	84	6 One records to Arunhachal
9.	Coleoptera	124	216	13 Species new to science, 8 species new to India 71 new records to the state
10.	Hymenoptera	21	28	All are new to state
11.	Diptera	43	69	3 New to science, 1 new to India, 42 new to state
12.	Ixodidae : Acarina	5	10	3 New to state
13.	Arachnida(Scorpions)	2	3	
14.	Mollusca	20	23	1 New to state
15.	Pisces	19	28	4 New to science, 3 new to state
16.	Amphibia	5	14	2 New to science, 6 new to state
17.	Reptilia	15	15	15 New to state
18.	Aves	46	64	One species rediscovered
19.	Mammalia	15	20	One new to science

Arthropoda : Insect Diversity

Orders	Family	Genera	Species	New Records to the State	New to Science
Colembola	3	15	27	Nil	Earlier in 1975 Mitra recorded one new species from Namdhapa BR

Arthropoda : Insect Diversity contd...

Orders	Family	Genera	Species	New Records to the State	New to Science
Orthoptera	2	33	44	10 species	Nil
Blattaria (Dictyoptera)	6	14	20	6 species	Nil
Odonata	9	49	92	Nil	Nil
Coleoptera	1	14	73	19 species	Nil
Diptera	19	136	271	7 species	Nil
Hymenoptera	4	59	118	77 species	Nil
Total	44	320	645	119 species	

Arthropoda : Arachnida, Crustacea

Orders	Family	Genera	Species	New Records to the State	New to Science
Arachnida					
Cheliceridae	1	1	4	1 species	1 species
Scorpiopsidae	1	2	3	Nil	2 species
Thelyphonidae	1	1	2	1 species	Nil
Oncopodidae	1	1	3	1 species	1 species
Oribitidae	20	30	35	35 species	3 are likely to be new awaiting confirmation
Ixodidae	1	8	21	2 species	Nil
Araneae	11	28	58	25 species	4 species
Crustacea	2	7	13	Nil	Nil
Total	38	78	139	65 species	8 species + 3 awaiting confirmation

Other Invertebrates :

Phylum/Class/Orders	Family	Genera	Species	New Records to the State	New to Science
Protozoa	28	39	72	2 species from India and 62 species from the state	Nil
Annelida	1	1	7	Nil	Nil
Trematode	4	6	8	Nil	Nil
Total	33	46	87	64 species	Nil

Vertebrates

Phylum/Class/Orders	Family	Genera	Species	New Records to the State	New to Science
Pisces	21	61	143	50 species from the state 12 distributed exclusively	Nil
Amphibia	6	11	39	2 species new to the state	1 species

Vertebrates contd...

Phylum/Class/ Orders	Family	Genera	Species	New Records to the State	New to Science
Reptilia	12	46	78	Nil	Nil
Aves			473 (authen- ticated)	Nil	Nil
Mammals	25	58	105	Nil	Nil
Total	64	176	838	64	1 species

REFERENCES

- Agarwal, V.C. 1980. Murids of northeast India. *Proc. Symp. Problems of Rodents*, Shillong, : 1-22.
- Alfred, J.R.B., Das, A.K., and A.K. Sanyal 1998. *Faunal Diversity in India*, Publ. Zool. Surv. India.
- Ali, S. and Ripley, S.D. 1968-1974. *Birds of India and Pakistan*. 10 Vols. Oxford University Press, Bombay.
- Annandale, N. 1912. Zoological Results of Abor Expedition, 1911-1912. *Rec. Indian Mus.*, 8(1) : 7-36. Taylor & Francis, London.
- Behera, M.D., S.P.S. Kushwaha, P.S. Roy, S. Srivastava, T.P. Singh and R.C. Dubey, 2002. Comparing structure and composition of coniferous forests in Subansiri district, Arunachal Pradesh, *Current science*, vol. 82(1) 10: 70-76.
- Blanford, W.T. 1888. *Fauna of British India Including Ceylon and Burma*, Francis & Taylor, London.
- Biswas, K. 1941. Flora of Aka Hills, *Indian For. Rec. Bot.*, 3 : 1-62.
- Champion, H.G. & S.K. Seth, 1968. *A revised survey of the forest types of India*. Govt. of India Press, Nasik.
- Chakraborty, S. & A.K. Sen, 1991. Mammals of Mehao Wildlife Sanctuary (Dobang Valley district, Arunachal Pradesh) with remarks on their status. *Rec. zool. surv. India*, 88 : 263-285.
- Das, Indranil, 1997. Checklist of Reptiles of India with English common names. *Hamdryad*, 22 : 32-45.
- Dutta, A.K. & Burman, R.P. 1984. On a new species of Garra Hamilton (Pisces : Cyprinidae) from Namdhapa Wildlife Sanctuary, Arunachal Pradesh. *Bull. zool. Surv. India.*, 6(1) : 283-287.
- Dutta, S.K. 1997. *Amphibians of India and Srilanka* (Checklist and Biography), Odyssey Publishing House, Bhubaneswar.
- Ellerman, J.R. 1961. *The Fauna of India including Pakistan, Burma and Ceylon, Mammalia* 3 (1&2), Zoological Survey of India, Calcutta.
- Forest Survey of India 2000. *The State of Forest Report*, 1999. FSI, Govt. of India Press, Dehradun, : 133.
- Griffith, W. 1847. *Jaournals of travels in Assam, Burma, Bhutan, Afghanistan & the neighbouring countries*, Calcutta.
- Hegde, S.N. (Ed.), 2001. *Arunachal Forest News* (Biodiversity Special Issue) Vol. 19(1-2) : 252.
- Hegde, S.N. 1996. Orchid wealth of India, *Arunachal Forest News*, 14(1): 6-19, SFRI, Arunachal Pradesh, Itanagar.
- Kaul, R.N. & K. Haridarsan, 1987. Forest Types of Arunachal Pradesh – a priliminary study. *J. Econ. Tax. Bot.*, 9(2) : 397-389.
- Mills, J.P. 1923. Bombay Natural History Society's Mammal Survey of India Burma & Ceylon, Report from Naga Hills. *J. Bombay nat. Hist. Soc.*, 29 : 221-229.
- National Informatics Centre, Arunachal Pradesh State Unit Content maintained by Govt. of Arunachal Pradesh.
- North Eastern Council 2000. Basic Statistics of North Eastern Region 2000. NEC, Ministry of Home Affairs, Govt. of India, Shillong.
- Parth Sarathi Roy and Mukunda Dev Behera, 2005. Assesment of biological richness in different altitudinal zones in the Eastern Himalayas, Arunachal Pradesh, India, *current science*, vol. 88(2) : 321-330.

MAMMALS

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INTRODUCTION

Out of a total 4,629 species of mammals known from the world, 397 species occur in the Indian Union (Wilson and Reeder 1993, Corbet and Hill 1992). Of these, 105 species and subspecies are being reported from Arunachal Pradesh.

Our knowledge about the mammalian fauna of Arunachal Pradesh is rather patchy. Fortunately, the Mammal Survey of India, Burma and Ceylon, conducted by the Bombay Natural History Society during the year 1911 to 1930; which surveyed the major part of the British India, touched the Mishmi Hills of Arunachal Pradesh (Wells, 1921). Wells has surveyed Dening, Tiki and Dreyi of Mishmi Hills region for mammals. Those specimens are present in British Museum, Bombay Natural History Society and Zoological Survey of India. Recently, Eastern Regional Station of Zoological Survey of India at Shillong, Meghalaya and Itanagar Station in Arunachal Pradesh have collected mammals from different parts of Arunachal Pradesh. Zoological Survey of India began its exploration in the year 1981 in course of assessment survey for the proposed Hydel Project. During the period 1982-85 the field survey was conducted in course of the MAB-India Project. A final survey was conducted in 1988 by a joint venture by ZSI-BNHS-Smithsonian Institution. MBA report was published in the year 1990. However the detailed studies with the additional material was awaiting. In this connection the results on the Mammalia has been dealt with.

Pending a full report, some interesting

observations were published (Saha, 1981, 1984, 1985) from recent collection. Jerdon (1867), Dobson (1876), Blanford (1888, 1891), Anderson (1881) and Sclater (1891), Pocock (1939, 1941), Ellerman (1961), Ellerman and Morrison-Scott Checklist (1951, 1966), all included mammalian faunal accounts of Arunachal Pradesh.

The present mammalian faunal account of the State is based mainly on the collection of mammal brought by the surveys as mentioned above, from different parts of Arunachal Pradesh, as also on earlier specimen already present in the National Zoological Collection of India from that State, and partly on published literature.

In this report, the classification and scientific names have been followed after Wilson and Reeder (1993) Indian range of each of the species has been given zone-wise; distribution outside India has been mentioned. In lieu of measurements, diagnosis of each species and subspecies has been provided. Status as per International Union for Conservation of Nature and Natural Resources (IUCN), Indian Red Data Book (RDB), Indian Wildlife (Protection) Act, 1972 (IWPA) and Conservation Assessment and Management Plan of Biodiversity Conservation Prioritisation Project (CAMP) Workshop (1998) has been given. In this connection following abbreviations have been used :

CR = Critical; EN = Endangered; VU = Vulnerable; R = Rare; IK = Insufficiently Known; LRCD = Lower Risk-Conservation Dependent; LRnt = Lower Risk-near threatened; LRLC = Lower Risk-Least concern NE = Not Evaluated.

The species and genera which occur exclusively in the Indian territory, i.e., endemic to India have been marked with an asterix.

Remarks on most of the species and subspecies have been provided.

SYSTEMATIC LIST

Order INSECTIVORA

Family SORICIDAE

1. *Suncus murinus soccatus* (Hodgson)
2. *Suncus murinus griffithi* (Horsfield)
3. *Anourosorex squamipes* Milne-Edwards

Family TALPIDAE

4. *Euroscaptor micrura* (Hodgson)

Order SCANDENTIA

Family TUPAIIDAE

5. *Tupaia belangeri assamensis* Wroughton

Order CHIROPTERA

Family PTEROPODIDAE

6. *Cynopterus brachyotis* (Müller)
7. *Cynopterus sphinx sphinx* (Vahl)
8. *Megaerops niphanae* Yenbutra and Felten
9. *Rousettus leschenaulti leschenaulti* (Desmarest)
10. *Sphaerias blanfordi* (Thomas)
11. *Eonycteris spelaea* (Dobson)
12. *Macroglossus sobrinus sobrinus* Andersen

Family EMBALLONURIDAE

13. *Taphozous nudiventris kachhensis* Dobson

Family MEGADERMATIDAE

14. *Megaderma lyra lyra* E. Geoffroy

Family RHINOLOPHIDAE

15. *Rhinolophus ferrum-equinum tragatus*
Hodgson
16. *Rhinolophus lepidus lepidus* Blyth
17. *Rhinolophus rouxi rouxi* Temminck

18. *Hipposideros cineraceus* Blyth
19. *Hipposideros lankadiva* Kelaart
20. *Hipposideros larvatus leptophyllus* (Dobson)
21. *Hipposideros pomona gentilis* Andersen

Family VESPERTILIONIDAE

22. *Pipistrellus coromandra* (Gray)
23. *Scotomanes ornatus* (Blyth)
24. *Scotophilus heathi heathi* (Horsfield)
25. *Tylonycteris pachypus fulvida* (Blyth)
26. *Murina cyclotis cyclotis* Dobson
27. *Murina tubinaris* (Scully)

Order PRIMATES

Family LORIDAE

28. *Nycticebus coucang bengalensis* (Lacepède)

Family CERCOPITHECIDAE

29. *Macaca assamensis assamensis* (M'Clelland)
30. *Macaca arctoides* (Geoffroy)
31. *Macaca mulatta* (Zimmermann)
32. *Macaca nemestrina* (Linnaeus)
33. *Trachypithecus pileatus pileatus* (Blyth)

Family HYLOBATIDAE

34. *Hylobates hoolock* (Harlan)

Order CARNIVORA

Family CANIDAE

35. *Canis aureus* Linnaeus
36. *Canis lupus* Linnaeus
37. *Cuon alpinus* (Pallas)
38. *Vulpes bengalensis* (Shaw)

Family FELIDAE

39. *Catopuma temminckii* (Vigors and Horsfield)
40. *Felis chaus* Schreber
41. *Prionailurus bengalensis* (Kerr)
42. *Prionailurus viverrinus* (Bennett)
43. *Neofelis nebulosa* (Griffith)
44. *Pardofelis marmorata* (Martin)
45. *Panthera pardus* (Linnaeus)

46. *Panthera tigris* (Linnaeus)

47. *Uncia uncia* (Schreber)

Family HERPESTIDAE

48. *Herpestes urva* (Hodgson)

49. *Herpestes javanicus* (E. Geoffroy Saint-Hilaire)

Family MUSTELIDAE

50. *Amblonyx cinereus* (Illiger)

51. *Lutra lutra* (Linnaeus)

52. *Melogale moschata* (Gray)

53. *Martes flavigula* (Boddaert)

54. *Arctonyx collaris* Cuvier

55. *Mustela strigidorsa* Gray

Family URSIDAE

56. *Ailurus fulgens* Cuvier

57. *Helarctos malayanus* (Raffles)

58. *Ursus thibetanus* Cuvier

Family VIVERRIDAE

59. *Arctictis binturong* (Raffles)

60. *Paguma larvata* (Hamilton-Smith)

61. *Paradoxurus hermaphroditus* (Pallas)

62. *Viverra zibetha zibetha* Linnaeus

63. *Viverricula indica indica* (Desmarest)

Order PROBOSCIDEA

Family ELEPHANTIDAE

64. *Elephas maximus indicus* G. Cuvier

Order ARTIODACTYLA

Family SUIDAE

65. *Sus scrofa cristatus* Wagner

Family CERVIDAE

66. *Muntiacus muntjak vaginalis* (Boddaert)

67. *Axis porcinus porcinus* (Zimmermann)

68. *Cervus unicolor* Kerr

Family BOVIDAE

69. *Bos frontalis* Lambert

70. *Bubalus bubalis* (Linnaeus)

71. *Budorcas taxicolor* Hodgson

72. *Naemorhaedus goral* (Hardwicke)

73. *Naemorhaedus sumatraensis* (Bechstein)

Order PHOLIDOTA

Family MANIDAE

74. *Manis pentadactyla aurita* Hodgson

Order RODENTIA

Family SCURIDAE

75. *Callosciurus erythraeus intermedius* (Anderson)

76. *Callosciurus pygerythrus stevensi* (Thomas)

77. *Dremomys lokriah lokriah* (Hodgson)

78. *Dremomys pernyi* (Milne-Edwards)

79. *Ratufa bicolor gigantea* (M'Clelland)

80. *Tamiops maccllellandi* (Horsfield)

81. *Belomys pearsoni* (Gray)

*82. *Biswamoyopterus biswasi* Saha

83. *Hylopetes alboniger* (Hodgson)

84. *Petaurista petaurista* (Pallas, 1766)

Family MURIDAE

85. *Eothenomys melanogaster libonotus* Hinton

86. *Apodemus draco* (Barrett-hamilton)

87. *Berylmys bowersi* (Anderson)

88. *Chiropodomys gliroides* (Blyth)

89. *Vandeleuria oleracea dumeticola* (Hodgson)

90. *Dacnomys millardi wroughtoni* Thomas

91. *Leopoldamys edwardsi* (Thomas)

92. *Mus booduga* (Gray)

93. *Mus cookii nagarum* (Thomas)

94. *Mus musculus castaneus* Waterhouse

95. *Mus pahari pahari* Thomas

96. *Niviventer brahma* (Thomas)

97. *Niviventer fulvescens* (Gray)

98. *Niviventer niviventer* (Hodgson)

99. *Rattus nitidus* (Hodgson)

100. *Rattus rattus* (Linnaeus)

101. *Rattus sikkimensis* (Hinton)

102. *Rattus tuneniumi* Temminck

103. *Cannomys bodius* (Hodgson)

* Lone endemic species of mammal in Arunachal Pradesh.

Family HYSTRICIDAE

104. *Atherurus macrourus* (Linnaeus)105. *Hystrix brachyura subcristata* Swinhoe, 1870

SYSTEMATIC ACCOUNT

Order INSECTIVORA

Animals usually small in size. Snout pointed and projecting far beyond the lower jaw. Body covered with short closely-set fur. Eye and ears small. Limbs short and five-toed.

The insectivores is represented in Arunachal Pradesh by two families, namely, Soricidae and Talpidae.

Family SORICIDAE

Mouse-like small animals with velvety fur; muzzle elongated and narrow; eyes very small; ear-conch small; limbs short. Two genera of the family Soricidae occur in Arunachal Pradesh.

Genus *Suncus* Ehrenberg, 1832

The genus *suncus* is represented in Arunachal Pradesh by one species and two subspecies.

1. *Suncus murinus soccatus* (Hodgson, 1845)1845. *Sorex soccatus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 270.*Type locality* : Central region of Nepal.*Common name* : House Shrew.

Diagnosis : Dorsal colour uniform sorbid to brownish slaty. Fur long, usually more than 8 mm.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : Nepal, Bhutan.

Status : CAMP : LR1c (Nationally); DD (Globally).

Remarks : A very variable species with a number of genetically distinct population.

2. *Suncus murinus griffithi* (Horsfield, 1851)1851. *Sorex griffithi* Horsfield, *Cat. Mammal. Mus. E. India* Cc. : 134.*Type locality* : Assam, India.*Common name* : House Shrew.

Diagnosis : Dorsum brown with rusty wash; ventral surface slightly lighter. Fur thick and long, over 8 mm. in length.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, West Bengal, Uttar Pradesh.

Elsewhere : Bhutan.

Status : CAMP : LR1c (Nationally); DD (Globally).

Remarks : A very variable species with a number of genetically distinct population which almost behave like semispecies (Hasler *et al.* 1977).

Genus *Anourosorex* Milne-Edwards, 1872

The genus *Anourosorex* is a monotypic genus and is represented in Arunachal Pradesh by a single species.

3. *Anourosorex squamipes* Milne-Edwards, 18721872. *Anourosorex squamipes* Milne-Edwards, *Rech. Hist. Nat. Mamm.*, : 264.*Type locality* : Sichuan, China; probably Moupin.*Common name* : Szechuan Burrowing Shrew.

Diagnosis : Seminude snout; feet naked; tail small, naked and scaly.

Distribution : India : North-eastern States (including Arunachal Pradesh).

Elsewhere : Bhutan, China, Myanmar, Thailand, Vietnam.

Status : CAMP : VU (Nationally); DD (Globally).

Family TALPIDAE

Body covered with very short velvety fur; eyes minute; pinna absent; forepaws broad, with outwardly directed heavy claws; small tail, scantily haired.

The family Talpidae is represented in Arunachal Pradesh by the genus *Euroscaptor*.

Genus *Euroscaptor* Miller, 1940

The genus *Euroscaptor* is represented in Arunachal Pradesh by a species.

4. *Euroscaptor micrura* (Hodgson, 1841)

1841. *Talpa micrurus* Hodgson, *Calcutta J. nat. Hist.*, 2 : 221.

Type locality : Central and northern hills, Nepal.

Common name : Himalayan Mole.

Diagnosis : Animals with a very small tail, almost concealed by fur; colour steel black or brown; snout and feet flesh coloured.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Mizoram, Sikkim, West Bengal.

Elsewhere : Nepal, Bangladesh.

Status : Not known.

Remarks : This species was treated under the genus *Talpa* Linnaeus by Ellerman and Morrison-Socott 1951, Honacki et al. 1982 and Corbet and Hill 1992. However, Abe et al. 1991 placed it under the genus *Euroscaptor*.

Order SCANDENTIA

Squirrel-like in appearance with long snout; whiskers absent.

The order Scandentia comprises of a single family Tupaiidae.

Family TUPAIIDAE

Only one genus *Tupaia* of the family Tupaiidae occurs in Arunachal Pradesh.

Genus *Tupaia* Raffles, 1821

The genus *Tupaia* is represented in Arunachal Pradesh by a single species and subspecies.

5. *Tupaia belangeri assamensis* Wroughton, 1921

1921. *Tupaia belangeri assamensis* Wroughton, *J. Bombay nat. Hist. Soc.*, 27 : 599.

Type locality : Mokokchung, Nagaland, India.

Common name : Common Tree Shrew.

Diagnosis : Tail shorter than head and body; colour grizzled yellowish brown on the back, ventral colour yellowish-buff or orange buff; fur long, soft and thick, with long dark brown hairs.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Nagaland, Mizoram, Tripura.

Elsewhere : Bangladesh, Cambodia, China, Malaysia, Myanmar, Nepal, Thailand, Vietnam and associated Islands.

Status : CAMP : LRLC (Nationally). DD (Globally).

Remarks : Ellerman and Morrison-Scott 1951 considered *belangeri* as a subspecies of *T. glis* (Diard). However, on the basis of incompatible karyotypes, Elliot et al. 1969 and Arrighi et al. (1969), considered *belangeri* as a full species. The name was followed by Corbet and Hill 1992 and Wilson (In Wilson and Reeder 1993).

Order CHIROPTERA

Chiroptera is the only order of mammals which has wings and is capable of true flight.

Forelimbs modified into wings; wing-membrane (Patagium) supported by elongated metacarpals and phalanges (except first) and extends to idess of body and leg; an interfemoral membrane between legs and tail; all digits end in curved and pointed claw; size generally small; eyes usually small; ears moderate to large; testes abdominal, descending into temporary scrotum during reproductive phase only.

The order chiroptera is divided into two suborders, both of which are represented in Arunachal Pradesh.

Suborder MEGACHIROPTERA

Second finger bears a claw (except Eonycteris); noseleaf absent; eyes large; margin of ear forms complete ring; tragus absent; tail rod-like and short, often absent; lower incisors never more than two.

Family PTEROPODIDAE

The suborder Megachiroptera consists of the single family Pteropodidae whose characters have been enumerated above.

Seven species and subspecies belonging to six genera of the family Pteropodidae occur in Arunachal Pradesh.

Genus *Cynopterus* F. Cuvier, 1824

Two species and subspecies of the genus *Cynopterus* occur in Arunachal Pradesh.

6. *Cynopterus brachyotis* (Müller, 1838)

1838. *Pachysoma brachyotis* Müller, *Tijdschr. Nat. Gesch. Physiol.*, 5 (1) : 146 (Borneo).

Type locality : Dewei River, Indonesia.

Common name : lesser Dog-faced Fruit Bat.

Diagnosis : Medium-sized fruit bat, white margin of ear absent or very faint; forearm under 66 mm and ear under 20 mm.

Distribution : India : Arunachal Pradesh, Assam, Nagaland, Meghalaya, Bihar, Kerala, Goa, Andaman and Nicobar Islands.

Elsewhere : China, Indonesia, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam and adjacent Islands.

Status : IWPA : Schedule V, CAMP : LRLC (Nationally), DD (Globally).

Remarks : There is difference of opinions as regard the allocation of different names under this species (Corbet and Hill 1992, Wilson and Reeder 1993).

7. *Cynopterus sphinx sphinx* (Vahl, 1797)

1797. *Vespertilio sphinx* Vahl, *Skr. Nat. Selsk. Copenhagen*, 4 (1) : 123.

Type locality : Travancore (= Thiruvananthapuram), Kerala, India.

Common name : Short-nosed Fruit Bat.

Diagnosis : Medium-sized fruit bat, with white margin to ears; metacarpals and phalanges whitish; nostrils divergent with deep inter-narial groove; dorsal colour grey or greyish brown, ventrally paler; tail reduced and rod like; often with a chestnut coloured area around shoulders and throat.

Distribution : India : Throughout the Country.

Elsewhere : Bangladesh, Bhutan, Cambodia, China, Indonesia, Malaysia, Myanmar, Pakistan, Sri Lanka, Thailand, Vietnam and adjacent Islands.

Status : CAMP : LRLC (Nationally), DD (Globally).

Remarks : This species is most common frugivorous bat in India.

Genus *Megaerops* Peters, 1865

The genus *Megaerops* is represented by one species in Arunachal Pradesh.

8. *Megaerops niphanae* Yenbutra Felten, 1983

1983. *Megaerops niphanae* Yenbutra and Felten, *Senckenberg. Biol.*, 64 : 2.

Type locality : Amphoe Park Thong chai, Nakhon Ratchasima, Thailand.

Common name : Niphan's Tail-less Fruit Bat.

Diagnosis : Much like short-nosed Fruit Bat, but nostrils are more subtubular, no external tail, ears without white edges, wing membranes attached to second phalanx of first toe, colour dusky brown above, light greyish brown below.

Distribution : India : Arunachal Pradesh, Manipur, Mizoram, Nagaland, West Bengal.

Elsewhere : Thailand, Vietnam.

Status : CAMP : DD.

Remarks : Some of the earlier records of *megaerops ecaudatus* Temminck from India, Thailand and Vietnam have been referred to *Megaerops niphanae* Yenbutra & Felten by Corbet & Hill (1992).

Genus *Rousettus* Gray, 1821

Only one species and subspecies of the genus *Rousettus* occurs in Arunachal Pradesh.

9. *Rousettus leschenaulti leschenaulti*
(Desmarest, 1820)

1820. *Pteropus leschenaulti* Desmarest, *Encycl. Meth. Mamm.*, 1 : 110.

Type locality : Pondicherry, India.

Common name : Fulvous Fruit Bat.

Diagnosis : Fruit bat with forearm around 80.0 to 87.0 mm. Muzzle longish with large eyes. Tail shorter and looks rod like., colour of dorsal fur slightly brown and that of ventral shades lighter.

Distribution : India : Widely distributed in the Indian mainland including Arunachal Pradesh.

Elsewhere : Pakistan, Nepal, Bhutan, Sri Lanka, Myanmar, Thailand, Vietnam, Southern China including Tibet.

Status : CAMP : LR1c (Nationally), DD (Globally).

Remarks : Agrawal and Bhattacharyya (1977) recorded *R. amplexicaudatus* Geoffroy from Tripura on the basis of specimens collected by them. Rookmaaker and Bergmans (1981) considered the record to be more probably of *R. leschenaulti*.

Genus *Sphaerias* Miller, 1906

The genus *Sphaerias* is represented in Arunachal Pradesh by a single species.

10. *Sphaerias blanfordi* (Thomas, 1891)

1891. *Cynopterus blanfordi* Thomas, *Ann. Mus. Civ. Stor. Nat. Genova, Ser. 2*, 10 : 884, 921-922.

Type locality : Karin Hills, Myanmar.

Common name : Blanford's Fruit Bat.

Diagnosis : A small (forearm slightly above 50.0 mm) fruit bat without external tail and calcar, interial margin of ears white, dull greyish brown above, a shade paler below, interfemoral membrane covered with soft, fine, dense hairs and extends along femur and upper part of tibia, as a narrow stripe.

Distribution : India : Arunachal Pradesh, Mizoram, Sikkim, Uttar Pradesh, West Bengal.

Elsewhere : Bhutan, Nepal, Myanmar, Thailand, China.

Status : IWPA : Schedule V, CAMP : DD (Nationally and Globally).

Remarks : This species has been reported from Mizoram (Mandal *et al.* 2000).

Genus *Eonycteris* Dobson, 1873

The genus *Eonycteris* is monotypic and occurs in Arunachal Pradesh.

11. *Eonycteris spelaea* (Dobson, 1871)

1871. *Macroglossus spelaeus* Dobson, *Proc Asiatic Soc Bengal.* : 105-106.

Type locality : Moulmein Tenasserim, Myanmar

Common name : Long-tongued Fruit Bat.

Diagnosis : Very much like the Indian Fulvous Fruit Bat, but second finger lacks a claw, small reniform perianal gland present on either side of arms, fur short and scanty, back brownish, ventral surface rather greyish, adult males with yellowish red buff on neck.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Sikkim, West Bengal, Karnataka.

Elsewhere : China, Indonesia, Malaysia, Myanmar, Philippines, Sulawesi, Thailand, and many other adjacent Islands.

Status : CAMP : VU (Nationally), DD (Globally).

Remarks : Only recently this species was found to be widely distributed in the greater parts of India (Bhat *et al.* 1980, Das *et al.* 1995, Mandal *et al.* 2000).

Genus *Macroglossus* Cuvier, 1824

Only one species and subspecies of the genus *Macroglossus* occurs in Arunachal Pradesh.

12. *Macroglossus sobrinus sobrinus* Andersen, 1911

1911. *Macroglossus minimus sobrinus* Andersen, *Ann. Mag. Nat. Hist.*, 7 : 642.

Type locality : Gunong Igari, 610 m., Perak, Malaysia.

Common name : Long-tongued Fruit Bat.

Diagnosis : A small fruit bat with very long head; pelage longish and light reddish brown, chest more brown; tail rod-like and short; interfemoral membrane narrow; muzzle long and cylindrical; nostrils upward pointing and separated by an ill-defined groove; tongue quite long with feathery tip.

Distribution : India : Arunachal Pradesh, (Saha 1985, as *M. Minimus*), Meghalaya and Tripura (Das *et al.* 1995), Mizoram, (Mandal *et al.* 1997), West Bengal.

Elsewhere : Indonesia, Malaysia, Myanmar, Thailand, Vietnam and many South East Asian small Islands.

Status : CAMP : DD (Nationally and Globally).

Remarks : Ellerman and Morrison-Scot (1951) treated *sobrinus* as a subspecies of *M. minimus* (Geoffroy). However, most of the recent authors (Lekagul and McNeely 1977, Honacki *et al.* 1982, Hill 1983, Corbet and Hill 1999, Koopman in Wilson and Reeder 1993) considered the two as distinct species.

Suborder MICROCHIROPTERA

Second finger without a claw; margin of ears not forming a complete ring. Angular process of mandible long and narrow. Crown of molar teeth with transverse furrow. Bony palate not extending behind the last molars.

The suborder Microchiroptera is represented by four families, in Arunachal Pradesh.

Family EMBALLONURIDAE

Tail entirely enclosed in interfemoral membrane. The family Emballonuridae is represented in Arunachal Pradesh by one genus.

Genus *Taphozous* E. Geoffroy, 1818

The genus *Taphozous* is represented in Arunachal Pradesh by one species and subspecies.

13. *Taphozous nudiventris kachhensis* Dobson, 1872

1872. *Taphozous kachhensis* Dobson, *J. Asiat. Soc. Beng.*, 41 (Pt. 2) : 221.

Type locality : Kachh (= Kachchh district), Gujarat, India.

Common name : Naked-rumped Tomb Bat.

Diagnosis : Larger than *T. longimanus*; blackish grey in colour; gular sac absent in both sexes, its position in male is indicated by a semicircular fold of skin; muzzle and throat naked; ear papillate along the margin.

Distribution : India : Almost throughout the country from Jammu and Kashmir in the north to Kannya kumari in the south, and Punjab in the West to Arunachal Pradesh in the east.

Elsewhere : Afghanistan, Pangeladesh, Myanmar, Pakistan and also west to Israel and W. Africa.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Ellerman and Morrison-Scot (1951) considered *kachhensis* as a distinct species. Felten (1962) revised the group and concluded that *kachhensis* should be treated as a subspecies of the widely distributed species *T. nudiventris*. This view was held by most of the recent workers (Including Corbet and Hill 1986, 1992, Koopman; In Wilson & Reeder 1993).

Family MEGADERMATIDAE

Both nose leaf and tragus present. It is represented in Arunachal Pradesh by a single genus *Megaderma*.

Genus *Megaderma* E. Geoffroy, 1810

The genus *Megaderma* is represented in Arunachal Pradesh by one species and subspecies.

14. *Megaderma lyra lyra* E. Geoffroy, 1810

1810. *Megaderma lyra* Geoffroy, *Ann. Mus. Hist Nat. Paris.*, 15 : 190.

Type locality : Madras (= Chennai), Tamil Nadu, India.

Common name : Indian False Vampire.

Diagnosis : Similar to *Megaderma spasma*, but larger; forearm (60-70 mm); posterior termination of nose-leaf truncated; dorsal colour slaty grey.

Distribution : India : Throughout India including Arunachal Pradesh.

Status : CAMP : LRlc (Nationally), DD (Globally).

Remarks : Sinha (1977) after reviewing the species, concluded that the entire Indian population belonged to the nominate subspecies.

Family RHINOLOPHIDAE

A nose-leaf but no tragus present. The family Rhinolophidae is represented in Arunachal Pradesh by two genera, viz. *Rhinolophus* and *Hipposideros*.

Genus *Rhinolophus* Lacepède, 1799

The genus *Rhinolophus* is represented in Arunachal Pradesh by three species and subspecies.

**15. *Rhinolophus ferrum-equinum tragatus*
Hodgson, 1835**

1835. *Rhinolophus tragatus* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 699.

Type locality : Nepal.

Common name : Greater Horseshoe Bat.

Diagnosis : This subspecies can easily be differentiated from other subspecies by larger noseleaf and broader horseshoe; larger ear, forearm and skull.

Distribution : India : Arunachal Pradesh (Denig 680 m, Mishmi Hills, Lohit district Kurup 1968), Sikkim, Uttar Pradesh, Jammu and Kashmir.

Elsewhere : China, Iran, Nepal, Pakistan, Japan and also to W. Europe.

Status : CAMP : VU (Nationally), DD (Globally).

Remarks : Nil.

16. *Rhinolophus lepidus lepidus* Blyth, 1844

1844. *Rhinolophus lepidus* Blyth, *J. Asiat. Soc. Bengal.* 13 : 486.

Type locality : Vicinity of Calcutta, West Bengal, India.

Common name : Blyth's Horseshoe Bat.

Diagnosis : Very much similar to *Rhinolophus pusillus blythi*, but slightly larger (forearm around 40.0 mm, on average) with average longer ears and larger nose leaf.

Distribution : India : Arunachal Pradesh (Namdapha), Assam, Meghalaya, Mizoram, Nagaland, West Bengal, Uttar Pradesh, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Karnataka, Andhra Pradesh, Bihar, Delhi, Rajasthan, Kerala.

Elsewhere : Afghanistan, China, Indonesia, Myanmar, Nepal, Thailand.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Corbet and Hill (1992) treated *R. monticola* Andersen as a synonym of *R. lepidus* Blyth.

17. *Rhinolophus rouxi rouxi* Temminck, 1835

1835. *Rhinolophus rouxi* Temminck, *Monogr. Mammal.* 2 : 306.

Type locality : Pondicherry, India and Calcutta, West Bengal, India.

Common name : Peninsular Horseshoe Bat.

Diagnosis : Medium sized horseshoe bat, forearm may reach upto 55.0 mm; margins of horizontal base of sella straight; colour varies from brown to orange-yellow.

Distribution : India : Arunachal Pradesh, Mizoram, West Bengal, Uttar Pradesh, Orissa, Madhya Pradesh, Kerala, Karnataka, Pondicherry, Tamil Nadu, Himachal Pradesh, Andhra Pradesh, Goa.

Elsewhere : China, Myanmar, Nepal, Sri Lanka, Vietnam.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Lal (1983) reported a specimen of *Rhinolophus rouxi sinicus* Andersen from Arunachal Pradesh. The specimen is in fact, an immature one of the nominate subspecies.

Genus *Hipposideros* Gray 1831

The genus *Hipposideros* is represented in Arunachal Pradesh by four species and subspecies.

18. *Hipposideros cineraceus* Blyth, 1853

1853. *Hipposideros cineraceus* Blyth, *J. Asiat. Soc. Beng.*, 22 : 410.

Type locality : Near Dadan Khan, Salt Range, Punjab, Pakistan.

Common name : Least Leaf-nosed Bat.

Diagnosis : Size small, forearm below 38.0 mm. Dorsal colour dusky grey, basal three fourth of hairs greyish-white, ventral colour greyish-white.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, West Bengal, Uttar Pradesh, Haryana.

Elsewhere : Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Probably Philippines, Thailand, Vietnam.

Status : CAMP : DD (Nationally and Globally).

Remarks : Nil.

19. *Hipposideros lankadiva* Kelaart, 1850

1850. *Hipposideros lankadiva* Kelaart, *J. Sri Lanka Branch Asiat. Soc.*, 2 : 216.

Type locality : Kandy, Sri Lanka.

Common name : None.

Diagnosis : Larger bat with forearm measuring 85-94 mm bearing no frontal sac. The 'posterior nose-leaf not narrower than horseshoe. Ears acutely pointed and large. The upper margin of the nose-leaf supported by three septa and looks semicircular.

Distribution : India : Arunachal Pradesh, Meghalaya, Mizoram, Tripura, West Bengal, Orissa, Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka.

Elsewhere : Sri Lanka, Northern Myanmar.

Status : CAMP : VU (Nationally), DD (Globally).

Remarks : Nil.

20. *Hipposideros lorvatus leptophyllus* (Dobson, 1874)

1874. *Phyllorhina leptophylla* Dobson, *J. Asiat. Soc. Beng.*, 43, 2 : 234.

Type locality : Khasi Hills, Meghalaya, India.

Common name : Leaf-nosed Bat.

Diagnosis : Smaller forearm (58.0 to 65.0) and skull (18.5 to 21.5).

Distribution : India : Arunachal Pradesh (Dibang valley district), Assam, Meghalaya.

Elsewhere : Bangladesh, China, Indonesia, Malaysia, Myanmar, Thailand, Vietnam and adjacent small Islands.

Status : CAMP : DD (Nationally and Globally).

Remarks : Sinha 1999 synonymised subspecies *grandis* with *leptophyllus*.

21. *Hipposideros pomona gentilis* Andersen, 1918

1918. *Hipposideros gentilis* Andersen, *Ann. Mag. nat. Hist.* (Ser 9), 2 : 380, 381.

Type locality : Thayetmyo, Myanmar.

Common name : None.

Diagnosis : Ears large and rounded, anterior margins strongly convex, posterior margins lacking any concavity just behind the lip; nose-leaf lacks lateral supplementary leaflets; posterior nose-leaf supported by three septa.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, West Bengal, Sikkim, Uttar Pradesh.

Status : CAMP : DD (Nationally and Globally).

Remarks : Hill et al. 1986 revived the specific status of *pomona*.

Family VESPERTILIONIDAE

Bats of this family have well developed tragus; nose-leaf absent; tail long, enclosed in the interfemoral membrane from base to tip or to penultimate joint.

Five genera and seven species and subspecies of this family have been reported from Arunachal Pradesh.

Genus *Pipistrellus* Kaup, 1829

One species of the genus *Pipistrellus* is found in Arunachal Pradesh.

22. *Pipistrellus coromandra* (Gray, 1838)

1838. *Scotophilus coromandra* Gray, *Mag. Zool. Bot.*, 2 : 498.

Type locality : Pondicherry, India.

Common name : Indian Pipistrelle.

Diagnosis : Bats of smaller size with forearm measuring on average 32 mm. The colour of the

dorsal fur being blackish brown and that of ventral fur slightly paler. A small calcarial lobe is present. Tragus bluntly rounded and forward curving.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura, widely distributed in the peninsular India, Car Nicobar.

Elsewhere : Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Genus *Scotomanes* Dobson, 1875

One species of the genus *Scotomanes* is found in Arunachal Pradesh.

23. *Scotomanes ornatus* (Blyth, 1851)

1851. *Nycticejus ornatus* Blyth, *J. Asiat Soc Bengal*, 20 : 517.

Type locality : Cherrapunji, Khasi Hills, Meghalaya, India.

Common name : Harlaquin Bat.

Diagnosis : Forearm 50.0 to 62.0 mm; total length of skull 19.1 to 22.0 mm; usually a dorsal pattern of white stripes or spots; tip of tail free.

Distribution : India : Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : China, Myanmar, Thailand, Vietnam and Probably Bangladesh.

Status : CAMP : DD (Nationally and Globally).

Remarks : Thomas (1921) described the population from Meghalaya as distinct subspecies viz. *S. O. imbreensis* but Das et al. 1995 synonymised *imbreensis* with the nominate subspecies.

Genus *Scotophilus* Leach, 1821

One species of the genus *Scotophilus* is found in Arunachal Pradesh.

24. *Scotophilus heathi* (Horsfield, 1831)

1831. *Nycticejus heathi* Horsfield, *Proc. Zool. Soc. Lond.*,
1831 : 113.

Type locality : Madras (=Chennai), Tamil Nadu, India.

Common name : Greater yellow Bat.

Diagnosis : Very much similar to the Lesser Yellow Bat, but larger; ventral parts lemon-yellow to orange-yellow.

Distribution : India : Widely distributed throughout the country.

Elsewhere : Afghanistan, Bangladesh, China, Myanmar, Bhutan, Nepal, Sri Lanka, Pakistan.

Status : CAMP : LRle (Nationally), DD (Globally).

Remarks : Ellerman and Morrison-Scott (1951) recognised two subspecies viz. *S. H. heathi* and *S. H. belangeri* from Indian range. Siddiqui (1961), however, synonymised *belangeri* with nominate subspecies.

Genus *Tylonycteris* Peters, 1872

One species of the genus *Tylonycteris* is found in Arunachal Pradesh.

25. *Tylonycteris pachypus fulvida* (Blyth, 1859)

1859. *Scotophilus fulvidus* Blyth, *J. Asiat. Soc. Beng.*, 28 : 293.

Type locality : Schwegyin, Sittang River, Southeastern Myanmar.

Common name : Club-footed Bat.

Diagnosis : Colour reddish brown above and below; ear shorter, tip rounded; tragus short and rounded at tip; fleshy pads at junction of thumb and second finger, and on soles; skull dorso-ventrally flattened.

Distribution : India : Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Tripura, Sikkim, West Bengal, Andaman Islands.

Elsewhere : Bangladesh, China, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Its size is very near to *Pipistrellus mimus* but skull is much flat so that it can be easily identified from *P. mimus*.

Genus *Murina* Gray, 1842

Genus *Murinus* is represented in Arunachal Pradesh by two species and subspecies.

26. *Murina cyclotis cyclotis* Dobson, 1872

1872. *Murina cyclotis* Dobson, *Proc. Asiat. Soc. Bengal.* : 210.

Type locality : Darjeeling, West Bengal, India.

Common name : Round-eared Tube-nosed Bat.

Diagnosis : A small bat with diverging tubular rostrils opening laterally, circular ear and long tragus; dorsal colour warm rufous brown to ferruginous, ventral surface greyish white with a brownish tinge, individual hairs on both surfaces dark brown at base; forearm, tail, leg, foot and upper surface of interfemoral membrane clothed with golden brown hairs; wing from tip of outer toe.

Distribution : India : Arunachal Pradesh, Meghalaya, Mizoram, Sikkim, West Bengal, Andhra Pradesh.

Elsewhere : China, Laos, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand.

Status : CAMP : DD (Nationally and Globally).

Remarks : Within the Indian Union, *Murina cyclotis cyclotis* was known only from northeastern India. But Ghosh 1989 has recorded it from the Eastern Ghats of Andhra Pradesh, a substantial extension of range of distribution further south.

27. *Murina tubinaris* (Scully, 1881)

1881. *Harpiocephalus tubinaris* Sculley, *Proc. Zool. Soc. Lond.*, 1881 : 210.

Type locality : Gilgit, Jammu and Kashmir, India.

Common name : Scully's Tube-nosed Bat.

Diagnosis : Ear rounded, small lobe at base of anterior margin, a slight emargination in the posterior margin; dorsal colour grey, ventral colour greyish white, pelage dark brown at base; anterior upper and lower premolar reduced.

Distribution : India : Arunachal Pradesh, Mizoram, Meghalaya, Sikkim, West Bengal, Himachal Pradesh, Jammu and Kashmir.

Status : CAMP : VU (Nationally) DD (Globally).

Remarks : Ellerman and Morrison-Scott 1950 listed *tubinaris* as a tentative subspecies of *M. huttoni* but Hill 1962, 1964 has shown that *tubinaris* should be treated as a species distinct from.

Order PRIMATES

Primates, evolved from arboreal ancestors, hence retain this characteristic in prehensile hands and feet, the thumb and big toe opposable to other digits; each digit tipped with a flat nail. Other characters include an increase in the size and well developed brain.

Three families of the order Primates occur in Arunachal Pradesh.

Family LORIDAE

Forelimbs not longer than hind, tail present, second digit of hind-limb with small claw.

One genus of the family Loridae occurs in Arunachal Pradesh.

Genus *Nycticebus* Geoffroy, 1812

One species and subspecies of the genus *Nycticebus* occurs in Mizoram.

28. *Nycticebus coucang bengalensis* (Lacépède, 1800)

1800. *Loris bengalensis* Lacépède. *Seances des Ecoles normales*, 8 : 63.

Type locality : Bengal, India.

Common name : Slow loris.

Diagnosis : About the size of a half-grown cat; with short ears and stumpy tail almost hidden in thick fur, which varies in colour; brown ring round the eyes; brown streak on crown and back.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Mizoram, Tripura, West Bengal.

Elsewhere : Bangladesh, China, Malaysia, Myanmar, Philippines, Vietnam, Thailand.

Status : IWPA : Schedule I; RDB : IK; CAMP : LRnt; CITES : Appendix II.

Remarks : Nil.

Family CERCOPITHECIDAE

In Arunachal Pradesh, the family Cercopithecidae is represented by two genera. In these genera, forelimbs not longer than hind, tail present, all digits with nails.

Genus *Macaca* Lacépède, 1799

Cheek-pouch present; tail variable but generally smaller than head and body; face reddish.

Four species and subspecies of the genus *Macaca* occur in Arunachal Pradesh.

29. *Macaca assamensis assamensis* (M'Clelland, 1839)

1839. *Macaca assamensis* M'Clelland. in Horsfield. *Proc. Zool. Soc. Lond.*, 148.

Type locality : Assam, India.

Common name : Assamese Macaque.

Diagnosis : Almost like the Rhesus Macaque, but distinguished by absence of orange-red hue on loins and rump.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland, Sikkim, Tripura, West Bengal, Uttar Pradesh.

Elsewhere : Nepal to Vietnam, S. China.

Status : IWPA : Schedule II; CAMP : LRnt (Nationally), DD (Globbly); CITES : Appendix II.

Remarks : Nil.

30. *Macaca arctoides* (Geoffroy, 1831)

1831. *Macaca arctoides* Geoffroy, In Belanger (ed.) *Voy. Indes Orient. Mamm.*, 3 (Zool) : 61.

Type locality : Cochin-China (Indochina).

Common name : Stump-tailed Macaque.

Diagnosis : Tail stump-like, almost naked, not more than 50.0 mm in length; colour of body dark brown with bare red face.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Mizoram, Tripura.

Elsewhere : From Bangladesh eastwards to Vietnam, northeast to China and southeast to Malaysia.

Status : IWPA : Schedule II; RDB : VU; CAMP : LRnt (Nationally), DD (Globbly); CITES : Appendix II.

Remarks : The species *arctoides* was considered as a subspecies of *M. speciosa* (Cuvier) by Ellerman and Morrison-Scott (1951). However, Fooden 1969, 1976 considered as a junior synonym.

31. *Macaca mulatta* (Zimmermann, 1780)

1780. *Cercopithecus mulatta* Zimmermann, *Geogr. Gasch. Mensch. vierf. Thiere*, 2 : 195.

Type locality : Nepal Terai (= U.P. Terai), India.

Common name : Rhesus Macaque.

Diagnosis : Medium-sized monkey with tail about half of head and body length; hair on head lying straight back, fur on loins and rump orange coloured; face flesh coloured.

Distribution : India : Whole of North and Northeast India to south up to 15°46'N Latitude near Bay of Bengal.

Elsewhere : Nepal, Bhutan, Bangladesh, Pakistan, Afghanistan, Myanmar, China, Thailand and Vietnam.

Status : IWPA : Schedule II; CAMP : LRlc (Nationally), DD (Globbly); CITES : Appendix II.

Remarks : Nil.

32. *Macaca nemestrina* (Linnaeus, 1766)

1766. *Simia nemestrina* Linnaeus, *Syst. Nat.*, 12th ed., 1 : 35.

Type locality : Sumatra, Indonesia.

Common name : Pig-tailed Monkey.

Diagnosis : Pig-Tailed Macaque carries its Tail erect and arched.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Tripura.

Elsewhere : Bangladesh, extending eastwards to Vietnam, northeast to S.China and southeast to Malaysia and Indonesia, Laos.

Status : IWPA : Schedule II; RDB : VU; CAMP : DD (Nationally and Globbly); CITES : Appendix II.

Remarks : India was not included within the range of this species by Groves (In Wilson and Reeder 1993) and Corbet and Hill 1992. But Agrwal and Alfred (in DZSI, 1994) and Das *et al.* 1995 have recorded it from northeast India.

Genus *Trachypithecus* Reichenbach, 1862

The genus *Trachypithecus* is represented in Arunachal Pradesh by a species and subspecies.

33. *Trachypithecus pleatus pleatus* (Blyth, 1843)

1843. *Semnopithecus pleatus* Blyth, *J. Aisat. Soc. Bengal.*, 12 : 174.

Type locality : Assam, India.

Common name : Capped Langur.

Diagnosis : Slender-build monkey with a crown of erect, long hairs directed backwards from forehead; colour dark grey on back and limbs, yellowish white on cheeks and under parts.

Distribution : India : Northeastern India (including Arunachal Pradesh).

Elsewhere : Bangladesh, Myanmar, China.

Status : IWPA : Schedule I; RDB : VU, CAMP : LRnt (Nationally), DD (Globaly); CITES : Appendix I.

Remarks : Nil.

Family HYLOBATIDAE

Forelimbs much longer than hind, tail absent. The family Hylobatidae consists of the lone genus *Hylobates*. It is the only ape found in India.

Genus *Hylobates* Illiger, 1811

Only one species of the genus *Hylobates* occurs in Arunachal Pradesh

34. *Hylobates hoolock* (Harlan, 1834)

1834. *Simia hoolock* Harlan, *Trans. Ann. Philos. Soc.*, 4 : 52.

Type locality : Garo Hills, Meghalaya, India.

Common name : Hoolock Gibbon.

Diagnosis : Body devoid of a tail; head and body length about 600 mm, arms longer than the legs; males and young females black, adult females yellowish-grey; eye-brows white.

Distribution : India : North-east India, between Brahmaputra and Salween rivers of Myanmar.

Elsewhere : Bangladesh, Myanmar and China.

Status : IWPA : Schedule I; RDB : EN, CAMP : EN, CITES : Appendix I.

Remarks : Nil.

Order CARNIVORA

Six small, equal-sized incisors; a pair of large conical canines; last upper premolar and first lower molar, having sharp edged lobes, developed into carnassial (flesh-cutting) teeth.

Six families of the order carnivora occur in Arunachal Pradesh.

Family CANIDAE

Bulla much dilated, rounded, but not divided into chambers by a septum.

In Arunachal Pradesh, the family canidae is represented by three genera.

Genus *Canis* Linnaeus, 1758

The genus *canis* is represented in Arunachal Pradesh by two species.

35. *Canis aureus* Linnaeus, 1758

1758. *Canis aureus* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 40.

Type locality : "Oriente," restricted by Thomas (1911) to "Benna Mts., Laristan, Southern Persia" (Iran).

Common name : Asiatic Jackal.

Diagnosis : Smaller than the wolf; lacks the arching brows and elevated forehead. Dorsal colour typically a mixture of black and white, washed with buff about the shoulders, ears and legs.

Distribution : India : Almost throughout the country including Arunachal Pradesh.

Elsewhere : Afghanistan, Pakistan, Sri Lanka, Nepal, Bhutan, Myanmar, Bangladesh, Thailand and many other countries of Asia, Africa and Europe.

Status : IWPA : Schedule II, Part II, CAMP : LRlc (Nationally), CITES : Appendix III.

Remarks : Nil.

36. *Canis lupus* Linnaeus, 1758

1758. *Canis lupus* Linnaeus, *Syst. Nat.*, 10th ed. 1 : 39

Type locality : "Europea sylvia, etiam frigidioribus" restricted by Thomas (1911) to Sweden.

Common name : Wolf.

Diagnosis : About the size of an Alsatian dog.

Dorsal greyish fulvous or reddish, with a brownish tinge, sometimes mixed with black. Face and limbs reddish. Forehead elevated and brows arched.

Distribution : India : Practically all over the country (including Arunachal Pradesh) except extreme south.

Elsewhere : Throughout the northern hemisphere, North America south to 20°N. Oaxaca (Mexico), Europe, Asia, including the Arabian peninsula and Japan excluding Indo-China.

Status : IWP : Schedule I, Part I, RDB : VU, CITES : Appendix I, CAMP : LRnt (Nationally) DD (Globally).

Remarks : Nil.

Genus *Cuon* Hodgson, 1838

The genus *cuon* is represented in Arunachal Pradesh by a species.

37. *Cuon alpinus* (Pallas, 1811)

1811. *Cuon alpinus* Pallas, *Zoogr. Rosso-Asiat.*, 1 : 34.

Type locality : "Udskoi ostrog"; reported in Honacki *et al.*, (1982) as "U.S.S.R., Amurskaya Obl. Udskii-Ostrog."

Common name : Wild Dog.

Diagnosis : Domestic dog-like in appearance, with long, lanky body and short in legs and muzzle. Ears rounded and tail-tip bushy. Body deepened in colour.

Distribution : India : Arunachal Pradesh, Sikkim, West Bengal, Meghalaya, Nagaland, Uttar Pradesh; South of river Ganges, peninsula from coorg and Nilgiri Hills northwards to Kashmir.

Elsewhere : Bhutan, China, Indo-China, Indonesia, Korea, Malayasia, Manchuria, Mongolia, Nepal, Pakistan, Russia, Tibet.

Status : IWP : Schedule II, Part I, CITES : Appendix III; CAMP : LRnt.

Remarks : Cohen (1978) has reviewed the species (in Mammalian species).

Genus *Vulpes* Frisch, 1775

One species of the genus *Vulpes* occurs in Arunachal Pradesh.

38. *Vulpes bengalensis* (Shaw, 1800)

1800. *Canis bengalensis* Shaw, *Gen. Zool. Syst. Nat. Hist.*, 1 (2), Mammalia P : 330.

Type locality : Bengal, India.

Common name : Indian Fox.

Diagnosis : A slender-limbed animal of about 45-60 cm in head and body length. Coat colour grey; back of ears sandy brown; tail tip black.

Distribution : India : Arunachal Pradesh, occurs throughout India.

Elsewhere : Pakistan, Nepal, and Bangladesh.

Status : IWP : Schedule II, Part II, CITES : Appendix III; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Family FELIDAE

Bulla much dilated, rounded, but divided into chambers by a septum. 3-4 teeth in upper molar series of each jaw; toes 5-4; claws curved, sharp and retractile, head short and somewhat roundish, with shortened muzzle.

In Arunachal Pradesh, the family Felidae is represented by seven genera.

Genus *Catopuma* Severtzov, 1858

The genus *Catopuma* is represented in Arunachal Pradesh by a species.

39. *Catopuma temminckii* (Vigors and Horsfield, 1827)

1827. *Felis temminckii* Vigors and Horsfield. *Zool. J.*, 3 : 451.

Type locality : Sumatra, Indonesia.

Common name : Asiatic Golden Cat.

Diagnosis : A medium to large-sized cat, head and body 76-84 cm; ears black or brownish black on outside with an ill-defined pale central spot;

round dusky spots on the breast, between and behind the axils; imperfect bands on the throat, a horizontal white or buff check-stripe from below the eyes to behind the gape.

Distribution : India : Arunachal Pradesh, Assam, Mizoram, Nagaland, Tripura, West Bengal, Sikkim.

Elsewhere : Bangladesh, Cambodia, China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam.

Status : IWPA : Schedule I; CITES : Appendix I.

Remarks : Hemmer (1978) and Groves (1982a) placed in *Catopuma*. Pocock (1932a), Weigel (1961), Král and Zima (1980) and Kratochvíl (1982) placed this under.

Genus *Felis* Linnaeus, 1758

One species occurs in Arunachal Pradesh under the genus *Felis*.

40. *Felis chaus* Schreber, 1777

1777. *Felis chaus* Schreber, *Die säugethiere*, 2(13) : pl. 1101B (1777), text. 3 (24) : 417.

Type locality : Terek river, North of caucasus, Dugestan, C.I.S. Country.

Common name : Jungle Cat.

Diagnosis : Medium-sized, head and body 60-75 cm in length; tail shorter, tipped black; general colour light reddish-grey, unspotted except on lower flanks and elbow; black horizontal stripe present on inner side of fore-legs; ears reddish chestnut with rudimentary hair tuft.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Nagaland, Mizoram, Tripura, Sikkim, Uttar Pradesh, West Bengal, Sikkim, Meghalaya, Himachal Pradesh, Jammu and Kashmir, Gujarat, Madhya Pradesh, Rajasthan.

Elsewhere : Iran, Iraq, Israel, Afghanistan, Nepal, Myanmar, Sri Lanka, Syria, Thailand, Pakistan, Vietnam, Arabia, Algeria, China, Egypt.

Status : IWPA : Schedule II, Part II; CITES : Appendix II; CAMP : LRnt (Nationally), DD (Globally).

Remarks : *F. chaus* GÜldenstadt 1776 is invalid (Allen, 1920). *affinis* is the subspecies found in Arunachal Pradesh.

Genus *Prionailurus* Severtzov, 1885

The genus *Prionailurus* is represented in Arunachal Pradesh by two species.

41. *Prionailurus bengalensis* (Kerr, 1792)

1792. *Felis bengalensis* Kerr. In Linnaeus, *Anim. Kingdon*. 1 : 151.

Type locality : Bengal (= West Bengal). India.

Common name : Leopard Cat.

Diagnosis : Colour variable, pelage ornamented with blackish brown spots; back of ears black, with a whitish round spot in the centre; four longitudinal black bands run from forehead to the neck, break up into short bands or elongated spots on shoulders; tail spotted above.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Manipur, Nagaland, Mizoram, Tripura, West Bengal, Orissa, north-western and central States.

Elsewhere : Afghanistan, Pakistan, Nepal, Bangladesh, Myanmar, Cambodia, Indonesia, Malaysia, Laos, Korea, Japan, Taiwan and China.

Status : IWPA : Schedule I, Part I; RDB : VU; CITES : Appendix I; CAMP : LRnt (Nationally), DD (Globally).

Remarks : The nominate subspecies *bengalensis* is found in Arunachal Pradesh.

42. *Prionailurus viverrinus* (Bennett, 1833)

1833. *Felis viverrinus* Bennett, *Proc. Zool. Soc. London*. 68.

Type locality : Malabar coast, India.

Common name : Fishing Cat.

Diagnosis : A medium-sized cat, head and body length 66-70 cm; back of ears black, with round whitish spot in the centre; body covered with black or brown spots throughout, spots always

longer than broad; six to eight black lines run from the forehead to the nape, breaking up into shorter lines and spots on the shoulders. Several cross bands present on the forehead and throat.

Distribution : India : Arunachal Pradesh, Assam, West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Uttar Pradesh.

Elsewhere : Bangladesh, Nepal, Pakistan, Sri Lanka, Myanmar, Indonesia, Malaysia, Thailand, Vietnam, Taiwan and China.

Status : IWP : Schedule I, Part I; RDB : VU; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Genus *Neofelis* Gray, 1867

The genus *Neofelis* is represented in Arunachal Pradesh by a species.

43. *Neofelis nebulosa* (Griffith, 1821)

1821. *Felis nebulosa* Griffith, *Gen. Particular Descrip. Vert. Anim. (carn.)*, : p. 37.

Type locality : Canton, Guangzhou, Guangdong, China.

Common name : Clouded Leopard.

Diagnosis : Large-sized cat, 66.0-117.0 cm in head and body length, tail long; fur close and sleek, and with a distinct pattern of large patches placed close together and edged behind with black; ground colour grey or buff, the patches darker. Head and limbs with black spots, tail black-ringed.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Mizoram, West Bengal, Sikkim.

Elsewhere : Nepal, Bhutan, Myanmar, Thailand, Vietnam, Taiwan, Indonesia, Malaysia, Cambodia, China.

Status : IWP : Schedule I, Part I; RDB : EN; CITES : Appendix I; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Pocock (1917), Weigel (1961), Hemmer (1978) placed it under genus *Neofelis* whereas Kratochvíl (1982) and Groves (1982a) placed it under.

Genus *Pardofelis* Severtzov, 1858

The genus *Pardofelis* is represented in Arunachal Pradesh by one species.

44. *Pardofelis marmorata* (Martin, 1837)

1837. *Felis marmorata* Martin, *Proc. Zool. Soc. London*. 1836 : 108.

Type locality : Sumatra, Indonesia.

Common name : Marbled cat.

Diagnosis : A small-sized cat, head and body length 45-58 cm; body covered with irregular blotches; black spots present on outer side of limbs, upper surface of tail, and frequently on the under surface. Ears rounded.

Distribution : India : Arunachal Pradesh, Assam, Nagaland, Meghalaya, West Bengal, Sikkim.

Elsewhere : Nepal, Bhutan, Myanmar, Thailand, Vietnam, Indonesia, Malaysia, China.

Status : IWP : Schedule I, Part I; RDB : EN; CITES : Appendix I; CAMP : LRnt (Nationally), DD (Globally).

Remarks : The subspecies of this species in India is *charltoni*.

Genus *Panthera* Oken, 1816

Two species of the genus *Panthera* occur in Arunachal Pradesh.

45. *Panthera pardus* (Linnaeus, 1758)

1758. *Felis pardus* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 41.

Type locality : "Indiis", fixed by Thomas (1911) as 'Egypt.'

Common name : Leopard/Panther.

Diagnosis : A sleek short-haired animal; colour pale fulvous yellow, with clearly defined black spots in rosettes.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Mizoram, Manipur,

Tripura, West Bengal, throughout India in suitable habitats.

Elsewhere : Sri Lanka, Bangladesh, Myanmar, China.

Status : IUPA : Schedule I, Part I; RDB : VU; CITES : Appendix I; CAMP : VU (Nationally), DD (Globally).

Remarks : According to Pocock (1930a, 1930b), three subspecies of this species occur in India.

46. *Panthera tigris* (Linnaeus, 1758)

1758. *Felis tigris* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 41.

Type locality : "Asia," Thomas (1911) fixed as "Bengal." India.

Common name : Tiger.

Diagnosis : A large, heavy-bodied animal with short close hairs, colour varies from pale yellow ochre to burnt sienna, with black stripes arranged irregularly.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Tripura, Mizoram, West Bengal, throughout in suitable pockets except desert region.

Elsewhere : Bangladesh, Bhutan, Nepal, Myanmar, Indonesia, Malaysia, Thailand, Vietnam, Laos, Korea, China.

Genus *Uncia* Gray, 1854

The genus *Uncia* is represented in Arunachal Pradesh by a species.

47. *Uncia uncia* (Schreber, 1775)

1775. *Felis uncia* Schreber, *Die Säugethiere*, 2(14) : pl. 100. (1775); text, 3(22) : 386-7 (1777).

Type locality : Kopet-Dagh Mountains, adjacent to Iran.

Common name : Snow Leopard.

Diagnosis : The ground colour of its coat is soft grey paleing to pure white on the underside. The grey is sometimes tinged with buff. The spots

are unbroken and distinct on the head, nape, and lower parts of the limbs. On the body they break up into larger, paler rosettes. Except for a few black blotches the fur of the underside is pure white.

Distribution : India : Arunachal Pradesh, Himachal Pradesh, Kashmir, Uttar Pradesh.

Elsewhere : Afghanistan, Pakistan, Nepal, Bhutan, China, Mongolia.

Status : IUPA : Schedule I, Part I; RDB : EN; CITES : Appendix I; CAMP : EN (Nationally), DD (Globally).

Family HERPESTIDAE

Six teeth in molar series of each jaw (except *Prionodon*); toes usually 5-5; claws variable; head elongated; ears small and rounded, with vestigial bursa; auditory bulla somewhat pear-shaped; a well developed long tube to the auditory orifice; claws elongated, exerted, non-retractile; pre-scrotal gland absent.

The family Herpestidae is represented in Arunachal Pradesh by a single genus *Herpestes*.

Genus *Herpestes* Illiger, 1811

The genus *Herpestes* is represented in Arunachal Pradesh by two species.

48. *Herpestes urva* (Hodgson, 1836)

1836. *Gulo urva* Hodgson, *J. Asiat. Soc. Bengal*, 5 : 38

Type locality : "Central and Northern Regions." [Nepal]

Common name : Crab-eating Mongoose.

Diagnosis : A white stripe present on each side at the neck running up to shoulders; fur coarse, ragged, dusky iron-grey in colour; under fur woolly, dark brown at base, brownish yellow at tips.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Nagaland, Meghalaya, Mizoram, Tripura, West Bengal.

Elsewhere : Bangladesh, Nepal, Myanmar, Thailand, Laos, Malaysia, Vietnam, Taiwan, China.

Status : IWPA : Schedule IV; CITES : Appendix III; CAMP : VU (Nationally), DD (Globally).

Remarks : Rare.

49. *Herpestes javanicus* (E-Geoffroy Saint-Hilaire, 1818)

1818. *Ichneumon javanicus* E.Geoffroy Saint-Hilaire, *Descrip. de L'Egypte*, 2 : 138.

Type locality : Java, Indonesia.

Common name : Small Indian Mongoose.

Diagnosis : Sleek in appearance; about 25 cm in head and body length; tail shorter than head and body; fur soft, silky, olive-brown to golden in colour.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Mizoram, West Bengal, Bihar, Sikkim, Orissa, Uttar Pradesh, Madhya Pradesh, Gujarat.

Elsewhere : Nepal, Bhutan, Bangladesh, Myanmar, Thailand, Vietnam, Malaysia, Indonesia, Cambodia, Afghanistan and many other tropical regions.

Status : IWPA : Schedule IV; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

Family MUSTELIDAE

Small-sized animals, with moderately long tail; pads of digits forming a strongly curved line; two lower molars present on each side; penis with a small baculum, and prepuce close to scrotum; soles of feet completely covered by hairs; alisphenoid canal present.

The family Mustelidae is represented in Arunachal Pradesh by seven genera.

Genus *Amblonyx* Reffinesque, 1832

The genus *Amblonyx* is represented in Arunachal Pradesh by a species.

50. *Amblonyx cinereus* (Illiger, 1815)

1815. *Lutra cinereus* Illiger, *Abh. Phys. klasse k. Preuss. Akad. Wiss.*, 1804-1811, 99 (1815).

Type locality : "Batavia," Jakarta, Java, Indonesia.

Common name : Small-clawed Otter.

Diagnosis : Small-sized otter of about 60.0 cm in head and body length. Two middle toes of feet noticeably longer than others. Colour dark brown above, paler below; white underparts limited to neck and shades into brown on chest.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Mizoram, Sikkim, West Bengal, Uttar Pradesh, Himachal Pradesh, Kerala, Karnataka.

Elsewhere : Bangladesh, Myanmar, Indonesia, Indo-China, Philippines, Taiwan.

Status : CITES : Appendix II; CAMP : NE (Nationally), DD (Globally).

Remarks : Subspecies of this species is *concolor* which is found in Arunachal Pradesh.

Genus *Lutra* Brünnich, 1771

The genus *Lutra* is represented in Arunachal Pradesh by a species.

51. *Lutra lutra* (Linnaeus, 1758)

1758. *Mustela lutra* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 45.

Type locality : Upsala, Sweden.

Common name : Common Otter.

Diagnosis : Fur long and loose, hindfoot long. Frontal bones behind post-orbital processes decreasing in width up to constriction in front of the brain case.

Distribution : India : North Eastern States (including Arunachal Pradesh), West Bengal, throughout India.

Elsewhere : World wide.

Status : IWPA : Schedule I, Part II; CITES : Appendix I; CAMP : NE (Nationally), DD (Globally).

Remarks : Nil.

Genus *Melogale* I. Geoffroy Saint Hilaire, 1831

The genus *Melogale* is represented in Arunachal Pradesh by a single species.

52. *Melogale moschata* (Gray, 1831)

1831. *Helictis moschata* Gray, *Proc. Zool. Soc. London* : 94.

Type locality : Canton, Kwanglung Province, China.

Common name : Chinese Ferret Badger.

Diagnosis : Coat deep purplish grey to brown; light facial markings and under-side yellowish or buffy-white; narrow whitish stripe runs from the crown of the head down the middle of the back to belly; molar teeth small and narrow-crowned.

Distribution : India : North Eastern States (including Arunachal Pradesh).

Elsewhere : Myanmar to Taiwan, China, Laos, Vietnam.

Status : IWPA : Schedule I, Part II; CAMP : EN (Nationally), DD (Globally).

Remarks : The subspecies of this species in India is *millsi*.

Genus *Martes* Pinel, 1792

The genus *Martes* is represented in Arunachal Pradesh by a species.

53. *Martes flavigula* (Boddaert, 1785)

1785. *Mustela flavigula* Boddaert, *Elench. Anim.*, 1 : 88.

Type locality : Nepal, fixed by Pocock 1941.

Common name : Yellowo-throated Marten.

Diagnosis : Head and body length 40-63 cm, with an equally long tail. Fur black on top of head, neck, outer part of limbs and the tail; sides of neck bright creamy yellow, sharply contrasting from upper side of it.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Sikkim, West Bengal, Uttar Pradesh, Himachal Pradesh,

Jammu and Kashmir; an isolate in Karnataka, Kerala, Tamil Nadu.

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

Status : IWPA : Schedule II, Part II; CITES : Appendix III; CAMP : LRIC (Nationally), DD (Globally).

Remarks : In India, the nominate subspecies *flavigula* is found.

Genus *Arctonyx* Cuvier, 1825

The genus *Arctonyx* is represented in Arunachal Pradesh by a species.

54. *Arctonyx collaris* Cuvier, 1825

1825. *Arctonyx collaris* Cuvier, In E. Geoffroy Saint-Hilaire and F.G. Cuvier, *Hist. Nat. Mammiferes*, pt. 3,5 (51). :Bali-saur," 2 pp.

Type locality : Bhutan Duars, Eastern Himalaya.

Common name : Hog Badger.

Diagnosis : Size small, head and body length 55-70 cm, squat bear-like body, stumpy legs and long powerful claws. Snout long like that of a hog, mobile and naked towards the end.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Nagaland, Sikkim, West Bengal.

Elsewhere : Nepal, Bangladesh, Myanmar, Indonesia, Malaysia, Thailand, China and Tibet.

Status : IWPA : Schedule I, Part I; RDB : IK; CAMP : DD (Nationally), DD (Globally).

Remarks : Subspecies of this species in Arunachal Pradesh is *collaris*.

Genus *Mustela* Linnaeus, 1758

The genus *Mustela* is represented in Arunachal Pradesh by a species.

55. *Mustela strigidorsa* Gray, 1855

1855. *Mustela strigidorsa* Gray, *Proc. zool Soc. London*, 1853 : 191 (1855).

Type locality : Sikkim, India.

Common name : Black-striped Weasel.

Diagnosis : A rare animal, distinctive in the white or whitish streak along its back and belly.

Distribution : India : Northeastern States (including Arunachal Pradesh), Sikkim.

Elsewhere : Nepal, Myanmar, Thailand, Laos, China.

Status : CAMP : DD (Nationally).

Remarks : Nil.

Family URSIDAE

Legs relatively short and thick, plantigrade or semi-plantigrade; first digit of the forefoot present close to second, and not raised above the planter pad. Large-sized animals, with a short tail; pads of digits forming a weak curved line; planter pads very wide; three lower molars on each side.

Three genera of the family Ursidae occur in Arunachal Pradesh.

Genus *Ailurus* Cuvier, 1825

The genus *Ailurus* is represented in Arunachal Pradesh by one species.

56. *Ailurus fulgens* Cuvier, 1825

1825. *Ailurus fulgens* Cuvier, In E. Geoffroy Saint-Hilaire and F.G. Cuvier, *Hist Nat. Mammeferes*, pt. 3.5 (50), "Panda" 3 pp.

Type locality : "Indes orientales."

Common name : Red Panda.

Diagnosis : Rounded head, stumpy muzzle, large, pointed ears, and hairy sole characterise this animal. Dorsum bright chestnut; face and lower lip white; a red stripe runs from above the eye to the gape; tail ringed.

Distribution : India : Arunachal Pradesh, Sikkim, West Bengal.

Elsewhere : Nepal, China, Myanmar.

Status : IWPA : Schedule I, Part I; RDB : EN; CITES : Appendix I; CAMP : VU (Nationally), DD (Globally).

Remarks : This species is sometimes included in the Procyoridae because of its ringed tail, and superficially resembles of teeth and rounded skull of *procyon*, however, this species does not have the shared derived morphological characters that would place it there (Decker and Wozencraft, 1991).

Genus *Helarctos* Horsfield, 1825

The genus *Helarctos* is represented in Arunachal Pradesh by one species.

57. *Helarctos malayanus* (Raffles, 1821)

1821. *Melursus malayanus* Raffles, *Trans. Lin. Soc. London*, 13 : 254.

Type locality : Sumatra, Indonesia.

Common name : Malayan Sun Bear.

Diagnosis : About 125 cm head and body length. Coat short and close, black in colour; muzzle grey; white or yellow crescent on the chest. Claws large, white in colour.

Distribution : India : South East of Brahmaputra river in North eastern States.

Elsewhere : China, Indonesia, Laos, Malaysia, Myanmar, Taiwan, Thailand, Vietnam.

Status : IWPA : Schedule I, Part I; RDB : EN; CITES : Appendix; CAMP : DD (Nationally and Globally).

Remarks : Nil.

Genus *Ursus* Linnaeus, 1758

The genus *Ursus* is represented in Arunachal Pradesh by one species.

58. *Ursus thibetanus* Cuvier, 1823

1823. *Ursus thibetanus* Cuvier, *Rech. oss. Foss., Nouv. ed.*, 4 : 325.

Type locality : Silhet, Bangladesh.

Common name : Asiatic Black Bear.

Diagnosis : Large-sized bear, 140-190 cm in head and body length; coat short, smooth and black; claws black; a white or buff coloured V-shaped breast patch present.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Sikkim, West Bengal, Uttar Pradesh Himachal Pradesh, Jammu and Kashmir.

Elsewhere : Nepal, Bangladesh, Pakistan, Afghanistan, Myanmar, Thailand, Vietnam, Taiwan, Korea, Japan, Laos, China, Formosa, Vietnam.

Status : CITES : Appendix I; CAMP : LRlc. (Nationally) DD (Globally).

Remarks : Nil.

Family VIVERRIDAE

Four or five toes in fore-and hindfeet, not dog-like in structure; jaws and teeth not powerful; ears moderate in size, with well-developed bursa and simple supratragus, but devoid of a valvular flap over it; feet compact, with short claws; anus not enclosed in a glandular sac; no bony tube to auditory orifice.

Five genera of the family Viverridae occur in Arunachal Pradesh.

Genus *Arctictis* Temminck, 1842

The genus *Arctictis* is represented in Arunachal Pradesh by one species.

59. *Arctictis binturong* (Raffles, 1821)

1821. *Viverra binturong* Raffles, *Trans. Linn. Soc. London*, 13 : 253.

Type locality : Malacca, Malaysia.

Common name : Binturong or Bear-Cat.

Diagnosis : Its tufted ears, long shaggy coat, tail markedly thick at the base and covered with large bristling hairs, longer than those of the coat, are distinctive. Colour, very variable : mostly black but an intermingling of partly white and buff hairs may give the coat a grizzled appearance.

Distribution : India : Hills of Northeastern States including Arunachal Pradesh, Sikkim.

Elsewhere : Bangladesh, Bhutan, China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Philippines, Thailand, Vietnam.

Status : IWPA : Schedule I, Part I; RDB : EN; CITES : Appendix III; CAMP : DD (Nationally and Globally).

Remarks : Nil.

Genus *Paguma* Gray, 1831

The genus *Paguma* is represented in Arunachal Pradesh by one species.

60. *Paguma larvata* (Hamilton-Smith, 1827)

1827. *Gulo larvatus* Hamilton-Smith, In Griffith et al *Anim. Kingdom*, 2 : 281.

Type locality : Unknown.

Common name : Masked Palm Civet.

Diagnosis : Body grey through out, under parts whitish, pale broad band present beneath each ear, a narrower line down the nose, and a blotch below each eye. Tail more than two thirds the length of head and body; palate extending over 127 mm behind last upper molars.

Distribution : India : Arunachal Pradesh and other Northeastern States, West Bengal, Sikkim, Uttar Pradesh, Himachal Pradesh, Andaman Islands.

Elsewhere : Nepal, Pakistan, Myanmar, Singapore, Malaysia, Laos, Tibet, China, Cambodia, Formosa, Indonesia, Japan, Taiwan, Thailand, Vietnam.

Status : IWPA : Schedule II, Part II; CITES : Appendix III; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

Genus *Paradoxurus* Cuvier, 1821

The genus *Paradoxurus* is represented in Arunachal Pradesh by one species.

61. *Paradoxurus hermaphroditus* (Pallas, 1777)

1777. *Viverra hermaphroditus* Pallas, In Schreber, Die Säugethiere, 3 (25) : 426. (1777).

Type locality : Uncertain.

Common name : Common Palm Civet, Toddy Cat.

Diagnosis : A black or blackish-brown civet with long coarse hair. The limbs are always black or dark brown. Facial markings variable, the most usual pattern is a white patch or spot below the eye, sometimes one above it.

Distribution : India : Almost throughout the country (including Arunachal Pradesh) except desert part of Rajasthan and Gujarat.

Elsewhere : Bhutan, Nepal, Sri Lanka, Myanmar, Thailand, Philippines, Singapore, Indonesia, Malaysia, Japan, Laos, China, Cambodia, Moluccas.

Status : IWP : Schedule II, Part II; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Ali *et al.* (1988) described *P. jorandensis* from Orissa, on the basis of its light colouration. However, Das *et al.* (1993) considered the type of *P. jorandensis* as an albinistic specimen and treated *P. jorandensis* a synonym of *P. hermaphroditus*.

Genus *Viverra* Linnaeus, 1758

The genus *Viverra* is represented in Arunachal Pradesh by one species.

62. *Viverra zibetha zibetha* Linnaeus, 1758

1758. *Viverra zibetha* Linnaeus, *Syst. Nat.* 10th ed., 1 : 44. (1777).

Type locality : Bengal, India.

Common name : Large Indian Civet.

Diagnosis : Body markings indistinct and cloudy; tail with complete dark and light rings; crest of long, black, erectile hairs present on the back; anterior upper molars distinctly triangular.

Distribution : India : Arunachal Pradesh,

Assam, Meghalaya, Mizoram, Nagaland, Sikkim, West Bengal, Bihar, Madhya Pradesh.

Elsewhere : Nepal, Bangladesh, Myanmar, Malaysia, Indonesia, Thailand, Singapore, Vietnam, Laos, China, Cambodia.

Status : IWP : Schedule II, Part II; CITES : Appendix III; CAMP : VU (Nationally), DD (Globally).

Remarks : The nominate subspecies *zibetha* of the species is found in Arunachal Pradesh.

Genus *Viverricula* Hodgson, 1838

The genus *Viverricula* is represented in Arunachal Pradesh by one species.

63. *Viverricula indica indica* (Desmarest, 1817)

1817. *Viverra indica* Desmarest, *Tabl. Meth. Hist. Nat.*, In. *Nouv. Dict. Hist. Nat.*, 24 : 9. 17.

Type locality : India.

Common name : Small Indian Civet.

Diagnosis : Body pattern consists of small spots on the fore-quarters, larger spots tending to run into longitudinal lines on the flanks, and form six to eight stripes down the back. Muzzle short and weak. No dorsal crest of long hairs on the back. Claws unprotected by sheaths of skin.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Sikkim, West Bengal, Bihar, Orissa, Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Maharashtra, Karnataka, Kerala, Andhra Pradesh, Goa, Gujarat, Jammu and Kashmir, Tripura, Tamil Nadu.

Elsewhere : Bangladesh, Pakistan, Sri Lanka, Myanmar, Hong Kong, Indonesia, Malaysia, Laos, Thailand, Taiwan, Vietnam, China, Cambodia.

Status : IWP : Schedule II, Part II; CITES : Appendix III; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Order PROBOSCIDEA

Massive build, with long, flexible proboscis; generally males possess large tusks which are

nothing but enlarged incisor teeth; molars large and transversely ridged.

The order Proboscidea contains a single family Elephantidae.

Family ELEPHANTIDAE

In India, this family is represented by a single genus, viz., *Elephas*.

Genus *Elephas* Linnaeus, 1758

Only one species and subspecies of the genus *Elephas* occurs in Arunachal Pradesh.

64. *Elephas maximus indicus* G. Cuvier, 1797

1797. *Elephas indicus* G. Cuvier, *Tabl. Elem. Hist. Nat.*, : 148.

Type locality : India.

Common name : Indian Elephant.

Diagnosis : Largest of land animals of India; well-known by its trunk, at the end of which nostrils are placed; lower lip small, pointed and spout-like; body blackish grey throughout; tail thin, long with coarse bristles at end; eyes very small, ears large and flat.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Mizoram, Tripura, Bihar, West Bengal, Uttar Pradesh, Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Orissa.

Elsewhere : Bangladesh, Bhutan, Myanmar, Sri Lanka, Thailand, Cambodia, Indonesia, Laos, Malaysia, Vietnam, China, Sumatra and Borneo.

Status : IWPA : Schedule I, Part I; RDB : VU; CITES : Appendix I; CAMP : VU (Nationally), DD (Globally).

Remarks : Nil.

Order ARTIODACTYLA

Animals belonging to this order are even-toed; axis of the foot passes between third and fourth toes; toes enclosed in horny hooves of approximately equal size and gives the appearance of a single hoof, split down in the middle.

The order Artiodactyla is represented by four families in Arunachal Pradesh.

Family SUIDAE

Upper incisors present; animals devoid of horns or antlers. The family suidae is represented in Arunachal Pradesh by a single genus, species and subspecies.

65. *Sus scrofa cristatus* Wagner, 1839

1839. *Sus cristatus* Wagner, *Munch. Gelehr. Anz.*, 9 : 435.

Type locality : Probably Malabar Coast. India.

Common name : Wild Boar.

Diagnosis : 76-102 cm height at shoulder; coat coarse, a crest of black bristles from nape to back; tail long, thin, fringed at tip, barely reaching hocks; first coat of pig dark brown, striped lengthways with buff.

Distribution : India : Arunachal Pradesh, throughout India, in forested tracks.

Elsewhere : Pakistan, Sri Lanka, Nepal, Bangladesh, Myanmar, Indonesia, Malaysia, Vietnam.

Status : IWPA : Schedule III, RDB : IK; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

Family CERVIDAE

Upper incisors absent; antlers present, at least in males, antlers solid, branched, ornamented with knots and ridges and periodically shed.

Three genera of the family cervidae occur in Arunachal Pradesh.

Genus *Muntiacus* Rafinesque, 1815

The genus *Muntiacus* is represented in Arunachal Pradesh by one species and subspecies.

66. *Muntiacus muntjak vaginalis* (Boddaert, 1785)

1785. *Cervus vaginalis* Boddaert, *Elench. Anim.*, 1 : 136.

Type locality : Bengal. India.

Common name : Barking Deer.

Diagnosis : Antle small, consisting of a short brow-tine and an unbranched beam, set on bony hair-covered pedicel, extending down on each side of face as bony ridges. Coat-colour deep chestnut, becoming darker on the back; and paler and duller below.

Distribution : India : Arunachal Pradesh, Assam, Mizoram, Nagaland, Sikkim, Meghalaya, Tripura, West Bengal, Uttar Pradesh, Bihar, many other places except Jammu and Kashmir and desert region.

Elsewhere : Bangladesh, Bhutan, Nepal, Sri Lanka, Pakistan, Indonesia, Malaysia, China and Vietnam.

Status : IWPA : Schedule III; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

Genus *Axis* H. Smith, 1827

One species and subspecies of the genus *Axis* occurs in Arunachal Pradesh.

67. *Axis porcinus porcinus* (Zimmermann, 1780)

1780. *Cervus porcinus* Zimmermann, *Geogr. Gesch. Mensch. Vierf-Thiere*, 2 : 131.

Type locality : Bengal, India.

Common name : Hog-Deer.

Diagnosis : Squat, pig-like in movement, colour of body brown to dark brown with yellowish or reddish tinge. Tip of individual hairs white, giving the coat a speckled appearance. Adults not spotted with white, except sometimes in summer. Beam of antlers after giving a short browline almost straight, till it divides into a longer fore and a shorter hind tine.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Tripura, Mizoram, West Bengal, Uttar Pradesh, Punjab, Himachal Pradesh.

Elsewhere : Nepal, Pakistan, Sri Lanka, Myanmar, Thailand, Indochina.

Status : IWPA : Schedule III; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Honcki *et al.* 1982 kept this species under the genus *cervus*.

Genus *Cervus* Linnaeus, 1758

One species of the genus *Cervus* occurs in Arunachal Pradesh.

68. *Cervus unicolor* Kerr, 1792

1792. *Cervus unicolor* Kerr.. In Linnaeus, *Anim. kingdom*, : 300 2 : 131.

Type locality : Sri Lanka.

Common name : Sambar.

Diagnosis : Largest Indian deer; coat coarse and shaggy; a mane present, in stags, around neck and throat; general colour brown with yellowish or greyish tinge, venter paler; females lighter in tone.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Mizoram, West Bengal.

Elsewhere : Myanmar, Thailand, China, Malaysia, Sumatra, erstwhile Indo-China.

Status : IWPA : Schedule III; CAMP : LRlc (Nationally), DD (Globally).

Remarks : *Equinus* is the subspecies of this species.

Family BOVIDAE

Upper incisors absent; horns present, at least in males. Horns consist of a hollow outer sheath and an inner bony core, unbranched and permanent.

Four genera of the family Bovidae occur in Arunachal Pradesh.

Genus *Bos* Linnaeus, 1758

The genus *Bos* is represented by a species in Arunachal Pradesh.

69. *Bos frontalis* Lambert, 1804

1804. *Bos frontalis* Lambert. *Trans. Linn. soc. London*, 7 : 57.

Type locality : North-Eastern Chittagong, Bangladesh (domesticated stock).

Common name : Indian Bison.

Diagnosis : Height at shoulders, in males, 175-196 cm females a little smaller. A muscular ridge present on the shoulders which slopes down to the middle of the back where it ends in an abrupt dip. General colour of body coffee or reddish brown, jet black in old bulls; ashy forehead, yellowish or white stockings.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Mizoram, West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Madhya Pradesh, Goa, Bihar, Uttar Pradesh, Rajasthan.

Elsewhere : Nepal, Bangladesh, Myanmar, Thailand, Malaysia, Cambodia, Vietnam, China Tibet.

Status : IUPA : Schedule I, Part I; RDB : VU; CITES : Appendix I; CAMP : VU (Nationally), DD (Globally).

Remarks : Honacki et al. 1982 treated *Bos gaurus* as a synonym of *Bos frontalis* Lambert.

Genus *Bubalus* Smith, 1827

The genus *Bubalus* is represented in Arunachal Pradesh by a species.

70. *Bubalus bubalis* (Linnaeus, 1758)

1758. *Bos bubalis* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 72.

Type locality : Asia, Habitat in Asia, Cultus in Italia, "restricted by Thomas 1911 to Rome, Italy.

Common name : Water Buffalo.

Diagnosis : A robust animal, height at the shoulders; in males, 150-280 cm females a little shorter. Body-colour slaty black, with dirty white feet. Horns triangular in cross section and transversely ridged.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Orissa, West Bengal, Madhya Pradesh, Maharashtra.

Elsewhere : Bangladesh, Cambodia, Nepal, Thailand.

Status : IUPA : Schedule I, Part I; RDB : EN; CITES : Appendix III; CAMP : EN (Nationally).

Remarks : Nil.

Genus *Budorcas* Hodgson, 1850

The above genus is represented in Arunachal Pradesh by a species.

71. *Budorcas taxicolor* Hodgson, 1850

1850. *Budorcas taxicolor* Hodgson, *J. Asiat. Soc. Bengal*, 19 : 65.

Type locality : Mishmi Hills, Arunachal Pradesh, India.

Common name : Takin.

Diagnosis : The Takin is a clumsy heavy animal. Its most striking feature is its immense convex 'face', heavy mouth, and tremendously thick neck. The muzzle except for a bare spot at the extremity, is covered with hair. The Takin's heavy body is supported by exceptionally short, thick legs, thicker than those of the gaur.

Distribution : India : Mishmi Hills, Arunachal Pradesh.

Elsewhere : Bhutan, China, Myanmar, Tibet.

Status : CITES : Appendix II.

Remarks : Nil.

Genus *Nemorhaedus* Smith, 1827

The genus *Nemorhaedus* is represented in Arunachal Pradesh by two species.

72. *Nemorhaedus goral* (Hardwicke, 1825)

1825. *Antelope goral* Hardwicke, *Trans. Linn. Soc. London*, 14 : 518.

Type locality : Himalayas, Nepal.

Common name : Goral.

Diagnosis : Height at the shoulders 65-75 cm. Coat golden or rufous brown, speckled with black; black spinal stripe reaches to the root of tail, but indistinct on rump; tail black above. Both the sexes have conical, backwardly curved horns, 12-15 cm in length.

Distribution : India : Arunachal Pradesh, Sikkim, West Bengal, Uttar Pradesh, Jammu and Kashmir, Himachal Pradesh.

Elsewhere : Bhutan, China, Korea, Myanmar, Pakistan, Tibet.

Status : CITES : Appendix I.

Remarks : Nil.

73. *Nemorhaedus sumatraensis* (Bechstein, 1799)

1799. *Antilope sumatraensis* Bechstein. In Pennant. *Allgemeine. Ueber. Vierfuss. Thiere.* 1 : 98.

Type locality : Sumatra. Indonesia.

Common name : Serow.

Diagnosis : Males 100-110 cm height at shoulders with large head, thick neck; ears like those of donkeys. Coat coarse, grizzled black on the back, rusty red on shoulders, flank and thigh; limbs chestnut above; dirty white below.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Mizoram, West Bengal, Sikkim, Uttar Pradesh, Himachal Pradesh, Jammu and Kashmir.

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

Status : IWPA : Schedule I, part I; RDB : VU, Appendix I; CAMP : VU (Nationally), DD (Globally).

Remarks : Nil.

Order PHOLIDOTA

Elongated, tapering body; dorsal area of head, body and tail covered with large overlapping scales; ventral surface covered with coarse, bristly hairs; limbs short; toes with powerful claws; jaws devoid of teeth.

Order Pholidota consists of a single family manidae.

Family MANIDAE

The family Manidae consists of only one genus, *Manis*.

Genus *Manis* Linnaeus, 1758

One species and subspecies of the genus *Manis* occurs in Arunachal Pradesh.

74. *Manis pentadactyla aurita* Hodgson, 1836

1836. *Manis aurita* Hodgson. *J. Asiat. Soc. Beng.* 5 : 234.

Type locality : Central Nepal.

Common name : Chinese Pangolin.

Diagnosis : Body covered with 15-18 rows of longitudinal overlapping scales; dark brown in colour; bare skin of ventral surface flesh-coloured.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram, Sikkim.

Elsewhere : Nepal, Myanmar, China, Indo-China, Formosa, Taiwan.

Status : IWPA : Schedule I, Part I; RDB : IK; CITES : Appendix II; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Order RODENTIA

Rodents are worldwide in distribution. They are characterised by the presence of a pair of chiselshaped incisors in each jaw and a distinct diastema between incisors and cheekteeth. In Arunachal Pradesh, they are represented by three families, namely, sciuridae, Muridae and Hystricidae.

Family SCUIRIDAE

Skull with distinct postorbital process; premolars two on each side in upper jaw, except in the genus *Katufa*, only one in the lower.

In Arunachal Pradesh, the family Scuridae is represented by eight genera.

Genus *Callosciurus* Gray, 1867

The genus *callosciurus* is represented by two species and subspecies in Arunachal Pradesh.

75. *Callosciurus erythraeus intermedius*
(Anderson, 1879)

1879. *Sciurus gordonii* var. *intermedius* Anderson, Zool. and Anat. Res. Yunnan, 241.

Type locality : Dikrang Valley, Asam.

Common name : Pallas's Squirrel.

Diagnosis : Flying membrane (patagium) absent. Length of nasal does not exceed interorbital width of skull. Dorsal surface of body unstriped or with a faint black stripe. Frontal width clearly more than one-third of the occipitonasal length.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Mizoram, Tripura.

Elsewhere : Bhutan, China, Indo-China, Malaysia, Myanmar, Taiwan, Thailand.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : The species was revised by Moore and Tate (1965) and Chkraborty (1985).

76. *Callosciurus pygerythrus stevensi*
(Thomas, 1908)

1908. *Sciurus stevensi* Thomas, J. Bombay nat. Hist. Soc., 18, 2, 246.

Type locality : Beni-Chang, Abor-Miri Hills, northern frontier of upper Assam, 4,000 ft.

Common name : Irrawaddy Squirrel.

Diagnosis : Underparts tend to be paler, more whitish and the feet are as a rule paler.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal.

Elsewhere : Bangladesh, Bhutan, China, Indo-China, Indonesia, Laos, Myanmar, Nepal, Vietnam.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : The form *inornatus* allocated to this species by Ellerman and Morrison-Scott (1951) has been given specific rank by Corbet and Hill (1992).

Genus *Dremomys* Heude, 1898

The genus *Dremomys* is represented by two species and subspecies in Arunachal Pradesh.

77. *Dremomys lokriah lokriah* (Hodgson, 1836)

1836. *Sciurus lokriah* Hodgson, J. Asiat. Soc. Bengal, 5 : 232.

Type locality : Central and northern regions, Nepal.

Common name : Orange-bellied Himalayan squirrel.

Diagnosis : Much paler and more yellowish ventral pelage color. Lacking black middorsal stripe on the back and also the anal colour patch. Dorsally, from rostrum to tail, pelage about brownish olive. Dorsal tail hairs with two black bands, ventral ones with three.

Distribution : India : Arunachal Pradesh and all the other six Northeastern States Sikkim, West Bengal.

Elsewhere : Bhutan, Myanmar, Nepal, Tibet.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

78. *Dremomys pernyi* (Milne-Edwards, 1867)

1867. *Sciurus pernyi* Milne-Edwards, Rev Mag Zool (Paris), (Ser. 2.), 19 : 19.

Type locality : Baoxing, Sichuan, China.

Common name : Perny's Long-nosed Squirrel.

Diagnosis : This species is at once

distinguished from *lokriah* by its lack of yellow or orange underpart, and from *rufigenis* by its lack of red coloration on lower surface of tail and lack of red checks.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Nagaland.

Elsewhere : China, Myanmar, Vietnam.

Status : Not known.

Remarks : Nil.

Genus *Ratufa* Gray, 1867

The genus *Ratufa* is represented by one species and subspecies in Arunachal Pradesh.

79. *Ratufa bicolor gigantea* (M'Clelland, 1839)

1839. *Sciurus giganteus* M'Clelland, *Proc. zool. Soc. Lond.*, : 150.

Type locality : Assam, India.

Common name : Malayan Giant Squirrel.

Diagnosis : A large diurnal squirrel. Dorsum varies from brown to black, venter buff.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura.

Elsewhere : Bhutan, Cambodia, China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Tibet, Vietnam.

Status : IWPA : Schedule II, Part II; CITES : Appendix II; CAMP : VU (Nationally), DD (Globally).

Remarks : Lives in high trees in dense forests, and never comes to the ground.

Genus *Tamiops* Allen, 1906

The genus *Tamiops* is represented in Arunachal Pradesh by a single species.

80. *Tamiops macclellandi* (Horsfield, 1840)

1840. *Sciurus macclellandi* Horsfield, *Proc. zool. Soc. London*, 1839 : 152 (1840).

Type locality : Assam, India.

Common name : Himalayan Striped Squirrel.

Diagnosis : Dorsal surface of body varies from greyish to brownish and striped, median stripe being black; ventral surface greyish white; ear tufts black, with conspicuous white tip.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland, Sikkim.

Elsewhere : Bhutan, China, Cambodia, Indo-China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam.

Status : CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

Genus *Belomys* Thomas, 1908

One species of the genus *Belomys* occurs in Arunachal Pradesh is monotypic genus.

81. *Belomys pearsoni* (Gray, 1842)

1842. *Sciuropterus pearsoni* Gray, *Ann. Mag. nat. Hist.* (Ser. 1), 10 : 263.

Type locality : Darjeeling, West Bengal, India.

Common name : Hairy-footed Flying Squirrel.

Diagnosis : A small-sized squirrel, head and body length 20 cm; fur rufous brown, with pale tips on the upper surface of body, and fulvous white on the undersurface; a pencil of hair, exceeding the ear length, present on the base of ear-conch.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland, Sikkim, West Bengal.

Elsewhere : Bhutan, China, Indo-China, Myanmar, Taiwan.

Status : CAMP : DD (Nationally and Globally).

Remarks : Corbet and Hill 1992 synonymised monotypic genus *Belomys* with *Tragopterus*.

Genus *Biswamoyopterus* Saha, 1981

The genus *Biswamoyopterus* is represented by a single species in Arunachal Pradesh.

82. *Biswamoyopterus biswasi* Saha, 1981

1981. *Biswamoyopterus biswasi* Saha, *Bull. Zool. Surv. India*, 4 : 331.

Type locality : Namdhapa, Tirap District, Arunachal Pradesh, India.

Common name : Namdhapa Flying Squirrel.

Diagnosis : It has the unique feature of the incisors being white and not red as in all other flying squirrels. The presence of ear tufts and the last upper premolar being larger than first upper molar are similar to those in *Belomys* Thomas, 1908 and *Trogopterus* Heude, 1898.

Distribution : India : Known only from type locality, Western slope, Pataki Range, Namdhapa, Arunachal Pradesh.

Status : CAMP : CR.

Remarks : This species is known only by the holotype. The genus and the species are newly described taxa by saha (1982).

Genus *Hylopetes* Thomas, 1908

The genus *Hylopetes* is represented in Arunachal Pradesh by a single species, namely, *H. alboniger*.

83. *Hylopetes alboniger* (Hodgson, 1836)

1836. *Sciuropterus alboniger* Hodgson, *J. Asiat. Soc. Bengal*, 5 : 231.

Type locality : Central and northern region of Nepal.

Common name : Particoloured Flying Squirrel.

Diagnosis : Colour above varying from greyish to reddish brown; white or light patches present in the region of shoulder; under surface greyish, but throat, and sometime chest, tends to be whitish. Occipitonasal length over 45 mm.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : China, Indo-China, Myanmar.

Status : CAMP : VU (Nationally), DD (Globally).

Remarks : Nil.

Genus *Petaurista* Link, 1795

The genus *Petaurista* is represented in Arunachal Pradesh by a single species.

84. *Petaurista petaurista* (Pallas, 1766)

1766. *Sciurus petaurista* Pallas, *Misc. Zool.* : 54.

Type locality : Preanger Regencies, Western Java, Indonesia.

Common name : Red Giant Flying Squirrel.

Diagnosis : Large flying squirrels, without the colour peculiarities of *P. alborufus* and *P. magnificus*, and always larger than any race of *P. elegans*.

Distribution : India : Arunachal Pradesh, Assam, Nagaland, Bihar, Andhra Pradesh, Uttar Pradesh, Himachal Pradesh, Madhya Pradesh, Maharashtra, Jammu and Kashmir, Gujarat, Karnataka, Kerala, Punjab, Tamil Nadu, Peninsular India.

Elsewhere : Afghanistan, China, Indo-China, Indonesia, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand.

Status : Not Known.

Remarks : Reviewed by Corbet and Hill 1992, who recognised the subspecies *philippensis* as distinct species.

Family MURIDAE

Family Muridae is characterized by the presence of three pairs of molars in each jaw. The premolar and canine are absent. The molar teeth may be cuspidate, laminate, prismatic or flat crowned in surface pattern.

Six subfamilies of the family Muridae occur in India, and three, namely, Arvicolinae, Murinae and Rhizomyinae occur in Arunachal Pradesh.

Subfamily ARVICOLINAE

The subfamily Arvicolinae (earlier known as Microtinae) consists of voles and lemmings; the latter, however, are not found within the Indian limits. Voles are fossorial in habit and denizen at high elevation in the Himalaya. They are characterised by soft, velvety fur, a short tail, measuring less than one-half of head and body length and rootless, prismatic, cheek-teeth.

In Arunachal Pradesh, this subfamily is represented by a species.

Genus *Eothenomys* Miller, 1896

The genus *Eothenomys* is represented in Arunachal Pradesh by a species & subspecies.

85. *Eothenomys melanogaster libonotus* Hinton, 1923

1923. *Eothenomys melanogaster libonotus* Hinton. *Ann. Mag. nat. Hist.*, [9], 11 : 151.

Type locality : Dreyi, Mishmi Hills, Arunachal Pradesh, India.

Common name : Pere David's vole.

Diagnosis : A dark, thick-furred vole, having a moderately haired tail, measuring 30-50% of head and body length. Body clove-brown with golden hair-tips above, and a little lighter below. Tail and hindfoot dark. Mammae 2 pairs.

Distribution : India : Arunachal Pradesh (Mishmi Hills).

Elsewhere : China, Myanmar, Taiwan, Thailand.

Status : IWPA : Schedule V; CAMP : DD (Nationally and Globally).

Remarks : Musser and Carleton (In Wilson and Reeder, 1993) did not include India within the scope of this species. However, Corbet and Hill 1992 on the basis of report of Hinton 1923, kept Arunachal Pradesh within its range.

Subfamily MURINAE

The subfamily Murinae is characterised by the upper molars being laminate, the laminae pressed

close together, and the cusps, when present, are arranged in three longitudinal rows. The cheek-teeth are rooted and 3/3 in number.

Genus *Apodemus* Kaup, 1829

The genus *Apodemus* is represented in Arunachal Pradesh by a species.

86. *Apodemus draco* (Barrett-Hamilton, 1900)

1900. *Mus sylvaticus draco* Barrett-Hamilton, *Proc. zool. Soc. London*, 1900. 418.

Type locality : Kuatum, N.W. Fujian, China.

Common name : None.

Diagnosis : A small mouse, having a long tail, more than 110% of head and body length. Body blackish brown above, silvery grey on the undersurface; tail bicoloured, nearly black above and paler below; mammae 4 pairs (Corbet and Hill 1992).

Distribution : India : Arunachal Pradesh (Mishmi Hills).

Elsewhere : China, Myanmar.

Status : Not known.

Remarks : Nil.

Genus *Berylmys* Ellerman, 1947

The genus *Berylmys* is represented in Arunachal Pradesh by a species.

87. *Berylmys bowersi* (Anderson, 1879)

1879. *Mus bowersi* Anderson, *Anat. Zool. Res. Yunnan*, : 304.

Type locality : Hotha 1372 m, kakhyen Hills, Yunnan Province, China.

Common name : Bower's Rat.

Diagnosis : A large-sized rat, having the tail slightly longer than head and body length. Body dark brown, to brownish grey above and white below; tail brown, its distal one fifth portion white all round; hindfoot brown, toes white. Mammae 4 pairs.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland.

Elsewhere : China, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam.

Status : IWPA : Schedule V; CAMP : EN (Nationally), DD (Globally).

Remarks : Nocturnal and fossorial. Commonly found in primary forest and in the highlands above 600 m altitude.

Genus *Chiropodomys* Peters, 1869

One species of the genus *Chiropodomys* present in Arunachal Pradesh.

88. *Chiropodomys gliroides* (Blyth, 1856)

1856. *Mus gliroides* Blyth, *J. Asiat. Soc. Bengal*, **24** : 721.

Type locality : Cherrapunji, Khasi Hills, Meghalaya; India.

Common name : Pencil-tailed Tree Mouse.

Diagnosis : An arboreal mouse, with head and body length usually less than 100 mm; tail hairy tufted terminally and much longer than head and body length; hallux clawless, and broadened at tip; fifth toe clawed; ears round, thin, scantily haired and brown in colour. Pelage thick, soft and dense. Body pale chestnut or reddish brown above, white below; tail unicoloured, greyish to dark brown; hind-foot whitish. Mammary 2 pairs.

Distribution : India : Arunachal Pradesh, Meghalaya, and Manipur.

Elsewhere : China, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam.

Status : IWPA : Schedule V; CAMP : VU (Nationally), DD (Globally).

Remarks : Out of five subspecies, only the nominate subspecies occurs in India (Musser, 1979).

Genus *Vandeleuria* Gray, 1845

This genus is represented in Arunachal Pradesh by a single species and subspecies.

89. *Vandeleuria oleracea dumeticola* (Hodgson, 1845)

1845. *Mus dumeticola* Hodgson, *Ann. Mag. nat. Hist.*, [1] **15** : 268.

Type locality : Nepal.

Common name : Indian Long-tailed tree Mouse.

Diagnosis : A small arboreal mouse, head and body length less than 100 mm, with tail much longer, about one and a half times of head and body; hallux and fifth toe clawless and provided with short nails; fifth toe appears to be opposable. Dorsum bright russet; tail unicoloured and dark; venter white; hind-foot pale. Mammary 4 pairs.

Distribution : India : Throughout India in suitable habitats.

Elsewhere : Bhutan, China, Indo-China, Indonesia, Myanmar, Nepal, Thailand, Sri Lanka.

Status : IWPA : Schedule V; CAMP : LRLc (Nationally), DD (Globally).

Remarks : Agrawal 2000 on the basis of examination of further material recognised only two subspecies namely *dumeticola* and *oleracea*.

Genus *Dacnomys* Thomas, 1916

The genus *Dacnomys* is represented in Arunachal Pradesh by a species and subspecies.

90. *Dacnomys millardi wroughtoni* Thomas, 1922

1922. *Dacnomys wroughtoni* Thomas, *J. Bombay nat. Hist. Soc.*, **28** : 430.

Type locality : Dreyi, Mishmi Hills, Arunachal Pradesh, India.

Common name : Millard's Rat.

Diagnosis : A large, heavily built rat, having the tail longer than head and body. Dorsum dark grey to brown, flecked with buff, venter silvery grey to greyish white; tail brown and unicoloured; hindfoot brown, lighter terminally. Mammary 4 pairs.

Distribution : India : Arunachal Pradesh, Assam, Nagaland, West Bengal.

Elsewhere : China, Laos, Nepal.

Status : IWP : Schedule V; CAMP : VU (Nationally), DD (Globally).

Remarks : Two subspecies occur in India.

Genus *Leopoldamys* Ellerman, 1947

The genus *Leopoldamys* is represented in India by a species only.

91. *Leopoldamys edwardsi* (Thomas, 1882)

1882. *Mus edwardsi* Thomas, *Proc. zool. Soc. Lond.*, 587.

Type locality : Mountains of Western Fujian (Probably Kuatun), China.

Common name : Edward's Rat.

Diagnosis : A large rat, having a long tail; ears large, more than one-tenth of head and body length. Fur short and spiny. Body colour brown above, slightly darker in the middle; undersurface white; tail bicoloured, dark brown above, greyish to whitish below; hind foot pale brown, with white toes. Mammary 4 pairs.

Distribution : India : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : China, Indonesia, Myanmar, Laos, Malaysia, Thailand, Vietnam.

Status : IWP : Schedule V; CAMP : DD (Nationally and Globally).

Remarks : The species *L. sabanus* reported from Meghalaya is a misidentification of *L. edwardsi*, as such *L. sabanus* does not occur in India (Musser, 1981).

Genus *Mus* Linnaeus, 1758

The genus *Mus* is represented in Arunachal Pradesh by four species and subspecies.

92. *Mus booduga* (Gray, 1837)

1837. *Leggada booduga* Gray, *Charlesworth's Mag. Nat. Hist.*, 1 : 586.

Type locality : South Mahratta, India.

Common name : Common Indian Field Mouse.

Diagnosis : A small, soft-furred mouse, having a bicoloured tail (dark above and paler below), equal to or shorter than head and body length. Dorsum varies from light (sandy or greyish) to dark reddish or rusty brown; venter perfectly white.

Distribution : India : Throughout India.

Elsewhere : Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka.

Status : IWP : Schedule V; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

93. *Mus cookii nagarum* (Thomas, 1921)

1921. *Leggada nagarum* Thomas, *J. Bombay nat. Hist. Soc.*, 27 : 597.

Type locality : Golaghat, Assam, India.

Common name : Ryley's Spiny Mouse.

Diagnosis : Essentially like *Mus cervicolor* but differs from it, on an average, larger size (head and length 70-100 mm), bristly fur and opisthodont or orthodont upper incisors; tail generally smaller than head and body. Body light brown above, grey on the undersurface; tail bicoloured, dark above, paler below; hindfoot whitish. Mammary 5 pairs.

Distribution : India : Arunachal Pradesh (Mishmi Hills), Assam, Meghalaya, Manipur, Nagaland, West Bengal, Maharashtra, Karnataka, Kerala and Tamil Nadu (Ellerman, 1961; Marshall, 1977).

Status : IWP : Schedule V; CAMP : LRnt (Nationally), DD (Globally).

Remarks : Nil.

94. *Mus musculus castaneus* Waterhouse, 1843

1843. *Mus castaneus* Waterhouse, *Ann. Mag. nat. Hist.*, [1] 12 : 134.

Type locality : Philippines.

Common name : House Mouse.

Diagnosis : A small mouse (head and body 52-116 mm in length), having tail a little longer than head and body length. Dorsum sandy brown to dark brown, and venter white to ochraceous brown; tail faintly bicoloured (dark above and white below); tail wholly dark and hindfoot cinnamon with white toes. Mammary 5 pairs.

Distribution : India : Throughout India. Also reported from Nepal, Sri Lanka, China (Yunnan) and SE Asia.

Status : IUPA : Schedule V; CAMP : LRlc (Nationally), DD (Globally).

Remarks : An indoor subspecies.

95. *Mus pahari pahari* Thomas, 1916

1916. *Mus pahari* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 414.

Type locality : Batasia (c. 1830 m), Darjeeling, West Bengal, India.

Common name : Sikkim Mouse.

Diagnosis : A medium-sized mouse, generally less than 100 mm in head and body length and tail slightly longer or subequal to that. Fur tends to be bristly. Body greyish to dark brown above, light grey on the undersurface; tail bicoloured, dark grey above and paler below; hindfoot greyish white. Mammary 4 or 5 pairs.

Distribution : India : Arunachal Pradesh, Assam, Nagaland, Meghalaya, Mizoram, Sikkim, West Bengal.

Elsewhere : Bhutan, China, Laos, Myanmar, Thailand, Vietnam.

Status : IUPA : Schedule V; CAMP : DD (Nationally & Globally).

Remarks : Nil.

Genus *Niviventer* Marshall, 1976

Three species and subspecies of this genus occur in Arunachal Pradesh.

96. *Niviventer brahma* (Thomas, 1914)

1914. *Epimys brahma* Thomas, *J. Bombay nat. Hist. Soc.*, 23(2) : 232.

Type locality : Anzong Valley in Mishmi Hills (1815 m), Arunachal Pradesh, India.

Common name : Thomas' Chestnut Rat.

Diagnosis : Essentially like *Niviventer fulvescens* in size appearance, but differs from it in having the pelage of body soft, dense and long (c 15 mm), dorsum orange brown and venter greyish (basal half of hairs grey and apical half white), tail longer, hairy, penicillate and poorly bicoloured (dark above and greyish below). Mammary 3 pairs.

Distribution : India : Arunachal Pradesh (Mishmi Hills, Anzong Valley c 1815 m), Assam.

Elsewhere : Myanmar.

Status : IUPA : Schedule V; CAMP : EN (Nationally), DD (Globally).

Remarks : Ellerman (1961) treated *Epimys brahma* as a subspecies of *Rattus fulvescens*, but Musser (1970) resuscitated it as a full species under the genus *Niviventer*, and considered it more near to *N. eha* than to *N. fulvescens*.

97. *Niviventer fulvescens* (Gray, 1847)

1847. *Mus fulvescens* Gray, *Cat. Hodgson Coll. Br. Mus.*, P : 18.

Type locality : Nepal.

Common name : Himalayan Chestnut Rat.

Diagnosis : Essentially like *Niviventer niviventer* in size and appearance, but differs in coat colour; dorsum fulvous to reddish brown (throughout the year) as against dark grey in *niviventer*; venter white; hindfoot flesh-coloured, with white toes; tail generally bicoloured (dark above and pale below), sometimes unicoloured in specimens from Sikkim & West Bengal. Pelage spiny or soft. There is a tendency in the tail being longer in *fulvescens* than in *niviventer*. Mammary 4 pairs.

Distribution : India : Arunachal Pradesh,

Assam, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh, Myanmar, China, Indonesia, Laos, Malaysia, Nepal, Thailand, Vietnam.

Status : IWPA : Schedule V; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

98. *Niviventer niviventer* (Hodgson, 1838)

1838. *Mus niviventer* Hodgson, *J. Asiat. Soc. Bengal*, 5 : 234.

Type locality : Kathmandu, Nepal.

Common name : Himalayan White-bellied Rat.

Diagnosis : A small to medium-sized rat, having a moderately long tail (mean 126% of head and body length), distinctly bicoloured, dark above and whitish below; sometimes distal one-fourth portion unpigmented all round. Pelage on dorsum spiny or soft. Coat colour dark grey above, white below, sharply demarcated on sides; hindfoot brownish to whitish, with toes white. Mammae 4 pairs.

Distribution : India : Arunachal Pradesh, Assam, Himachal Pradesh, Meghalaya, Manipur, Nagaland, Sikkim, Uttar Pradesh, West Bengal.

Elsewhere : China, Formosa, Indo-China, Indonesia, Malaysia, Myanmar, Nepal, Pakistan.

Status : IWPA : Schedule V; CAMP : DD (Nationally and Globally).

Remarks : The nominate subspecies is found in Arunachal Pradesh (Mishmi Hills).

Genus *Rattus* Fischer, 1803

Four species and subspecies of this genus occur in Arunachal Pradesh.

99. *Rattus nitidus* (Hodgson, 1845)

1845. *Mus nitidus* Hodgson, *Ann. Mag. nat. Hist.*, (Ser.1), 15 : 267.

Type locality : Nepal.

Common name : Himalayan Rat.

Diagnosis : A dusky-brown, soft-furred rat, wherein long hair piles almost wanting; undersurface of body silvery to dark grey, with or without a rusty tinge; tail wholly dark, longer shorter than head and body length; hind-foot whitish. Mammae 6 pairs.

Distribution : India : Arunachal Pradesh (Namdapha, Mishmi Hills), Assam, Manipur, Meghalaya, Mizoram, Tripura, West Bengal, Sikkim, Uttar Pradesh.

Elsewhere : Bangladesh, Bhutan, China, Laos, Myanmar, Nepal, Palau Islands, Philippines, Seram Islands in the Moluccas, New Guinea, Thailand, Vietnam, Vogelkop Peninsula of Irian Jaya.

Status : IWPA : Schedule V; CAMP : DD (Nationally and Globally).

Remarks : Agrawal (2000) has confirmed that there is no clear cut difference between *R. n. nitidus* and *R. n. obsoletus* either in colour of the undersurface of body or in the length of tail. Hence, the subspecies *R. nitidus obsoletus* is being treated here as a synonym of *R. nitidus nitidus*.

100. *Rattus rattus* (Linnaeus, 1758)

1758. *Mus rattus* Linnaeus, *Syst. nat.*, 10th ed., 1 : 61.

Type locality : Uppsala, Uppsala County, Sweden.

Common name : Common House Rat.

Diagnosis : A medium-sized rat, having a completely unicoloured tail, generally longer than head and body length. Fur short and harsh, with many soft flattened spines in forms from the plains, and soft without spines at least in winter in forms from the montane habitats. Dorsum in various shades of brown; venter of two colours (i) greyish, tipped with buff (indoor forms) and (ii) white or creamish (outdoor forms). Mammae generally 5 pairs.

Distribution : India : A cosmopolitan species, occurring practically throughout India, both in the wild and commensal state.

Elsewhere : Introduced world wide in the tropics and temperate zones.

Status : IWPA : Schedule V; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Nil.

101. *Rattus sikkimensis* Hinton, 1919

1919. *Rattus sikkimensis* Hinton, *J. Bombay. nat. Hist. Soc.*, 26 : 394.

Type locality : Peshok, Darjeeling, West Bengal, India.

Common name : Sikkim Rat.

Diagnosis : Similar to *Rattus rattus* but having longer black hair in the mid-dorsal line of body, ventrum always pure white, mammae 6 pairs, 3 pairs of thoracic teats equally spaced. In addition, maxillary toothrows are longer than tympanic bulla length in *R. sikkimensis*.

Distribution : India : Arunachal Pradesh, Nagaland, Meghalaya, Manipur, West Bengal, Sikkim.

Elsewhere : Bhutan, Nepal, Myanmar, China, Cambodia, Laos, Hong Kong, Thailand, Vietnam.

Status : IWPA : Schedule V; CAMP : DD (Nationally and Globally).

Remarks : Hinton 1919 described the subspecies *R. rattus sikkimensis*, which was later synonymised with *R. rattus brunneusculus* by Ellerman 1961. Musser and Heaney 1985 have considered *R. rattus sikkimensis* as a separate species distinct from *Rattus rattus*. Agrawal (2000) observed that the differences between *Rattus sikkimensis* and *Rattus rattus* do not stand in collections present in ZSI especially when compared with *R. r. brunneusculus* or *R. r. gangutrianus*.

102. *Rattus tanezumi* Temminck, 1844

1844. *Rattus tanezumi* Temminck, In Siebold, Temminck, and Schlegel, *Fauna Japonica, Arnz et socil, Lugduni Batavorum*, : 15.

Type locality : Possibly near Nagasaki on Kyushu Islands, Japan.

Common name : None.

Diagnosis : It is presumed from the inclusion of Indian forms to it, that it is a white bellied rat.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Sikkim, West Bengal, Andhra Pradesh, Kerala, Karnataka and Andaman and Nicobar Islands.

Elsewhere : Afghanistan, Bhutan, China, Indo-China, Japan, Korea, Malaysia, Moluccas, Micronesia Islands of Eniwetok, Nepal, New Guinea, Nusa Tenggara, Taiwan.

Status : Not known.

Remarks : Wilson & Reeder (1993) mentioned the name of this species, where they synonymized many species and subspecies of India to it (*andamanensis*, *bhotia*, *brevicaudus*, *bullocki*, *burrulus*, *holchu*, *khyensis*, *tistae*, and many others). Agrawal (2000) did not mention any subspecies of the species *Rattus rattus*. At present, it is better to keep this species in this list.

Subfamily RHIZOMYINAE

This subfamily consists of bamboo-rats. These are heavily built rats, provided with strong claws in the limbs for digging, highly fossorial and prefer hilly terrain.

In India, two genera of this subfamily are *Rhizomys* and *Cannomys*. Only, the genus *Cannomys* is represented in Arunachal Pradesh by a species.

Genus *Cannomys* Thomas, 1915

103. *Cannomys badius* (Hodgson, 1841)

1841. *Rhizomys badius* Hodgson, *Calcutta J Nat Hist.* 2 : 60.

Type locality : Nepal.

Common name : Bay Bamboo Rat.

Diagnosis : A heavily built rat, having a short tail (less than 40% of head and body), scarcely covered with hairs; ears small, remain hidden in the fur; hindfoot powerfully clawed; soles of hindfoot smooth. Body chestnut bay or ashy brown with a rusty tinge above and ashy on the undersurface; tail unicoloured.

Distribution : India : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : Bangladesh, China, Cambodia, Myanmar, Nepal, Thailand.

Status : IWPA : Schedule V; CAMP : LRlc (Nationally), DD (Globally).

Remarks : Ellerman 1961 maintained three subspecies of *Cannomys badius*, namely, *badius*, *castaneus* and *pater*. However, Agrawal 2000 has treated all the three subspecies as synonym of the nominate subspecies.

Family HYSTRICIDAE

Family Hystricidae consists of porcupines. These are characterised by their fur being modified into true quills or spine. Cheekteeth 4/4 in number and flat-crowned.

Two genera, *Atherurus* and *Hystrix* are found in Arunachal Pradesh.

Genus *Atherurus* F. Cuvier, 1829

The genus *Atherurus* is represented in Arunachal Pradesh by a species.

104. *Atherurus macrourus* (Linnaeus, 1758)

1758. *Hystrix macrourus* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 57.

Type locality : Malacca, Malaysia.

Common name : Brush-tailed Porcupine.

Diagnosis : Smaller in size as compared to the genus head and body length less than 500 mm, and the tail ranging from one-third to one-half of that; no crest on head; neck, shoulders, and undersurface of body covered with soft flattened spines; back covered with rigid spines, those on lumber region longer and mixed with a few long white bristles; tail bears scales, with short spiny bristles in between, ending in a cluster of alternately expanded and contracted papery hairs. Mammary 3 pairs.

Distribution : India : Arunachal Pradesh (Sanglang district) and Meghalaya.

Elsewhere : China, Laos, Malaysia, Myanmar, Thailand, Vietnam.

Status : IWPA : Schedule II; CAMP : EN (Nationally), DD (Globally).

Remarks : Agrawal 2000 synonymised the subspecies *assamensis* with the nominate subspecies by examining body and skull measurements and colour.

Genus *Hystrix* Linnaeus, 1758

The genus *Hystrix* is represented in Arunachal Pradesh by a single species and subspecies.

105. *Hystrix brachyura subcristata* Swinhoe, 1870

1870. *Hystrix subcristata* Swinhoe, *Proc. Zool. Soc. Lond.*, 638.

Type locality : Fujian, China.

Common name : Himalayan crestless Porcupine.

Diagnosis : Similar to *Hytris indica* in size etc., but can readily be distinguished by the crest of hairs on the crown being poorly developed, quills on the back of body having one dark ring, being in the majority white terminally and basally, but in some white on base and dark at tip. Anterior end of body covered with flat flexible spines and posterior with quills; ventral surface covered with coarse, flat hairs.

Distribution : India : Arunachal Pradesh (Sanglang district), Nagaland, Meghalaya, Manipur, Mizoram.

Elsewhere : Myanmar, China, Thailand, Laos and Vietnam.

Status : CAMP : VU (Nationally), DD (Globally).

Remarks : Lekagul and McNeely 1977 though maintained *hodgsoni* as a species distinct from *brachyura*, yet Van Weers 1979, however kept *Hystrix hodgsoni* under *Hystrix brachyura*.

SUMMARY

An account of the mammalian fauna of Arunachal Pradesh, based mainly on the old and recent collections present in the Zoological Survey

of India as well as those recorded in the literature, is provided. Altogether 105 species and subspecies belonging to 58 genera, 25 families and 9 orders have been reported.

Besides systematic account, first reference, type locality, common name, diagnosis, distribution (India and Elsewhere), status, Remarks of each species has been provided.

The taxon like, *Atherurus macrourus* (Linnaeus), *Chiropodomys gliroides* (Blyth), *Leopoldamys edwardi* (Thomas), *Eothenomys melanogaster libonotus* Hinton are all new records from Arunachal Pradesh (Saha, 1985). And of course, the discovery of the new genus and new species of a Flying Squirrel, namely, *Biswamoyopterus biswasi* Saha is unique. This Flying Squirrel is the only endemic species of India in Arunachal Pradesh among its 105 species and subspecies of mammals.

Two annexures has been provided where order, family, genera, species, endemic species of Arunachal Pradesh and India were dealt with.

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REFERENCES

- AGRAWAL, V.C. 1980. Murids of north-eastern India. *Proc. Symp. Problems of Rodents*, Shillong, : 1-22.
- AGRAWAL, V.C. 2000. Taxonomic studies on Indian Muridae and Hystricidae (Mammalia : Rodentia). *Rec. zool. Surv. India, Occ. Paper No. 180* : 1-177.
- AGRAWAL, V.C. and BHATTACHARYA, T.P. 1977. Report on a collection of mammals from Tripura. *Rec. zool. Surv. India*, 73 : 135-157.
- AGRAWAL, V.C. and CHAKRABORTY, S. 1976. Revision of the subspecies of the Lesser Bandicoot-Rat, *Bandicota bengalensis* (Gray) (Rodentia : Muridae). *Rec. zool. Surv. India*, 69 : 267-274.
- AGRAWAL, V.C. DAS, P.K., CHAKRABORTY, S., GHOSE, R.K., MANDAL, A.K., CHAKRABORTY, T.K., PODDAR, A.K., LAL, J.P., BHATTACHARYA, T.P. & GHOSH, M.K. 1992. Mammalia. In : *Fauna of West Bengal, State Fauna Series*, 3(Part-1) : 27-109. Zoological Survey of India, Calcutta.
- ALLEN, G.M. 1938-40. *The Mammals of China and Mongolia*. Part I & II. New York.
- ANDERSEN, K. 1912. *Catalogue of the Chiroptera in the collection of the British Museum*. 2nd edn., I. Megachiroptera. *Brit. Mus. (Nat. Hist.)*, London.
- ANDERSON, J. 1881. *Catalogue of Mammalia in the Indian Museum, Calcutta*. Part I. Calcutta (Indian Museum).
- ANONYMOUS. 1994. *The Red Data Book on India Animals (Mammals, Aves, Reptilia, Amphibia) Vertebrates (Part-1)* : 1-534 (Published by the Director, Zool. Surv. India, Kolkata).

- ABE, H. and ARAI, S. 1991. A new mole from uotsuri jima, the Ryuku Islands. *J. Mammological Soc. Japan*, **15** : 47-60.
- AGRAWAL, V.C. and ALFRED, J.R.B. 1994. *Macaca memestrina* (Linnaeus, 1766). In : "*The Red Data Book on Indian Animals. Part-I : Vertebrata*" Zoological Survey of India, Calcutta : 17-19.
- ALI, S.M., CHATTOPADHYA, S., KANKANE, P.L. GYEN, N.C. 1988. A new species of palm civet from Orissa, India. *Rec. zool. Surv. India*, **85** : 45-48.
- ARRIGHI, F.E.M., SORENSON, W. and SHIRLEY, L.R. 1969. Chromosomes of the tree shrews (Tupaiaidae). *Cytogenetics*, **8** : 199-208.
- BHAT, H.R. 1968. Dobson's Long-tongued Fruit Bat, *Eonycteris spelaea* (Dobson) from Kumaon Hills, U.P. : An addition to the Chiropteran fauna of India. *J. Bombay nat. Hist. Soc.*, **64** : 550-551.
- BHAT, H.R., SREENIVASAN, M.A. and JAEAB, P.G. 1980. Breeding cycle of *Eonycteris spelaea* (Dobson, 1871) (Chiroptera : Pteropodae : Microglossinae) in India *Mammalia*, **44** : 343-347.
- BHATTACHARYA, T.P. 1975. Occurrence of Dobson's Long-tongued Fruit Bat, *Eonycteris spelaea* (Dobson) (Mammalia : Chiroptera : Pteropodidae) in Andaman Islands, India. *Sci. Cult.* **41** : 317, 318.
- BLANFORD, W.T. 1888, 91. *The Fauna of British India, Mammalia*. Taylor and Francis, London.
- BLYTH, E. 1863a. *Catalogue of the Mammalia in the Museum of Asiatic Society, Calcutta*.
- BROSSET, A. 1962. The bats of Central and Western India. *J. Bombay nat. Hist. Soc.* a. Part I. **59** : 1-57. b. Part 2. **59** : 583-624. C. Part 3. **59** : 707-746.
- CHAKRABORTY, S. 1983. Contribution to the knowledge of mammalian fauna of Jammu and Kashmir, India. *Rec. zool. Surv. India, Occ. Paper No.* **38** : 1-129.
- CHAKRABORTY, S. & AGRAWAL, V.C. 2000. *Mammalia*. In : *Fauna of Gujarat, State Fauna Series 8(Part-I)* : 15-83, Zoological Survey of India, Calcutta.
- CHAKRABORTY, S. and SEN, A. K. 1991. Mammals of the Mehao Wildlife Sanctuary (Dibung Valley district, Arunachal Pradesh) with remarks on their status. *Rec. zool. Surv. India*, **88(3 & 4)** : 263-285.
- CHASERI, F.N. 1940. A handlist of Malayasian mammals : A systematic list of the mammals of the Malay Peninsula, Sumatra, Borneo and Java, including the adjacent small islands. *Bull. Raffles Mus., Singapore*, **15** : 1-209.
- CHATURVEDI, Y. 1980. Mammals of the Andaman and Nicobars : Their Zoogeography and faunal affinity. *Rec. zool. Surv. India*, **77** : 127-139.
- CONSERVATION ASSESSMENT AND MANAGEMENT PLAN (CAMP). *Workshop Report 1998. Biodiversity conservation Prioritization Project, India, Mammals of India*. Hosted by the Indian Institute of Sciences, Bangalore, 25-29 August. 1997.
- Conservation on International Trade in Endangered Species of Wild Fauna and Flora*. September 1, 1991. U.S. Government Printing Office, Washington. D.C.
- CORBET, G.B. 1978. The Mammals of the Palaearctic Region : A Taxonomic Review. *Brit. Mus. (Nat. Hist.)*, London.

- CORBET, G.B. & HILL, J.E. 1992. *The Mammals of the Indomalayan Region. A systematic Review*. Oxford Univ. Press, Oxford.
- CORBET, G.B. and HILL, J.E. 1986. *A world list of Mammalian species*. 2nd ed. Brit. Mus. (Nat. Hist.), London.
- DAS, P.K., GHOSE, R.K., CHAKRABORTY, T.K., BHATTACHARYYA, T.P. and GHOSH, M.K. 1995. Mammalia. In : *Fauna of Meghalaya, State Fauna Series*, 4(Part-1) : 23-128, Zoological Survey of India, Calcutta.
- DAS, P.K., LAL, J.P. and AGRAWAL, V.C. 1993. Mammalia. In : *Fauna of Orissa, State Fauna Series*, 1(Part-4) : 143-180. Zoological Survey of India, Calcutta.
- DOBSON, G.E. 1876. *Monograph of the Asiatic Chiroptera and Catalogue of the species of Bats in the collection of the Indian Museum, Calcutta*. London.
- DOBSON, G.E. 1890. *Monograph of the Insectivora*. Part 3. Gurney & Jackson, London.
- DECKER, D.M. and WOZENCROFT, N.C. 1991. Phylogenetic analysis of recent procyonid genera. *J. Mammal.* 72 : 42-55.
- ELLERMAN, J.R. 1961. *The Fauna of India Including Pakistan, Burma and Ceylon*. Mammalia, 3 [Rodentia]. Govt. of India, Delhi.
- ELLERMAN, J.R. and MORRISON-SCOTT, T.C.S. 1951. *Checklist of Palaearctic and Indian Mammals*. Brit. Mus. (Nat. Hist.) London.
- ELLISOT, O.S., WONG, M. and BARGAON KAR, D.S. 1969. Zoological study of *Tupaia thailands*. *J. Hered.* 60 : 153-157.
- FELTON, H. 1992. Bemerkungen zu Fledermausen der Gattungen *Rhinopoma* and *Tepozous* (Mammalia, Chiroptera). *Sencken. Biol.* 47 : 171-176.
- GHOSE, R.K. 1965. A new species of mongoose (Mammalia : Carnivora : Viverridae) from West Bengal. *Proc. Zool. Soc., Calcutta*, 18 : 173-178.
- GHOSH, M.K. 1989. New locality - records for *Myotis mantivagus paytoni*: Wroughton and Ryley, 1913 and *Murina cyclotis* Dobson, 1872 (Chiroptera : Vespertilionidae) in the Eastern Ghats of Andhra Pradesh, India. *J. Bombay nat. Hist. Soc.*, 86 : 93-94.
- GROVES, C.P. 1982a. Cranial and dental characteristics in the systematics of old World Felidae. *Carnivora*, 5(2) : 28-29.
- HEMMER, H. 1978. The evolutionary systematics of living Felidae : Present status and current problems. *Carnivore*, 1 : 71-79.
- HILL, J.E. 1967. The bats of the Andaman and Nicobar Islands. *J. Bombay nat. Hist. Soc.*, 64 : 1-9.
- HILL, J.E. and THONGLONGYA, K. 1972. Bats from Thailand and Cambodia. *Bull. Brit. Mus. (Nat. Hist)*, Zoology Series, 22 : 171-196.
- HILL, J.E. 1962a. Notes on some Insectivores and bats from upper Burma. *Proc. zool. Soc. London*, 139 : 119-137.
- HILL, J.E. 1964. Notes on some tube-nosed bats, genus *Murina*, from south-eastern Asia with description of a new species and a new subspecies. *Fedn. Mus. J.* 8 : 48-59.

- HILL, J.E. 1983. Bats (Mammalia : Chiroptera) from Indo-Australia. *Ball. Br. Mus. Nat. Hist. (Zool.)*, **45** : 103-208.
- HILL, J.E., ZUBAID, H. and DOVIDSON, G.W.H. 1986. The taxonomy of leaf nosed bats of the *Hipposideros bicolor* group (Chiroptera : Hipposideridae) from South-eastern Asia. *Mammalia*, **50** : 523-540.
- HONACKI, J.H. KINMAN, K.E. and KOEPL, J.W. [Eds.] 1982. *Mammal Species of the World : A Taxonomic and Geographic Reference*. Allen Press, Inc. and Assoc. Syst. Collns. Lawrence, Kansas.
- HINTON, M.A.C. 1923. On the voles collected by Mr. G. Forrest in Yunnan : with remarks upon the genera *othomys* and *Neodon* and upon their allies. *Ann Mag. nat. Hist.* (9)**11** : 145-162.
- Indian Wildlife (Protection) Act*. 1972. (Revised Edition, 1990). Natraj Publishers, Dehradun.
- International Union for the Conservation of Nature and Natural Resources*, 1990. *IUCN Red List of Threatened Animals*. Gland, Switzerland.
- JERDON, T.C. 1867. *The Mammals of India : A Natural History of All the Animals known to Inhabit Continental India*. Roorke.
- KEMP, S. 1924. Notes on the mammals of the Siju Cave. *Rec. Indian Mus.*, **26** : 23-26.
- KHAJURIA, H. 1956. A new langur (Primates : Colobidae) from Goalpara dist., Assam. *Ann. Mag. nat. Hist.*, (12) **16** : 86-88.
- KHAJURIA, H. 1979. Studies on bats (Chiroptera : Mammalia) of M.P. Part 1. Families : Pteropodidae, Rhinopomatidae and Emballonuridae. *Rec. zool. Surv. India, Occ. Paper No. 13* : 1-59.
- KHAJURIA, H. 1980. Studies on bats of Jabalpur Dist., M.P., India. Part II. Families Megadermatidae, Rhinolophidae and Vespertilionidae. *Rec. zool. Surv. India, Occ. Paper No. 19* : 1-69.
- KHAJURIA, H. & GHOSAL, D.K. 1981. Studies on wildlife of Narmada Valley, Part IV. Mammals. *Rec. zool. Surv. India*, **79** : 235-257.
- KHAN, M.A.R. 1982. *Wildlife of Bangladesh : A checklist*. University of Dhaka, Dhaka.
- KLOSS, C.B. 1918. Notes on some hares in the Indian Museum with description of two new forms. *Rec. Indian Mus.*, **15** : 89-96.
- KOCK, D. & BHAT, H.R. 1994. *Hipposideros hypophyllus* n. sp. of the *H. bicolor* group from peninsular India (Mammal : Chiroptera : Hipposideridae). *Sencken Biol.*, **73** : 25-31.
- KOOPMAN, K.F. 1989. Distributional patterns of Indo-Malayan bats (Mammalia : Chiroptera). *Am. Mus. Novit*, **2942** : 1-19.
- KURODA, N. 1938. *A list of the Japanese Mammals*. Tokyo.
- KRAL, B. and ZIMA, J. 1980. Karyosystematica celedi Felidae. *Gazelle (Praque)*, **2/3** : 45-53.
- KRATOCHVIL, J. 1982. Karyotype und system der Familie Felidae (Carnivora : Mammalia). *Folia Zool.*, **31** : 289-304.
- KURUP, G.U. 1968. Mammals of Assam and adjoining areas. 2. A distributional list. *Proc. zool. Soc., Calcutta*, **21** : 79-99.

- LAHIRI CHOUDHURY, D.K. 1985. Elephants in northeast India. In 'Elephants in Asia' [Ed- P. Jackson]. IUCN/SSC Asian Elephant Specialist Group, India.
- LEKAGUL, B. & McNeely, J.A. 1977. *Mammals of Thailand*. Assoc. Conserv. W.L., Sahakarnbhat Co., Bangkok.
- LINDSAY, H.M. 1926. Bombay Natural History Society's Mammal Survey of India, Burma and Ceylon. Nos. 38, 39, 40, 43, 44, 45. *J. Bombay nat. Hist. Soc.* **31** : 40-42; 42-48; 372-382; 591-597; 597-606; 606-612.
- LAL, J.P. 1983. Andersen's Rufous Horseshoe Bat, *Rhinolophus rouxi sinicus* Andersen from Arunachal Pradesh, India. *J. Bombay nat. Hist. Soc.*, **79** : 402.
- MANDAL, AJOY KUMAR, PODDER, A.K., BHATTACHARYYA, T.P. 1993. Records of *Megaerops niphanae* Yenbutra & Felten, 1983 (Chiroptera : Pteropodidae), *Hipposideros lankadiva* Kelaart, 1850 and *Hipposideros armiger armiger* (Hodgson, 1835) (Chiroptera : Rhinolophidae) from Manipur, India, with taxonomic notes. *Rec. zool. Surv. India*, **93**(3-4) : 355-359.
- MANDAL, AJOY KUMAR, PODDAR, A.K., BHATTACHARYYA, T.P. 1994. Occurrence of the Bay Bamboo Rat, *Cannomys badius* (Hodgson, 1841) (Rodentia : Rhizomyidae) in Mizoram, India. *Rodent Newsl.* **18**(3) : 1.
- MANDAL, AJOY KUMAR, PODDAR, A.K., BHATTACHARYYA, T.P. 1997. Some new records of bats from Mizoram, India. *Rec. zool. Surv. India*, **96**(1-6) : 7-13.
- MANDAL, AJOY KUMAR, PODDAR, A.K., BHATTACHARYYA, T.P. 2000. Further new records of bats from Mizoram, India. *Rec. zool. Surv. India*, **98**(2) : 147-154.
- MARSHALL, J. 1977. A synopsis of the Asian species of *Mus* (Rodentia, Muridae). *Bull. Am. Mus. nat. Hist.*, **458** : 173-220.
- MASON, G.E. 1908. On the fruit bats of the genus *Pteropus* inhabiting the Andaman and Nicobar Archipelago, with the description of a new species. *Rec. Indian Mus.*, **2** : 159-166.
- MEDWAY, L. 1977. Mammals of Borneo : Field keys and an annotated checklist. *Malay Branch of the Royal Society*, **7** : 1-172.
- MEDWAY, L. 1978. *The Wild Mammals of Malay (Peninsular Malaysia) and Singapore*. Oxford Univ. Press, Kuala Lumpur.
- MILLER, G.S. 1902. The Mammals of the Andaman and Nicobar Islands. *Proc. U.S. Natn. Mus.*, **24** : 751-795.
- MILLS, J.P. 1923. Bombay Natural History Society's Mammals Survey of India, Burma and Ceylon. No. 36. *J. Bombay nat. Hist. Soc.*, **29** : 221-229.
- MUSSER, G.G. 1970. Species limits of *Rattus brahma*, a murid rodent of northeastern India and northern Burma. *Am. Mus., Novit.*, **2406** : 27.
- MUSSER, G.G. 1981. Results of the Archbold Expedition. No. 105. Notes on systematics of Indo-Malaya murid rodents, and description of new genera and species from Ceylon, Sulawesi, and the Philippines. *Bull. Am. Mus. nat. Hist.*, **168** : 225-334.
- NOWAK, R.M. 1991. *Walker's Mammals of the World*. 5th ed. Johns Hopkins Univ. Press, Baltimore.

- PHILLIPS, W.W.A. 1935. *Manual of the Mammals of Ceylon*. Colombo Museum, Dulau and Co. Ltd., Ceylon and London.
- POCOCK, R.I. 1939, 1941. *The Fauna of British India, Including Ceylon and Burma. Mammalia*. Taylor and Francis, London.
- POCOCK, R.I. 1917. The classification of the existing Felidae. *Ann. Mag. nat. Hist.*, (8)**20** : 329-350.
- POCOCK, R.I. 1930a. The panthers and ounces of Asia. *J. Bombay nat. Hist. Soc.*, **34** : 65-82.
- POCOCK, R.I. 1930b. The panthers and ounces of Asia, Part-II. The panthers of Kashmir, India and Ceylon. *J. Bombay nat. Hist. Soc.*, **34** : 307-336.
- POCOCK, R.I. 1932a. The marbled cat (*Pardofelis marmorata*) and some other oriental species with the definition of a new genus of the Felidae. *Proc. zool. Soc. London*, **1932** : 741-766.
- PRADHAN, M.S., MANDAL, A.K. & AGRWAL, V.C. 1989. Proposal of an additional species in the genus *Bandicota* Gray [Order : Rodentia; Fam : Muridae] from India. *Mammalia*, **53** : 369-376.
- PRADHAN, M.S., MANDAL, A.K., BHAGWAT, A.M. & AGRAWAL, V.C. 1993. Taxonomic studies on the Indian Bandicoot Rats (Rodentia : Muridae) with description of new species. *Rec. zool. Surv. India*, **93** : 175-200.
- PRADHAN, M.S., SHARMA, R.M. & SHANKAR, K. 1977. First Record of Kelaart's Long-clawed Shrew, *Feroculus feroculus* (Kelaart) [Insectivora : Soricidae : Crocidurinae] from peninsular India. *Mammalia*, **61** : 448-450.
- PRAKASH, I. 1962. Taxonomic and biological observations on the bats of the Rajasthan Desert. *Rec. Indian Mus.*, **59** : 149-170.
- PRATER, S.H. 1971. *The Book of Indian Animals*. 3rd ed. Bombay Natural History Society, Bombay.
- ROBERTS, T.J. 1977. *The Mammals of Pakistan*. Ernest Benn. Ltd., London.
- ROBINSON, H.C. and KLOSS, C.B. 1918. A nominal list of the Sciuridae of the Oriental Region with a list of specimens in the collection of the Zoological Survey of India. *Rec. Indian Mus.*, **15** : 171-254.
- ROONWAL, M.L. and MOHNAT, S.M. 1977. *Primates of South East Asia*. Harvard Univ. Press, Cambridge, London.
- RYLEY, K.V. 1913, 1914. Bombay Natural History Society's Mammal Survey of India. No. 9-14. *J. Bombay nat. Hist. Soc.*, 1913, **22** : 283-295; 464-513, 1914, **22** : 684-725.
- SAHA, S.S. 1981. A new genus and a new species of flying squirrel (Mammalia : Rodentia : Sciuridae) from north eastern India. *Bull. zool. Surv. India*, **4** : 331-336.
- SAHA, S.S. 1985. Mammalia. In "Fauna of Namdapha : Proposed Biosphere Reserve", *Rec. zool. Surv. India*, **82** : 321-330.
- SAHA, S.S. 1984. Occurrence of the tailless fruit bat *Megaerops ecaudatus* (Temminck, 1837) in Namdapha, Tirap district, Arunachal Pradesh : An addition to the Indian fauna (Mammalia : Chiroptera : Pteropodidae). *Bull. zool. Surv. India*, **6** : 343-344.

- SCLATER, W.L. 1891. *Catalogue of Mammalia in the Indian Museum, Calcutta*. Part II. Indian Museum, Calcutta.
- SINHA, Y.P. 1970. Taxonomic notes on some Indian bats. *Mammalia*, **34** : 81-92.
- SINHA, Y.P. 1980. The bats of Rajasthan : Taxonomy and Zoogeography. *Rec. zool. Surv. India*, **76** : 7-63.
- SRIVASTAVA, J.P., MANDAL, AJOY KUMAR, BISWAS, D.P.K. 2000. New records of bats from Nagaland, India. *Rec. zool. Surv. India*, **98** (4) : 83-87.
- SUKUMAR, R. 1985. The elephant in south India. In '*Elephants in Asia*' (Ed. P. Jackson). IUCN/SSC Asian Elephant Specialist Group, India.
- THONGLONGYA, R. 1972. A new genus and species of fruit bat from S. India. *J. Bombay nat. Hist. Soc.*, **69** : 151-158.
- THOMAS, O. 1921. Scientific results from the Mammal Survey No. XXV. *J. Bombay nat. Hist. Soc.*, **27** : 596-599.
- THOMAS, O. 1922. Scientific results from the Mammal Survey. No. XXXII. New and interesting mammals from Mishmi Hills. *J. Bombay nat. Hist. Soc.*, **28** : 428-431.
- VAN WEERS, D.J. 1979. Notes on Southeast Asian Porcukines (Hystricidae, Rodentia). IV. On the taxonomy of the subgenus *Acanthion* F. Cuvier, 1823 with notes on the other taxa of the family. *Beaufortia*, **29**(365) : 215-272.
- WALKER, E.P., WARNICK, F., HAMET, S.E., LANGE, K.L., DARIS, M.A., VIBLE, H.E. and Wright, P.F. 1968. *Mammals of the World. Zools*. 2 vols. Hopkins Press, Baltimore.
- WILSON, D.E. and REEDER, D.M. (Eds.) 1993. *Mammal Species of the World : A Taxonomic and Geographic Reference*. Smithsonian Inst. Prens, Washington and London.
- YIN, U.T. 1967. *Wild Animals of Burma*. Rangoon Gazette Ltd., Rangoon.

ANNEXURE - I**Table showing number of Orders, Families, Genera, Species, and Endemic Species in Arunachal Pradesh**

Sl. No.	Order	Family	Genera	Species	Endemic species
1.	INSECTIVORA	2	3	4	–
2.	SCANDENTIA	1	1	1	–
3.	CHIROPTERA	5	15	22	–
4.	PRIMATES	3	4	7	–
5.	CARNIVORA	6	25	29	–
6.	CETACEA	–	–	–	–
7.	SIRENIA	–	–	–	–
8.	PROBOSCIDEA	1	1	1	–
9.	PERISSODACTYLA	–	–	–	–
10.	ARTIODACTYLA	3	8	9	–
11.	PHOLIDOTA	1	1	1	–
12.	RODENTIA	3		31	1
13.	LAGOMORPHA	–	–	–	–
	Total	25	58	105	1

ANNEXURE - II**Table showing number of Orders, Families, Genera, Species, and Endemic Species in India**

Sl. No.	Order	Family	Genera	Species	Endemic species
1.	INSECTIVORA	3	11	28	7
2.	SCANDENTIA	1	2	3	2
3.	CHIROPTERA	7	34	112	11
4.	PRIMATES	3	6	15	3
5.	CARNIVORA	7	35	60	4
6.	CETACEA	7	19	26	—
7.	SIRENIA	1	1	1	—
8.	PROBOSCIDEA	1	1	1	—
9.	PERISSODACTYLA	2	2	3	—
10.	ARTIODACTYLA	5	21	31	1
11.	PHOLIDOTA	1	1	2	—
12.	RODENTIA	4	43	104	18
13.	LAGOMORPHA	2	3	11	—
	Total	44	179	397	46

AVES

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INTRODUCTION

Arunachal Pradesh, the 'province of the Dawn' is the last member of the group of seven north-eastern states under the Union of India. Before 1972 this area was called as the North-East Frontier Agency (NEFA), comprising of the Kameng, Subansiri, Siang and Lohit frontier divisions.

Arunachal Pradesh is situated in the mountains of the eastern Himalaya. It has International boundaries with three nations viz., The China on the north; Bhutan on the west, Myanmar on the east and the rest on the south and south-east by the states Assam and Nagaland respectively.

HISTORY OF ORNITHOLOGICAL EXPLORATION

The state of Arunachal Pradesh did not see much of ornithological activities due to its inaccessibility.

Mr. M.T. Ogle, a member of the Topographical Survey of India was first to collect avian samples in the plains and Foothills around Sadiya and along the Lohit River towards Brahmakund which lies east of Tezu, Lohit district. Specimens collected by him were written up by the Lt. Col. H.H. Godwin-Austen in various numbers of the Journal of the Asiatic Society of Bengal, culminating in a combined list published in 1878.

Nest to Mr. M.T. Ogle, Lt-Col. F.M. Bailey collected a good series of materials in the Mishmi

Hills. Capt. R.S. Kennedy I.M.S. collected a considerable amount of material in the Mishmi Hills during the months of March and April, 1913, on which Stuart Baker published a paper entitled 'on a small collection of Birds from the Mishmi Hills, N.F. Frontier of India' (*Rec. Ind. Mus.*, IX, Pt. V, No. 17, 1913, pp. 251-4).

Hearbert Stevens published a paper entitled 'On the Birds of Upper Assam' in the Journal of the *Bombay nat. Hist. Soc.* xxiii, Nos. 2.3 and 4, 1914-1915, pp. 234-268, 547-570, 721-736.

F. N. Bates published a paper entitled 'Notes on birds of the Subansiri area, Assam' on his study and collection trip to the Apa Tani Valley.

Recently, Ripley, S.S. Saha and B.M. Beehler surveyed the Upper Noa Dihing, Arunachal Pradesh and Published its account in 1991.

More recently a number of bird watchers with special reference to A. Chowdhury under the umbrella of N.G.O's, noted a number of birds in Arunachal Pradesh specially in Sanctuaries and National Parks and published their accounts in different journals. Their observation specially in respect of small birds, viz., Warbler, Wagtail etc. is doubtful. However acknowledged and incorporated in the ornithological account of this present paper.

FIELD WORK

The present work is based on a large collection made under MAB Programme in the Namdapha National Park, conducted by the Zoological Survey of India, Calcutta.

Under the researched head, 'State Fauna of Arunachal Pradesh-Aves', the Zoological Survey of India undertook a number of field surveys from 1997 to 2001, covering almost all the districts barring W. Siang due to local disturbance as reported by the local people and forest officials of the Arunachal Pradesh.

AVIAN FAUNA

The avifauna of Arunachal Pradesh is extensive and complex. It receives Himalayan forms through China (Tibet) on the north, good infiltration through eastern Bhutan on the west and from Myanmar through southeast. It further enriches its avian wealth from the neighbouring states of Assam and Nagaland as well.

The avifauna of the Arunachal Pradesh is hereby divided and shown into four separate list vide Annexure I to IV. The first list comprises of birds which have been recorded or authentically recorded from the Arunachal Pradesh and with additional list under Annexure I & II. The third list contains species of birds which occurs in Arunachal Pradesh but with doubtful in existence (vide Ali & Ripley, distribution as shown NEFA under Annexure III). The fourth list under Annexure IV, comprises of birds which are well distributed in the neighbouring states of Assam and Nagaland, has the every possibility to be distributed in Arunachal Pradesh as mere political boundaries does not make any difference so far the flying birds are concerned. Thus, combining together a total sum of 964 species of birds are dealt with. Most are of typical of the Indian subcontinent with a major share is of Palaearctic, Indochinese and Indomalayan in affinity. Hence in this way, the Arunachal Pradesh is an asylum of different geographical races (ssp.) of a biological race (sp.). Hence central part of Arunachal has been formed a intergrading zone of number of geographical races (spp.).

The state of Arunachal Pradesh so far its geography of landmass is concerned, could be divided into four ecological zones. The upward

succession of landmass and vegetation thereof has given successive changes on the pattern of avifauna. It could be possible to characterize a number of typical zones where avifaunal wealth of Arunachal takes its shelter as per its habit and habitat.

(i) Lowland, alluvial zone

It consists of southern Arunachal Pradesh. Actually the same alluvial landmass is politically divided Arunachal Pradesh, Assam (north of Brahmaputra) and northern Nagaland.

(ii) Lowland jungle

Very large areas of original forest of the well developed primary rainfall type.

(iii) Mid-montane jungle

It comprises of steep precipitous hill-sides under lofty dense evergreen jungle. Wild bananas and tree ferns are a feature of the landscape, while rattan brakes and bamboo predominates in patches. The enormous forest trees and heavily draped with lianas and creeper, and their trunks and branches covered with mosses.

(iv) Montane jungle

Almost vertical hill-sides are clothed with lofty trees and impenetrable shrub growth. One torrential streams and waterfalls, which are abundant, break the continuity of the unending green.

The most enriched avifaunal wealth of Arunachal Pradesh has been facing extensive threat since last decade due to massive deforestation and ruthless hunting as well. Rapid urbanisation *vis-a-vis* requirement of agricultural land together with hunting of every living example would lead successive devaluation of avifauna in future. Most of the areas surveyed by us are deprived of any avian species beyond the size of bulbul due to ruthless hunting which we believe, a natural instinct of every tribal folk for shevalry, decoration and the ritual practice. If such twin practices are continued in the coming days, no wonder, the state of Arunachal would lose its glory of avifauna barring some impenetrable terrain where human couldn't venture.

A number of rivers which have originated from the Himalayas, are flowing down through the Arunachal Pradesh. The mighty Tsang Po, and other rivers predominately Subansiri, Dibang, Lohit, Kameng etc. during their down courses criss-crossed and cut the upstanding hills leaving huge and accessible in gorges with impenetrable vertical stripes of mountains clad with dense evergreen forest. This leads isolation of ecological niche *vis-a-vis* of luxuriant endemic species of birds. Thus to sum up of whole characteristic, viz., Indo-china and Indomalayan elements through China (Tibet) and Myanmar; faunal elements of alluvial plains through Assam and Nagaland; four successive ecological zones and the ecological isolation due to river drainage system through the mountain chain, make the avifauna of Arunachal more and more complex, exquisite, most interesting through the eyes of ornithologist.

The state of Arunachal Pradesh considering its forest reserve and potentiality of faunal resources has already protected most of the parts of Arunachal as Wildlife Sanctuaries, National Parks and proposed conservation areas (Annexure-V). In this way almost whole of the Arunachal Pradesh is protected or being protected. But at the same time if the generation long traditional ruthless hunting of any living kind is not stopped or minimised to a greater extent, sooner or latter all the protected areas will remain as a mere list and faunal resources would take their place in the written script rather than wonderful greenery of the earth.

ORINITHOLOGICAL ACCOUNTS

The number preceeding the names of the birds in this chapter are given in accordance with the sequence used in Ali and Ripley's Handbook of the birds of India and Pakistan, Vols 1-10 (1968-1974).

Birds said to occur in Arunachal Pradesh from logical inference, such as from distributional point of view, and not based on actual collection or reliable sight record, have their accounts given in square brackets.

Family PODICIPEDIDAE

3. *Podiceps cristatus cristatus* (Linnaeus). Great Crested Grebe.

Katti *et al.* (1992) reported it from Mehao Wildlife Sanctuary, Dibang Valley district.

Choudhury (1992) noted a large flock of 65 birds on the main channel of the Siang, D'Ering Memorial Wildlife Sanctuary, East Siang district.

Barman (1996) reported it from D'Ering Wildlife Sanctuary, East Siang district.

Ali & Ripley (HB) mentioned its distribution elsewhere in India along with NE Assam, but not Arunachal Pradesh.

5. *Podiceps ruficollis capensis* Salvadori. Little Grebe.

Ali & Ripley (1948) reported that this species is probably found along the Lohit river.

Katti *et al.* (1992) reported this bird from Mehao Wildlife Sanctuary, Dibang Valley district.

Ali & Ripley (HB) mentioned its distribution in India east to Assam and Manipur.

Family PELECANIDAE

21. *Pelecanus philippensis philippensis* Gmelin. Spotted billed or Grey Pelican

Barman (1996) reported its presence in D'Ering Memorial Wildlife Sanctuary, East Siang district.

Choudhury (2000) reported that fourteen examples were seen in flight near Roing, Dibang Valley district on 28th March, 1994.

Family PHALACROCORACIDAE

26. *Phalacrocorax carbo sinensis* (Shaw). Large Cormorant.

Tirap district : 77 mile base camp 1 ♀ (30 Jan., 1987). Ramnagar (c 1150 m) 30 (16, 17 Feb., 1988), Lohit district : Wakro 1 ♀ (21 Nov., 1998).

Katti *et al.* (1992) reported this species from Siang district.

Choudhury (1992) altogether noted 45 birds on two occasions in the D'Ering Memorial Wildlife Sanctuary in March 1991.

Barman (1996) reported this species from D'Ering Memorial wildlife Sanctuary, East Siang district.

Athreya (1996) reported it from Namdapha, Changlang district.

We noted this bird common near hill stream and river side.

Measurements :	Wing	Tail	Bill
2 ♀	335-336	193-195	64-69
3 ♀	320-340 (328.3)	215-225 (221.5)	64-67 (65.3)

27. *Phalacrocorax fuscicollis* Stephens.
Indian Shag

Ali & Ripley (1948) reported its probable occurrence along the Lohit river.

Barman (1996) reported its presence from D'Ering Memorial Wildlife Sanctuary, East Saing district.

Dutta (1998) noted a family party consisting of two adults and one immature on a large boulder in Kameng river towards Sangti, Dirang, 45 km ahead of Bomdila, W. Kameng district. We noted solitary bird flying along the Subansiri river, Dumporijo, U. Subansiri district.

28. *Phalacrocorax niger* (Vieillot).
Little Cormorant.

Ali & Ripley (1948) reported that this species is probably found along the Lohit river.

Katti *et al.* (1992) reported this species from Kamlang Wildlife Sanctuary, Lohit district.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) noted it from Pakui Wildlife Sanctuary, East Siang district.

29. *Anhinga rufa melanogaster* Pennant
Darter or Snake bird.

Barman (1996) reported this bird from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) reported this bird from Pakhui Wildlife Sanctuary, East Kameng district.

Family ARDEIDAE

33. *Ardea insignis* Hume.
Great White-bellied Heron.

Choudhury (2000) noted it in Namdapha National Park on 16th January, 1993.

Ali & Ripley (HB) mentioned its distribution upto NE Assam. Hence there is every possibility to enter this bird in Arunachal Pradesh through NE Assam.

36. *Ardea cinerea rectirostris* Gould.
Eastern Grey Heron.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

37. *Ardea purpurea manilensis* Meyen
Eastern Purple Heron.

38. *Butorides striatus javanicus* (Horsfield)
Little Green Heron

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Katti *et al.* (1992) reported this species from Kamlang Wildlife Sanctuary, Lohit district.

Barman (1996) reported it from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) noted this species from Pakhui Wildlife Sanctuary, East Kameng district.

42. *Ardeola grayii grayii* (sykes).
Indian Pond Heron.

Ali & Ripley (1948) reported this species from the Mishmi hills.

Katti *et al.* (1992) reported this species from Kamlang Wildlife Sanctuary, Lohit district.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Kameng district.

Datta *et al.* (1998) reported this species from Pakhui Wildlife Sanctuary, East Kameng district.

43. *Ardeola bacehus* (Bonaparte)
Chinese Pond Heron

Changlang district : Deban North. 1 ♀ (29 Dec., 1983), Gibbon land, 1 ♂ (31 Dec., 1983).

We did not found this species during our survey.

Measurements	Wing	Tail	Bill
1 ♂	214	158	74
1 ♀	198	122	65

44. *Bubulcus ibis coromandus* (Boddaert)
Cattle Egret

Ali & Repley (1948) reported this bird from Lohit district.

Katti *et al.* (1992) reported it from Mehao Wildlife Sanctuary, Dibang Valley district, Siang district and Kamlang Wildlife Sanctuary, Lohit district.

Barman noted it from D'Ering Memorial year? Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) noted it from Pakhui Wildlife Sanctuary, East Kameng district.

We found it common along the bordering districts of Arunachal and Assam.

46. *Ardea alba modesta* J. E. Gray
Eastern Large Egret

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

47. *Egretta intermedia intermedia* (Wagler)
Smaller or Median Egret

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

49. *Egretta garzetta garzetta* (Linnaeus)
Little Egret

Tirap district : Gibbon's land. 1 ♀ (31 Dec., 1983).

Ali & Ripley (1948) collected a specimen from Tezu, Lohit district.

Barman (1996) reported this bird from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) reported it from Pakhui Wildlife Sanctuary, East Kameng district.

Choudhury (2000) noted one bird near Anchal Ghat in D'Ering Memorial Wildlife Sanctuary in March, 1991.

Noted elsewhere, we surveyed, adjourning to Assam.

Measurements	Wing	Tail	Bill
1 ♀	248	129	91

52. *Nycticorax nycticorax nycticorax* (Linnaeus)
Night Heron

Barman (1996) noted it from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Rare, not found anywhere during our survey.

53. *Gorsachius melanolophus melanolophus* (Raffles).
Malay or Tiger Bittern.

A discontinuously distributed Indo-Malayan form found in Western Ghats Complex and in Assam and Manipur. May occur in Arunachal Pradesh.

55. *Ixobrychus minutes minutes* (Linnaeus)
Little Bittern

56. *Ixobrychus cinnamomeus* (Gmelin)
Chestnut Bittern.

Tirap district : Gandhigram (c. 1100 m) 1 ♂ (30 Jan., 1987).

Measurements	Wing	Tail	Bill
1 ♂	145	90	54

57. *Ixobrychus sinensis* (Gmelin).
Yellow Bittern.

58. *Ixobrychus flavicollis flavicollis* (Latham).
Black Bittern.

Family CICONIIDAE

61. *Anastomus oscitans* (Boddaert)
Openbill Stork

62. *Ciconia episcopus episcopus* (Boddaert)
White-necked stork.

Singh (1995) found this species at Namsai, Lohit district.

64. *Ciconia ciconia boyciana* Swinhoe
Eastern white Stork.

Uncommon winter visitor to Assam and Manipur in Indian limit. May occur in Arunachal Pradesh.

65. *Ciconia nigra* (Linnaeus)
Black Stork

Athreya (1996) reported this species from Namdapha, Changlong district.

Dutta *et al.* (1998) also reported it from Pakhui Wildlife Sanctuary, East Kameng district.

66. *Ephippiorhynchus asiaticus asiaticus* (Latham)
Black-necked Stork

Singh (1995) noted this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

67. *Leptotilos dubius* (Gmelin)
Adjutant Stork

68. *Leptotilos javanicus* (Horsfield)
Lesser Adjutant Stork

Singh (1995) found this species in D'Ering Memorial Wildlife Sanctuary, East Siang district.

Family THRESKIORNITHIDAE

69. *Threskiornis aethiopica melanocephala* (Latham)
White Ibis

Singh (1995) reported this species from Khari

in Pakhui Wildlife Sanctuary, East Kameng district.

Datta *et al.* (1998) also reported it from Pakhui Wildlife Sanctuary, East Kameng district.

71. *Plegadis falcinellus falcinellus* (Linnaeus)
Glossy Ibis

Family ANATIDAE

76. *Anser fabilis* (Latham)
Bean Goose

This goose was observed near the eastern border of Bhutan in Arunachal Pradesh, India, in January, 1978 by Ripley.

81. *Anser anser rubrirostris* Swinhoe
Eastern Greyleg Goose

Barman (1996) reported the presence of this species in D'Ering Memorial Wildlife Sanctuary, East Siang district.

Choudhury (1992) found a group of 13 birds on the Shingle river bank in D'Ering Memorial Wildlife Sanctuary in March, 1991.

82. *Anser indicus* (Latham)
Barheaded Goose

Choudhury (2000) mentioned its breeding report in Arunachal Pradesh but without any details.

88. *Dendrocygna javanica* (Horsfield)
Lesser Whistling Teal

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

A flock consisting of four birds were seen swimming on the Subansiri river, at Dumporijo, U. Subansiri district.

90. *Tadorna ferruginea* (Pallas)
Ruddy Shelduck

Ali & Ripley (1948) found this duck in pairs along the Lohit river.

Katti *et al.* (1992) reported this species from Mehao Wildlife Sanctuary, Dibang Valley district.

Choudhury (1992) noted altogether forty birds in D'Ering Memorial Wildlife Sanctuary, East Siang district in March, 1991.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

91 *Tadorna tadorna* (Linnaeus)
Common Shelduc

Casual and uncommon winter visitor. Recorded from Assam and Manipur. May occur in Arunachal Pradesh.

93. *Anas acuta* Linnaeus
Pintail

Barman (1966) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

94. *Anas crecca crecca* Linnaeus
Common Teal.

Tirap district : 77 mile base camp. 1 ♂ (9 Feb., 1987), Gandhigram (c 1100 m) 1 ♀ (1988).

Katti *et al.* (1992) reported this species from Mehao Wildlife Sanctuary, Dibang Valley district.

Barman (1996) also found it from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Measurements	Wing	Tail	Bill
1 ♂	178	125	44
1 ♀	172	127	41

98. *Anas poecilorhyncha haringtoni* (Oates)
Spotbill Duck

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district and Choudhury (2000) further noted four birds from the same sanctuary.

Choudhury (2000) noted two other ssps, viz., the nominated race, *A.P. poecilorhyncha* Froster and the Burmese subspecies from different bordering district of east Assam. So it is presumed that both the ssps. may also be found in Arunachal Pradesh since political boundary is not at all any geographical barrier to this bird.

100. *Anas platyrhynchos* Linnaeus
Mallard

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

101. *Anas strepera strepera* Linnaeus
Gadwall

Choudhury (1992) found more than hundred birds on the Siang river in D'Ering Memorial Wildlife Sanctuary, East Siang district.

103. *Anas penelope* Linnaeus
Wigeon

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

104. *Anas querquedula* Linnaeus
Garganey or Bluwinged Teal

We did not come across this most common teal in and around Arunachal Pradesh during our survey. It is commonly found in all large waterbodies, marshes in Assam bordering Arunachal Pradesh.

105. *Anas clypeata* Linnaeus
Shoveller

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

108. *Anythya ferina* (Linnaeus)
Common Pochard

Choudhury (1992) found a flock of twenty birds on migration in D'Ering Memorial Wildlife Sanctuary, East Siang in March, 1991.

111. *Anythya fuligula* (Linnaeus)
Tufted Pochard.

Choudhury (1992) found a gathering of more than hundred birds on the Siang river in D'Ering Memorial Wildlife Sanctuary, East Siang district in March, 1991.

Katti *et al.* (1992) reported this species from Siang district. Barman (1996) also found this bird from D'Ering Memorial Wildlife Sanctuary, East Siang district.

114. *Nettapus coromandelianus coromandelianus*
(Gmelin)

Cotton Teal

Barman (1996) found this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Cotton Teal is common in Assam and it should occur in Arunachal Pradesh adjoining to Assam, although we never met with during our survey.

116. *Cairina scutulata* (S. Muller)
Whitewinged Wood Duck

Ali & Ripley (1948) found a pair at Tezu and at Brahmakund, Lohit district.

Barman (1996) reported the presence of this species in D'Ering Memorial Wildlife Sanctuary, East Siang district.

Choudhury (2000) recorded this species in Arunachal Pradesh (Lohit, Tirap, Dibang Valley, E. Kameng, E. Siang and Changlang districts; protected areas include Namdapha National Park, Mehao and Pakhui Wildlife Sanctuaries) but without any details.

118. *Bucephala clangula clangula* (Linnaeus)
Goldeneye Duck

Choudhury (1992) found fifty birds on 17 March, 1991 in D'Ering Memorial Wildlife Sanctuary, East Siang district. He further reported that 231 examples were counted there in 1994.

121. *Mergus merganser orientalis* (Gould)
Eastern Merganser

Tirap district : Gibbon's land. 1 ♀ (7 Jan., 1984), Ramnagar (c 1150 m.) 1 ♂ (10 Feb., 1988), Gandhigram (c 1100 m) 1 ♀ (22 Feb., 1988), Namdapha Camp-1 ♀

Ali & Ripley (1948) collected a pair from Tezu on 10 Jan., 1948 and reported seeing 40-50 birds on the Lohit river.

Choudhury (1992) found altogether fourteen birds in the D'Ering Memorial Wildlife Sanctuary, East Siang district in March, 1991. Choudhury

further commented that this bird is not uncommon during winter along the Noa-Dihing, Deban and Namdapha rivers.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) further reported this species from Pakhui Wildlife Sanctuary, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	280	183	67
1 ♀	265	160	57
2 ♂	263-274	172-177	61-63

Family ACCIPITRIDAE

124. *Elanus caeruleus vociferus* (Latham)
Blackwinged Kite

Katti *et al.* (1992) noted this bird from Mehao Wildlife Sanctuary, Dibang Valley district.

Barman (1996) also noted this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Dutta *et al.* (1998) noted this kite near Bhalukpong, East Kameng district.

125. *Aviceda jerdoni jerdoni* (Blyth)
Blyth's Baza

Singh (1995) noted this species at Pakhui Wildlife Sanctuary, East Kameng district.

Datta *et al.* (1998) noted it also from the same sanctuary.

Ali & Ripley (HB) mentioned it as rare and mentioned its presence upto eastern Assam.

130. *Pernis ptilorhynchus ruficollis* Lesson
Crested Honey Buzzard

Datta *et al.* (1998) reported this species from Pakhui Wildlife Sanctuary, East Kameng district.

133. *Milvus migrans govinda* Sykes
Pariah Kite

Choudhury (1992) reported six examples from D'Ering Memorial Wildlife Sanctuary, East Kameng district.

Datta *et al.* (1998) further reported this species from Pakhui Sanctuary. We also found it in the same sanctuary and further found twice around Yazali, Lower Subansiri district.

135. *Haliastur indus indus* (Boddert)
Brahminy Kite

Lower Subansiri : Pitapool, Yazali, 1 ♀ (21 Jan., 1997).

Ali & Ripley (1948) reported this species from upper Brahmaputra.

Barman (1966) found this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui Wildlife Sanctuary, East Kameng district.

We noted a solitary bird soaring over Kameng river, Dirang, West Kameng district.

Measurements	Wing	Tail	Bill
1 ♀	384	199	40

136. *Accipiter genitilis schvedowi* (Menzbier)
Eastern Goshawk

Chiefly a rare winter visitor and extended upto Assam. May possibly further be extended to Arunachal Pradesh.

138. *Accipiter badius dussumieri* (Temminck)
Shikra

Datta *et al.* (1998) reported this species from Pakhui Wildlife Sanctuary, East Kameng district. However Ali & Ripley (HB) commented that it is difficult to distinguish from other subspecies and not found in Assam.

144. *Accipiter trivirgatus indicus* (Hodgson)
North Indian Crested Goshawk

Katti *et al.* (1992) reported this species from Siang district and Mehao Wildlife Sanctuary, Dibang Valley district.

148. *Accipiter nisus melaschistos* Hume
Sparrow-Hawk

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Datta *et al.* (1998) also noted this bird from Pakhui Wildlife Sanctuary, East Kameng district.

150. *Accipiter virgatus affinis* Hodgson.
East Himalayan Besra Sparrow-Hawk

Upper Subansiri : Taliha, Daporijo, 1 ♂ (16 Apr., 2001)

Katti *et al.* (1992) reported this species from Siang district and Mehao Wildlife Sanctuary, Dibang Valley district.

Measurements	Wing	Tail	Bill
1 ♂	152	124	20

156. *Buteo buteo japonicus* (Temminck & Schlegel)
Buzzard.

Katti *et al.* (1992) noted this species from Siang district. Unsatisfactorily known and difficult in field identification. Any record should be treated with reservation unless supported by Skins (Ali & Ripley - H.B.).

158. *Spizaetus nipalensis nipalensis* (Hodgson)
Hodgson's or Feather-toed Hawk-Eagle

Datta *et al.* (1998) reported this species from Pakhui Wildlife Sanctuary, East Kameng district.

161. *Spizaetus cirrhatus cirrhatus* (Gmelin)
Crested Hawk-Eagle

Ali & Ripley (1948) reported this species from Tideling, Mishmi Hills. Ali & Ripley, perhaps, recorded *Spizaetus (Cirrhatius) limnaeetus* (Horsfield).

165. *Hieraetus kienesii kienesii* (E. Geoffroy)
Rufous bellied Hawk-Eagle

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

A Indo-Malayan form with discontinuously distribution ranging from Himalayas and then to Western Ghats.

171. *Aquila pomarina hastota* (Lesson)
Lesser Spotted Eagle

Barman (1996) reported this species from D'Ering Memorial Wildlife Sanctuary, East Siang district.

Rare resident and sporadically distributed species.

172. *Ictinaetus malayensis perniger* (Hodgson)
Black Eagle

Ali & Ripley (1948) found this species at Tidding, Mishmi Hills.

Katti *et al.* (1992) reported this species from Mehao W.L.S., Dibang Valley district.

Atherya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

Singh (1995) noted this bird at D'Ering Memorial W.L.S. and Namdapha Biosphere Reserve, Changlang district in 1993 and 1994 respectively.

174. *Haliaeetus leucoryphus* (Pallas)
Ring-tailed Fishing Eagle.

Ali & Ripley (1948) found this species from Tezu, Lohit district.

175. *Ichthyophaga ichthyaetus ichthyaetus*
(Horsfield)
Grey-headed Fishing Eagle.

Ali & Ripley (1948) found this species from Lohit district.

Singh (1995) also noted this bird from D'Ering Memorial W.L.S., East Siang district.

177. *Ichthyophaga nana plumbea* (Jerdon)
Himalayan Greyheaded Fishing Eagle

Choudhury (1996) reported this species from Namdapha Biosphere Reserve, Changlang district and near Glao Lake in Kamlang W.L.S., Lohit district.

181. *Gyps himalayensis* Hume
Himalayan Griffon Vulture

Barman (1996) reported this species from D'Ering W.L.S., East Siang district.

182. *Gyps indicus indicus* (Scopoli)
Long-billed Vulture

Katti *et al.* (1992) reported this species from Kamlang W.L.S., Lohit district.

185. *Gyps bengalensis* (Gmelin)
White-backed Vulture

Katti *et al.* (1992) reported this species from Siang district and Mehao W.L.S., Dibang Valley district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S., East Kameng district.

188. *Gypaetus barbatus aureus* (Hablizl)
Bearded Vulture or Lammergeier

Choudhury (2000) found a lone bird from outskirt of Eaglenest and Sessa Orchid Sanctuary, West Kameng district.

We noted this bird twice, one in Hayuliang, Dibang Valley district and the other near 4th bridge in between Bomdila and Tawan, Tawan district.

185. *Circus cyaneus cyaneus* (Linnaeus)
Hen Harrier

Katti *et al.* (1992) reported this bird from Siang district.

Datta *et al.* (1998) also reported this bird from Pakhui, W.L.S., East Kameng district.

Uncommon winter visitor and /or passage migrant, recorded upto North Lakhimpur district, Assam (Ali & Ripley - HB).

192. *Circus melanoleucos* (Pennant)
Pied Harrier

Barman (1996) reported this species from D'Ering Memorial W.L.S., East Siang district.

Datta *et al.* (1998) further reported this species from Pakhui W.L.S., East Kameng district.

195. *Circaetus gallicus gallicus* (Gmelin)
Short-toed Eagle

Singh (1995) noted this bird twice from D'Ering Memorial W.L.S., E.Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district and Choudhury (2000) noted it crossing over Pakhui W.L.S, East Kameng district.

196. *Spilornis cheela cheela* (Latham)
Crested Serpent Eagle

Tirap district : 124 km. on MV-Road, Namdapha, 1 ♀ (21 Jan., 1985).

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Katti *et al.* (1992) reported it from Siang district.

Athreya (1996) also reported this species from Namdapha.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

We have also noted two birds of this species near Tipi Forest Rest House, Bhalukpong, West Kameng district.

Measurements	Wing	Tail	Bill
1 ♀	500	295	45

203. *Pandion haliaetus haliaetus* (Linnaeus)
Osprey

Singh (1995) noted this species at Glao Lake, Seijosa, East Kameng district.

Datta *et al.* (1998) noted it from Pakhui W.L.S, East Kameng district.

Choudhury (2000) reported its record near Jairampur in Changlang district on 19th May, 1993; in Namsang Reserve Forest on 26th Dec., 1993 and D'Ering Memorial W.L.S, on 17th Mar., 1991. Choudhury further noted a bird of this species flying over the Siang river in D'Ering Memorial W.L.S in Mar., 1991.

Family FALCONIDAE

204. *Microhierax caerulescens caerulescens*
(Linnaeus)
Redbreasted Falconet

Choudhury (2000) commented that it occurs

upto c. 2000m. in Arunachal Pradesh but without any detail.

205. *Microhierax melanoleucos* (Blyth)
White-legged Falconet or Pied Pygmy Falcon

Tirap district : Deban. 1 ♂ (28th Apr., 1987).

Singh (1995) noted it from Seijosa, East Kameng, Naharlagum, Itanagar and Namdapha National Park.

Athreya (1996) also reported from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	105	77	15

215. *Falco severus severus* Horsfield
Burmese Hobby

Ali & Ripley (1948) collected 3 ♀ specimens from Tezu and reported the species from near the Lohit river, Lohit district.

220. *Falco vespertinus amurensis* Radde
Redlegged Falcon

Choudhury (2000) mentioned its breeding record from Arunachal Pradesh.

221. *Falco neumannii* Fleischer
Lesser Kestrel

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Status uncertain. Rare winter visitor, and an irregular passage migrant. Recorded in Dibrugarh, Assam (Ali & Ripley - HB).

224. *Falco tinnunculus objusgatus* (Baker)
Kestrel

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family PHASIANIDAE

227. *Lerwa lerwa* (Hodgson)
Snow Partridge

It has distributional range through entire

Himalayas as far as Bhutan to NE Frontier between c. 3000 and 5000 m.

231. *Tetraogallus tibetanus centralis* Sushrin
Central Tibetan Snowcock

233. *Tetraophasis szechenyii* Madarazz
Pheasant Grouse

It enters through Upper Subansiri and Siyom drainage areas of NEFA, Ali & Ripley (HB).

239. *Francolinus francolinus melanonotus* Hume
Assam Black Partridge

It probably enters in Arunachal Pradesh through Assam.

247. *Francolonus gularis* (Temminck)
Swamp Partridge

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

255. *Perdicula asiatica asiatica* (Latham)
Jungle Bush Quail

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

267. *Arborophila torqueola torqueola* (Valenciennes)
Common Hill Partridge

Tirap district : Ridge Top (c. 2500 m) 1 ♂, 1 ♀ (4th Mar., 1988).

Baker (1913) reported of a specimen collected by Capt. Kennedy from 9000 ft. in the Mishmi Hills on 5th Apr., 1913.

Katti *et al.* (1992) reported this species from Siang district, Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Ali & Ripley (HB) mentioned its range to extreme eastern Assam north of Brahmaputra river.

Measurements	Wing	Tail	Bill
1 ♂	145	62	24
1 ♀	144	61	24

271. *Arborophila rufogularis intermedia* (Blyth)
Arakan Hill Partridge

Tirap district : Gandhigram (c. 1100 m) 1 ♂ (30 Dec., 1984), 124 km. on MV Road, Namdapha. 1 ♂ (12 Jan., 1985), Lower Jheel Camp. 1 ♂ (5 Feb., 1987), Ramnagar Camp, Namdapha (c. 1150 m) 1 ♀ (12 Feb., 1988).

Ali & Ripley (1948) collected a female between Denning and Dreyi, Mishmi Hills.

Measurements	Wing	Tail	Bill
2 ♂	143, 149	58, 59	23, 24
1 ♀	143	57	23

272. *Arborophila atrogularis* (Blyth)
Whitecheeked Hill Partridge

Tirap district : Hornbill Camp, Namdapha, 1 ♂ (13 Dec., 1983),

Zero Camp, Namdapha. 1 ♂ (22 Dec., 1983).

Datta *et al.* (1988) reported this species from Pakhui W.L.S., East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	147	104	21

273. *Arborophila mandellii* Hume
Redbreasted Hill Partridge

Singh (1995) reported it from Mallinye, Dibang Vally and West Kameng (AUC)

Ali & Ripley (HB) mentioned its distributional range through north of Brahmaputra river east through NEFA.

274. *Bambusicola fytchii hopkinsoni* Godwin-Austen
Assam Bamboo Partridge

Tirap district : Ramnagar (c. 1150 m), Namdapha. 1 ♀ (12 Feb., 1988).

Measurements	Wing	Tail	Bill
1 ♀	146	134	22

It enters in Arunachal Pradesh through Eastern Assam (Lakhimpur Sadiya tract).

283. *Ithaginis cruentus tibetanus* (Baker)
Tibetan Blood Pheasant

Ali & Ripley (1948) purchased a fan from one Mishmi made up of tail feather of this species.

Baker (1917) reported a male collected by Capt. Kennedy from Upper Matun Valley (8000'), Mishmi Hills on 28, 1913.

286. *Tragopan satyra* (Linnaeus)
Crimson Horned Pheasant or Satyr Tragopan

During the survey at Zemithang, Tawan district it was reported by one local people who lives at high altitude of Zemithang Valley, that this tragopan is common in the high altitude of Zemithang valley. This tragopan could easily be trapped during severe winter and heavy snow fall. During the month of January-February entire mountain chain above Zemithang Valley at the altitude of 12000 ft. and above are covered with snow with scattered patches covered with mosses. During severe winter these moss-covered patches are the only hunting ground of all sorts of pheasants including Satyr Tragopan. Local people use to palce trap on these patches and it is reported by local people that trapper use to catch a good number in every winter. This continuous practice leads to sharp decline of pheasant population in Zemithang. Otherwise entire Wildlife including birds are well protected here at Zemithang by Monpa Tribe who by religion are Buddhist and natural protector of Wildlife. Besides local Monpa tribe, enlighten elite of Zemithang Valley, eg. Govt. Official and school teachers act as protector of Wildlife. But a very few army or paramilitary personnel posted in Zemithang Valley and above are the regular hunter of Wildlife and pheasants of this area.

288. *Tragopan blythii blythii* (Jerdon)
Greybellied Tragopan

Tirap district : Gandhigram (c. 1100 m), Namdapha. 1 ♀ (12 Feb., 1988).

Measurements	Wing	Tail	Bill
1 ♀	224	185	33

Ali & Ripley (HB) mentioned its distribution from Assam south of the Brahmaputra river, in the Patai, Naga and Barail hill ranges south through Manipur and Lushai Hills. The present collection thus extends its range upto Tirap district of Arunachal Pradesh.

289. *Tragopan temminckii* (J.E.Gray)
Temminck's Tragopan

Ali & Ripley (HB) mentioned its distribution in the Mishmi Hills, Upper Debang and Tsangpo Valleyes etc. It is reported by the local people that this bird is found frequently on the hill top of Zemithang Valley, Tawan district and comes down during severe winter.

It may be presumed that this tragopan is distributed from east to west of the Arunachal Pradesh in suitable biotope.

290. *Lophophorus impejanus* (Latham)
Impeyan or Monal Pheasant

The owner of the inn where we stayed during our survey at Zemithang, Tawan district, showed a dryskin of this pheasant which he procured from a military personnel posted in the Upper post at Zemithang Valley. According to some local people, still there is a good population of this pheasant on the top of Zemithang Valley. They use to palce trap on moss ladden patches in between snow patches during January-February and all types of pheasants including Monal pheasant are easily trapped by these local people.

Ali & Ripley (HB) mentioned its distributional range from Kashmir east to about eastern frontier Bhutan. Some where between c. 92° and 93° E long, it meets the species *L. sclateri* (291).

The present observation concludes that this species extends its range upto Zemithang Valley, Tawang district of Arunachal Pradesh.

291. *Lophophorus sclateri* Jerdon.
Sclater's or Mishmi Monal Pheasant.

Ali & Ripley (1948) purchased fans made up of tail feathers of this species from the Mishmis.

292. *Crossoptilon crossoptilon harmani* Elwes
Elwes's Eared Pheasant

It is reported by the local people that it is commonly found in Sakti, a small village, c. 30 km. before Zemithang, Tawang district. They further reported that these birds use to cross the road during night and could be visible through the head-light of motor car during night.

Ali & Ripley (HB) mentioned that this birds ranges upto extreme northern fringes of the Siang, Subansiri and Lohit Frontier Divisions of NEFA.

Present report makes possible extension to about Zemithang, Tawang district, Arunachal Pradesh.

296. *Lophura leucomelana lathami* (J.E. Gray)
Black breasted Kaleej Pheasant

Tirap district : Hornbill Camp, Namdapha, 1 ♀, Firmbase Camp 1 ♀ (13, 19 Dec., 1983); 77 mile base camp, Namdapha 1 ♀ (7 Feb., 1987); Ramnagar (c. 1150 m), Namdapha 1 ♂ (15 Feb., 1988). Lower Subansiri district : Yazali 1 ♀ (13 Jan., 1997).

Ali & Ripley (1948) reported this species to be common in the lowland forest at Tezu, Lohit district.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	232	280	35
4 ♀	220-223 (221)	208-220 (216)	33-35 (34)

299. *Gallus gallus murgi* Robinson & Kloss
Red Jungle fowl

Katti *et al.* (1992) reported this species from Siang districts; Mehao W.L.S, Dibang Valley district and Kernalng W.L.S, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We also noted this bird as plenty in Kamlang W.L.S Lohit district and at TIPI, Bhalukpong, West Kameng district.

300. *Gallus gallus spadiceus* (Bonnaterre)
Burmese Red Jungle fowl

Ali & Ripley (1948) collected this species at Tezu, Lohit district.

309. *Polyplectron bicalcaratum bakeri* Lowe
Bhutan Peacock-Pheasant

Tirap district : Gibbon's land, Namdapha. 3 ♂ (6, 7, 9 Jan., 1984).

Ali & Ripley (1948) reported this species from Denning, Mishmi Hills.

Athreya (1996) also reported this species from Namdapha.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
3 ♂	212-225 (219)	365-370 (367)	28-30 (29)

311. *Pavo cristatus* Linnaeus
Indian Peafowl

Family TURNICIDAE

313. *Turnix sylvatica dussumier* (Temminck)
Little Bustard-Quail

According to Ali & Ripley (HB) it extends through the Assam Valley to Dibrugarh and Sadiya. Hence there is possibility of being extended through Arunachal Pradesh.

314. *Trunix tanki tanki* Blyth
Indian Yellow Legged Button Quail

Family GRUIDAE

320. *Grus grus lilfordi* Sharpe
Eastern Common Crane

Choudhury (1994) reported this species from Arunachal Pradesh. He further said that two

large flocks of 522 and 156 cranes were seen crossing the Mishmi Hills following the Dibang river on 7 Mar., 1993. The site was Nizamghat (28°16'N, 95°42'E).

321. *Grus nigricollis* Przevalski
Black necked Crane

Betts (1954) reported that every year flock varying between 20 and 40 birds arrives in the Apa Tani Valley by mid November and leaves at the end of February. In the latter days during eighties, Salim Ali made an attempt to find this bird in Apa Tani Valley and ultimately confirmed its presence in the valley but not in Bett's way of a flock of 20-40 birds.

Choudhury (1999) reported new sites of this species from Zemithang Valley, Tawang district and Sangti Valley, Dirang, West Kameng district.

We collected information to have further details. It is reported by the local people that this migratory species comes every year at Zemithang Valley, Tawang district. This practice has been continuing since last seventy years. But we did not meet with this bird till the end of November, 2000 in Zemithang Valley and also in Sangti Valley.

We further recorded another new site at Sela Pass (c. 14000/), Tawang district in September, 1999. A pair was found in a small lake near Sela Pass. This is, we suppose, on migration to their permanent site at Zemithang Valley.

Ali, Biswas and Ripley (1996) made an illaborate account of availability of this species in different parts of Bhutan. It is now well pecipilated fact that the Blacknecked Crane has a regular winter hunt in a landmass streatching from Bhutan to Western Arunachal Pradesh upto Apa Tan Valley and thus a regular route of migration could be established in this way.

Family RALLIDAE

342. *Amaurornis bicolor* (Walden).
Elwe's Crane.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

342. *Amaurornis akool akool* (Sykes)
Brown Crake

Singh (1995) reported this species from Chessa, Papum Pare district.

Ali & Ripley (HB) mentioned its eastern range upto W. Assam (Guahati). Present report thus further extends its range upto Papum Pare district, Arunachal Pradesh.

343. *Amaurornis phoenicurus chinensis* (Boddaert)
Whitebreasted Waterhen

Upper Subansiri district : Daporijo - 1 ♂ (25 April, 2001)

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We found one solitary bird beside a nullah with dense undergrowth at Dumporijo, U. Subansiri district. According to Ali & Ripley (HB) its eastern limit is Bhutan duars and Assam.

We observed and collected specimen from Upper Subansiri district. So it is well distributed in Arunachal Pradesh and is extended upto western Arunachal Pradesh.

Measurements	Wing	Tail	Bill
1 ♂	17	71	43

346. *Gallicrex cinerea cinerea* (Gmelin)
Water Cock or Kora

It is reported by many Villagers that they used to kill this bird for its meat at Dumporijo, Upper Subansiri district.

347. *Gallinula chloropus indica* Blyth
Moorhen

Tirap district : Gandhigram (c. 1100 m). Namdapha. 1 ♂ (27 Dec., 1984); 1 ♀ (20 Jan., 1987).

Measurements	Wing	Tail	Bill
1 ♂	168	66	47
1 ♀	152	53	41

350. *Fulica atra atra* Linnaeus
Coot

A local boy collected a coot from Yam-Chang Chu (river) Zemithang, Tawang district in the

3rd week of November, 2000. The bird was a sub-adult one.

Family HELIORNITHIDAE

351. *Heliopais personata* G.R. Gray
Masked Finfoot

Choudhury (2000) mentioned its occurrence in Arunachal Pradesh but without authentic record. However he reported this species from Nameri National Park, the same territory divided and named as Pakhui W.L.S, Seijosa, East Siang district. Hence reporting of Choudhury may be taken granted.

Family OTIDIDAE

356. *Eupoditis bengalensis bengalensis* (Gmelin)
Bengal Florican

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Choudhury (2000) presented a report of population estimate of this species in Arunachal Pradesh. Altogether 54-68 birds were estimated from East Siang; Dibang Valley and Lohit district. He further reported 18-22 birds from Dibang reserve forest; 3-4 from Deopani and Kerim reserve forest; 9-12 from Chagories of the Lohit river; 6-8 between Sesserri and Sibia rivers and 18-20 from D'Ering Memorial W.L.S, East Siang district.

Family JACANIDAE

358. *Hydrophasianus chirurgus* (Scopoli)
Pheasant tailed Jacana

We noticed it twice, once while crossing a river on the way to Tezu, Lohit district and near Tipi. Bhalukpong, West Kameng district.

359. *Metopidius indicus* (Latham)
Bronzewinged Jacana

We noticed it twice, once at Tipi, Bhalukpong, West Kameng district and another on the way to Itanagar at Kiming, Papum Pare district.

Family CHARADRIIDAE

364. *Vanellus vanellus* (Linnaeus)
Green Plover

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

365. *Vanellus cinereus* (Blyth)
Grey-headed Lapwing

Barman (1996) reported this species from D'Ering Memorial W.L.S., East Siang district.

Ali & Ripley (HB) mentioned it as quite common in Assam, and also wintering as far as East Siang district of Arunachal Pradesh.

366. *Vanellus indicus indicus* (Boddaert)
Red-Wattled Lapwing

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Barman (1996) found it at D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

We noticed several bird surrounded Forest Rest House, Tezu, Lohit district.

369. *Vanellus spinosus duvaucelii* (Lesson)
Spurwinged Plover

Tirap district : Gandhigram, Namdapha 3 ♂ (11, 12 Feb., 1987), 1 ♀ (11 Feb., 1987).

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Choudhury (1992) altogether reported 4 birds on the bank of Siang river in D'Ering Memorial W.L.S, East Siang district in March, 1991. He further noted 2 birds among the boulder of the Noa-Dihing river, Deban, Changlang district in July.

Barman (1996) reported it also from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

<i>Measurements</i>	Wing	Tail	Bill
3♂	193,194,197	32,33,35	114,114,117
1♀	199	105	33

380. *Charadrius dubius jerdoni* (Legge)
Little Ringed Plover

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Barman (1996) reported it from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

390. *Limosa limosa melanuroides* Gould
Black-tailed Godwit

Singh (1995) reported this species from D'Ering Memorial W.L.S, East Siang district; Khari, Pakhui W.L.S, and Namooora both in East Kameng district.

Datta *et al.* (1998) also noted it from Pakhui W.L.S, East Kameng district.

394. *Tringa totanus eurhinus* (Oberhdser)
Eastern Redshank

Ali & Ripley (1948) reported this species from Lohit river, Lohit district.

We found this bird on the bank of Siang river, Tipi, Bhalukpong, West Kameng district and on the bank of Subansiri river, Dumporijo, Upper Subansiri district.

395. *Tringa stagnatilis* (Bechstein)
Marsh Sandpiper or Little Greenshank

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

396. *Tringa nebularia* (Gunnerus)
Greenshank

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

397. *Tringa ochropus* Linnaeus
Green Sandpiper

Tirap district : Gandhigram, Namdapha. 1 ♂ (12 Feb., 1987), Gibbon's Land, Namdapha. 1 ♀ (5 Jan., 1984), Ramnagar, Namdapha 1 ♀ (18 Feb., 1988).

Ali & Ripley (1948) reported this species from the Lohit river, Lohit district.

Datta *et al.* (1998) also found this bird from Pakhui W.L.S, East Kameng district.

We noticed a number of birds of this species on the bank of Subansiri river, Dumporijo, Upper Subansiri district.

<i>Measurements</i>	Wing	Tail	Bill
1♂	136	64	39
2♀	137,144	66,70	37,38

398. *Tringa glareola* Linnaeus
Wood or Spotted Sandpiper

401. *Tringa hypoleucos* Linnaeus
Common Sandpiper

Ali & Ripley (1998) found this species from the Lohit river, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

404. *Gallinago solitaria solitaria* (Hodgson)
Eastern Solitary Snipe

405. *Gallinago nemoricola* (Hodgson)
Wood Snipe

406. *Gallinago stenura* (Bonaparte)
Pintail Snipe

409. *Gallinago gallinago gallinago* (Linnaeus)
Common or Fantail Snipe

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

410. *Gallinago minima* (Brunnich)
Jack Snipe

411. *Scolopax rusticola rusticola* Linnaeus
Woodcock

Tirap district : 124 km. on MV Road, Namdapha, 1 ♂ (17 Jan., 1985).

Measurements	Wing	Tail	Bill
1♂	198	121	71

417. *Callidris temminckii* (Leisler)
Temminck's Stint

426. *Philomachus pugnax* (Linnaeus)
Ruff

Family ROSTRATULIDAE

429. *Rostratula benghalensis benghalensis* (Linnaeus)
Painted Snipe

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Family RECURVIROSTRIDAE

430. *Himantopus himantopus himantopus* (Linnaeus)
Blackwinged Stilt

432. *Recurvirostra avosetta* Linnaeus
Avocet

433. *Ibidorhynchos struthersii* Vigors
Ibisbill

Tirap district : Ramnagar (c 1150 m)
Namdapha 1♀ (11 Feb., 1988).

Ali & Ripley (1948) reported this species from Lohit river near Tezu, Lohit district.

Choudhury (1996) reported this species as first record from along the Nao-Dihing in Namdapha. However Z.S.I. party collected 1♀ from Namdapha Biosphere Reserve.

Measurements	Wing	Tail	Bill
1♀	238	144	85

Family BURHINIDAE

436. *Burhinus oedicephalus indicus* (Salvadori)
Stone Curlew

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

437. *Esacus magnirostris recurvirostris* (Cuvier)
Great Stone Plover

Choudhury (1992) noted 6 birds on 17 Mar., 1991 in D'Ering Memorial W.L.S, East Siang district.

Family GLAREOLIDAE

443. *Glareola pratineola maldivrum* J R. Forster
Large Pratincole

Ali & Ripley (1948) reported this species at Tezu, Lohit district.

444. *Glareola lactea* Temminck
Small Indian Pratincole

Choudhury (1992) commented that it is common in the D'Ering Memorial W.L.S in March, 1991.

Barman (1996) also reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family LARIDAE

453. *Larus ichthyaetus* Pollas
Great Blackheaded Gull

Choudhury (1992) reported this as first record from D'Ering Memorial W.L.S, East Siang district on 17 March, 1991 and further reported two birds from Namdapha Biosphere Reserve, Changlang district on 16 Jan., 1993.

454. *Larus brunnicephalus* Jerdon
Brownheaded Gull

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

455. *Larus ridibundus ridibundus* Linnaeus
Black-headed Gull

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

463. *Sterna aurantia* J.E.Gray
Indian River Tern

Choudhury (1992) noted this bird in many numbers and commented that it is a common resident in D'Ering Memorial W.L.S, East Siang district.

Katti *et al.* (1992) also reported this bird from Siang district.

Barman (1996) reported this species from the same area.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

470. *Sterna acuticauda* J.E.Gray
Black-bellied Tern

Singh (1995) reported this species from D'Ering Memorial W.L.S, East Siang district.

Choudhury (2000) reported its occurrence from Chowkham, Lohit district on 8 Feb., 1994 and more than five examples from D'Ering Memorial W.L.S, East Siang district on 17 Mar., 1991.

484. *Rynchops albigollis* Swainson
Indian Skimmer

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Family COLUMBIDAE

493. *Treron apicauda apicauda* Blyth
Pintailed Green Pigeon

Tirap district : Gibbon's land, Namdapha. 1 ♀ (31 Dec., 1983); 1 ♂, 2 ♀, 10 (1, 3, 7 Jan., 1984); 1 ♂ (5 Jan., 1985); Namdapha Camp. 1 ♀ (21 Apr. 1990).

Ali & Ripley (1948) collected 3 ♂ and 2 ♀ from Dening and Tezu, Lohit district.

Athreya (1996) also reported it from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

We also noted this species from Tipi, Bhalukpong, West Kameng district, Brahmakund, Wakrow, Lohit district and Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2♂	160,169	220,224	23,24
4♀	159-167	220-241	23-25
10	167	245	26

494. *Treron sphenura sphenura* (Vigors)
Kokla or Wedgetailed Green Pigeon

Tirap district : Gibbon's land, Namdapha. 1 ♂, 1 ♀ (20,23 Dec., 1982); 77 mile base camp. 1 ♀ (8 Feb., 1987).

Ali & Ripley (1948) collected a female from Dreyi, Mishmi Hills.

Betts (1956) collected a specimen from Subansiri district and further collected two from Kore (5000'), Subansiri district.

Athreya (1996) also reported this species from Namdapha, Changlang district.

We found this birds on many spots.- Hayuliang, Workrow, Lohit district; Tipi, Bhalukpong, West Kameng district and Talia, Doparijo, Upper Subansiri district.

Measurements	Wing	Tail	Bill
1♂	170	137	25
2♀	170-174	114-120	24-25

495. *Treron curvirostra nipalensis* (Hodgson)
Thick billed Green Pigeon

Barinan (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

499. *Treron pompadora phayrei* (Blyth)
Ashyheaded Green Pigeon

Tirap district : Gibbon's land, Namdapha. 1 ♂ (31 Dec., 1983).

Ali & Ripley (1948) collected 2 ♂ and 1 ♀ at Tezu, Lohit district.

Betts (1956) collected a specimen from Subansiri district.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1♂	156	124	26

501. *Treron bicincta bicincta* (Jerdon)
Orange breasted Green Pigeon

503. *Treron phoenicoptera phoenicoptera* (Latham)
Bengal Green Pigeon

512. *Ducula badia griseicapilla* Walden
Greyheaded Imperial Pigeon

Tirap district : Firmbase Camp, Namdapha 1♂, 1♀ (19 Apr., 1981), 1♀ (20 Dec., 1983); 124 km. on MV Rd. 4♀ (17 Jan., 1985); 77 mile base camp, Namdapha 1♂ (9 Feb., 1987).

Ali & Ripley (1948) collected a pair at Dening and Dreyi, Mishmi Hills.

Betts (1956) reported this species between 1800-4000' in Subansiri district.

Katti *et al.* (1992) found this bird from Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

A flock consisting of eight birds were seen by us in between Taliha and Daichook, Daporijo, Upper Subansiri.

Measurements	Wing	Tail	Bill
2♂	240,252	176,180	29,29
6♀	228-240 (236)	176-178 (177)	28-29 (28)

514. *Columba leuconota gradaria* Hartert
East Himalayan Snow Pigeon

It is reported by local people that this bird visits every year in large flock at Zemithang Valley, Tawang district during severe winter.

517. *Columbia livia intermedia* Strickland
Blue Rock Pigeon

Katti *et al.* (1992) reported this species from Siang district; Mehao W.L.S, Debang Valley district and Kamlang W.L.S, Lohit district.

520. *Columba hodgsonii* Vigors.
Speckled Wood Pigeon.

523. *Columba pulchricollis* Blyth.
Nepal or Ashy Wood Pigeon.

Betts (1956) reported this species from Pein

and Apa Tani Valley and collected a specimen from Sovo (6000 ft.), Subansiri district.

Katti *et al.* (1992) also reported this species from Mehao W.L.S, Dibang Valley district.

524. *Columba punicea* Blyth
Purple Wood Pigeon

Ali & Ripley (1948) collected 2♀ from Dening and Tezu, Lohit district.

Choudhury (2000) found this bird in between Koronu and Roing, Dibang Valley district.

526. *Macropygia unchall tusalia* (Blyth)
Bartailed Cuckoo-Dove

Tirap district : Gandhigram (c 1100 m), Namdapha 1♂, 1♀ (30 Dec., 1984); 77 mile base camp, Namdapha 1♂, 2♀ (7,8.9 Feb., 1987).

Betts (1956) collected a specimen from Kore (5000'), Subansiri district.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Measurements	Wing	Tail	Bill
2♂	188,190	202,203	20,20
3♀	192-193 (192)	197-200 (198)	20-20 (20)

530. *Streptopelia orientalis orientalis* (Latham)
Rufous Turtle-Dove

Baker (1913) reported of a ♂ collected from Mipi (8500 ft.), Mishmi Hills on 9 Mar., 1913 by Capt. Kennedy.

Betts (1956) reported this species as common in Apa Tani Valley, Subansiri district.

Katti *et al.* (1992) reported this species from Siang district and Kamlang W.L.S, Lohit district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

We also noted this bird in the Pakhui W.L.S, East Kameng district.

532. *Streptopelia orientalis agricola*. Eastern Turtle-Dove

Tirap district : Gandhigram, Namdapha 1 ♂, 1 ♀ (26 Feb., 1988).

We noted a good population of this species at Yachuli, Lower Subansiri district.

Measurements	Wing	Tail	Bill
1 ♂	187	136	24
1 ♀	184	121	23

534. *Streptopelia decaocto decaocto* (Fridvaldszky) Ring Dove or Collared Turtle Dove

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

We noticed this birds in Tipi, Bhalukpong, West Kameng district; Kimming, Papum Pare district.

536. *Streptopelia tranquebarica humilis* (Temminck) Burmese Red Turtle-Dove

Tirap district : Gibbon's land, Namdapha. 1 ♀ (17 Dec., 1982).

Measurements	Wing	Tail	Bill
1 ♀	138	89	19

537. *Streptopelia chinensis suratensis* (Gmelin) Spotted Dove

Betts (1956) reported that this species is not common in Subansiri district.

539. *Streptopelia chinensis tigrina* (Temminck) Burmese Spotted Dove

Betts (1956) reported that this species is not common in Subansiri district.

540. *Streptopelia chinensis edwardi* Ripley NEFA Spotted Dove

Tirap district : Gibbon's land, Namdapha 1 ♂, 3 ♀ (23, 24, 26 Dec., 1983); Gandhigram (c 1100 m), Namdapha 2 ♂, 1 ♀ (26, 27 Feb., 1988). Dibang Valley district : Koronu 1 ♂ (4 Apr., 1999).

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Barman (1996) reported this bird from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

We found this bird very common in and around Tipi, Bhalukpong, West Kameng district.

Measurements	Wing	Tail	Bill
4 ♂	142-147 (145)	138-145 (142)	18-21 (20)
5 ♀	141-149 (146)	139-146 (142)	18-21 (20)

542. *Chalcophaps indica indica* (Linnaeus) Indian Emerald Dove

Tirap district : Gibbon's land, Namdapha 1 ♂ (3 Apr. 1981); Deban, Namdapha 1 ♂ (9 Dec., 1982); Firmbase Camp, Namdapha 1 ♂, 1 ♀ (13, 20 Dec., 1983); 124 km. on MV Road, Namdapha 2 ♂ (6, 10 Jan., 1985); Gandhigram (c 1100 m), Namdapha 2 ♂, 1 ♀ (1 Feb., 1987, 26 Feb., 1988, 2 Mar., 1988); 77 mile base camp, Namdapha 1 ♂ (8 Feb., 1987).

Dibang Valley district : Koronu - 1 ♂ (3 April, 1999)

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Athreya (1996) also reported this bird from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We found this bird in good numbers at Tezu, Lohit district; Talia, Dumporijo, Upper Subansiri district.

Measurements	Wing	Tail	Bill
7 ♂	142-151 (147)	90-96 (94)	22-24 (23)
2 ♀	139-148	81-89	22(2)
2 ♀	141-142	88-90	22(2)

Family PSITTACIDAE

545. *Psittacula eupatria avensis* (Klossa)
Large Indian Parakeet

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

549. *Psittacula krameri borealis* (Neumann)
Rose-ringed Parakeet

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

551. *Psittacula alexandri fasciata* (P.L.S. Muller)

Ali & Ripley (1948) noted this species at Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We also found numerous birds in Pakhui W.L.S, East Kameng district.

554. *Pasittacula derbyana* (Fraser)
Lord Derby's Parakeet

557. *Pasittacula cyanocephala bengalensis* (Forster)
Blossom headed Parakeet

Ali & Ripley (1948) noted this species at Tezu, Lohit district. We also noted plenty at Tezu, Lohit district.

563. *Pasittacula finschii* (Hume)
Eastern Slaty headed Parakeet

566. *Loriculus vernalis* (Sparman)
Lorikeet

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We noted a large flock at Tezu, Lohit district.

Family CUCULIDAE

569. *Clamator coromandus* (Linnaeus)
Redwinged Crested Cuckoo

Betts (1959) noted this species in Subansiri area.

572. *Cuculus sparverioodes sparverioodes* Vigors
Large Hawk-Cuckoo

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

573. *Cuculus varius varius* Vahl
Common Hawk-Cuckoo

Katti *et al.* (1992) reported this species from Kamlang W.L.S, Lohit district.

We also noticed this bird on the way to Brahmakund, Workrow, Lohit district.

575. *Cuculus fugax nasicolor* Blyth
Hodgson's Hawk-Cuckoo

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

576. *Cuculus micropterus micropterus* Gould
Indian Cuckoo

Betts (1956) reported it as very common in Subansiri area.

Barman (1996) noted this bird from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) further recorded it from Pakhui W.L.S, East Kameng district.

579. *Cuculus canorus bakeri* Hartert
Cuckoo

Betts (1956) reported it from above 4000 ft. in Subansiri area.

Altogether 5-6 birds were noted by us in the thin jungle at Dumporijo, Upper Subansiri district.

580. *Cuculus saturetus saturatus* Blyth
Himalayan Cuckoo

Betts (1956) reported it as very common in the Apa Tani Valley above 5000'

581. *Cuculus poliocephalus poliocephalus* Latham
Small Cuckoo

Betts (1956) collected a specimen from Kore (5000 ft.) and reported it as a common visitor to the hills of Subansiri area.

585. *Cacomantis merulinus querulus* Heine
Rufousbellied or Burmese Plaintive Cuckoo

Katti *et al.* (1992) reported this species from Kamlang W.L.S, Lohit district.

Datta *et al.* (1998) further noted it from Pakhui W.L.S, East Kameng district.

586. *Chalcites maculatus* (Gmelin)
Emerald Cuckoo

587. *Chalcites xanthorhynchus xanthorhynchus* (Horsfield)
Violet-Cuckoo

588. *Surniculus lugubris ducruroides* (Hodgson)
Indian Drongo-Cuckoo

Betts (1956) reported this species from Likha (4000 ft.), Subansiri area.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

591. *Eudynamys scolopacea malayana* Cabanis & Heine
Malay Koel

We recorded its call note on many occasion at Tezu, Lohit district.

593. *Rhopodytes tristis tristis* (Lesson)
Large Greenbilled Malkoha

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

594. *Rhopodytes tritis saliens* Mayr
Burmese Large Greenbilled Malkoha

Tirap district : Gibbon's Land, Namdapha. 1♂ (1 Jan., 1984).

Ali & Ripley (1948) collected a female from Dening, Mishmi Hills.

Measurements	Wing	Tail	Bill
1♂	161	320	31

597. *Taccocua leschenaultii infuscata* Blyth
Eastern Sirkeen Cuckoo

600. *Centropus sinensis sinensis* (Stephens)
Common Crow-Pheasant

Ali & Ripley (1948) recorded this species at Tezu, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S., East Siang district.

We noted one solitary bird in the bush at Dumporijo, Upper Subansiri.

605. *Centropus toulou bengalensis* (Gmelin)
Lesser Coucal

Betts (1956) reported this species as common in Pein Valley (3-4000 ft.).

Datta *et al.* (1998) noted this bird from Pakhui W.L.S, East Kameng district.

We noticed 2-3 birds in bushes around Forest Rest House at Tezu, Lohit district. Two to Three pairs were also noted in a bush at Dumporijo, Upper Sunbansiri. One bird was trapped in the mist net but unfortunately flew away.

Family STRIGIDAE

608. *Tyto capensis longimembris* (Jerdon)
Grass Owl

609. *Phodilus badius saturatus* Robinson
Sikkim Bay Owl

612. *Otus spilocephalus spilocephalus* (Blyth)
Eastern Spotted Scops Owl

Tirap district : Gibbon's land, Namdapha 1♂ (3 May, 1981); Gandhigram (c. 1100 m), Namdapha 1♀ (2 Feb., 1987).

Tawang district : 4th Bridge 1♂ (17 Nov., 2000).

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Measurements	Wing	Tail	Bill
2♂	141, 142	85, 85	20, 20
1♀	138	81	20

616. *Otus scops sunia* (Hodgson)
North Indian Scops Owls

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

624. *Otus bakkamoena lettia* (Hodgson)
Burmese Collared Scops Owl

Tirap district : 77 mile base camp, Namdapha
2♂ (31 Jan., 1 Feb., 1987).

Lower Subansiri : Pittapool, Yazali 1♀ (22
Jan., 1997).

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
4♂	161-167 (164)	75-83 (79)	24-25 (24)
2♀	175,177	88,89	24

626. *Bubo bubo tibetanus* Bianchi
Tibetan Horned or Eagle-Owl

628. *Bubo nipalensis nipalensis* Hodgson
Forest Eagle-Owl

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

633. *Bubo flavipes* (Hodgson)
Tawn Fish Owl

Choudhury (1998) noted one specimen from
Mehao W.L.S, Dibang Valley, in Dec., 1992 at
an elevation of 2450 ft.

We found one of this bird near a hill stream
on the other stretch of Kamlang W.L.S,
Workrow, Lohit district.

635. *Glaucidium brodiei brodiei* (Burton)
Collared Pigmy Owlet

Tirap district : Chiria Camp 1♂ (24th Apr.,
1981); Hornbill Camp, Namdapha 1♂ (12th
Dec., 1983); 124 km. on MV Road, Namdapha
1♂ (12th Jan., 1985); 77 miles base camp 1♂
(29th Jan., 1987).

Baker (1913) reported of 1♀ from Etalni
(2200 ft), Mishmi Hills collected by Capt.
Kennedy on 13th Feb., 1913.

Katti *et al.* (1992) reported this species from
Siang district; Mehao W.L.S, Dibang Valley
district and Kamlang W.L.S, Lohit district.

Measurements	Wing	Tail	Bill
4♂	92-100 (96)	60-63 (61)	14-15 (14.5)

640. *Glaucidium cuculoides austerum* Ripley
East Himalayan Barred Owlet

Tirap district : Gibbon's land, Namdapha 1♂
(29th Dec., 1982); Deban, Namdapha, 1♂, 1♀
(4, 13th Dec., 1983); Gibbon's land, Namdapha
2♀ (1, 7th Jan., 1984).

Lower Subansiri district : Yachuli 1♂ (12th
Jan., 1997)

Lohit district : Tezu 2♂ (5, 12 Nov., 1998).

Dibang valley district : Koranu, Roing 1♂ (2
Apr. 1999).

Ali & Ripley (1948) reported this species
from Dering, Mishmi Hills.

Measurements	Wing	Tail	Bill
5♂	150-154 (152)	80-90 (84)	20-22 (21)
3♀	156-160 (158)	86-87 (86)	20-21 (20)
1♂	157	87	20

641. *Glaucidium cuculoides rufescens*. Baker
Burmese Barred Owlet

642. *Ninox scutulata lugubris* (Tickell)
Indian Brown Hawk-Owl

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

643. *Ninox scutulata burmanica* Hume
Burmese Brown Hawk-Owl

649. *Athene noctua ludlowi* Baker
Tibet Owlet

650. *Athene brama indica* (Franklin)
Northern Spotted Owlet

651. *Athene brama ultra* Ripley
East Assam spotted Owlet

Tirap district : Deban, Namdapha 1♀ (29th
Dec., 1983).

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♀	156	86	22

658. *Strix leptogrammica newarensis* (Hodgson)
Himalayan Brown Wood Owl

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district.

662. *Strix aluco nivicola* (Blyth)
Himalayan Wood Owl

Katti *et al.* (1992) reported this species from Kamlang W.L.S, Lohit district.

Family PODARGIDAE

667. *Batrachostomus hodgsoni hodgsoni* (G.R.Gray)
Hodgson's Frogmouth

Family CAPRIMULGIDAE

670. *Caprimulgus indicus hazaræ* Whistler and Kinnear
Himalayan Jungle Nightjar

675. *Caprimulgus macrurus albonotatus* Tickell
Long-tailed Nightjar

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

680. *Caprimulgus asiaticus asiaticus* Latham
Indian Little Nightjar

Family APODIDAE

683. *Collocalia brevirostris brevirostris* (Horsfield)
Himalayan Swiftlet

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Datta *et al.* (1998) further reported this species from Pakhui W.L.S, East Kameng district.

We found a flock consisting of 50-70 birds over a mountain cliff at 4th bridge, Jung, Tawang district.

684a. *Collocalia maxima maxima* Hume
Indo-malayan or 'Black-nest' swiftlet

688. *Chaetura caudacuta nudipes* (Hodgson)
Whitethroated Spinetailed Swift

690. *Chaetura cochinchinensis cochinchinensis*
Oustalet
Cochinchina Spine tail Swift

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

691. *Chaetura gigantea indica* Hume
Large Brownthroated Spinetail Swift

Betts (1956) reported this species from Pani river (2000') and Apa Tani Valley (5000'), Subansiri district.

700. *Apus pacificus leuconyx* (Blyth)
Blyth's or Himalayan White-rumped Swift

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

701. *Apus pacificus kanoi* (Yamashina)
Tibetan White-rumped Swift

Many of this species were seen moving around the sky on each cloudy afternoon at Taliha, Daporijo, Upper Subansiri. But I am in doubt about the identification of this bird upto sub-species level.

706. *Apus affinis subfurcatus* (Blyth)
Malay House Swift

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district. Barman (1996) found it from D'Ering Memorial W.L.S, East Siang district and Datta *et al.* (1998) noted it from Pakhui W.L.S, East Kameng district.

707. *Cypsiurus parvus batasiensis* (J.E.Gray)
Palm Swift

Betts (1955) reported this species from 1800 ft. in Subansiri district.

708. *Cypsiurus parvus infumatus* (sclater)
Eastern Palm Swift

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

709. *Hemiprocne longipennis coronata* (Tickell)
Crested Tree Swift

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Family TROGONIDAE

714. *Harpactes erythrocephalus helenae* Mayr
Mishmi Redheaded Trogon

Tirap district : Firmbase Camp, Namdapha 1♂, 1♀ (17, 18 Apr. 1981); Gibbon's land, Namdapha 2♂, 4♀ (2 Jan., 1982, 18 Dec., 1982; 1, 3, 8 Jan., 1984); Zero Camp, Namdapha, 1♀ (24 Dec., 1983); 77 mile base camp, Namdapha 2♂, 1♀ (2,3,9 Feb., 1987); Gandhigram, Namdapha 1♀ (22 Jan., 1987); Upper Camp, Namdapha 1♀ (5 Mar., 1988).

Ali & Ripley (1948) collected this species from Tezu and Dening, Mishmi Hills.

Betts (1956) reported this species from Pite (2000') collected a specimen from Talo (5000'), Subansiri district.

Katti *et al.* (1992) noted this species from Siang district and Mehao W.L.S, Dibang Valley district.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
5♂	152-160 (156)	180-187 (185)	21-22 (21)
9♀	155-165 (161)	182-188 (185)	21-22 (22)

716. *Harpactes wardi* (Kinnear)
Ward's Trogon

Tirap district : Ridgetop, Namdapha 1♀ (7 Mar., 1988).

Ali & Ripley (1948) collected 2♀ from Tidding, Mishmi Hills.

Betts (1956) collected a specimen from Kore (5,500' ft.), Subansiri district.

Measurements	Wing	Tail	Bill
1♀	170	212	19

Family ALCEDINIDAE

718. *Ceryle lugubris guttulata* Stejneger
East Himalayan Pied Kingfisher

Tirap district : Namdapha - Gibbon's land, 1♀ (5 Jan., 1985); Ramnagar (c. 1150 m) 1♂ (16 Feb., 1988).

Lohit district : Wakro 1♂ (18 Nov., 1998).

Ali & Ripley (1948) collected 1♂ and 1♀ from Tezu, Lohit district and Deming, Mishmi Hills.

Betts (1956) reported it from Subansiri district.

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district.

Athreya (1996) also reported this bird from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2♂	190,190	110,114	80,80
1♀	183	110	74

719. *Ceryle rudis leucomelanura* Reichenbach
Lesser Pied Kingfisher

Ali & Ripley (1948) reported this species from Tezu, Lohit district.

Katti *et al.* (1992) found this species from Kamlang W.L.S, Lohit district.

Choudhury (1992) noted one bird in D'Ering Memorial W.L.S, East Siang district.

Barman (1996) also reported it from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

721. *Alcedo hercules* Laubmann
Great Blue Kingfisher

Tirap district : Namdapha - 77 mile base camp, 1♂ (7 Feb, 1987); Hornbill House Camp 1♀ (12 Apr., 1981).

Dibang Valley district : Koranu 1♂ (29 Mar., 1999).

Betts (1956) reported this species from Subansiri district (2000ft.).

Athreya (1996) also reported this species from Namdapha, Changlang district.

Choudhury (2000) found this bird in Khari, Pakhui W.L.S, East Kameng district on 27 Oct., 1994 and also recorded from Namdapha National Park, Changlang district.

Measurements	Wing	Tail	Bill
2♂	97,103	45,45	49,55

723. *Alcedo atthis bengalensis* Gmelin
Indian Small Blue Kingfisher

Tirap district : Gibbon's land, Namdapha 1♀ (22 Dec., 1982)

Dibang Valley : Koronu 1♂ (30 Mar., 1909).

Ali & Ripley (1948) collected 1♂ from Tezu, Lohit district.

Betts (1956) reported it as the only Kingfisher in Apa Tani Valley (5000 ft.).

Katti *et al.* (1992) reported this species from Siang district.

Barman (1996) noted this bird from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) recorded this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1♂	69	37	42
1♀	69	31	41

725. *Alcedo meninting collarti* Baker
Assam Blue-eared Kingfisher

Tirap district : Gibbon's land, Namdapha 1♀ (20 Dec., 1982).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1♀	66	29	43

727. *Ceyx erithacus erithacus* (Linnaeus)
Indian Threetoed Forest Kingfisher

Tirap district : Namdapha - Gibbon's land 1♂, 1♀ (3 May, 1981); Miao Reserve Forest 1♂, 1♀ (4,5 May, 1981).

Measurements	Wing	Tail	Bill
2♂	55,55	22,23	33,36
2♀	53,56	22,22	33,33

730. *Pelargopsis capensis capensis* (Linnaeus)
Stork-Billed Kingfisher

Ali & Ripley (1948) noted this species at Tezu, Lohit district.

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

We also found it in Pakhui W.L.S, East Kameng district.

733. *Halcyon coromanda coromanda* (Latham)
Indian Ruddy Kingfisher

Tirap district : Miao Reserve Forest, Namdapha 1♂, 2♀ (4,5 May, 1981).

West Kameng district : Pakui W.L.Sanctuary 1♂ (30 Apr, 2001).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2♂	110,121	62,65	58,60
2♀	103,112	61,62	57,60

737. *Halcyon smyrensis perpulchra* Madarasz
Eastern Whitebreasted Kingfisher

Tirap district : Gandhigram, Namdapha (1100 m) 1♀ (31 Jan., 1987).

Dibang Valley district : Koronu 1 ♂ (28 Mar., 1999).

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta, *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

One bird was seen on the bank of Subansiri river at Dumporijo, Upper Subansiri district.

Measurements	Wing	Tail	Bill
1 ♂	124	77	62
1 ♀	118	81	62

739. *Halcyon pileata* (Boddaert)
Black-capped Kingfisher

Singh (1995) reported this species from West Kameng and Lohit district.

Family MEROPIDAE

744. *Merops leschenaulti leschenaulti* Vieillot
Chestnut headed Bee-eater

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

748. *Merops philippinus philippinus* Linnaeus
Blue-tailed Bee-eater

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

751. *Merops orientalis birmanus* Neumann
Burmese Small Green Bee-eater

753. *Nyctornis athertoni athertoni* (Jardine & Selby)
Blue-bearded Bee-eater

Ali & Ripley (1948) reported this species from Tezu and Dening, Mishmi Hills.

Athreya (1996) reported this bird from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) further reported it from Pakhui W.L.S, East Kameng district.

Family CORACIIDAE

757. *Coracias benghalensis affinis* Horsfield
Burmese Roller

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Barman (1996) reported this bird from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) reported further this bird from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) recorded its presence from Pakhui W.L.S, East Kameng district.

758. *Eurystomus orientalis cyanicollis* Vieillot
Himalayan Broad-billed Roller

Betts (1956) reported this species as not uncommon in Panioiv Valley, Subansiri area.

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Family UPUPIDAE

764. *Upupa epops saturata* Lonnberg
Tibetan Hoopoe

Katti *et al.* (1992) reported this species from Siang district; Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

766. *Upupa epops longirostris* Jerdon
Burmese Hoopoe

Family BUCEROTIDAE

770. *Ptilolaemus tickelli austeni* (Jerdon)
Assam Brownbacked Hornbill

Tirap district : 124 km. on MV Road, Namdapha, 1 ♂ (7 Jan, 1985).

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

<i>Measurements</i>	Wing	Tail	Bill
1 ♂	336	290	120

771. *Aceros nipalensis* (Hodgson)
Rufousnecked Hornbill

Tirap district : Namdapha Camp 1 ♂ (-).

Ali & Ripley (1948) reported this species from Tidding, Mishmi Hills.

Betts (1956) reported it as not common at 4000 ft. in Subansiri district.

Choudhury (1990) noted one bird about one km. east of Deban river, Chanlang district.

Katti *et al.* (1992) reported this species from Siang district and Kamlang W.L.S, Lohit district.

Athreya (1996) also noted this bird from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

We found a flock of 7-8 birds flying from Wakro to Kamlang W.L.S, Lohit district. During our stay at Pakhui W.L.S, every day we saw a flock consisting of twenty birds flying towards Nameri National Park, Assam in the morning and the same flock again was seen returning in the evening from Nameri National Park to Pakhui W.L.S, East Kameng district.

<i>Measurements</i>	Wing	Tail	Bill
1 ♂	455	430	226

772. *Rhyticeros undulatus ticehursti* Deignan
Assam Wreathed Hornbill

Betts (1956) reported it as common upto 6000 ft. in Subansiri district.

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S., East Kameng district.

774. *Anthracoceros malabaricus malabaricus* (Gmelin)
Indian Pied Hornbill

Ali & Ripley collected a male from Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

776. *Buceros bicornis homrai* Hodgson
Great Pied Hornbill

Ali & Ripley (1948) reported this species between Tezu and Dening, Mishmi Hills.

Betts (1956) reported it at lower elevation (2000 ft) in Subansiri district.

Athreya (1996) reported this species from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

Family CAPITONIDAE

778. *Megalaima virens magnifica* Baker
Assam Great Barbet

Betts (1956) reported it as common in Subansiri area.

Katti *et al.* (1992) reported this species from Siang district and Mehao W.L.S, Dibang Valley district.

Datta *et al.* (1998) reported further this species from Pakhui W.L.S, East Kameng district.

779. *Megalaima virens mayri* Ripley
Mishmi Great Barbet

Ali & Ripley (1948) collected a male from Tidding, Mishmi Hills.

Katti *et al.* (1992) reported this species from Kamlang W.L.S, Lohit district.

Athreya (1996) also reported this bird from Namdapha Biosphere Reserve, Changlang district.

780. *Megalaima zeylanica caniceps* (Franklin)
Large Green Barbet

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

784. *Megalaima lineata hodgsoni* (Bonaparte)
Eastern or Assam Lineated Barbet

Katti *et al.* (1992) reported this species from Siang district.

Barman (1996) further reported this bird from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

787. *Megalaima franklinii franklinii* (Blyth)
Golden throated Barbet

Tirap district : Ridge top (c. 2500 m) Namdapha 1 ♀ (7 Mar. 1988).

Lohit district : Hayuliang 1 ♂ (10 Nov., 1998).

Dibang Valley district : Koronu 1 ♀ (4 Apr., 1999).

Ali & Ripley collected a pair from Dreyi , Mishmi Hills.

Betts (1956) reported it as not uncommon in Apa Tani Valley (5-6000 ft.).

Katti *et al.* (1992) reported this species from Siang district and Mehao W.L.S, Dibang Valley district.

Measurements	Wing	Tail	Bill
1 ♂	105	68	25
2 ♀	99,102	61,61	25,27

788. *Megalaima asiatica asiatica* (Latham)
Bluethroated Barbet

Dibang Valley district : Koronu 2 ♂, 1 ♀ (29 Mar., 4 Apr. 1999).

Ali & Ripley year collected this barbet from Tezu; Dening and Dreyi, Mishmi Hills.

Katti *et al.* (1992) reported this species from Siang district. Mehao W.L.S, Dibang Valley district and Kamlang W.L.S, Lohit district.

Athreya (1996) reported this barbet from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2 ♂	105,109	60,65	26
1 ♀	105	64	30

789. *Megalaima australis cyanotis* (Blyth).
Blue-eared Barbet.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

792. *Megalaima haemacephala indica* (Latham)
Coppersmith

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Family INDICATORIDAE

794. *Indicator xanthonotus xanthonotus* Blyth
Nepal Orange-rumped Honeyguide

795. *Indicator xanthonotus fulvus* Ripley
Negaland Orange-rumped Honeyguide

Family PICIDAE

797. *Jynx torquilla chinensis* Hesse
Chinese Wryneck

Lohit district : Tezu 1 ♂ (6 Nov., 1998).

Measurements	Wing	Tail	Bill
1 ♂	87	74	17

798. *Picumnus innominatus innominatus* Burton
Northern Speckled Piculet

Tirap district : Namdapha - Miao Reserve Forest 1 ♀ (6 May, 1981); 77 mile base camp. 1 ♂, 2 ♀ (7,9 Feb., 1987).

Ali & Ripley (1948) collected a female from Dening, Mishmi Hills.

Betts (1956) reported it from Pein river, Subansiri area.

Katti *et al.* (1992) reported it from Mehao W.L.S, Dibang Valley district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	55	27	12
3 ♀	54-55 (54.5)	30-32 (31)	11-11 (11)

799. *Picumnus innominatus malayorum* Hartert
Southern Speckled Piculet

Lohit district : Hayuliang 1 ♂ (8 Nov., 1998).

Measurements	Wing	Tail	Bill
1 ♂	58	30	12

800. *Sasia ochracea ochracea* Hodgson
Himalayan Rufous Piculet

Tirap district : Namdapha - Chiria Camp 1 ♀ (20 Apr., 1981); Gibbon's land 3 ♂, 4 ♀ (25 Apr., 1,6 May, 1981, 17 Dec., 1982; 2,5,7 Jan., 1984); Deban 2 ♂ (13 Dec., 1982, 4 Dec., 1983); Gandhigram (c. 1100 m) 1 ♂, 3 ♀ (9 Feb., 1987; 22,23rd Feb., 5 Mar., 1988); 124km. on MV Road 1 ♂, 1 ♀ (4,8 Jan., 1985); 77 mile base camp 1 ♂ (27 Jan., 1987); Ramnagar (c.1150 m) 2 ♂ (10,15 Feb., 1988).

Lohit district : Hayuliang 1 ♂ (6 Nov. 1998).

Dibang Valley district : Koronu 1 ♀ (1 Apr., 1999)

Upper Subansiri district : Daporijo 1 ♀ (14 Apr. 2001). West Kameng district : Bhalukpong 1 ♂ (27 Nov. 2000).

Ali & Ripley collected a female from Dening, Mishmi Hills.

Betts (1956) reported this bird from Pein river, Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
12 ♂	52-55 (54)	22-24 (23)	12-13 (12)
11 ♀	52-55 (54)	22-24 (23)	12-14 (12)

803. *Micropternus brachyurus phaiiceps* Blyth
Eastern Rufous Woodpecker

Tirap district : 77 mile base camp, Namdapha 1 ♂ (5 Feb., 1987).

Dibang Valley district : Koronu 1 ♂, 1 ♀ (4 Apr., 1999).

Ali & Ripley (1948) collected a female from Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2 ♂	121,123	65,66	28,28
1 ♀	126	67	26

810. *Picus canus hessei* Gyldenstolpe
Eastern Blacknaped Green Woodpecker

Tirap district : Ramnagar (c 1150 m.), Namdapha 1 ♂, 1 ♀ (14,16 Feb., 1988).

Dibang Valley district : Koronu 2 ♂ (1,4 Apr., 1999).

Katti *et al.* (1992) reported this species from Siang district., Mehao W.L.S, Dibang Valley district.

Barman (1996) reported this woodpecker from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
3 ♂	142-144 (143)	110-114 (112)	40-42 (41)
1 ♀	143	117	40

811. *Picus canus sordidior* Rippon
Tibetan Black-naped Green Woodpecker

813. *Picus flavinucha flavinucha* Gould
East Himalayan Small Yellownaped Woodpecker

Tirap district : Gibbon's land, Namdapha 1 ♂ (5 Jan., 1984); 77 mile base camp 1 ♂, 1 ♀ (5,8 Feb., 1987).

Ali & Ripley (1948) collected one male from Tezu, Lohit district.

Athreya (1996) also reported this species from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2♂	174,177	121-123	40,41
1♀	170	131	39

815. *Picus chlorolophus chlorolophus* Vieillot
East Himalayan Small Yellownaped Woodpecker

Tirap district : Namdapha - Hornbill Camp. 2♂ (15 Apr., 1981; 5 Jan., 1985); 77 mile base camp 1♀ (31 Jan., 1987); Gandhigram (c. 1100 m.) 1♀ (2 Mar, 1988).

Ali & Ripley (1948) collected one male from Dreyi and one female from Dening, Mishmi Hills.

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlong W.L.S, Lohit district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
2♂	131,133	91,92	22,26
2♀	132,133	84,92	26,27

819. *Dinopium benghalense benghalense* (Linnaeus)
Lesser Goldenbacked Woodpecker

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

827. *Gecinulus grantia grantia* (Horsfield)
Paleheaded Woodpecker

Tirap district : Gibbon's land, Namdapha 1♀ (10 Apr., 1981).

Dibang Valley district : Koronu 1♂ (1 Apr., 1999).

Ali & Ripley (1948) reported this species from Dening and Dreyi, Mishmi Hills.

Katti *et al.* (1992) found this species from Mehao W.L.S, Dibang Valley district.

Datta *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district.

Measurements	Wing	Tail	Bill
1♂	143	102	24
1♀	139	89	29

828. *Mulleripicus pulverulentus mohun* Ripley
Nepal Great Slaty Woodpecker

Betts (1956) reported this species from near Kinin river, Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

829. *Mulleripicus pulverulentus harterti* Hesse
Mishmi Great Slaty Woodpecker

Ali & Ripley (1948) reported this species from Tezu, Lohit District.

833. *Hypopicus hyperythrus hyperythrus* (Vigors)
Eastern Rufous bellied Woodpecker

838. *Picoides darjellensis darjellensis* (Blyth)
Darjeeling Pied Woodpecker

Betts (1956) obtained a specimen from Subansiri area.

840. *Picoides cathpharius cathpharius* (Blyth)
Himalayan Crimson-breasted Pied Woodpecker

841. *Picoides cathpharius pyrrhothorax* (Hume)
Manipur Crimson breasted Pied Woodpecker

844. *Picoides atratus* (Blyth)
Stripe breasted Pied Woodpecker

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

845. *Picoides macei macei* (Vieillot)
Indian Fulvousbreasted Pied Woodpecker

Dibang Valley district : Koronu 1♂ (2 Apr., 1999).

Ali & Ripley (1948) collected this species from Tezu and Dening, Mishmi Hills.

Katti *et al.* (1992) reported this species from Mehao W.L.S, Dibang Valley district and Kamlong W.L.S, Lohit district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	104	63	27

849. *Picoides canicapillus semicoronatus* (Malherbe)
Grey-crowned Pigmy Woodpecker

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

851. *Picoides nanus nanus* (Vigors)
Pigmy Woodpecker

Betts (1956) noted it from Pein river, Subansiri area.

857. *Blythipicus pyrrhotis pyrrhotis* (Hodgson)
Redeared Bay Woodpecker

Tirap district : Namdapha - Hornbill Camp 1 ♂ (15 Apr., 1981); Gibbon's land 1 ♀ (4 Jan., 1984).

Ali & Ripley (1948) collected one female from Tezu, Lohit district.

Betts (1956) reported it from Subansiri area.

Katti *et al.* (1992) reported this species from Siang district and Kamlong W.L.S, Lohit district.

Athreya (1996) also reported this species from Namdapha Biosphere Reserve, Changlang district.

Datta *et al.* (1998) found this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
1 ♂	144	95	48
1 ♀	143	85	46

861. *Chrysocolaptes lucidus guttacristatus* (Tickell)
Eastern Larger Golden backed Woodpecker

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family EURLAIMIDAE

864. *Serilophus lunatus rubropygius* (Hodgson)
Nepal Collared Broadbill

Tirap district : Namdapha-Gibbon's land 3 ♂, 5 ♀ (7 Jan, 1984), Hornbill Camp 2 ♂, 3 ♀ (14, 15 Dec., 1983).

Ali & Ripley (1948) collected 11 specimens from Tezu, Lohit district.

Betts (1956) obtained a specimen from Pite (1500').

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
5 ♂	83-86 (84)	66-70 (67)	15-16 (15.5)
8 ♀	82-87 (85)	66-71 (67)	15-16 (15.5)

865. *Psarisomus dalhousiae dalhousiae* (Jameson)
Longtailed Broadbill

Tirap district : Namdapha - Firmbase 1 ♂ (18 Apr., 1981), Miao 1 ♀ (4 May, 1981), Gandhigram (1100 m) 2 ♂, 3 ♀ (30 Dec., 1984).

Ali & Ripley (1948) collected this species from Tezu and Dening, Mishmi Hills.

Betts (1956) noted this species at Panior river (3000 ft.).

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported it from Pakhui W.L.S, East Kameng district.

Measurements	Wing	Tail	Bill
5 ♂	104-107 (106)	117, 121 (119)	21-22 (22)
8 ♀	95-102 (98)	119-122 (120)	21-22 (22)

Family PITTIDAE

866. *Pitta nipalensis nipalensis* (Hodgson)
Bluenaped Pitta

Tirap district : Namdapha -Gibbon's land 1 ♀ (Jan., 1984), 124 km. on MV Road 1 ♂ (14

Jan., 1985), 77 mile base Camp 3 ♀ (30 Jan., 1987), Lower camp 1 ♂ (3 Feb., 1987), Lower Camp 1 ♀ (4 Mar., 1988).

Ali & Ripley (1948) collected some males from Tezu and Dening, Mishmi Hills.

Betts (1956) obtained a female from 6000 ft. in Apa Tani Valley.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We found this bird twice from Yhachuli, Lower Subansiri districts and Wakro, Lohit district.

Measurements	Wing	Tail	Bill
2 ♂	121,122	58,59	22,23
8 ♀	122-126 (124)	59-63 (61)	22-23 (22)

869. *Pitta sordida cucullata* Hartlaub
Hooded or Greenbreasted Pitta

Betts (1956) saw a pair in Kihim nullah (500 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

871. *Pitta cyanea cyanea* Blyth
Blue Pitta

Family ALAUDIDAE

897. *Eremophila alpestris elwesi* (Blanford)
Sikkim or Elwec's Horned Lark

906. *Alauda gulgula inopinata* Bianchi
Tibetan Small Skylark

909. *Alauda gulgula vernayi* Mayr
Yunan Small Skylark

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family HIRUNDINIDAE

911. *Riparia riparia ijimae* (Lonnberg)
Eastern Collared Sand Martin

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

917. *Hirundo rustica gutturalis* Scopoli
Eastern Swallow

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

918. *Hirundo rustica tytleri* Jerdon
Chestnut bellied Swallow

921. *Hirundo smithii filifera* Stephens
Indian wire-tailed Swallow

923. *Hirundo daurica daurica* Linnaeus
Daurian Striated or Redrumped Swallow

925. *Hirundo daurica nipalensis* Hodgson
Himalayan Striated or Redrumped Swallow

929. *Hirundo striolata mayri* Hall
Chinese Striated or Redrumped Swallow

931. *Delichon urbica cashmeriensis* (Gould)
Kashmir House Martin

932. *Delichon nipalensis nipalensis* Moore
Nepal House Martin

Ali & Ripley year collected a specimen from Dening (3500 ft), Mishmi Hills.

A flock of more than fifty birds were seen after rain on the flat hill top in between Taliha and Daichook, Daporijo, Upper Subansiri.

Family LANIIDAE

945. *Lanius tephronotus tephronotus* (Vigors)
Eastern Tibetan Graybacked Shrike

Tirap district : Gibbon's land, Namdapha 2 ♂ (27,28 Dec., 1982).

Lower Subansiri district : Yazali, 1 ♂, 1 ♀ (16 Jan., 1997), Yachuli 1 ♂ (11 Jan., 1997).

Lohit district : Wakro 2 ♂, 1 ♀ (12 Oct., 1985), 14,15 Nov., 1998). Tezu 2 ♂ (4,12 Nov., 1998).

Dibang Valley district : Koronu 1 ♂ (29 Mar., 1999).

West Kameng district : Bhalukpong 1 ♂ (27 Nov., 2000).

Upper Subansiri district : Dumporijo 2 ♂, 1 ♀ (14,21,23 Apr., 2000).

Ali & Ripley (1948) collected specimen from Tezu, Dening and Dreyi, Mishmi Hills.

Athreya (1996) reported this species from Namdapha, Changlang District.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i>	Wing	Tail	Bill
12♂	100-107 (104)	108-117 (117)	20-23 (21)
3♀	99-102 (101)	106-109 (107)	20-22 (21)

948. *Lanius schach tricolor* (Hodgson)
Blackheaded Shrike

Betts (1956) reported this species as common in the Pein Valley and Apa Tani Valley.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) reported this bird from Namdapha, Changlang district.

Datta *et al.* (1998) further reported this species from Pakhui W.L.S, East Kameng district.

949. *Lanius cristatus cristatus* Linnaeus
Brown shrike

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family ORIOLIDAE

958. *Oriolus xanthornus xanthornus* (Linnaeus)
North Indian Blackheaded Oriole

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Kameng district.

Athreya (1996) noted this bird from Namdapha, Changlang district.

Datta *et al.* (1998) found this bird in Pakhui W.L.S, East Kameng district.

Solitary bird was found in the compound of Forest Rest House, Tezu, Lohit district in Nov., 1998.

961. *Oriolus traillii traillii* (Vigors)
Indian Maroon Oriole

Tirap district : Namdapha - Firm base camp 1♂ (21 Apr., 1981).

Dibang Valley district : Koronu 1♀ (28 Mar., 1999).

Ali & Ripley (1948) collected specimens at Tezu and Dening, Mishmi Hills.

Betts (1956) noted this species as not uncommon in Apa Tani Valley (6000 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i>	Wing	Tail	Bill
2♂	146, 149	102.5, 105	32(2)
1♀	138	102	31

Family DICRURIDAE

962. *Dicrurus adsimilis albirictus* (Hodgson)
North Indian Black Drongo

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also noted this Drongo from Pakhui W.L.S, East Kameng district.

966. *Dicrurus leucophaeus hopwoodi* Baker
Assam Grey Drongo

Lower Subansiri district : Yachuli 1 unsexed (14 Jan., 1997).

Lohit district : Wakro 1♂ (15 Nov., 1998)

Upper Subansiri district : Dumporijo 2♂ (21 Apr., 2001).

Ali & Ripley collected a male at Dening, Mishmi Hills.

Betts (1956) noted this species to occur at lower elevations in the river valleys in Subansiri areas.

Athreya (1996) reported this species from Pakhui W.L.S, East Kameng district.

2-3 birds were seen in the campus of Forest Rest House, Tezu, Lohit district. More or less common in and around Koronu, Dibang Valley district; Tipi, Bhalukpong, West Kameng district and fairly common in Taliha, Daporijo, Upper Subansiri district. During our stay at Taliha, during March-April, 2001, we noted that whenever drizzling starts, hundred of insectivorous birds, especially drongos and swallows come from everywhere and catch insects in a agricultural farm, near Taliha.

Measurements	Wing	Tail		Bill
		(Central)	Outer most	
3 ♂	139-104	96-99	149-153	25-26
1 unsexed	138	98	148	25

970. *Dicrurus annectans* (Hodgson)
Crowbilled Drongo

Tirap district : Namdapha - Miao 1 ♂ (6 May, 1981), Gibbon's land 1 ♀ (2 Jan., 1984).

Measurements	Wing	Tail		Bill
		Central	Outermost	
1 ♂	142	120	121	28
1 ♀	138	105	123	28

971. *Dicrurus aeneus aeneus* Vieillot
Bronzed Drongo

Tirap district : Namdapha - Firm base Camp 1 ♂ (19 Apr., 1981), Miao 1 ♂ (5 May, 1981), Namdapha 1 ♂ (5 Jan., 1985), 124 km. on MV Road 1 ♂ (14 Jan., 1985), Deban 1 ♀ (13 Dec., 1982).

Lower Subansiri district : Yazali 1 ♀ (21 Jan., 1997)

Ali & Ripley (1948) collected specimens from Tezu, Dening and Dreyi, Mishmi Hills.

Betts (1986) noted it as fairly common in Apa Tani Valley at 1500 ft.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) also found this bird in Namdapha, Chanlang district.

Datta *et al.* (1998) recorded this species from Pakhui W.L.S, East Kameng district.

Fairly common in and around Tezu, Lohit district in Nov., 1998. Several birds were seen in an agricultural field at Dumporijo, Upper Subansiri district.

Measurements	Wing	Tail		Bill
		(Central)	Outermost	
4 ♂	118-121 (119)	83-86 (84)	105-109 (107)	20-21
2 ♀	117,118	84,85	105 (2)	20 (2)

972. *Dicrurus remifer tectirostris* (Hodgson)
Lesser Racket tailed Drongo

Tirap district : Gibbon's land, Namdapha 1 ♀ (4 Jan., 1984).

Ali & Ripley year collected it at Tezu and Dening, Mishmi Hills.

Betts (1956) noted this species on several occasions upto 4000 ft. in Subansiri area.

Athreya (1996) also reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) recorded this bird from Pakhui W.L.S, East Kameng district.

One solitary bird was seen near Pita Pool, Tazali, Lower Subansiri in Jan., 1997.

During our stay at Konoru, Roing, Dibang Valley district we saw almost in every light, several drongos of this species were feeding on insects near a bamboo cluster.

Measurements	Wing	Tail	Bill
1 ♀	141	118,387	24

973. *Dicrurus hottentottus hottentottus* (Linnaeus)
Haircrested or Spangled Drongo

Tirap district : Miao, Namdapha 2 ♀ (4,5 May, 1981)

Lohit district : Wakro 1 ♀ (19 Nov., 1998)

Dibang Valley district : 1 ♂ (28 Mar, 1999).

Ali & Ripley (1948) collected a female at Tezu, Lohit district.

Betts (1956) noted this species as fairly common at low and medium elevations in Subansiri area. A specimen was obtained from Lichi (3000 ft.).

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) also noted this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this species from Namdapha, Changlang district.

Measurements	Wing	Tail		Bill
		Central	Outmost	
1 ♂	165	125	142	26
3 ♀	156-161 (158)	124-126 (125)	138-140 (139)	25(3)

976. *Dicrurus paradiscus grandis* (Gould)
Northern Large Racket-tailed Drongo

Tirap : Namdapha - Zero Camp 1 ♀ (9 Apr., 1981), Gibbon's land 2 ♂ (19 Dec., 1982, 5 Jan., 1984), 77 mile base Camp 1 ♂ (7 Feb., 1987).

Betts (1956) noted that this species is not common but upto 7000' in Subansiri area.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

We also found bird in fairly good number in Koronu, Dibang Valley district.

Measurements	Wing	Tail		Bill
		Central	Outmost	
3 ♂	174-183 (179)	148-152 (150)	487-491 (489)	39(3)
1 ♀	168	143	401	38

Family ARTAMIDAE

982. *Artamus fuscus* Vieillot
Ashy Swallow-Shrike

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family STURNIDAE

987. *Sturnus malabaricus malabaricus* (Gmelin)
Grey headed Myna

Lohit district : Wakro 1 ♂ (15 Nov., 1998).

Ali & Ripley (1948) collected specimens at Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

During our halt at Wakro, Lohit district we noted a large flock consisting more than two hundred birds every day.

Measurements	Wing	Tail	Bill
1 ♂	130	67	24

994. *Sturnus pagodarum* (Gmelin)
Blackheaded or Brahminy Myna

Choudhury (1990) noted this species from Namdapha, Changlang district.

Singh (1995) noted it on the Foothills in West Kameng district. Common in and around Tipi, Bhalukpong, West Kameng district. Sparsely noted at Tezu, Lohit district.

1003. *Sturnus contra sordidus* Ripley
Eastern Pied Myna

Tirap district : Gibbon's land, Namdapha 1 ♀ (20 Dec., 1982).

Ali & Ripley (1948) collected specimens at Tezu, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported it from Pakhui W.L.S, East Kameng district.

Common in and around Forest Rest House, Tezu, Lohit district in Nov., 1998.

Measurements	Wing	Tail	Bill
1 ♀	114	65	32

1004. *Sturnus contra superciliaris* (Blyth)
Burmese Pied Myna

1006. *Acridotheres tristis tristis* (Linnaeus)
Common Myna

Tirap district : Zero Camp, Namdapha 1 ♀
(26 Dec., 1983).

Barman (1996) reported this species from
D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) reported this myna from
Pakhui W.L.S, East Kameng district.

Common in and around Banderdawa,
Papunpare district in Jan., 1997. Also common
at Tezu, Lohit district and Bhalukpong, West
Kameng district.

Measurements	Wing	Tail	Bill
1 ♀	136	78	35

1011. *Acridotheres fuscus fumidas* Ripley
Eastern Jungle Myna

Lohit district : Wakro 1 ♀ (14 Nov., 1998).

Ali & Ripley (1948) collected 4 ♂ at Tezu,
Lohit district.

Barman (1996) reported this species from
D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this bird
from Pakhui W.L.S, East Kameng district.

A flock consisting of 8-10 birds were seen
in a cultivated field around Forest Rest House,
Tezu, Lohit district in Nov., 1998.

Measurements	Wing	Tail	Bill
1 ♀	119	70	29

1014. *Mino coronatus* (Blyth)
Goldcrested Myna

Tirap district : Zero Camp, Namdapha 2 ♀
(24 Dec., 1983).

Measurements	Wing	Tail	Bill
2 ♀	124,125	56,58	22-23

1015. *Gracula religiosa intermedia* A. Hay
Northern Hill Myna

Tirap district : Namdapha - Zero Camp 1 ♀
(22 Dec., 1983), Gibbon's land 1 ♀ (5 Jan.,
1984), 77 mile base Camp 1 ♂ (9 Feb., 1987),
Dibang Valley district : Koronu 2 ♂ (2 Apr.,
1999).

Ali & Ripley (1948) noted it at Tezu, Lohit
district.

Athreya (1996) reported this species from
Namdapha, Changlang district.

Datta *et al.* (1998) also reported this bird
from Pakhui W.L.S, East Kameng district.

We noted a flock consisting of seven birds
near Forest Rest House at Tezu, Lohit district.
Fairly common in Pakhui W.L.S, East Kameng
district. Common in Wakro and Kamlang W.L.S,
Lohit district.

Measurements	Wing	Tail	Bill
3 ♂	168-175 (171)	80-81 (81)	31(3) (3)
2 ♀	162,163	78,80	31(2)

Family CORVIDAE

1021. *Garrulus glandarius interstinctus* Hartert
East Himalayan Redcrowned Jay

Baker (1913) collected one unsexed specimen
from Mishmi Hills (c. 8500 ft.) on 22 Mar., 1913.

We found this bird on two occasions at
Mayodiya, Dibang Valley district.

1023. *Cissa chinensis chinensis* (Boddaert)
Green Magpie

Tirap district : Namdapha - Gandhigram 1 ♂
(27 Dec., 1984), 124 km. on MV Road 1 ♂, 1 ♀
(12,16 Jan., 1985), 77 mile base Camp 1 ♀ (2 Feb.,
1987), Long Camp 1 ♂ (3 Mar., 1988).

Lohit district : Hayuliang 1 ♀ (9 Nov., 1998).

Upper Subansiri district : Diporijo 1 ♂ (11
Apr., 2001).

Ali & Ripley noted it at Tezu, district and
collected seven birds at Dening, Mishmi Hills.

Betts (1956) noted this bird as scarce but seen at 'Pite' (2000 ft.) and 'Kore' (4500 ft.) in Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also found this bird in Pakhui W.L.S, East Kameng district.

Thinly populated in Yachuli and Yazali, Subansiri district. Once noted in Yazali.

<i>Measurements</i> :	Wing	Tail	Bill
4♂	138-151 (146)	200-203 (201)	37-38 (37)
3♀	138-150 (145)	181-183 (182)	34-35 (34)

1026. *Cissa flavirostris flavirostris* (Blyth)
Eastern Yellow billed Blue Magpie

Dibang valley district : Mayadiya 2♂ (20, 23 Mar., 1999).

Betts (1956) not encountered this bird in Subansiri proper but noted numerous in the Tibetan frontier between 8000 ft-12000 ft.

We found this bird as common in Mayaduya, Dibang Valley district.

<i>Measurements</i> :	Wing	Tail	Bill
2♂	179,182	363,367	38(2)

1030. *Pica pica bottanensis* Delessert
Tibetan Blackrumped Magpie

1032. *Dendrocitta vagabunda vagabunda* (Latham)
North eastern Tree Pie

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) recorded this bird from Pakhui W.L.S, East Kameng district.

1035. *Dendrocitta frontalis frontalis* Horsfield.
Black browed Tree Pie.

Tirap district : Namdapha-Hornbill Camp 1♂, (14 Apr., 1981), Gibbon's land 1♂, (20 Apr., 1981), Chiria Camp 3♀, (21, 22, 24 Apr., 1981), 124 km. on MV Road 2♂, 1♀, (10, 15 Jan., 1985), Lone Camp 1♀, (4 Mar., 1988).

Ali & Ripley (1948) collected specimens at Dening, Mishmi Hills.

Betts (1956) saw on one occasion on Tasser Pattu (4, 500') in Subansiri area.

Atheya (1998) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
3♂	120-126 (122)	244-253 (249)	30 (3)
5♀	120-125 (122)	244-249 (247)	29-30 (30)

1038, 1039. *Dendroctitta fromosae himalayensis* Blyth
East Himalayan Tree Pie

Tirap district : Namdapha - Hornbill Camp 1♂ (14 Apr., 1981), Gibbon's land 1♀, (30 Apr. 1981), 77 mile base Camp 1♀ (7 Feb., 1987), Gandhigram 2♂ (26 Dec., 1984, 25 Feb., 1988).

Betts (1956) obtained two specimens at Pite (1500 ft.) on 10 Oct., 1941 and noted to occur throughout the area (= Subansiri) but most numerous in the tropical rain forest.

Athreya (1996) also noted this species from Namdapha, Changlang district.

Datta *et al.* (1998) recorded this bird from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
3♂	138-148 (144)	197-208 (201)	32-33 (32)
2♀	132,133	191,194	30(2)

1044. *Nucifraga carvocatates macella*
Thayer & Bangs
Yunan Nutcracker

Baker obtained one female specimen from Mishmi Hills (c. 8000') on 5 Apr., 1913.

Betts (1956) recorded this bird as *N. C. hemispila* Vigors, a West Himalayan Population which extends upto Nepal and Darjeeling, West Bengal and noted it at Se La in the Balipara Frontier Tract (8000-12000 ft.).

1045. *Pyrrhocorax graculus digitatus*
Hemprich & Ehrenberg

Himalayan Yellowbellied or Alpine Chough

1047. *Pyrrhocorax pyrrhocorax himalayanus* (Gould)
East Himalayan Redbilled Chough

It is reported by the local people that Redbilled Chough is a regular visitor in Zemithang valley, Tawang district. Large flock consisting of numerous birds were seen during severe cold.

1049. *Corvus splendens splendens* Viellot
House Crow

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this crow from Pakhui W.L.S, East Kameng district.

House crow is virtually replaced by Jungle crow in every interior of Arunachal Pradesh and specially in higher elevation. Fairly good population of Jungle crow were noted and on the contrary only two bird of this species were observed in Lichi village, 24 km away from Kimin, Papumpare district in Jan., 1997.

1055. *Corvus macrorhynchos leuallanti* Lesson
Eastern Jungle Crow

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) also found this jungle crow in Namdapha, Changlang district.

Datta *et al.* (1998) noted this bird from Pakhui W.L.S, East Kameng district.

A pair of birds were noted near Sessa, Bhalukpong, West Kameng district.

1056. *Corvus macrorhynchos tibetosinensis*
Kleinschmidt & Weigold
Tibetan Jungle Crow

Ali & Ripley (1948) collected specimens at Dening, Mishmi Hills.

Betts (1956) noted it as numerous in the Apa Tani Valley and elsewhere scarce. However he did not mention any sub-specific status.

Fairly common at Yazali, Lower Subansiri district, seen at least 30 birds at a time.

Solitary bird was seen at Dirang, West Kameng district.

1060. *Corvus corax tibetanus* Hodgson
Tibet Raven

Family CAMPEPHAGIDAE

1064. *Hemipus picatus capitalis* (Horsfield)
Brownbacked Pied Flycatcher-Shrike

Tirap district : Namdapha - 124 km. on MV Road 1 ♂ (12 Jan., 1985), Gandhigram 2 ♂ (3, 5 Feb., 1987), 1 ♀ (3 Feb., 1987), Ramnagar 1 ♂, 1 ♀ (15 Feb., 1988).

Lohit district : Hayuliang 2 ♀ (6, 8 Nov., 1998).

Betts (1956) noted this species as quite common all over the hills upto 7000 ft. in Subansiri area.

Measurements :	Wing	Tail	Bill
4 ♂	62-66 (63)	57-60 (58)	16-17 (16)
4 ♀	62-67 (64)	58-62 (60)	16 (4)

1084. *Pericrocotus brevirostris brevirostris* (Vigors)
Shortbilled Minivet

West Kameng district : Dibang 1 ♂, 1 ♀ (14 Nov., 2000).

Betts (1956) obtained a specimen from the Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S., East kameng district.

Two pairs were seen in between Taliha and Daichook, Doparijo, upper Subansiri.

Measurements :	Wing	Tail	Bill
1 ♂	90	-	15
1 ♀	88	101	14

1080. *Perierocotus flammeus speciosus* (Latham)
Scarlet Minivet

Dibang Valley district : Koronu 1 ♂ (14 April 1999).

Ali & Ripley (1948) collected four males and a female from Tezu and Dening, Mishmi Hills.

Population is very thin in and around both at Yachuli and Yazali, Lower Subansiri district. One bird was seen in between Kimun and Yazali, Lower Subansiri district in January 1997.

Measurements :	Wing	Tail	Bill
1 ♂	98	103	20

1086. *Percrocotus ethologus lactus* Mayr East Himalayan Longtailed Minivet

Upper Subansiri district : Dumporijo 3 ♀ (21, 22, 23 April 2001).

Datta *et al.* (1998) reported this species from Pakhui W.L.S., East Kameng district.

Measurements :	Wing	Tail	Bill
3 ♀	87-92 (89)	105-107 (106)	16 (3)

1087. *Pericrocotus ethologus mariae* Ripley Nagaland Longtailed Minivet

Family IRENIDAE

1098. *Aegithina tiphia tiphia* (Linnaeus) Common lora

Ali & Ripley collected a female from Tezu, Lohit district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) recorded this bird from Pakhui W.L.S, East Kameng district.

1104. *Chloropsis aurifrons frontalis* (Pelzeln) Leaf Bird

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

1006. *Chloropsis hardwickii hardwickii* Jardine & Selby Orangebellied Chloropsis

Tirap district : Gibbon's land 1 ♂ (2 Jan., 1984), 124 km. on MV Road 2 ♂ (4 Jan., 1985),

77 mile base Camp 4 ♂ (27 Jan, 1, 5, 9 Feb., 1987), 1 ♀ (1 Feb., 1987), Gandhigram 1 ♀ (25 Feb., 1988), Lone camp 1 ♀ (3 Mar., 1988).

Ali & Ripley (1948) collected 10 specimens from Tezu, Dening and Dreyi, Mishmi Hills.

Betts (1956) noted it between 2000-7000 ft. in Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
7 ♂	92-95 (94)	72-78 (75)	22-23 (23)
3 ♀	88-92 (90)	66-70 (68)	22 (3)

Family PYCNONOTIDAE

1115. *Pycnonotus melanicterus flaviventris* (Tickell) Blackcrested Yellow Bulbul

Tirap district : Namdapha - Gibbon's land 1 ♂ (17 Dec., 1982), 138 km. on MV Road 2 ♂, 1 ♀ (21 Jan., 1985), Gandhigram 3 ♂ (29 Dec., 1984), 2 ♀ (27, 30 Dec., 1984).

West Kameng district : Bhalukpong 1 ♂ (26 Nov., 2000).

Ali & Ripley (1948) collected a male from Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Common on flat hilltop in between Daichook and Teliha, Daporijo, Upper Subansiri district.

Measurements :	Wing	Tail	Bill
7 ♂	94-93 (89)	82-88 (86)	14-15 (14)
3 ♀	83-84 (84)	78-80 (79)	14 (3)

1121a. *Pycnonotus jocosus monticola* (M C Clelland)
Assam Redwhishered Bulbul

Tirap district : Namdapha - Miao 1 ♂, 1 ♀ (5 May, 1981), Gibbon's land 1 ♂ (28 Dec., 1982), Gandhigram 1 ♂ (27 Dec., 1984), 124 km. on MV Road 2 ♂, 1 ♀ (8, 14, 15 Jan., 1981). 77 mile base Camp 2 ♂ (31 Jan., 1987).

Lower Subansiri district : Yazuli 1 ♀ (10 Jan., 1997).

Lohit District : Hayuliang 1 ♀ (9 Nov., 1998), Tezu 1 ♀ (11 Nov., 1998), Wakro 1 ♂, 2 ♀ (15 Nov., 1998).

Dibang Valley district : Koronu 1 ♂ (31 Mar., 1999).

Upper Subansiri district : Daporijo 1 ♂, 1 ♀ (13, 22 Apr., 2001).

Ali & Ripley (1948) collected this species from Tezu and Dening, Mishmi Hills and noted them as common in the Mishmi Hills.

Betts (1956) noted it as very common in Pein Valley of Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also noted this bird from Pakhui W.L.S, East Kameng district.

Noted elsewhere in Arunachal Pradesh in lower elevation. Plenty in Dirak and Mahadebpur, Lohit district. Common at Yachuli, Lower Subansiri district. Fairly common at Taliha and Damporijo, Upper Subansiri district, Tipi, Bhalukpong, West Kameng district.

Measurements :	Wing	Tail	Bill
10 ♂	88-94 (92)	85-94 (89)	20-22 (21)
8 ♀	86-89 (88)	88-91 (88)	19-21 (20)

1125. *Pycnonotus leucogenys leucogenys* (Gray)
White cheeked Bulbul

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1 unsexed	90	82	18

1131. *Pycnonotus cafer bengalensis* Blyth
Bengal Redvented Bulbul

Lohit district : Tezu 4 ♂ (5, 11, 12 Nov., 1998), Wakro 6 ♂, 3 ♀ (16, 17, 18 Nov., 2000)

West Kameng district : Bomdila 3 ♂ (11, 14 Nov., 2000)

Bhalukpong 5 ♂, 3 ♀ (26 Nov., 2000).

Ali & Ripley (1948) reported that this species is not found north of Brahmaputra river.

Betts (1956) noted this bulbul as very common in Pein Valley (5000 ft.) and collected a specimen at Yachuli (4000 ft.), Lower Subansiri district.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) also reported this bird from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
18 ♂	91-107 (96)	89-102 (97)	21-23 (22)
6 ♀	91-98 (94)	86-91 (89)	21 (6)

1132. *Pycnonotus cafer stanfordi* Deignan
Burmese Redvented Bulbul

Tirap district : Namdapha - Firmbase camp 1 ♀ (10 Apr. 1981), Gibbon's land 1 ♂, 1 ♀ (28 Dec., 1982), 124 km. on MV Road 1 ♀ (14 Jan., 1985), Gandhigram 1 ♂, 1 ♀ (7, 25 Feb., 1988), Upper Subansiri District : Damporijo 2 ♂, 5 ♀ (21, 22, 23, 24 Apr., 2001).

We noted fairly good population in and around Forest Rest House, Tezu, Lohit district.

<i>Measurements</i> :	Wing	Tail	Bill
4♂	99-103 (101)	92-100 (94)	23-24 (23)
9♀	91-93 (92)	84-90 (88)	20-22 (21)

1133. *Pycnonotus Striatus striatus* (Blyth)
Striated Green Bulbul

Betts (1956) noted this species as not common in higher elevations of Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

1134. *Pycnonotus striatus arctus* Ripley
Mishmi Striated Green Bulbul

Ail & Repley (1948) collected 8♂ and 5♀ from Dreyi, Mishmi Hills.

1140. *Criniger flaveolus flaveolus* (Gould)
White throated Bulbul

Tirap district : Namdapha - Firmbase camp 1♀ (19 Apr., 1981), Gibbon's land 1♂, 1♀ (1 May, 1981, 3 Jan., 1984), Hornbill Camp 5♂, 5♀ (15, 16, 18 Dec., 1983), Debam 4♀ (4, 13 Dec., 1983), Zero Camp 3♀ (27 Dec., 1983), 124 km. on MV Road 4♂, 2♀ (4, 5 Jan., 1985), 77 mile base Camp 1♀ (31 Jan., 1987), Ramnagar 1♂, 1♀ (10 Feb., 1988), Lower Camp 1♂ (5 Mar., 1988).

Lower Subansiri district : Yazali 1♀ (22 Jan., 1997)

Dibang Valley district : Koronu 4♀ (3, 4 Apr., 1999).

West Kameng district : Pakui W.L.S 2♂, 4♀ (30 Apr., 2001).

<i>Measurements</i> :	Wing	Tail	Bill
19♂	100-105 (103)	92-100 (96)	20-23 (22)
22♀	97-103 (101)	97-90 (89)	20-22 (21)

1146. *Hypsipetes mccllellandi mccllellandi* Horsfield
Rufousbellied Bulbul

Tirap district : Namdapha - Gandhigram 2♂ (30 Dec., 1984, 29 Feb., 1988), 3♀ (30 Dec., 1984, 11, 23 Feb., 1988), 77 mile base Camp 1♂, 1♀ (6 Feb., 1987), Ramnagar (12 Feb., 1988).

Alil & Ripley (1948) noted this species at Dreyi, Mishmi Hills.

Betts (1956) noted this species as not uncommon at Kore, Subansiri area.

Athreya (1996) also recorded this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
3♂	101-107 (105)	97-108 (104)	24-25 (25)
5♀	99-104 (103)	93-105 (98)	24-26 (25)

1147. *Hypsipetes flavalus flavalus* (Blyth).
Browneared Bulbul

Tirap district : Ramnagar, Namdapha 2♂ (10, 12 Feb., 1988).

Stevens (1914-15) noted this species from Beni, Abor-Miri Hills in February.

Ali & Ripley (1948) collected 9 males and 7 females from Tezu and Dening, Mishmi Hills.

Betts (1956) noted this bird as common in the Pein Valley and collected a few specimens.

Athreya (1996) reported this species from Namdhpha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
2♂	94, 96	89 (2)	22 (2)

1148. *Hypsipetes madagascariensis psaroides* Vigors
Himalayan Black Bulbul

Betts (1956) noted this bird as very common in the Subansiri area and moving around in noisy flocks.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1151. *Hypsipetes madagascariensis nigrescens* Baker
Assam Black Bulbul

Tirap district : Namdapha - 77 mile base Camp 1♂ (31 Jan., 1989), Ramnagar 1♀ (14 Feb., 1988), Gandhigram 1♀ (27 Feb., 1988), 3♂ (4, 6 Feb., 1987, 27 Feb., 1988).

Upper Subansiri district : Daporijo 2♂ (12, 16 Apr., 2001).

Ali & Ripley (1948) collected two males from Dening, Mishmi Hills and noted this species at Tezu, Lohit district.

Athreya (1996) also noted this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
6♂	118-121 (120)	101-110 (107)	26-28 (27)
2♀	110,111	94,97	26 (2)

Family MUSCICAPIDAE

1153. *Pellorneum ruficeps mandellii* Blandford
Mandelli's or Sikkim Spotted Babbler

1156. *Pellorneum ruficeps chamelum* Deignan
Assam Spotted Babbler

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1157. *Pellorneum ruficeps pectorale* Godwin-Austen
Mishmi Spotted Babbler

Ali & Ripley (1948) collected 3♂ and 1♀ from Tezu and noted it from Dening, Mishmi Hills.

1158. *Pellorneum ruficeps riplei* Deignan
Lakhimpur Spotted Babbler

Tirap district : Miao Reserve Forest 1♂ (5 May, 1981).

Measurements :	Wing	Tail	Bill
1♂	69	63	22

1159. *Pellorneum ruficeps vocale* Deignan
Manipur Spotted Babbler

1160. *Pellorneum palustre* Gould
Marsh Spotted Babbler

Singh (1995) noted two birds of this species at Tipi, West Kameng district on 26 June, 1994.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1164. *Pellorneum albiventris albiventris*
(Godwin-Austen)
Assam Brown Babbler

1165. *Pellorneum albiventris ignotum* Hume
Mishmi Brown Babbler

Ali & Ripley (1948) collected 2♂ from Tezu, Lohit district.

1166. *Trichastoma tickelli assamensis* (Sharpe)
Tickell's Babbler

Ali & Ripley collected 1♂ at Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Tirap district : Chiria Camp 1♂, 2♀ (25 Apr., 1981), Deban 1♂, 1♀ (28 Apr. 1981, 12 Dec., 1982), 124 km. on MV Road, 1♂, 1♀ (9, 12 Jan., 1985), 77 mile base Camp 1♂ (5 Feb., 1987).

Measurements :	Wing	Tail	Bill
4♂	64-69 (67)	53-55 (54)	19-17.5 (18)
4♀	64-69 (67)	51-55 (53)	17(4)

1167. *Trichastoma abbotti abbotti* (Blyth)
Abbott's Babbler

West Kameng district : Pakui W.L. Sanctuary
1♂ (30 April, 2001)

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
1♂	74	52	22

1169. *Pomatorhinus schisticeps schisticeps* Hodgson
East Himalayan Slatyheaded Scimitar Babbler

1170. *Pomatorhinus schisticeps salimalii* Ripley
Mishmi Slatyheaded Scimitar Babbler

Ali & Ripley collected 1♂ at Tezu, Lohit
district.

1171. *Pomatorhinus schisticeps cryptanthus* Hartert
Lakhimpur Slatyheaded Scimitar Babbler

1179. *Pomatorhinus ruficollis godwini* Kinnear
Sikkim Rufousnecked Scimitar Babbler

Tawang district : Zemithang 2♂ (21, 22
Nov., 2000).

<i>Measurements</i> :	Wing	Tail	Bill
2♂	82,84	87,89	23,24

1184. *Pomatorhinus erythrogenys mccllellandi*
Godwin-Austen
Assam Rustycheeked Scimitar Babbler

1185. *Pomatorhinus hypoleucos hypoleucos* (Blyth)
Large Scimitar Babbler

Tirap district : Hornbill Camp, Namdapha 1♂
(14 Apr., 1981).

<i>Measurements</i> :	Wing	Tail	Bill
1♂	109	107	44.5

1186. *Pomatorhinus ferruginosus ferruginosus* Blyth
Sikkim Coralbilled Scimitar Babbler

Stevens (1914-15) noted a parties of this
species in February in the Abor-Miri Hills.

Betts (1956) reported this bird as uncommon
and collected specimens from Kore (5000'),
Subansiri area.

Athreya (1996) reported this species from
Namdapha, Changlang district.

1189. *Pomatorhinus ochraceiceps stenorhynchus*
Godwin-Austen
Mishmi Longbilled Scimitar Babbler

Tirap district : Namdapha - Gandhigram 3♂,
1♀ (26 Dec., 1984), 124 km. on MV Road 1♂,
2♀ (12, 14 Jan., 1985), 77 mile base camp 1♂,
2♀ (28 Jan., 1987, 4, 8 Feb. 1987), Lower Camp
1♂ (28 Feb., 1988).

Ali & Ripley (1984) collected 2♂ and 1♀ of
this species from Dening, Mishmi Hills.

<i>Measurements</i> :	Wing	Tail	Bill
6♂	89-92 (91)	97-105 (101)	34-38 (36)
5♀	83-91 (87)	95-101 (98)	34-37 (35)

1190. *Pomatorhinus ochraceiceps austeni* Hume
Manipur Longbilled Scimitar Babbler

1191. *Xiphirhynchus superciliaris superciliaris* Blyth
Slenderbilled Scimitar Babbler

Chaudhury (2000) reported that is was
recently recorded at Tale Valley W.L.S. Lower
Subansiri district, Kamlang W.L.S, Lohit district,
Cheyo, Upper Subansiri district.

Singh (1995) reported this species near
Tenga, Bomdila Road, West Kameng district.

It is impossible to ascertain the status of the
bird reported by Choudhury and Singh. Birds as
noted above may belong either to this race or
the next race, i.e., ssp. *intextus*.

1192. *Xiphirhynchus superciliaris intextus* Ripley
Assam Slenderbilled Scimitar Babbler

Tirap district : Namdapha - Gandhigram 1♂
(29 Dec., 1984), Upper camp 1♀ (28 Feb.,
1988), Lower Camp 1♂ (6 Mar, 1988), Lone
Camp 1♀ (6 Mar., 1988).

Dibang Valley district : Mayadiya 1♂ (26
Mar., 1999).

Tawang district : Zemithang Valley 1♂ (20
Nov., 2000).

Ali & Ripley (1948) collected a ♀ (Holotype) from Dreyi, Mishmi Hills.

Betts (1956) obtained solitary specimen on Tasser Pettu (4000 ft.), Subansiri area.

Measurements :	Wing	Tail	Bill
4♂	76-79 (78)	84-86 (85)	51-60 (58)
2♀	73,74	82(2)	47,48

1193. *Rimator malacoptilus* Blyth
Longbilled Wren-Babbler

Tirap district : Lone Camp, Namdapha 1 ♀ (4 Mar., 1988).

Stevens (1914-15) collected specimen on the north side of the Abor-Miri Hills (4500 ft.).

Singh (1995) noted this species from Mehao W.L.S, Dibang Valley district and Punge, Lower Subansiri district.

Measurements :	Wing	Tail	Bill
1♀	58	26	22

1194. *Napothera brevicaudata striata* (Blyth)
Streaked Wren-Babbler

Tirap district : Hornbill Camp 1♂ (16 Apr., 1981), Deban 1♂ (15 Dec., 1982).

Ali & Ripley (1948) collected 1♂ from Dening, Mishmi Hills.

Measurements :	Wing	Tail	Bill
2♂	63,34	45 (2)	15 (2)

1196. *Napothera epilepilota guttaticollis* (Ogilvie-Grant)
Grant's Wren-Babbler

Tirap district : Gibbon's land 2♂ (29 Apr., 1981, 3 Jan., 1984), Gandhigram (c 1100 m) 1♂ (2 Mar., 1988), Lone Camp 1♂, 1♀ (4, 5 Mar., 1988).

Stevens (1914-15) noted this species in the Valleys of Abor-Miri Hills.

Measurements :	Wing	Tail	Bill
4♂	50-55 (52)	20-26 (22)	13-18 (15)
1♀	22	20	14

1198. *Pnoepyga albiventer albiventer* (Hodgson)
Eastern Scalybreasted Wren-Babbler

1199. *Pnoepyga pusilla pusilla* Hodgson
Brown Wren-Babbler

Tirap district : Lone Camp 1♀ (5 Mar., 1988).

Ali & Ripley (1948) collected 1♀ at Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1♀	46	13	12

1201. *Spelaornis badeigularis* Ripley
Mishmi Wren-Babbler

Ali & Ripley (1948) collected 1♀ (Holotype) from Dreyi, Mishmi Hills.

1204. *Spelaornis chocolatinus oatesi* (Rippon)
Chin Hills Longtailed Wren-Babbler

1206. *Spelaornis formosus* (Walden)
Spotted Short-tailed Wren-Babbler

1208. *Sphenocichla humei roberti* Godwin-
Austen & Walden
Cachar Wedge-billed Wren

Tirap district : Deban 1♀ (27 Mar., 1981), Namdapha Camp 1♂ (6 Jan, 1985), 124 km. on MV Road 1♀ (11 Jan., 1985), 77 mile base Camp 1♂, 1♀ (30 Jan., 1987), Gandhigram 2♀ (28 Feb., 1988).

Katti *et al.* (1992) recorded this species at Abango Ridge in Mehao W.L.S, Dibang Valley district.

Singh (1995) also reported this species from Orak-Glenshang, Upper Subansiri district, Mehao false, Mehao W.L.S, Dibang Valley district.

Measurements :	Wing	Tail	Bill
2♂	72,74	59,60	25,26
5♀	71-74 (72)	60-62 (61)	26 (5)

1209. *Stachyris rufifrons ambigua* (Harington)
Assam Redfronted Babbler

Ali & Ripley (1948) collected 2♂ at Dreyi, Mishmi Hills.

1210. *Stachyris ruficeps ruficeps* Blyth
Redheaded Babbler

Tirap district : Ridge top camp (2500 m), Namdapha 1♀ (3 Mar., 1988)

1212. *Stachyris chrysaea chrysaea* Blyth
Nepal Goldenheaded Babbler

Tirap district : Chiria Camp 1♂, 1♀ (24, 25 Apr., 1981), Firmnase Camp 1♀ (18 Feb., 1981), Deban 2♂ (8 Dec., 1983), 124 km. on MV Road 3♀ (10, 11 Jan., 1985), 2♂ (9 Feb., 1987). Ramnagar (c 1150 m.) 1♀ (16 Feb., 1988), Lower Camp 2♂ (28 Feb., 5 Mar., 1988). Gandhigram (c 1100 m) 1♂, 1♀ (30 Dec., 1984, 25 Jan., 1985).

Ali & Ripley (1948) collected 3♂ and 1♀ from Dreyi, Mishmi Hills.

Betts (1956) noted this bird as common around Apa Tani Valley (5000-6000 ft.).

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
15♂	48-56	42-50	13-14
	(54)	(47)	(14)
10♀	47-52	42-48	13-14
	(51)	(45)	(14)

1214. *Stachyris nigriceps nigriceps* Blyth
Blackthroated Babbler

Ali & Ripley (1948) collected specimens from Tezu, Dening and Dreyi, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1215. *Stachyris nigriceps coei* Ripley
Mishmi Blackthroated Babbler

Lohit district. Hayuliang 7♂, 1♀ (9 Nov.

1998), Wakro 1♂, 1♀ (17 Nov. 1998); Dibang Valley district : Koronu 2♂ (30 Mar. 1999, 3 Apr. 1999).

Measurements :	Wing	Tail	Bill
10♂	53-62	49-55	17-18
	(57)	(51)	(17)
2♂	56, 57	51 (2)	17 (2)

1217. *Stachyris rigriceps collari* Harington
Nagaland Blackthroated Babbler

Tirap district : Zero Camp 5♂, 3♀ (10, 14, 19 Apr. 1981), Chiria camp 8♂, 6♀ (24, 25 Apr. 1981), Gandhigram (1100 m) 11♂, 10♀ (26, 27, 30 Dec., 1984), Ramnagar 3♂, 1♀ (10, 13 Feb. 1988)

Measurements :	Wing	Tail	Bill
27♂	53-62	49-53	18-19
	(58)	(52)	(18)
20♀	57-62	48-52	17-19
	(59)	(51)	(18)

1218. *Stachyris oglei* (Godwin-Austen)
Austen's Spotted Babbler

Ripley *et al.* (1991) collected specimens in Namdapha National Park, Changlang district in March, 1979, and recorded it in between Deban and Hornbill, Namdapha, Changlang district. Athreya (1991) reported this species from Namdapha, Changlang district.

1228. *Macronous gularis rubricapilla* (Tickell)
Yellowbreasted Babbler

West Kameng district : Bhalukpong 1♂, 1♀ (27 Nov. 2000).

Measurements :	Wing	Tail	Bill
1♂	57	-	15
1♀	53	49	15

1236. *Conostoma aemodium* Hodgson
Great Parrotbill

1237. *Paradoxornis unicolor* Hodgson
Brown Parrotbill

1239. *Paradoxornis fulvifrons chayulensis* (Kinnear)
Tebetan Fulvous fronted Parrotbill

1242. *Paradoxornis nipalensis poliotis* (Blyth)
Blyth's or Assam Orange Parrotbill

Tirap district : Gandhigram 6♂, 3♀ (30 Dec., 1984), 124 km. on MV Road 2♂ (12, 15 Jan., 1985), Ramnagar 2♀ (14, 18 Feb., 1988).

Dibang Valley district : Mayudiya 2♂, 2♀ (24, 25, 26 Mar., 1999).

Ali & Ripley (1948) collected specimens from Tezu and Dreyi and noted flocks of 30 or more there.

Betts (1956) obtained one specimen and noted uncommon in flocks in the Apa Tani valley wood reserves (c. 6000 ft.).

Measurements :	Wing	Tail	Bill
8♂	42-46 (44)	50-52 (51)	7
5♀	42-43 (43)	49-50 (50)	7

1246. *Paradoxornis atrosuperciliaris atrosuperciliaris*
(Godwin-Austen)
Blackbrowed Parrotbill

Tirap district : 124 km. on MV Road 1♀ (11 Jan., 1985).

Stevens (1914-15) reported this species from Abor-Miri Hills on the right bank of the Subansiri (4000 ft.) in March.

Ali & Ripley (1948) collected a male from Dening, Mishmi Hills and noted small parties of 6-8 bird in that area.

Chaudhury (2000) reported this species from Lohit district, Namdapha National Park, Changlang district, Dibang Valley, West Kameng and Upper Subansiri district (AVC; Ali & Ripley, 1983, Singh, 1995).

Measurements :	Wing	Tail	Bill
1♂	70	70	12

1247. *Paradoxornis ruficeps ruficeps* Blyth
Greater Redheaded Parrotbill

Athreya (1996) reported this species from Namdapha, Changlang district.

Choudhury (2000) reported this species in eight locality records from West Kameng, West Siang, Changlang and Dibang Valley districts (Abdulali 1982; Saha 1985; Katti *et al.* 1992 and Singh 1995).

1248. *Paradoxornis ruficeps bakeri* (Hartert)
Assam Redheaded Parrotbill

Tirap district : Namdapha : Chiria Camp 2♂, 1♀ (24, 25 Jan., 1981), 124 km. on MV Road 1♂, 2♀ (11 17 Jan., 1985), Gandhigram 4♀ (21, 22, 24 Feb., 1988).

Measurements :	Wing	Tail	Bill
3♂	87-88 (88)	75-81 (79)	16-18 (17)
7♀	81-86 (85)	74-80 (78)	15-18 (16)

1249. *Paradoxornis gularis gularis* Gray
Greyheaded Parrotbill

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1251. *Paradoxornis flavirostris flavirostris* Gould
Gould's or Blackthroated Parrotbill

1257. *Turdoides longirostris* (Hodgson)
Slenderbilled Babbler

1265. *Turdoides striatus striatus* (Dumont)
Bengal Jungle Babbler

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

1271. *Babax waddelli waddelli* Dresser
Giant Babax

1274. *Garrulax albogularis albogularis* (Gould)
Eastern Whitethroated Laughing Thrush

1275. *Garrulax monileger monileger* (Hodgson)
Necklaced Laughing Thrush

Betts (1956) reported this species as common on the river valleys, occurs in groups of 30-40 birds.

Athreya (1996) recorded this species from Namdapha, Changlang district.

Datta *et al.* (1998) noted this bird from Pakhui W.L.S, East Kameng district.

1276. *Garrulax monileger badius* Ripley
Mishmi Necklaced Laughing Thrush

Tirap district : Gibbon's land 1 ♀ (30 Apr., 1981), Remnagar 1 ♂ (16 Feb., 1988).

Lower Subansiri district : Pitapool 1 ♀ (20 Jan., 1997).

Lohit district : Hayuliang 2 ♂ (9 Nov., 1998).

Dibang Valley district : Koronu 2 ♂, 1 ♀ (31 Mar, 3, 4 Apr., 1999).

Ali & Ripley (1948) collected 3 ♂ (including Holotype) from Tezu, Lohit district.

Measurements :	Wing	Tail	Bill
4 ♂	117-125 (122)	119-128 (124)	30 (4)
4 ♀	117-123 (119)	119-126 (122)	30 (4)

1278. *Garrulax pectoralis melanotis* Blyth
Assam Blackgorgeted Laughing Thrush

Tirap district : Namdapha - Gibbon's land 1 ♂ (5 Jan., 1984).

Stevens (1914-15) reported its occurrence over the water-shed in the Abor-Miri Hills.

Ali & Ripley (1948) collected specimens from Dening, Mishmi Hills.

Datta *et al.* (1998) noted this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1 ♂	133	125	32

1282. *Garrulax striatus cranbrooki* (Kinnear)
Assam Striated Laughing Thrush

Tirap district : 124 km. on MV Road 1 ♂ (12 Jan., 1985), 77 mile base camp 1 ♀ (9 Feb., 1987), Upper Camp 1 ♀ (2 Mar., 1988).

Tawang district : 4th Bridge 1 ♂ (17 Nov., 2000).

Stevens (1914-15) collected specimens on the right bank of Subansiri river in the Abor Miri hills.

Ali & Ripley collected specimens from Dreyi and Tidding, Mishmi Hills.

Betts (1956) collected one specimen above the Apa Tani Valley (6000 ft.).

Measurements :	Wing	Tail	Bill
2 ♂	137,140	127,131	29 (2)
2 ♀	134,135	126,127	30 (2)

1283. *Garrulax leucolophus leucolophus* (Hardwicke)
Himalayan Whitecrested Laughing Thrush

Baker (1913) collected 1 unsexed specimen from Etalni, Mishmi land (c 2200 ft.) on 13 Feb., 1913.

Ali & Ripley (1948) collected one male specimen from Tezu, Lohit district.

Betts (1956) collected one specimen from a large flock on the Pein river (1500 ft.) and reported it as common in the river valleys upto 3000 ft.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Patchy flocks, numbering 8-12 birds were found in Yazali and Pita Pool, Lower Subansiri district.

1284. *Garrulax leucolophus patkaicus* Reivhenow
Assam Whitecrested Laughing Thrush

Tirap district : Gibbon's land 1 ♂ (29 Apr., 1981), 124 km. on MV Road 1 ♂, 1 ♀ (13 Jan., 1985), 77 mile base camp 1 ♂ (31 Jan., 1987), 1 ♂, 1 ♀ (31 Jan, 1 Feb., 1987), Lower Camp 1 ♂ (28 Feb., 1988), Remnagar 1 ♀ (10 Feb., 1988).

Athreya (1996) also reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
4 ♂	123-133 (128)	124-130 (127)	28-29 (28)
3 ♀	127-131 (130)	126-130 (128)	28-29 (28)

1285. *Garrulax chinensis nuchalis* Godwin-Austen
Chestnutbacked Laughing Thrush

Choudhury reported that this species was recently recorted at Lai Anchal Reserve Forset. A large party was noted on 22 Jan., 1994, and also in Kamlang W.L.S on 23 Jan., 1994 (AVC).

1286. *Garrulax galbanus galbanus* Godwin-Austen
Yellowthroated Laughing Thrush

Athreya (1996) reported this species from Namdapha, Changlang district.

Ali & Ripley (HB) reported its distribution from Nagaland, Manipur and Assam.

1288. *Garrulax delesserti gularis* (McClelland)
Yellowbreasted Laughing Thrush

Tirap district : Hornbill Camp 1 ♀ (14 Apr., 1981), Namdapha Camp 1 ♀ (21 Apr., 1981).

Measurements :	Wing	Tail	Bill
2 ♀	97, 98	90 (2)	29 (2)

1291. *Garrulax cineraceus cineraceus* (Godwin-Austen)
Ashy Laughing Thrush

1294. *Garrulax rufogularis rufogularis* (Gould)
Rufouschinned Laughing Thrush

Stevens (1914-15) collected specimens in the Abor-Miri Hills (4000 ft.).

Betts (1956) noted a flock of this bird at Kore (5000 ft.).

- 1295a. *Garrulax rufogularis rufiberbis* Koelz
Burmese Rufouschinned Laughing Thrush

1296. *Garrulax rufogularis assamensis* (Hartert)
Assam Rufouschinned Laughing Thrush

1302. *Garrulax caerulatus livingstoni* Ripley
Nagaland Greysided Laughing Thrush

Tirap district : Lower Camp 2 ♀ (28 Feb., 1988).

Measurements :	Wing	Tail	Bill
2 ♀	117, 119	126 (2)	24 (2)

Ali & Ripley (HB) reported its distribution from Assam in north Chachar, Nagaland, Manipur and Adjacent Myanmar.

1303. *Garrulax ruficollis* (Jardine & Selby)
Rufousnecked Laughing Thrush

Tirap district : 124 km. on MV Road 1 ♂ (10 Jan., 1985), 77 mile base camp 2 ♂ (1, 6 Feb., 1987).

Lower Subansiri district : Yachuli 1 ♂ (12 Jan., 1997).

Dibang Valley district : Koronu 1 ♂ (4 Apr., 1999).

Upper Subansiri district : Dumporijo 4 ♂, 3 ♀ (22 Apr., 2001).

Betts (1956) reported this species to occur in the plains also common in the Pein valley (4000 ft.), also seen at Hapulia (5000'), bardens of Apa Tani valley.

Measurements :	Wing	Tail	Bill
8 ♂	95-100 (98)	100-109 (106)	23-24 (23)
3 ♀	95-97 (96)	99-101 (100)	23 (3)

1304. *Garrulax merulinus merulinus* Blyth
Assam Spottedbreasted Laughing Thrush

1305. *Garrulax merulinus toxostominus* (Koelz)

Tirap district : Chiria camp 1 ♀ (24 Apr., 1981), Gandhigram 1 ♂ (1 Mar., 1988).

Measurements :	Wing	Tail	Bill
1 ♂	97	96	28
1 ♀	94	80	27

1316. *Garrulax lineatus imbricatus* Blyth
Bhutan Streaked Laughing Thrush

Tawang district : 4th Bridge 3 ♂, 2 ♀ (16, 17, 18 Nov., 2000).

Measurements :	Wing	Tail	Bill
3 ♂	77-80 (78)	94-102 (98.5)	20-21 (20.5)
2 ♀	75, 80	90, 102	20, 21

1317. *Garrulax virgatus* (Godwin-Austen)
Manipur Streaked Laughing Thrush

1318. *Garrulax austeni austeni* (Godwin-Austen)
Brown capped Laughing Thrush

1319. *Garrulax squamatus* (Gould)
Blue winged Laughing Thrush

Tirap district : Gandhigram 2♂, 2♀ 1 unsexed (27 Dec., 1984, 23 Feb., 1988), 1 unsexed (25 Feb., 1988), 124 km. on MV Road 2♂, 3♀ (6, 12, 13, 17 Jan., 1985), 77 mile base camp 1♂ (31 Jan., 1987).

Lohit district : Hayuliang 2♀ (9 Nov., 1998).

Measurements :	Wing	Tail	Bill
5♂	99-105 (102)	101-106 (102)	22-24 (23)
7♀	98-105 (101)	100-105 (102)	22-24 (23)
2 unsexed	104	102	22

1320. *Garrulax subunicolor subunicolor* (Blyth)
Plain coloured Laughing Thrush

Ali & Ripley (1948) collected 1♂ at Dreyi, Mishmi Hills and found flocks of upto 20 birds quite common at that altitude.

1321. *Garrulax henrici* (Oustalet)
Prince Henry's Laughing Thrush

1323. *Garrulax affinis bethelae* Rand & Fleming
Eastern Black faced Laughing Thrush

Dibang Valley district : Mayudiya 1♂ (20 Mar., 1999).

Measurements :	Wing	Tail	Bill
1♂	111	131	24

1326. *Garrulax erythrocephalus nigrimentum* (Oates)
Sikkim Redheaded Laughing Thrush

Tirap district : Namdapha Camp 1♂ (4 Mar., 1998).

Tawang district : 4th Bridge 4♂, 2♀ (15, 18 Nov., 2000).

Betts (1956) collected two specimens on the Kale River (4500 ft.) and noted this species in a flock in the valleys of the Pein river in Subansiri area.

Measurements :	Wing	Tail	Bill
6♂	98-105 (103)	106-115 (111)	24-25 (24)
3♀	100-102 (101)	110-118 (114)	24-25 (24)

1327. *Garrulax erythrocephalus imprudens* Ripley
NEFA Redheaded Laughing Thrush

Dibang Valley district : Mayudiya 1♂, 1♀ (20 Mar., 1999).

Ali & Ripley (1948) collected a specimen near Tidding above Dreyi in the Mishmi Hills.

Measurements :	Wing	Tail	Bill
1♂	100	110	25
1♀	102	115	25

1330. *Garrulax erythrocephalus erythrolaema* (Hume)
Manipur Redheaded Laugh Thrush

1331. *Garrulax phoeniceus phoeniceus* (Gould)
Himalayan Crimson winged Laughing Thrush

Stevens (1914-15) collected specimens in the Abor-Miri Hills (4000 ft.).

Ali & Ripley (1948) collected 1♂ at Dreyi, Mishmi Hills.

Betts (1956) noted this species as uncommon, one specimen collected on Kore Hills (5000 ft.) in Subansiri area and also seen in between Kore and Apa Tani Valley (6000 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1332. *Garrulax phoeniceus bakeri* (Hartert)
Assam Crimson winged Laughing Thrush

Tirap district : Namdapha : 77 mile base camp 1♀ (29 Jan, 1987), Lower Camp 1♂ (28 Feb., 1988), Gandhigram 2♂ (23, 26 Feb., 1988).

Measurements :	Wing	Tail	Bill
3♂	86-89 (88)	92-93 (92.5)	20-21 (20.5)
2♀	84,85	92 (2)	20 (2)

1333. *Leiothrix argenteauris argenteauris* (Hodgson)
Himalayan Silvereared Mesia

Tirap district : Namdapha : Chiria camp 1 ♀ (25 Apr., 1981), Miao 3 ♂, 1 ♀ (4 Dec., 1982), Deban 2 ♂ (15 Dec., 1982), Hornbill Camp 4 ♀ (13, 15 Dec., 1983), Zero Camp 8 ♂, 8 ♀ (25 Dec., 1983), Gibbon's land 1 ♀ (2 Feb., 1984), Gandhigram 7 ♂ (21, 26, 27, 31 Jan., 1987, 2 Feb., 1987), 7 ♀ (26 Dec., 1984; 21, 26, 31 Jan., 1987; 21, 25 Feb., 1988).

Ali & Ripley (1948) collected 2 ♂ and 1 ♀ from Tezu and Dering, Mishmi Hills and noted flocks of 30 or more among the foliage of shrubs and forest canopy.

Betts (1956) noted this as very common in Pein and Apa Tani Valleys and collected a specimen at Kore (5000 ft.) in Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
24 ♂	70-80 (75)	64-71 (68)	17-18 (17.5)
18 ♀	69-76 (74)	63-70 (67)	17-18 (17.5)

1333a. *Leiothrix argenteauris aureigularis* (Koelz)
Assam Silvereared Mesia

Athreya (1996) reported this species from Namdapha, Changlang district.

1334. *Leiothrix argenteauris vernayi* (Mayr & Greenway)
Burmese Silvereared Mesia

Stevens (1914-15) reported this species around the 'Changs' in the Abor-Miri hills.

Stevens recoded his bird as *Mesia argenteauris* Hodgson. We retain it under this subspecies.

1336-1337. *Leiothrix lutea calipyga* (Hodgson)
Eastern Redbilled Leiothrix

Tirap district : Lower Camp 1 ♀ (27 Feb., 1988), Gandhigram 1 ♀ (1 Mar., 1988).

Tawang district : 4th Bridge 1 ♂ (16 Nov., 2000), Zemithang 4 ♂ (21, 22 Nov., 2000).

Betts (1956) noted this species as common in Kore and Apa Tani Valley, in Subansiri area.

Measurements :	Wing	Tail	Bill
5 ♂	66-69 (68)	59 (5)	15 (5)

2 ♀	55-66	54,55	15 (2)
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1338. *Myzornis pyrrhura* Blyth
Firetailed Myzornis

Tirap district : Second Upper Camp 2 ♂, 2 ♀ (5 Mar., 1988).

Measurements :	Wing	Tail	Bill
2 ♂	59, 61	49 (2)	16 (2)
2 ♀	55, 56	42, 43	15 (2)

1339. *Cutia nipalensis nipalensis* Hodgson
Nepal Cutia

Betts (1956) encountered this bird only once on Tasser Puttu (4500 ft.) in Subansiri area.

1340. *Pteruthius rufiventer* Blyth
Rufousbellied Shrike Babbler

Tirap district : Gandhigram (c 1100 m) 1 ♀ (6 Mar., 1988).

Measurements :	Wing	Tail	Bill
1 ♀	87	78	20

1341. *Pteruthius flaviscapis validirostris* Koelz
Redwinged Shrike Babbler

Tirap district : 77 mile base camp 1 ♂ (6 Feb., 1987).

Ali & Ripley (1948) collected 2 ♂ at Tezu, Lohit district.

Betts (1956) noted this species at Kore (5000 ft.), Subansiri area and a small flock at Apa Tani Valley.

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
1 ♂	79	60	19

1343. *Pteruthius xanthochlorus xanthochlorus* Gray
Eastern Green Shrike-Babbler

Dibang Valley district : Mayudiya 1 ♂, 1 ♀ (25, 26 Mar., 1999);

Tawang district : Zenithang 1♂ (22 Nov., 2000).

Ali & Ripley (1983) reported its distribution from Tawang district (27° 33'N, 91° 48'E, 3600 m. Whistler Mss).

Measurements :	Wing	Tail	Bill
2♂	61,63	46,47	11,12
1♀	62	47	12

1344. *Pteruthius xanthochlorus hybrida* Harington
Chin Hills Green Shrike-Babbler

1345. *Pteruthius melanotis melanotis* Hodgson
Chestnut-throated Shrike-Babbler

Stevens (1914-15) collected 2♂ at Beni, Rungcilla, Yoloo Peak, 5000 ft., Abor Miri Hills in February.

Ali & Ripley (1948) collected 2♀ at Tezu, Lohit district.

1347. *Gampsorhynchus rugulus rufulus* Blyth
Whiteheaded Shrike-Babbler

Tirap district : Gibbon's Land 1♂ (2 Jan, 1984).

Ali & Ripley (1948) collected 2♀ at Tezu, Lohit district.

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
1♂	96	102	21

1348. *Actinodura egertoni egertoni* Gould
Himalayan Barwing

Stevens (1914-15) collected this bird from Abor-Miri Hills in February.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1349. *Actinodura egertoni lewisi* Ripley
Mishmi Barwing

Ali & Ripley (1948) collected a large number of specimens from Dreyi and Tidding, Mishmi Hills and noted that this species is one of the commonest bird above 5000 ft.

1350. *Actinodura egertoni khasiana* Godwin-Austen
Assam Barwing

Tirap district : 124 km. on MV Road, 2♂ 3♀ (11, 17 Jan., 1985), Namdapha Camp 1♂, 2♀ (28 Feb., 1988).

Measurements :	Wing	Tail	Bill
3♂	80-87 (85)	102-110 (107)	20 (3)
5♀	81-90 (87)	100-110 (106)	20 (5)

1351. *Actinodura egertoni ripponi* Ogilvie-Grant
Mizo Barwing

1354. *Actinodura waldeni daslaensis* Godwin-Austen
NEFA Barwing

Betts (1956) collected two specimens on Pad Puttu and Donku Puttu in Subansiri area and noted it common on high elevation (above 7000 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1♂	63	60	16
1♀	60	63	15

1355. *Actinodura waldeni waldeni* Godwin-Austen
Manipur Barwing

1357. *Minla ignotincta ignotincta* Hodgson
Redtailed Minla

Stevens (1914-15) found this species in Beni, Subansiri Gorge, Apor-Miri Hills.

Betts (1956) noted this bird as common in the hills from 3000-5000 ft. in Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S. East Kameng district.

Athreya (1996) reported this bird from Namdapha, Changlang district.

1359. *Minla strigula strigula* (Hodgson)
Eastern Barthroated Siva

Dibang Valley district : Mayadiya 2♂, 2♀ (24, 25, 26 March 1999).

Measurements :	Wing	Tail	Bill
2♂	69,70	72 (2)	15 (2)
2♀	65 (2)	68,70	13,14

1360. *Minla strigula yunnanensis* (Rothschild)
NEFA Barthroated Siva

Ali & Ripley (1948) collected 5♂ and 1♀ at Dreyi, Mishmi Hills.

1361. *Minla strigula cinereigenae* (Ripley)
Assam Barthroated Siva

1362. *Minla cyanouroptera cyanouroptera* (Hodgson)
Bluwinged Siva

Tirap district : Deban camp 1♂ (27 Apr. 1981); Upper Subansiri district : Daporijo 1♀ (13 Apr. 2001).

Stevens (1914-15) reported occurrence of this species in the Abor-Miri Hills.

Ali & Ripley (1948) collected a specimen at Dening, Mishmi Hills.

Betts (1956) noted this species as common around Kore and Apa Tani Valley in Subansiri area.

1363. *Yuhina castaniceps rufigenis* (Hume)
Sikkim Whitebrowed Yuhina

Stevens (1914-15) reported occurrence of this species in the Abor Miri Hills and in the gorge of the Subansiri (Ganditola, Virgua stream).

1364. *Yuhina castaniceps plumbeiceps* (Godwin-Austen)
Mishmi Whitebrowed Yuhina

Tirap district : 124 km. on MV Road 1♂ (17 Jan., 1985).

Godwin-Austen (SF 7 : 144) reported this species from the Dikrang Valley, Arunachal Pradesh, east to the Mishmi Hills.

Measurements :	Wing	Tail	Bill
1♂	60	56	11

1365. *Yuhina castaniceps castaniceps* (Moore)
Chestnut headed Yuhina

1366. *Yuhina bakeri* Rothschild
Whitenaped Yuhina

Tirap district : Chiria Camp 1♂, 4♀ (25 Apr., 1981), 124 km. on MV Road 6♂, 12♀ (4, 5, 8,

12 Jan., 1985), Ramnagar 2♂ (13 Feb., 1988), Gandhigram 1♀ (26 Feb., 1988).

Upper Subansiri district : Daporijo 1♀ (16 Apr., 2001).

Ali & Ripley (1948) collected 1♂, 4♀ at Tidding above Dreyi, Mishmi Hills.

Measurements :	Wing	Tail	Bill
9♂	63-68 (67)	51-54 (53)	13-15 (14)
18♀	66-69 (68)	45-51 (46)	12-14 (13)

1368, 1369. *Yuhina flavicollis flavicollis* Hodgson
Eastern Yellownaped Yuhina

Tawang district : 4th Bridge 9♂, 3♀ (16, 17, 18 Nov., 2000), Zemithang 2♂, 1♀ (20, 21 Nov., 2000).

Stevens (1914-15) noted this species from Beni, Abor Miri Hills in Subansiri area.

Ali & Ripley (1948) collected a pair of this species at Dreyi, Mishmi Hills.

Betts (1956) collected specimen and noted this bird as common in Kore and Apa Tani Valley in Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
11♂	58-66 (64)	47-51 (50)	14-16 (15)
4♀	62-66 (63)	49-51 (50)	14-15 (14)

1370. *Yuhina flavicollis rouxi* (Oustalet)
Assam Yellownaped Yuhina

Tirap district : Deban Camp 2♂, 1♀ (24, 27, 28 Apr., 1981), Gibbon's land 1♂ (30 Apr., 1981), Gandhigram (c 1100 m), 4♂ (26 Dec., 1984, 30 Jan, 3 Feb., 1987, 22 Feb., 1988).

Dibang Valley district : Mayudiya 2♂ (25, 26 Mar., 1999).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
7♂	60-66 (64)	48-50 (49)	13-15 (14)
4♀	59-64 (63)	45-49 (48)	13 (4)

1372. *Yuhina gularis gularis* (Hodgson)
Eastern Stripethroated Yuhina

Dibang Valley district : Mayudiya 3♂ (20, 24 mar., 1999).

Tawang district : 4th Bridge 1♂ (17 Nov., 2000).

Baker (1913) collected 1♀ in Mishmi Hills (8000 ft.) on 5 Apr., 1913.

Betts (1956) saw a flock on Donko Puttu above the Apa Tani Valley (7000 ft.).

<i>Measurements</i> :	Wing	Tail	Bill
4♂	76-80 (78)	58-62 (60)	16-19 (18)

1373. *Yuhina occipitalis occipitalis* Hodgson
Slatyheaded or Rufousvented Yuhina

Tirap district : Ridgetop Camp 1♂ (4 mar., 1988).

Tawang district : Zemithang 1♀ (21 Nov., 2000).

Stevens (1914-15) reported this species from Subansiri Gorge in January and from Beni, Abor Miri Hills in February.

Betts (1956) listed this bird in publication but mentioned nothing.

<i>Measurements</i> :	Wing	Tail	Bill
1♂	63	51	17
1♀	63	50	17

1374. *Yuhina nigrimenta nigrimenta* Hodgson
Blackchinned Yuhina

Tirap district : Deban Camp. 1♂, 1♀ (12 Dec., 1982), 124 km. on MV Road 12♂, 3♀ (4, 5, 6, 7, 8 Jan., 1985), Ramnagar (c 1100 m) 1♂, 1♀ (11, 14 Feb., 1988).

Stevens (1914-15) noted this species from Beni, in the Abor-Miri Hills (4000 ft.) in February.

Ali & Ripley (1948) collected 1♀ at Dening, Mishmi Hills.

Betts (1956) noted it as not uncommon in flocks in the Apa Tani (6000 ft.) in Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
14♂	51-58 (56)	36-39 (38)	13-14 (14)
5♀	52-58 (56)	36-39 (37)	14 (5)

1375. *Yuhina xantholeuca xantholeuca* (Hodgson)
Whitebellied Yuhina

Tirap district : Deban Camp 1♀ (7 Dec., 1983), 77 mile base camp 1♂ (1 Feb., 1987), Ramnagar (c. 1100 m) 1♀ (3 Mar., 1988).

East Kameng district : Pakui 1♀ (28 Apr., 2001).

Ali & Ripley collected 1♂ at Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
1♂	66	46	15
3♀	65-66 (66)	45-46 (45)	14-15 (15)

1376. *Alcippe chrysotis chrysotis* (Blyth)
Himalayan Goldenbreasted Tit-Babbler

Dibang Valley district : Mayudiya 1♀

<i>Measurements</i> :	Wing	Tail	Bill
1♀	53	49	10

1377. *Alcippe chrysotis albillineata* (Koelz)
Assam Godenbreasted Tit-Babbler

1378. *Alcippe cinerea* (Blyth)
Dusky Green or Yellowthroated Tit-Babbler

Tirap district : 124 km on MV Road 7♂, 5♀ (5, 7, 8, 10, 11, 16 Jan., 1985), 77 mile base

camp 7♂, 4♀ (1, 2, 8 Feb., 1987), Ramnagar (c. 1100 m). 1♂, 3♀ (12, 15, 16 Feb., 1988).

Steven (1914-15) found this species upto c. 5000 ft. in the Abor Miri Hills.

Ali & Ripley (1948) collected a large series of species between Dreyi and Tidding, Mishmi Hills.

We found fairly good numbers in the dense forest in Pita Pool Yazali, Lower Subansiri in Jan., 1997.

Measurements :	Wing	Tail	Bill
15♂	50-58 (55)	37-44 (42)	11-13 (12)
12♀	51-58 (56)	37-43 (42)	11-13 (12)

1379. *Alcippe castaneiceps castaneiceps* (Hodgson)
Chestnut-headed Tit-Babbler

Tirap district : Lower Camp 2♂ (27, 28 Feb., 1988);

Dibang Valley district : Mayudiya 2♂, 2♀ (20, 25, 26 Mar., 1999).

Stevens (1914-15) found this bird upto c. 5000 ft. in the Abor-Miri Hills.

Ali & Ripley (1948) collected 1♀ from Tezu, Lohit district.

Betts (1956) obtained one specimen but any exact locality.

We noted it as fairly common in dense forest, Yazali, Lower Subansiri district in Jan., 1992.

Measurements :	Wing	Tail	Bill
4♂	57-60 (58)	42-44 (43)	12-13 (12)
2♀	54,55	40, 41	12 (2)

1382. *Alcippe vinipectus chumbiensis* (Kinnear)
Eastern Whitebrowed Tit-Babbler

1383. *Alcippe vinipectus austeni* (Ogilvie-Grant)
Assam Whitebrowed Tit-Babbler

1384. *Alcippe cinereiceps ludlowi* (Kinnear)
Himalayan Brownheaded Tit-Babbler

1385. *Alcippe cinereiceps maipurensis* (Ogilvie-Grant)
Manipur Brownheaded Tit-Babbler

Tirap district : Ridge Top (c 2500 m.) 1♂, 1♀ (4, 5 Mar., 1988).

Dibang Valley district : Mayudiya 2♂, 1♀ (25, 26 Mar., 1999), Koronu 1♀ (2 Apr., 1999).

Measurements :	Wing	Tail	Bill
3♂	55-56 (55.5)	52-54 (53)	10 (3)
2♀	50,51	50 (2)	10 (2)

1385a. *Alcippe striaticollis* (Verreaux)
Streak throated Tit-Babbler

Ali & Ripley (1983) reported that it may occur in northern Arunachal Pradesh based on the collection by Ludlow from the Tzari Valley (Upper Subansiri) to Tripe (Ibis 1944 : 81 and 1951 : 556). This species was also obtained at Thipe by Bailey (JBNHS 24 : 75).

1386. *Alcippe rufogularis rufogularis* (Mandelli)
Himalayan Redthroated Tit-Babbler

Ali & Ripley (1948) collected 2♂, 2♀ at Tezu, Lohit district.

Ali & Ripley (1983) further extended its range upto Dibang river in Arunachal Pradesh.

1387. *Alcippe rufogularis collaris* Walden
Assam Redthroated Tit-Babbler

Tirap district : Hornbill Camp 2♂ (14 Apr., 1981), Firmbase Camp 1♂, 1♀ (19 Apr., 1981), Giddon's land 1♀ (29 Apr., 1981), Miao R.F. 1♂, 1♀ (5 May., 1981), Deban Camp 2♂ (13 Dec., 1982, 6 Dec., 1983).

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
6♂	56-59 (58)	45-48 (47)	13-14 (14)
3♀	54-57 (55)	45-47 (46)	13-14 (14)

1388. *Alcippe brunnea mandelli* (Godwin-Austen)
Rufousheaded Tit-Babbler

Tirap district : Gandhigram (1100 m) 8♂, 3♀ (29 Dec. 1984; 1 Jan. 1985; 6 Feb. 1987; 1, 15 Mar. 1988), 77 mile base camp 2♂, 2♀ (29 Jan.; 8, 9 Feb., 1987), Ramnagar (1150 m) 1♀ (12 Feb. 1988).

Measurements :	Wing	Tail	Bill
10♂	56-61 (58)	58-60 (59)	13-14 (14)
6♀	54-58 (56)	56-59 (58)	14 (6)

1391. *Alcippe poiocephala fusca* Godwin-Austen
Assam Quaker Babbler

1392. *Alcippe nipalensis nipalensis* (Hodgson)
Nepal Quaker Babbler

Betts (1956) collected one specimen at Kore (5000 ft.) and also noted common in the Pein Valley in Subansiri area.

Athreya (1996) reported this species from Namdhapa, Changlang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S. East Kameng district.

1393. *Alcippe nipalensis commoda* Ripley
Mishmi Quaker Babbler

Tirap district : Chiria Camp 1♂, 2♀ (25 Apr., 1981), Hornibill Camp 1♂, 3♀ (12, 13 Apr. 1981), Namdapha Camp 3♂, 1♀ (22, 23 Apr., 1981), Zero camp 1♂ (25 Dec. 1983), Firm base camp 4♂, 1♀ (19 Dec. 1983), Gandhigram (1100 m) 16♂, 11♀ (29, 30 Dec. 1984; 22, 23, 24, 25 Jan. 1987; 4, 9 Feb. 1987), Gibbon's land 1♂ (6 Jan. 1984), Ramnagar (1150 m) 1♂, 1♀ (10 Feb. 1988), 77 mile base camp 3♂ (29 Jan; 8 Feb. 1987); Lohit district : Hayuliang 5♂, 2♀ (9, 10 Nov. 1998).

Upper Subansiri district : Daporijo 1♂, 2♀ (13, 16, 20 Apr., 2001).

Measurements :	Wing	Tail	Bill
37♂	58-62 (60)	56-60 (58)	12-13 (13)
23♀	56-62 (60)	55-58 (57)	12-13 (13)

Ali & Ripley (1948) collected 2♂, 2♀ at Tezu, Lohit district and Dening, Mishmi Hills.

1394. *Alcippe nipalensis stanfordi* Ticehurst
Chin Hills Quaker Babbler

1395. *Heterophasia annectens annectens* (Blyth)
Chestnut backed Sibia

Tirap district : Lone Camp 1♂ (5 Mar., 1988).

Betts (1956) collected one specimen at Kore (5000 ft.) in Subansiri area.

Measurements :	Wing	Tail	Bill
1♂	81	82	16

1398. *Heterophasia capistrata bayleyi* (Kinnear)
Eastern Blackcapped Sibia

Tirap district : 4th Bridge 7♂, 5♀ (15, 16, 17, 18 Nov., 2000), Zemithang Valley 1♂, 2♀ (21 Nov., 2000).

Population is very thin, one bird was seen in the dense forest, Pita Pool, Yazali, Lower Subansiri district in January, 1997.

Measurements :	Wing	Tail	Bill
8♂	92-100 (97)	103-111 (108)	23-25 (24)
7♀	93-101 (97)	101-114 (109)	24 (7)

1399. *Heterophasia gracilis* (McClelland)
Grey Sibia

Betts (1956) saw this bird (?) on Donko Puttu, above Apa Tani Valley and recorded call note probably of this bird.

1400. *Heterophasia pulchella* (Godwin-Austen)
Beautiful Sibia

Tirap district : Firmbase Camp 1♂, 1♀ (17, 19 Apr., 1981), Ridgetop (c. 2500 m) 1♀ (2 Mar., 1988);

Dibang Valley district : Mayudiya 1♂, 1♀ at (20, 25 Mar., 1999).

Ali & Ripley (1948) collected 4♂ and 1♀ at Dreyi, Mishmi Hills.

Betts (1956) collected two specimens on Pad Puttu (7000 ft.) and between Kore and Apa Tani Valley, and noted as not uncommon at higher elevation.

Measurements :	Wing	Tail	Bill
3 ♂	109-113 (111)	110-119 (113)	25-26 (25)
2 ♀	91,95	110,111	24 (2)

1401. *Heterophasia picaoides picaoides* (Hodgson)
Longtailed Sibia

Ali & Ripley (1948) noted flocks of this species at Dening and Dreyi, Mishmi Hills.

Betts (1956) saw one at Lichi in the Valley of the Panior river (3000 ft.) in Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

1406. *Muscicapa sibirica cacabata* Penard
Nepal Sooty Flycatcher

Ludlow (1937) reported this species from Western Arunachal Pradesh.

1410. *Muscicapa ferruginea* (Hodgson)
Ferruginous Flycatcher

Ludlow (1944) reported this species from Upper Subansiri area of Arunachal Pradesh.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1412. *Muscicapa parva albicilla* Pallas
Eastern Redbreasted Flycatcher

Tirap district : Namdapha Camp 1 ♂ (21 Apr., 1981), Firmbase Camp 1 ♂, 1 ♀ (18, 19 Apr., 1981).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1 ♂	69	49	12
1 ♀	68	50	12
1 ♀	69	51	13

1414. *Muscicapa strophhiata strophhiata* (Hodgson)
Orangeorgeted Flycatcher

Tirap district : Namdapha : Gibbon's land 1 ♂ (18 Dec., 1982), Namdapha Camp 1 ♂ (5 Jan., 1985), Gandhigram 8 ♂, (26, 27, 28 Dec., 1984, 25 Jan., 1987, 3 Feb., 1987, 1, 7 Mar., 1988), 5 ♀ (29, 30 Dec., 1984, 8 Jan., 1985, 25 Feb., 1988), Ramnagar 1 ♂ (12 Feb., 1988), 77 mile base camp 1 ♀ (7 Feb., 1987), 124 km. on MV Road 1 ♀ (8 Jan., 1985), 77 mile base camp 1 ♀ (7 Feb., 1987). Diban Valley district : Mayudiya 3 ♂, 1 ♀ (23, 24, 25 Mar., 1999).

Tawang district : 4th Bridge 1 ♂ (16 Nov., 2000).

Ali & Ripley (1948) collected 4 ♂ at Dening and Dreyi, Mishmi Hills.

Betts (1956) noted this bird as a winter visitor and obtained one specimen from Kore, Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
15 ♂	70-76 (74)	54-65 (58)	12-14 (13)
8 ♀	69-74 (72)	54-58 (56)	12-14 (13)

1415. *Muscicapa monileger monileger* (Hodgson)
Himalayan Whiteorgeted Flycatcher

Betts (1956) obtained one specimen from Kore (4500 ft.) in Subansiri area.

1416. *Muscicapa monileger leucops* (Sharpe)
Assam Whiteorgeted Flycatcher

Tirap district : 124 km. on MV Road 2 ♂, 2 ♀ (8, 10, 11 Jan., 1985), 77 mile base Camp 1 ♂ (28, Jan., 1987), Lower Camp 1 ♂, 2 ♀ (28 Feb., 1988), Ramnagar 1 ♂ (16 Feb., 1988).

Measurements :	Wing	Tail	Bill
4 ♂	62-64 (63)	44-47 (45)	13-14 (14)
5 ♀	62-63 (62)	44-45 (44.5)	13-14 (14)

1417. *Muscicapa hyperythra hyperythra* Blyth
Rufousbreasted Blue Flycatcher

Tirap district : Miao Camp 1♂ (2 Dec., 1982), Hornbill Camp 1♂, 1♀ (12, 16 Dec., 1983), Zero Camp 1♀ (25 Dec., 1983).

Ali & Ripley (1948) collected 2♂ at Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
2♂	56, 57	37, 38	12 (2)
2♀	55, 56	36 (2)	12 (2)

1418. *Muscicapa hodgsnii* (Verreaux)
Rustybreasted Blue Flycatcher

Dibang Valley district : Koronu 1♀ (31 Mar., 1999).

Measurements :	Wing	Tail	Bill
1♀	66	53	

1420. *Muscicapa westermanni australorientis* Ripley
Eastern Little Pied Flycatcher

Betts (1956) noted this species at Kore, Pein Valley above 4500 ft. in considerable numbers in March.

Datta *et al.* (1988) reported this species from Pakhui W.L.S, East Kameng district.

1422. *Muscicapa superciliaris aestigma* Gray
Little Blue and White Flycatcher

Diesselhorst (1968) and Bailey (JBNHS 24 : 75) reported this species from Arunachal Pradesh from c. 2000 to 2700 m., locally up to 3200 m.

1424. *Muscicapa leucomelanura minuta* (Hume)
Eastern Slaty Blue Flycatcher

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1425. *Muscicapa leucomelanura cerviniventris* (Sharpe)
Manipur Slaty Blue Flycatcher

1426. *Muscicapa sapphira* (Blyth)
Sapphireheaded Flycatcher

Tirap district : Zero Camp 1♀ (10 Apr., 1981), Hornbill Camp 1♂ (14 Apr., 1981), Firmbase Camp 1♀ (19 Apr., 1981).

Measurements :	Wing	Tail	Bill
1♂	70	55	14
2♀	66,68	50,51	14 (2)

1428. *Muscicapa grandis grandis* (Blyth)
Large Niltava

Tirap district : Namdapha Camp 1♀ (23 Apr., 1981), Hornbill Camp 1♀ (13 Dec., 1983), Gandhigram 2♂ (26, 29 Dec., 1984), 124 km. on MV Road 2♂ (7, 12 Dec., 1985), 77 mile base camp 1♂ (7 Feb., 1987), Ramnagar Camp 1♂, 1♀ (12, 18 Feb., 1988), Lower Camp 2♂ (28 Feb., 1988), 138 km. on MV Road 1♀ (20 Jan., 1985).

Measurements :	Wing	Tail	Bill
6♂	103-110 (107)	89-98 (96)	18-20 (19)
3♀	98-104 (101)	85-89 (87)	18-20 (19)

Ali & Ripley (1948) collected 2♂ and 1♀ at Dreyi, Mishmi Hills.

Betts (1956) noted this species at Ape Tani Valley (6000 ft.)

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1430. *Muscicapa macgrigoriae signata* (Horsfield)
Eastern Small Niltava

Tirap district : Gandhigram 6♂, 2♀ (26, 28, 30 Dec., 1984; 6, 8 & 9 Feb., 1987; 27 Feb., 1988), Gibbon's land 5♂, 3♀ (18, 19, 31 Dec., 1982; 5, 7, 8 Jan., 1984), Zero Camp 1♂, 2♀ (9 Apr., 1981, 26, 27 Dec., 1983), Hornbill Camp 4♂, 2♀ (12, 14 Apr., 1981), Namdapha Camp 1♀ (23 Apr., 1981), Chiria Camp 1♂, 1♀ (24 Apr., 1981), Miao Camp 3♂, 1♀ (2, 3, 4 Dec., 1982), Deban 1♂, 1♀ (3, 8 Dec., 1983), 124

km. on MV Road 2♂, (12, 27 Feb., 1988), 77 mile base Camp 1♂ (6 Feb., 1987).

Lohit district : Tezu 3♂ (4, 5 Nov., 1998), Hayuliang 3♂ (8, 10 Nov., 1998), Wakro 1♂, 2♀ (13, 19, 20 Nov., 1998);

Dibang Valley district : Koronu 1♂ (29 Mar., 1999).

West Kameng district : Bhalukpong 1♂ (26 Nov., 2000)

Upper Subansiri district : Daporijo 1♀ (11 Apr., 2001).

Ali & Ripley (1948) collected 3♂, 2♀ at Dening, Mishmi Hills.

Betts (1956) noted this species as unommon in Apa Tani Valley (6000 ft.)

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
33♂	61-65 (63)	49-53 (51)	12
16♀	60-65 (63)	47-52 (50)	12

1432. *Muscicapa sundara sundara* (Hodgson)
Eastern Rufousbellied Niltava

Tirap district : Namdapha : Deban 3♂, 3♀ (9, 12 Dec., 1982; 4, 5, 9 Dec., 1983), Gandhigram 4♂, 1♀ (26, 30 Dec., 1984; 24, 27 Jan., 1987; 9 Feb., 1987), Hornbill Camp 3♂, 1♀ (9, 12, 15 Dec., 1983), Zero Camp 2♂, 1♀ (10 Apr., 1981, 26 Dec., 1983), Gibbon's land 2♂ (18 Dec., 1982, 4 Jan., 1984), 77 mile base camp 1♂, 1♀ (29 Jan., 1987, 2 Feb., 1987), Namdapha Camp 1♂ (23 Feb., 1988), Miao Camp 1♂ (5 Dec., 1982), Ramnagar 1♀ (13 Feb., 1988).

Lower Subansiri district : Yachuli 1♂ (13 Jan., 1997);

Lohit district : Tezu 1♀ (5 Nov., 1998), Hayuliang 1♀ (10 Nov., 1998), Wakro 2♂, 1♀ (19 Nov., 1998);

West Kameng district : Bhalukpong 1♂ (27 Nov., 2000).

Ali & Ripley (1948) collected 4♂ and 1♀ at Tezu, Lohit district and Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
21♂	80-83 (82)	65-70 (68)	16
11♀	77-80 (79)	61-66 (63)	16

1433. *Muscicapa vivida oatesi* (Salvadori)
Rufousbellied Blue Flycatcher

Ludlow (1944) reported this species from Pachashriri area of Arunachal Pradesh.

1434. *Muscicapa concreta cyanea* (Hume)
Whitetailed Blue Flycatcher

Tirap district : Gibbon's land 1♀ (2 Jan., 1984).

Measurements :	Wing	Tail	Bill
1♀	90	67	21

1437. *Muscicapa poliogenys cachariensis* (Madarasz)

1439. *Muscicapa unicolor unicolor* (Blyth)
Pale Blue Flycatcher

Ali & Ripley (1948) collected 2♂ at 1♀ at Tezu, Lohit district and Dening, Mishmi Hills.

1440. *Muscicapa rubeculoides rubeculoides* (Vigors)
Bluethroated Flycatcher

Tirap district : Hornbill Camp 1♂ (14 Apr., 1981).

Measurements :	Wing	Tail	Bill
1♂	71	65	12

1441. *Muscicapa banyumas magnirostris* (Blyth)
Large-billed Blue Flycatcher

Godwin-Austen obtained this species in the Miri hills of Arunachal Pradesh.

Tirap district : Zero Camp 1♂ (10 Apr., 1981);

Upper Subansiri district : Daporijo 2♂, 1♀ (13, 14, 21 Apr., 2001).

Measurements :	Wing	Tail	Bill
3♂	66, 68, 81	50, 52, 65	16(2), 19
1♀	66	51	16

1445. *Muscicapa thalassina thalassina* Swainson
Verditer Flycatcher

Tirap district : Gandhigram 1♂ (27 Feb., 1988).

Ali & Ripley (1948) noted this species at Tezu, Lohit district.

Betts (1956) noted this species in fair numbers all over the Subansiri hills upto 7000 ft.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

One ♂ was seen on the hill top, near Taliha, Daporijo, Upper Subansiri district.

Measurements :	Wing	Tail	Bill
1♂	85	69	14

1447. *Muscicapella hodgsoni hodgsoni* (Moore)
Pygmy Blue Flycatcher

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1448. *Culicicapa ceylonensis calochrysea* Oberholser
Northern Greyheaded Flycatcher

Tirap district : Gibbon's land 1♀ (17 Dec., 1982), Deban 1♂ (6 Dec, 1998), Zero camp 1♂ (24 Dec., 1983), 77 mile base camp 1♂ (1 Feb., 1987).

Betts (1956) noted this species as a permanent resident and the commonest flycatcher of the Subansiri district.

Athreya (1996) also reported this bird from Namdhapa, changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
3♂	64-66 (65)	52-53 (52.5)	13-14 (13.5)
1♀	60	56	13

1450. *Rhipidura hypoxantha* Blyth
Yellow-bellied Fantail Flycatcher

Tirap district : 77 mile base camp 1♂ (9 Feb., 1987), Gibbon's land 1♂ (31 Dec., 1983), Ramnagar (c 1150 m.) 1♀ (18 Feb., 1988), Lower Camp 1♂ (21 Feb., 1988).

Ali & Ripley (1948) collected 1♀ species from Tezu, Lohit district, Dening and Dreyi, Mishmi Hills.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
3♂	52-54 (53)	54-56 (55)	9 (3)
1♀	53	54	9

1453. *Rhipidura aureola burmanica* (Hume)
Eastern Whitebrowed Fantail Flycatcher

1455. *Rhipidura albicollis albicollis* (Vieillot)
Eastern White throated Fantail Flycatcher

Ali & Ripley collected seven specimens from Tezu, Lohit district and Dening, Mishmi Hills and noted it at Dreyi, Mishmi Hills.

1456. *Rhipidura albicollis stanleyi* Baker
NEFA White throated Fantail Flycatcher

Tirap district : Deban 2♂, 1♀ (9 Dec., 1982; 4, 9 Dec., 1983), Firmbase Camp 1♂ (19 Dec., 1993), Zero Camp 1♂, 1♀ (23, 25 Dec., 1983), Gibbon's land 3♂, 2♀ (2, 5, 6 Jan., 1984), 124 km. on MV Road 1♂ (8 Jan., 1985), 77 mile base Camp 2♀ (1, 6 Feb., 1987), Ramnagar (c 1150 m) 1♂ (5 Mar., 1988);

Lower Subansiri district : Yazali 1♀ (17 Jan., 1997);

Lohit district : Wakro 1♀ (21 Nov., 1998);

West Kameng district : Bhalukpong 1 ♂ (27 Nov., 2000).

Betts (1956) noted this species all over the hills in the Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
9 ♂	76-80 (78)	95-101 (98)	14-16 (15)
7 ♀	71-77 (74)	94-95 (95)	14-16 (15)
20	71,77	93 (2)	15 (2)

1463. *Terpsiphone paradisi saturator* (Salomonsen)
East Himalayan Paradise Flycatcher

Tirap district : Namdapha Camp 1 ♂, 1 ♀, 10, (21 Apr., 1981), Miao Camp 1 ♂ (5 May., 1981); Upper Subansiri district : Daporijo 2 ♂ (13, 24 Apr., 2001).

Betts (1956) noted this species in the terai, at the foothill in Subansiri area (2000-3000 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
4 ♂	85-89 (88)	225-230 (227)	23-23.5 23
1 ♀	85	221	21
10	80	223	20

1465. *Hypothymis azurea styani* (Hartlaub)
Black-naped Monarch Flycatcher

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1471. *Tesia cyaniventer* Hodgson
Yellowbrowed Ground Warbler

1472. *Tesia olivea* (McClelland)
Stalybellied Ground Warbler

Tirap district : Deban 1 ♂ (12 Dec., 1982), Hornbill Camp 1 ♀ (16 Dec., 1983).

Ali & Ripley (1948) collected 1 ♀ at Dening, Mishmi Hills.

Measurements :	Wing	Tail	Bill
1 ♂	48	20	13
1 ♀	45	19	13

1473. *Tesia castaneocoronata*
castaneocoronata (Burton)
Chestnut headed Ground Warbler

Tirap district : Ramnagar (c 1150 m) 1 ♀ (16 Feb., 1988), Lower camp 1 ♂ (27 Feb., 1988).

Stevens (1914-15) noted this species in the valleys of the Abor-Miri Hills.

Ali & Ripley (1948) collected 1 ♀ at Dreyi, Mishmi Hills.

Betts (1956) noted this bird as not uncommon in the hillsides bordering Apa Tani Valley (5000-6000 ft.).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1 ♂	47	26	11
1 ♀	45	23	11

1474. *Cettia pallidipes pallidipes* (Blanford)
Indian Palefooted Bush Warbler

Ali & Ripley (1948) collected one specimen at Tezu, Lohit district.

Betts (1956) found a nest of this species at Likhia (4000 ft.) in Subansiri district.

1478. *Cettia fortipes fortipes* (Hodgson)
Strongfooted Bush Warbler

1479. *Cettia major major* (Moore)
Himalayan Large Bush Warbler

1481. *Cettia flavolivacea flavolivacea* Hodgson
Himalayan Abberant Bush Warbler

1484. *Cettia acanthizoides brunnescens* (Hume)
Hume's Bush Warbler

1487. *Cettia brunnifrons muroides* (Koelz)
Arunachal Rufouscapped Bush Warbler

1490. *Bradypterus thoracicus thoracicus* (Blyth)
Eastern Spotted Bush Warbler

1493. *Bradypterus luteoventris luteoventris* (Hodgson)
Brown Bush Warbler

1497. *Cisticola exilis tytleri* Jerdon
Yellowheaded Fantail Warbler

1498. *Cisticola juncidis cursitans* (Franklin)
Streaked Fantail Warbler

1501. *Prinia rufescens rufescens* Blyth
Rufous Wren-Warbler

1502. *Prinia hodgsonii rufula* Godwin-Austen
Northern Ashy-grey Wren-Warbler

Lower Subansiri district : Yazali 1 ♀ (10 Jan., 1997), Yachuli 2 ♀ (12 Jan., 1997); Lohit district : Tezu 3 ♂, 1 ♀ (4, 11 Nov., 1998),

Measurements :	Wing	Tail	Bill
3 ♂	44-47 (46)	49-57 (53)	13 (3)
4 ♀	43-47 (44)	48-55 (53)	13 (4)

1509. *Prinia gracilis stevensi* Hartert
Eastern Streaked Wren-Warbler

Betts (1956) noted this species as common around Kore (5000 ft.) in Subansiri area.

1512. *Prinia subflava fusca* (Hodgson)
Eastern Plain Wren-Warbler

1516. *Prinia socialis inglisi* Whistler & Kinnear
Assam Ashy Wren-Warbler

1525. *Prinia Haviventris flaviventris* (Delessert)
Assam Yellowbellied Wren-Warbler

Lohit district : Tezu 2 ♂ (12 Nov., 1998)

Betts (1956) noted this species at Yachuli, Lower Subansiri district and Pein Valley (3500 ft.) in Subansiri area.

Measurements :	Wing	Tail	Bill
2 ♂	43,47	59,61	14,15

1527. *Prinia criniger criniger* Hodgson
Himalayan Brown Hill Warbler

1528. *Prinia criniger catharia* Reichenow
Assam Brown Hill Warbler

1529. *Prinia atrogularis atrogularis* (Moore)
Himalayan Blackthroated Hill Warbler

1530. *Prinia atrogularis khasiana* (Godwin-Austen)
Assam Blackthroated Hill Warbler

1534. *Graminicola bengalensis bengalensis* Jerdon
Large Grass Warbler

1536. *Orthotomus sutorius patia* Hodgson
Bengal Tailor Bird

Lower Subansiri district : Yachuli 2 ♀ (14 Jan., 1997), Dibang Valley district : Karanu 2 ♂ (2 April 1999), Upper Subansiri district : Doparijo 1 ♂ (16 April 2001).

Measurements :	Wing	Tail	Bill
3 ♂	44-47 (46)	45-54 (50)	16 (3)
2 ♀	43,46	35,39	16 (2)

1537. *Orthotomus sutorius luteus* Ripley
Mishmi Tailor Bird

Lohit district : Tezu 1 ♂ (11 Nov., 1998)

Ali & Ripley (1948) collected specimens at Tezu, Lohit district and Dening, Mishmi Hills.

Barman (1996) reported this species from D'Ering Memorial W.L.S., East Siang district.

Datta *et al.* (1998) also reported this bird from Pakhui W.L.S., East Kameng district.

Measurements :	Wing	Tail	Bill
1 ♂	50	45	14

1541. *Orthotomus cucullatus coronatus* Blyth
Goldenheaded Tailor bird

Athreya (1996) reported this species from Namdapha, Changlang district.

1545. *Locustella naevia straminea* Seeborn
Eastern Grasshopper Warbler

1547. *Chaetornis striatus* (Jerdon)
Bristled Grass Warbler

1548. *Megalurus palustris toklao* (Blyth)
Striated Marsh Warbler

Lohit district : Tezu 2 ♀ (5 Nov., 1998)

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
2 ♀	82,85	100,106	19,20

1549. *Phragamaticola aedon aedon* (Pallas)
Thickbilled Warbler

1550. *Acrocephalus stentoreus brunnescens* (Jerdon)
Indian Great Reed Warbler

1552. *Acrocephalus stentoreus amya* Baker
Assam Great Reed Warbler

1556. *Acrocephalus dumetorum* Blyth
Blyth's Reed Warbler

1557. *Acrocephalus agricola agricola* (Jerdon)
Indian Paddyfield Warbler

1560. *Acrocephalus concinens stevensi* Baker
Assam Bluntwinged Paddyfield Warbler

1562. *Hippolais caligata caligata* (Lichtenstein)
Siberian Booted Tree Warbler

1976. *Phylloscopus affinis affinis* (Tickell)
Tickell's Leaf Warbler

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1582. *Phylloscopus fulgivent* *fulgivent* (Hodgson)
Smoky Leaf Warbler

1583. *Phylloscopus fulgivent* *tibetanus* Ticehurst
Tibetan Smoky Leaf Warbler

1584. *Phylloscopus fuscatus weigoldi* Stresemann
Szechuan Dusky Leaf Warbler

1585. *Phylloscopus fuscatus mariae* Ripley
Manipur Dusky Leaf Warbler

- 1588-89. *Phylloscopus pulcher pulcher* Blyth
Eastern Orangebarred Leaf Warbler

Tawang district : Zemithang Valley 1 ♂ (19 Nov. 2000).

Measurements :	Wing	Tail	Bill
1 ♂	54	38	13

1591. *Phylloscopus inornatus mandellii* (Brooks)
Mandelli's Yellowbrowed Leaf Warbler

Ali & Ripley (1983) reported that this species probably ranges in Arunachal Pradesh from 2800 m. up.

1592. *Phylloscopus inornatus inornatus* (Blyth)
Siberian Yellowbrowed Leaf Warbler

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1596. *Phylloscopus proregulus newtoni* Gatke
Eastern Pallas's Leaf Warbler

Tirap district : Ramnagar (c 1150 m) 2 ♀ (13 Feb., 1988).

Lower Subansiri district : Yazali 1 ♂ (10 Jan., 1997).

Ali & Ripley (1948) collected 1 ♂ and 1 ♀ at Tezu, Lohit district and Dening, Mishmi Hills.

Measurements :	Wing	Tail	Bill
1 ♂	52	39	12
2 ♀	48,49	34,35	11 (2)

1599. *Phylloscopus maculipennis maculipennis* (Blyth)
Eastern Greyfaced Leaf Warbler

Tirap district : Ramnagar (c 1150 m) 1 ♀ (5 Mar., 1988).

Dibang Valley district : Mayadiya 1 ♂ (25 Mar., 1997).

Tawang district : Zemithang Valley 1 ♂ (20 Nov., 2000).

Ali & Ripley (1948) collected 1 ♂ and 2 ♀ at Dening, Mishmi Hills in late December.

Measurements :	Wing	Tail	Bill
2 ♂	48,52	34,37	9,10
1 ♀	46	32	10

1601. *Phylloscopus magnirostris* Blyth
Largebilled Leaf Warbler

Ali & Ripley recorded this species from the Mishmi Hills (JBNHS 48 : 31).

1604. *Phylloscopus trochiloides trochiloides* (Sundevall)
Eastern Greenish Leaf Warbler

1610. *Phylloscopus reguloides assamensis* Hartest
Assam Crowned Leaf Warbler

1612. *Phylloscopus cantator cantator* (Tickell)
Blackbrowed or Yellowfaced Leaf Warbler

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1613. *Seicercus affinis* (Hodgson)
Allied Flycatcher-Warbler

Betts (1956) obtained a specimen from Subansiri area.

Atherya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this species from Pakhui W.L.S, East Kameng district.

1615. *Seicercus burkii burkii* (Burton)
Eastern Blackbrowed Flycatcher-Warbler

Tirap district : Gibbon's land 1 ♂ (17 Dec., 1982)

Measurements :	Wing	Tail	Bill
1 ♂	56	47	13

1617. *Seicercus xanthoschistos xanthoschistos* (Gray)
Nepal Greyheaded Flycatcher-Warbler

Baker (1913) commented that this race intergrades with the next race, *flavigularis* in Arunachal Pradesh.

1618. *Seicercus xanthoschistos flavogularis*
(Godwin-Austen)
Mishmi Greyheaded Flycatcher-Warbler

Lower Subansiri district : Yazali 1 ♂ (10 Jan., 1997).

Ali & Ripley (1948) collected 2 ♀ and 1 unsexed at Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1 ♂	53	40	13

1619. *Seicercus xanthoschistos tephrodinas* Sick
Assam Greyheaded Flycatcher-Warbler

1620. *Seicercus poliogenys* (Blyth)
Greycheeked Flycatcher-Warbler

Tirap district : Miao camp 1 ♀ (3 Dec., 1982), Gibbon's land 1 ♂ (17 Dec., 1982), Zero camp 2 ♂ (23, 25 Dec., 1983), Gandhigram (c 1100 m) 1 ♂, 4 ♀ (26, 29 Dec., 1984; 24 Jan., 1987; 22 Feb., 1988), 124 km. on MV Rd. 1 ♂, 2 ♀ (6, 11, 14 Jan., 1985), 77 mile base camp 2 ♀ (28 Jan., 9 Feb., 1987), Ramnagar (c 1150 m) 1 ♂ (12 Feb., 1988), Lower camp 1 ♂ (28 Feb., 1988).

Ali & Ripley (1948) collected 3 ♂ at Dening and Dreyi, Mishmi Hills.

Betts (1956) noted this species as common in Apa Tani Valley (6000 ft.)

Measurements :	Wing	Tail	Bill
7 ♂	51-54 (53)	40-42 (41)	9 (7)
9 ♀	49-53 (52)	39-42 (41)	9 (9)

1621. *Seicercus castaniceps castaniceps* (Hodgson)
Chestnut-headed Flycatcher-Warbler

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1622. *Abroscopus superciliaris flaviventris* (Jerdon)
Sikkim Yellowbellied Flycatcher-Warbler

1623. *Abroscopus superciliaris drasticus* Deignan
Arunachal Yellowbellied Flycatcher-Warbler

Ali & Ripley (1948) collected specimens at Tezu, Lohit district and Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1625. *Abroscopus schisticeps flavimentalis* (Baker)
Assam Blackfaced Flycatcher-Warbler

Betts (1956) saw a pair at Apa Tani Valley in Subansiri area.

1626. *Abroscopus albogularis albogularis*
(Horsfield & Moore)

Whitethroated Flycatcher-Warbler

Tirap district : 77 mile base camp 1♂ (1 Feb., 1987), Ramnagar (c 1150 m) 1♀ (16 Feb., 1988) Lower camp 1♂ (22 Feb., 1988), Lone camp 1♂ (4 Mar., 1988).

Ali & Ripley (1948) collected one specimen from Dering, Mishmi Hills.

Betts (1956) collected a specimen from Pein (3000 ft.) in Subansiri area.

Measurements :	Wing	Tail	Bill
3♂	44-46 (45)	36-40 (38)	9 (3)
1♀	43	37	9

1627. *Abroscopus hodgsoni hodgsoni* (Moore)
Broadbilled Flycatcher-Warbler

Singh (1995) noted this species from Tale Valley W.L.S, Lower Subansiri district.

Datta *et al.* (1998) recorded this species from Pakhui W.L.S, East Kameng district.

1630. *Regulus regulus sikkimensis* R. & A.
Meinertzhagen
Sikkim Goldcrest

1631. *Regulus regulus yunnanensis* Rippon
Yunnan Goldcrest

1632. *Leptopoecile elegans* Przevalski
Crested Tit-Warbler

1634. *Leptopoecile sophiae obscura* Przevalski
Tibetan Tit-Warbler

1635. *Brachypterux stellata stellata* Gould
Gould's Shortwing

Ludlow (1944) reported this species as common in the Upper Subansiri region in Arunachal Pradesh.

1636. *Brachypteryx hyperythra* Jerdon & Blyth
Rustybellied Shortwing

Tirap district : 77 mile base camp 2♂ (31 Jan., 7 Feb., 1987).

Hume (1888) recorded this species from Dafla hills of Arunachal Pradesh in Winter.

Ripley *et al.* (1991) collected specimens from Namdapha National Park, Changlang district.

Raza (1994) noted this bird in Kamlang W.L.S, Lohit district.

Measurements :	Wing	Tail	Bill
2♂	62,63	37,38	13 (2)

1639. *Brachypteryx leucophrys nipalensis* Moore
Lesser Shotwing

Tirap district : Miao 2♀ (2, 3 Dec., 1982), Deban 2♀ (9 Dec., 1982, 3 Dec., 1983), Hornbill camp 1♂ (16 Dec., 1983), Gibbon's land 1♂ (5 Jan., 1984); West Kameng district : Bhalukpong 1♂ (27 Nov., 2000).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
3♂	58-62 (60)	35-36 (35.5)	15-16 (15.5)
4♀	54-58 (56)	30-32 (31)	15 (4)

1640. *Brachypteryx montana eruralis* (Blyh)
Whitebrowed Shortwing

Tirap district : Deban 4♀ (9, 12 Dec., 1982; 4, 5 Dec., 1983), Hornbill camp 1♀ (16 Dec., 1983), 124 km. on MV. Rd. 2♂ (6, 13 Jan., 1985), Upper camp 1♀ (6 Mar., 1988); Dibang Valley district : Tawarigaon 1♂ (31 Jan., 1988).

Singh (1995) noted this species at Eagle nest, West Kameng district.

Measurements :	Wing	Tail	Bill
3♂	65-69 (67)	44-46 (45)	15 (3)
6♀	64-67 (65)	44-47 (45)	15-16 (15)

1643. *Erithacus calliope* (Pallas)
Rubythroat

Lower Subansiri district : Yachuli 1♀ (13 Jan., 1997).

Measurements :	Wing	Tail	Bill
1 ♀	73		15

1648. *Erithacus pectoralis confusus* (Hartert)
Eastern Rubythroat

Hume (1888 SF 11 : 199) reported its Wintering rang in Arunachal Pradesh. Hume's report was based on the specimen procured by Godwin-Austen in the Dekrang valley of the Dafla hills.

1649. *Erithacus pectoralis tschebaiewi* (Przevalski)
Tibetan Rudythroat

Ludlow (1937 & 1951) reported this species as summer (breeding) vistor in northern Arunachal Pradesh.

Ali & Ripley (1983) reported its wintering range in Arunachal Pradesh.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1650-51. *Erithacus brunneus* (Hodgson)
Indian Blue Chat

1652. *Erithacus pectardens* (David)
Firethroat

1655. *Erithacus cyanurus rufilatus* (Hodgson)
Eastern Redflanked Bush Robin

Tirap district : Gandhigram (c 1100 m) 6♂, 1♀ (24, 31 Jan., 1987; 1, 7, 9 Feb., 1987), Ramnagar (c 1150 m) 2♂, 1♀ (11 Feb., 4, 7 Mar., 1988); Dibang Valley district : Mayediya 1♂, 1♀ (25, 26 Mar., 1999); Tawang district : Zemithang 1♂ (21 Nov., 2000)

Ali & Ripley (1948) collected 1♀ from Dreyi, Mishmi Hills.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
10♂	80-87 (85)	65-70 (68)	14-15 (15)
3♀	82-84 (83)	58-63 (60)	14 (3)

1658. *Erithacus chrysaeus charysaeus* (Hodgson)
Eastern Golden Bush Robin

1659. *Erithacus indicus indicus* (Vieillot)
Whitebrowed Bush Robin

Dibang Valley district : Mayadiya 2♀ (21, 26 Mar. 1999)

Measurements :	Wing	Tail	Bill
2♀	76,77	60,61	15 (2)

1660. *Erithacus hyperythrus* (Blyth)
Rufousbellied Bush Robin

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1663. *Copsychus saularis erimelas* Oberholser
Assam Magpie-Robin

Lohit district : Tezu 1♀ (6 Nov., 1998); Upper Subansiri district : Dumporijo 2♂, 2♀ (21, 22, 25 April 2001)

Ali & Ripley (1948) noted this species as uncommon at Tezu, Lohit district.

Betts (1956) saw a pair in Pein Valley in Subansiri area.

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

Athreya (1996) found this species in Namdapha, Changlang district.

Datta *et al.* (1998) recorded this species from Pakhui W.L.S, East Kameng district.

We noted one pair 3 km. away from Forest Rest House, Tezu, Lohit district in Nov., 1998.

Measurements :	Wing	Tail	Bill
2♂	100 (2)	85,88	23 (2)
3♀	89-93 (91)	78-85 (83)	20-23 (22)

1667. *Cposychus malabaricus indicus* (Baker)
Shama

East Kameng district : Pakhui Wildlife Sanctuary 2♂ (28, 30 April 2001).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
2♂	86,89	105,106	20,22

1672. *Phoenicurus ochruros rufiventris* (Vieillot)
Eastern Black Redstart

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1674. *Phoenicurus hodgsoni* (Moore)
Hodgson's Redstart

Tirap district : Gandhigram (c 1100 m) 4♂, 1♀ (26, 27, 28, 29 Jan., 7 Feb., 1987), Ramnagar 1♂ (15 Feb., 1988); Lower Subansiri district : Yazali 1♀ (29 Jan., 1997); Lohit district : Wakro 2♂ (17, 18 Nov., 1998); West Kameng district : Bomdila 3♂ (11, 13, 14 Nov., 2000); Tawang district : 4th Bridge 1♂ (15 Nov., 2000), Zemithang Valley 2♂ (21, 22 Nov., 2000).

Ali & Ripley (1948) collected 1♂ and 1♀ from Tezu, Lohit district.

Betts (1956) saw a pair at Kore, Subansiri area.

<i>Measurements</i> :	Wing	Tail	Bill
13♂	79-85 (83)	63-70 (68)	15-17 (16)
2♀	79,82	65,68	15 (2)

1675. *Phoenicurus frontalis* (Vigors)
Bluefronted Redstart

Tirap district : Gandhigram (c 1100 m) 1♀ (29 Dec., 1984), 124 km. on MV. Road 1♂ (21 Jan., 1989); Lower Subansiri district : Yachuli 1♂ (14 Jan., 1997), Yazali 1♂ (17 Jan., 1997); Dibang Valley district : Mayadiya 1♂ (26 Mar., 1999)

Tawang district : Zemithang Valley 4♂, 1♀ (20, 21, 22 Nov., 2000).

Ali & Ripley (1948) collected 1♂ and 1♀ from Dreyi, Mishmi Hills.

<i>Measurements</i> :	Wing	Tail	Bill
8♂	83-89 (87)	68-74 (72)	15-17 (16)
2♀	78,80	62,63	15 (2)

1676. *Phoenicurus schisticeps* (Gray)
Whitethroated Redstart

1677. *Phoenicurus aureus leucopterus* (Blyth)
Daurian Redstart

Lower Subansiri district : Yazali 1♂, 1♀, 1 unsex (12, 17, 21 Jan., 1997), Yachuli 1♂ (14 Jan., 1997); Lohit district : Hayuliang 1♂ (10 Nov., 1998), Wakro 1♂ (20 Nov., 1998)

Ali & Ripley (1948) collected a specimen from Tezu, Lohit district but noted this bird as uncommon in this area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1996) also recorded this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
4♂	69-78 (75)	57-60 (58)	14-15 (14.5)
1♀	76	59	14
10	74	57	14

1678. *Phoenicurus erythrogaster grandis* (Gould)
Güldenstadt's Redstart

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Choudhury (2000) reported that it was recorded at the lowest elevation at 350 m. at Parshuram Kund in Lohit district on 22 Jan, 1994.

1679. *Rhyacornis fuliginosus fuliginosus* (Vigors)
Plumbeous Redstart

Tirap district : Gandhigram (c 1100 m) 3♂, 1♀ (28 Jan, 1 Feb., 1987; 23 Feb., 1988); Lohit district : Wakro 4♂, 1♀ (16, 18, 19 Nov., 1998)

Ali & Ripley (1948) collected specimens from Tezu, Lohit district and Debang River and noted this species as most common of all the Redstarts.

Betts (1956) noted this bird on all rivers and streams in the Sunbansiri area in winter.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also reported this species from Pakhui W.L.S, East Kameng district.

Common along the Kameng river, Dirang, West Kameng district.

Measurements :	Wing	Tail	Bill
7♂	73-79 (75)	50-54 (53)	13-15 (14.5)
2♀	68,69	46,47	13 (2)

1680. *Hodgsonius phoenicuroides*
phoenicuroides (Gray)

Hodgson's Shortwing or Whitebellied Redstart

1681. *Cinclidium leucurum* (Hodgson)
Whitetailed Blue Robin

Tirap district : Deban 3♂ (28 Apr., 1981; 4, 8 Dec; 1983), Hornbill camp 1♀ (15 Dec., 1983), Zero camp 1♀ (24 Dec., 1983), Gibbon's land 4♀ (24., 1983); 1, 5, 6 Jan., 1984).

Ali & Ripley (1948) collected 3♂ from Dening, Mishmi Hills and 1♀ from Tezu, Lohit district.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also found this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wign	Tail	Bill
3♂	90-96 (93)	72-74 (73)	19 (3)
6♀	85-89 (87)	65-70 (67)	18-19 (18.5)

1683. *Grandala coelicolor* Hodgson
Grandala

1684. *Enicurus scouleri scouleri* Vigros
Little Forktail

Tirap district : Upper camp 1♂ (5 Mar., 1988); Lohit district : Wakro 2♂, 4♀ (16, 18, 19, 20 Nov., 1998).

Ali & Ripley (1948) noted this species on the Debang river and on small rocky streams near Dreyi, Mishmi Hills.

Betts (1956) noted it once on the Kale River (3,500 ft.) of Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
3♂	75-79 (78)	42-49 (46)	14-15 (14.5)
4♀	75-78 (77)	42-48 (46)	14-15 (14.5)

1685. *Enicurus immaculatus* (Hodgson)
Blackbacked Forktail

West Kameng district : Bhalukpong 1♀ (27 Nov., 2000)

Athreya (1996) reported this species from Pakhui W.L.S, East Kameng district.

Datta *et al.* (1998) also recorded this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1♀	85	-	20

1686. *Enicurus schistaceus* (Hodgson)
Slatybacked Forktail

Tirap district : Hornbill camp 1♂, 1 unsex (12 Apr., 1981), Gibbon's land 1♀ (2 Jan., 1984), Ramnagar (c 1150 m) 1♂, 1♀ (15, 17 Feb., 1988); Lohit district : Hayuling 1♂ (9 Nov., 1998), Wakro 1♂, 1♀ (18, 19 Nov., 1998); West Kameng district : Bhalukpong 2♂ (27 Nov., 2000).

Ali & Ripley (1948) collected specimens from Tezu and Dening, Mishmi Hills and noted this species on every rock torrential stream above 500 ft.

Betts (1956) noted it to be commonest Fork tail of Subansiri area and found a nest in Panior valley (2000 ft.).

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) reported this bird from Pakhui, W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
6♂	92-102 (97)	115-133 (128)	21-23 (22)
3♀	92-98 (96)	114-120 (118)	21-22 (21.5)
10	96	113	22

1687. *Enicurus leschenaulti indicus* Hartert
Leschenault's Forktail

Tirap district : Gibbon's land 1♀ (19 Dec., 1982)

Betts (1956) reported this species as not common along the main rivers and their tributaries in Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also found this bird in Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1♀	99	129	26

1689. *Enicurus maculatus guttatus* Gould
Eastern Spotted Forktail

Tirap district : Gandhigram (c 1100 m) 3♂, 1♀ (25, 28 Feb., 1988) Lohit district : Wakro 1♀ (16 Nov., 1998)

Betts (1956) noted this bird to occur on smaller rapid streams at all elevations of Subansiri area but not to be numerous.

Athreya (1996) reported this species from Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
3♂	98-104 (101)	120-139 (129)	21-23 (22)
2♀	95,96	122,124	21 (2)

1690. *Cochoa purpurea* Hodgson
Purple Cochoa

Singhh (1995) noted this species from Pange, Lower Subansiri district.

1691. *Cochoa viridis* Hodgson
Green Cochoa

Sing (1995) noted this species from Ganga Lake near Itanagar, Papum Pare district.

1696. *Saxicola torquata przewalskii* (Pleske)
Tibetan Collared Bush Chat

Lohit district : Tezu 6♂ (4, 5, 6, 12 Nov., 1998), Hayuliang 2♂ (7 Nov., 1998)

Baker (1913) reported this species from the Abor hills.

Barman (1996) also reported this species from D'Ering Memorial W.L.S, East Siang district.

Datta *et al.* (1998) also recorded this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
8♂	70-75 (73)	52-56 (54)	15-14 (16)

1697. *Saxicola torquata indica* (Blyth)
Indian Collared Bush Chat

Lower Sabansiri district : Yazali 1♂ (10 Jan., 1997)

Stevens (1946) reported its breeding range in Arunachal Pradesh.

Betts (1956) noted this species as common in winter in Pein and Apa Tani Valley in Subansiri area.

Measurements :	Wing	Tail	Bill
1♂	73	56	13

1701. *Saxicola caprata burmanica* Baker
Burmese Pied Bush Chat

1704. *Saxicola jerdoni* (Blyth)
Jerdon's Bush Chat

1705. *Saxicola ferrea* Gray
Darkgrey Bish Chat

Lower Subansiri district : Yazali 1♂ (21 Jan., 1997), Yachuli 1♀ (14 Jan., 1997); Lohit district : Tezu 1♀ (4 Nov., 1998)

Ali & Ripley (1948) collected specimens from Dening and Dreyi Mishmi Hills.

Betts (1956) noted this species as permanent resident and breeding in Apa Tani Valley, Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

<i>Measurements</i> :	Wing	Tail	Bill
1 ♂	65	-	16
2 ♀	64,65	60 (2)	14,15

1716. *Chaimarrornis leucocephalus* (Vigors)
Whitecapped Redsart

Tirap district : 138 km. on MV. Road 1 ♂ (21 Jan., 1983), Gandhigram (c 1100 m) 2 ♂ (7, 23 Feb., 1988); Lower Subansiri district : Yachuli 1 ♀ (11 Jan., 1997); Lohit district : Wakro 4 ♂ (17, 19, 20 Nov., 1998).

Ali & Ripley (1948) collected specimens from Debang river below Dening, Mishmi Hills.

Betts (1956) noted this bird as common winter visitor on all the larger rivers in Subansiri area.

Atherya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also found this bird from Pakhui W.L.S, East Kameng district.

Common along the Kameng river in Dirang, West Kameng district. A pair was seen at Tipi, Bhalukpong, West Kameng district. Practically we found almost on every spot nearing hill stream upto c. 5000 ft.

<i>Measurements</i> :	Wing	Tail	Bill
7 ♂	93-98 (96)	77-80 (79)	17-19 (18)
1 ♀	90	72	17

1723. *Monticola cinclorhynchus* (Vigors)
Blueheaded Rock Thrush

1724. *Monticola rufiventris* (Jardine & Selby)
Chestnut bellied Rock Thrush

Tirap district : 124 km. on MV. Road 1 ♀ (17 Jan., 1985)

Atherya (1996) reported this species from Namdapha, Changlang district.

Population was very thin and scarce, one bird was seen at Pita Pool, Yazali, Lower Subansiri district in Jan., 1997.

<i>Measurements</i> :	Wing	Tail	Bill
1 ♀	112	97	26

1726. *Monticola solitarius pandoo* (Sykes)
Blue Rock Thrush

Ali & Ripley (1948) collected 1 ♂ from Dening, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1729. *Myiophonus caeruleus temminckii* (Vigors)
Himalayan Whistling Thrush

Tirap district : Hornbill camp 1 ♂, 1 ♀ (16 Apr., 1981; 17 Dec., 1983)

Tawang district : Zemithang 2 ♂ (22 Nov., 2000); West Kameng district : Bhalukpong 1 ♀ (27 Nov., 2000)

Ali & Ripley (1983) extended its distribution in Arunachal Pradesh upto the Dibang river (c. 95°-96° E. long), where it intergrades with the next race *eugenei*.

Betts (1956) noted this species as not very common but saw one or two on hill streams on the slopes of Tasser Puttu (4500 ft.) in Subansiri area.

Atherya (1996) recorded this species from Namdapha, Changlang district.

Datta *et al.* (1996) reported this bird from Pakhui W.L.S, East Kameng district.

Fairly common in and around Hayuliang, Lohit district in Nov., 1998. Noted as common in between 3000'-5000' on road side in Arunachal Pradesh, and more down to Gorge by any disturbance.

<i>Measurements</i> :	Wing	Tail	Bill
3 ♂	162-180 (171)	109-127 (119)	34-38 (36)
2 ♀	164,165	111,119	35,36

1730. *Myiophonus caeruleus eugenei* (Hume)
Burmese Whisting Thrush

Tirap district : Ganthigram (c 1100 m) 1 ♀ (28 Feb., 1988).

Ali & Ripley (1948) collected 1 ♂ from Dening and noted this bird at Dreying Mishmi Hills.

Measurements :	Wing	Tail	Bill
1 ♀	169	121	35

1731 *Zoothera wardi* (Blyth)
Pied Ground Thrush

Baker (1932-35) reported its breeding record from Arunachal Pradesh.

1733. *Zoothera citrina citrina* (Latham)
Orangeheaded Ground Thrush

Betts (1956) noted this species as not very common in the Subansiri area but located a nest on the north slopes of Tasser Puttu.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

1739. *Zoothera mollissima mollissima* (Blyth)
Eastern Plainbacked Mountain Thrush

Dibang Valley district : Mayadiya 1 unsexed (26 Mar. 1999).

Baker collected 1 ♂ at Mipi, Mishmi Hills (8, 500 ft.) on 9 Mar., 1913.

Betts collected a specimen at Kore (5000 ft.) in Apa Tani Valley in Subansiri area

Measurements :	Wing	Tail	Bill
1 ♂	134	97	

1740. *Zoothera dixonii* (Seeböhm)
Longtailed Mountain Thrush

Tirap district : 124 km. on MV. Road 1 ♀ (15 Jan., 1985).

Measurements :	Wing	Tail	Bill
1 ♀	137	113	25

1741. *Zoothera dauma dauma* (Latham)
Smallbilled Mountain Thrush

Ali & Ripley (1948) noted this species at Dreyi, Mishmi Hills.

Betts (1956) noted this bird once below Kore (4500 ft.) in Subansiri area.

1744. *Zoothera dauma aurea* (Holandre)
Golden Thrush

Tirap district : 77 mile base camp 1 ♀ (4 Feb., 1987).

Measurements :	Wing	Tail	Bill
1 ♀	152	111	27

1745. *Zoothera monticola monticola* Vigors
Large Brown Thrush

Tawang district : 4th Bridge 1 ♂ (18 Nov., 2000).

Singh (1995) noted this species from Namdapha, Changlang district and from Upper Subansiri district.

Measurements :	Wing	Tail	Bill
1 ♂	137	87	42

1746. *Zoothera marginata* Blyth
Lesser Brown Thrush

Tirap district : Hornbill camp 1 ♂, 1 ♀ (13 Apr., 1981).

Stevens (1946) reported this species from Arunachal Pradesh.

Measurements :	Wing	Tail	Bill
1 ♂	120	71	33.5
1 ♀	121	73	33.5

1747. *Turdus dissimilis dissimilis* Blyth
Blackbreasted Thrush

Tirap district : Hornbill camp 2 ♂ (12, 14 Dec., 1983), Gibbon's land 1 ♀ (3 Jan., 1984), Gandhigram (c 1100 m) 2 ♂, 1 ♀ (27 Dec., 1984; 30 Jan., 3 Feb., 1987), 77 mile base camp 3 ♂, 1 ♀ (30 Jan., 1, 4 Feb., 1987), Ramnagar (c 1150 m) 2 ♂, 2 ♀ (11 Feb., 1988).

Measurements :	Wing	Tail	Bill
9♂	120-125 (122)	75-82 (79)	23-25 (24)
5♀	119-123 (121)	79-80 (79)	23-25 (24)

1748. *Turdus unicolor* Tickell
Tickell's Thrush

Betts (1956) noted this species as common.
Winter visitor in Subansiri area.

1749. *Turdus albocinctus* Royle
Whitecollared Blackbird

Betts (1956) noted a small party on Pad Puttu
in subansiri area.

1750. *Turdus boulboul* (Latham)
Greywinged Blackbird

Betts (1956) noted this species at 4500 ft. in
Subansiri area.

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

1752. *Turdus merula maximus* (Seeböhm)
Tibetan Blackbird

1759. *Turdus rubrocanus gouldii* (Verreaux)
Eastern Greyheaded Thrush

Athreya (1996) reported this species from
Namdapha, Changlang district.

1760. *Turdus kessleri* Przevalski
Kessler's Thrush

1762. *Turdus obscurus* Gmelin
Dark Thrush

Tirap district : 77 mile base camp 3♂, 2♀
(31 Jan., 1, 4 Feb., 1987), Ramnagar (c 1150
m) 1♂ (11 Feb., 1988).

Betts (1956) noted this bird as common winter
visitor in Subansiri area.

Measurements :	Wing	Tail	Bill
4♂	118-131 (126)	83-90 (86)	21-22 (22)
2♀	115,121	81,83	21 (2)

1763. *Turdus ruficollis atrogularis* Jarocki
Blackthroated Thrush

Ali & Ripley (1948) collected 1♀ from Dreyi,
Mishmi Hills.

Betts (1956) noted this bird as common
winter visitor in Subansiri area.

1764. *Turdus ruficollis ruficollis* Pallas
Redthroated Thrush

Dibang Valley district : Mayadiya 1♂ (23
Mar., 1999)

Betts (1956) noted this bird as common winter
visitor in Subansiri area.

Athreya (1996) reported this species from
Namdapha, Changlang district.

Measurements :	Wing	Tail	Bill
1♂	144	108	24

Family TROGLODYTIDAE

1771. *Troglodytes troglodytes nipalensis* Blyth
Nepal Wren

Family CINCLIDAE

1774. *Cinclus cinclus przewalskii* Bianchi
Eastern Whitebreasted Dipper

1776. *Cinclus pallasii dorjei* Kinnear
East Himalayan Brown Dipper

Tirap district : 77 mile base Camp 3♂ (27
Jan., 5 Feb., 1987);

Lohit district : Wakro 4♂, 1♀ (10, 18, 19
Nov., 1998).

Ali & Ripley (1940) collected a specimen
from a branch of the Lohit river, below Dening
(1400'), Mishmi Hills.

Betts (1956) noted this bird as common on
all large rivers and streams from 2000' upwards
in Subansiri area.

Athreya (1996) reported this species from
Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird
from Pakhui W.L.S, East Kameng district.

Common along the hill stream at Wakro, Lohit district. Two examples were seen along the Kameng river, Dirang, West Kameng district.

Measurements :	Wing	Tail	Bill
7♂	102-103 (102)	54-58 (56)	25-26 (25)
1♀	100	56	25

1779. *Prunella collaris nipalensis* (Blyth)
Eastern Alpine Accentor

1780. *Prunella himalayana* (Blyth)
Altai Accentor

1781. *Prunella rubeculoides* (Moore)
Robin Accentor

1783. *Prunella strophciata strophciata* (Blyth)
Eastern Rufous breasted Accentor

Tirap district : Vijoynagar 1♂ (11 Mar., 1988);
Dibang Valley district : Mayadiya 1♀ (26 Mar., 1999); West Kameng district : Bomdila 3♂, 2♀ (11, 12, 13, 14 Nov., 2000); Tawang district : Zemithang 1♂ (20 Nov., 2000).

Measurements :	Wing	Tail	Bill
5♂	64-68 (66)	60-62 (62)	14-15 (15)
3♀	65-67 (66)	60-62 (61)	13-15 (14)

1785. *Prunella fulvescens sushkim* Collin & Hartert
Tibet Brown Accentor

1788. *Prunella immaculata* (Hodgson)
Maroonbacked Accentor

Tawang district : Zemithang 1♂ (20 Nov., 2000).

Measurements :	Wing	Tail	Bill
1♂	80	57	15

Family PARIDAE

1789. *Melanochlora sultanea sultanea* (Hodgson)
Sultan Tit

Tirap district : Gibbon's land 1♀ (31 Dec., 1983);

Dibang Valley district : Koronu 2♂ (4 Apr., 1999).

Ali & Ripley collected 3♂ and 1♀ at Tezu, Lohit district.

Betts (1956) noted this species as widely distributed and fairly common from plain upto 4000 ft. in small parties of 3-4 birds in Subaniri area.

Atherya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

We didnot notice this bird elsewhere in Arunachal Pradesh except a flock consisting of 10-12 birds at Koronu, Roing, Dibang Valley district.

Measurements :	Win	Tail	Bill
2♂	102, 105	88, 89	17, 18
1♀	98	87	16

1796. *Parus major vauriei* Ripley
Lakhimpur Grey Tit

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1799. *Parus monticolus monticolus* Vigors
Green backed Tit

Tirap district : Gibbon's land 1♂ (Dec., 17, 1982), Gandhigram (c 1100 m.) 4♂, 3♀ (30 Jan., 3 Feb., 1987), Ramnagar (c 1150 m) 1♂ (14 Feb., 1988); Lower Subansiri district : Yazali 1♀ (20 Jan., 1997); Lohit district : Hayuliang 1♂ (8 Nov., 1998); West Kameng district : Bomdila 1♂, 2♀ (12, 13 Nov., 2000); Tawang district : 4th Bridge 1♂, 1♀ (16, 18 Nov., 2000), Zemithang 2♂ (20, 21 Nov., 2000).

Betts (1956) noted this species as fairly common from 5000 ft. upwards, also occurs in the Apa Tani Valley. He also collected specimen at Kore (5000 ft.) in Subansiri area.

Measurements :	Wing	Tail	Bill
11♂	65-68 (67)	55-57 (56)	11-12 (11.5)
7♀	65-68 (66)	54-55 (54)	10-11 (10.5)

1801. *Parus hypermelas* (Berezovski & Bianchi)
Blackbibbed Tit

1803. *Parus ater aemodius* Hodgson
Himalayan Coal Tit

1806. *Parus rubidiventris beavani* (Jerdon)
Sikkim Black Tit

1808. *Parus dichrous dichrous* Hodgson.
Eastern Brown Crested Tit.

1812. *Parus spilonotus spilonotus* Bonaparte
Himalayan Blackspotted Yellow Tit

Dibang Valley district : Mayadiya 2♂, 1♀
(24, 26 Mar., 1999).

Ali & Ripley (1948) noted this species at
Dreyi, Mishmi Hills.

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
2♂	78, 82	56, 58	13
1♀	78	56	13

- 1812a. *Parus spilonotus subviridis* Blyth
Burmese Blackspotted Yellow Tit

Betts (1956) saw this species at all seasons
on the hills round the Apa Tani Valley (5000 ft.
- 6000 ft.).

1814. *Sylviparus modestus modestus* Burton
Eastern Yellowbrowed Tit

Ludlow (1944) reported this species from
Arunachal Pradesh.

1819. *Aegithalos concinnus rubricapillus* (Ticehurst)
Eastern Redheaded Tit

Stevens (1914-15) noted this species in Abor-
Miri country during 1905-6 in the cold seasons.

Ali & Ripley (1948) noted a flock at Dreyi,
Mishmi Hills.

Betts (1956) noted this bird as frequent at
Kore (5000 ft.) and Apa Tani Valley in groups
of 7-8 birds.

1820. *Aegithalos concinnus manipurensis* (Hume)
Manipur Redheaded Tit

Tirap district : Ramnagar (c 1150 m) 1♂ (18
Feb., 1988).

Measurements :	Wing	Tail	Bill
1♂	48	48	7

Family SITTIDAE

1825. *Sitta europaea montium* La Touche
Chinese Nuthatch

Ali & Ripley (1963) reported that this species
may occur in Arunachal Pradesh in the Tsangpo
Bend area.

1826. *Sitta europaea negaensis* Godwin-Austen
Naga Nuthatch

1928. *Sitta castanea cinnamomiventris* Blyth
Eastern Chestnutbellied Nuthatch

Dibang Valley district : Koronu 1♂ (3 Apr.,
1999).

Measurements :	Wing	Tail	Bill
1♂	83	41	23

Stevens (1914-15) found this species in
Subansiri Gorge (Ganditola), Abor-Miri Hills.

Ali & Ripley (1948) collected 1♂ at Tezu,
Lohit district.

Betts (1956), observed this bird as not
uncommon at medium elevation (2000-5000 ft.)
in Subansiri area.

Datta *et al.* (1998) reported this species from
Pakhui W.L.S, East Kameng district.

We noted one pair along the Subansiri river
at Damporijo, Upper Subansiri district.

1833. *Sitta leucopsis przewalskii* Berezovski & Bianchi
Eastern Whitefaced Nuthatch

1834. *Sitta himalayensis himalayensis* Jardine & Selby
Himalayan Whitetailed Nuthatch

Ali & Ripley (1948) collected 1♂ at Dreyi,
and noted it at Tidding (6000 ft.), Mishmi Hills.

Ali & Ripley (1983) further reported that this

species may occur in northern Arunachal Pradesh in the Tsangpo Bend area, Changlang district.

1835. *Sitta himalayensis australis* Koelz
Assam Whitetailed Nuthatch

1837. *Sitta formosa* Blyth
Beautiful Nuthatch

Ali & Ripley (1948) collected 2 ♀ at Dreyi, Mishmi Hills.

Betts (1956) noted this species as rare in Subansiri area, only seen twice. A specimen obtained between Kore and Apa Tani Valley (7000 ft.).

Athreya (1996) reported this species from Namdapha, Changlang district.

Singh (1995) also noted this bird from Namdapha, Changlang district.

Chowdhury (2000) reported this bird from Sesni and Sessa both in West Kameng district and Etalin-Malinye, Dibang Valley district.

1838. *Sitta frontalis frontalis* Swainson
Velvetfronted Nuthatch

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1839. *Tichodroma muraria nipalensis* Bonaparte
Wall Creeper

Family CERTHIDAE

1843. *Certhia familiaris mandellii* Brooks
Mandelli's Tree Creeper

1844. *Certhia familiaris khamensis* Bianchi
Tibetan Tree Creeper

Ludlow (1944) recorded this species in the Pachakshiri region between 2900 and 4000 m.

1849. *Certhia discolor discolor* Blyth
Sikkim Tree Creeper

Betts (1956) obtained a specimen from Subansiri area but did not record exact locality.

1850. *Certhia discolor manipurensis* Hume
Manipur Tree Creeper

1851. *Certhia nipalensis* Blyth
Nepal Tree Creeper

Tawang district : 4th Bridge 1 ♂ (17 Nov., 2000).

Measurement :	Wing	Tail	Bill
1 ♂	73	82	15

Family MOTACILLIDAE

1852. *Anthus hodgsoni hodgsoni* Richmond
Tree Pipit

Tirap district : Gandhigram (c 1100 m) 1 ♂, 1 ♀, 1 unsexed (27, 28 Dec., 1984); Lower Subansiri district : Yachuli 3 ♂, 2 ♀ (13, 14, 15 Jan., 1997); Dibang Valley district : Mayudiya 1 ♂ (21 Mar., 1999), Koronu 1 ♂ (3 Apr., 1999), West Kameng district : Bomdila 1 ♂, 2 ♀ (12, 13 Nov., 2000); East Kameng district : Pakhui 1 ♀ (28 Apr., 2001).

Ali & Ripley (1948) collected specimens from Tezu, Dening and Dreyi, Mishmi Hills.

Betts (1956) collected specimens from Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

We found in large numbers in a cultivated filed around Forest Rest House, Tezu, Lohit district in Nov., 1998. A good population also recorded near the Forest Rest House, Yazali and in a large Firm House, Yachuli, Lower Subansiri district.

Measurements :	Wing	Tail	Bill
9 ♂	81-88 (84)	54-65 (59)	16 (9)
7 ♀	79-86 (83)	57-63 (58)	17 (7)
1 unsexed	84	62	16

1859. *Anthus novaeseelandiae rufulus* Vieillot
Paddyfiled Pipit

1863. *Anthus godlewskii* (Taczanowski)
Blyth's Pipit

1865. *Anthus roseatus* Blyth
Vinaceousbreasted Pipit

Ali & Ripley collected 2♂ from Tezu, Lohit district.

1875. *Motacilla flava thunbergi* Billberg
Greyheaded Yellow Wagtail

We noted this species as common in and around Bomdila, West Kameng district.

1884. *Motacilla caspica caspica* (Gmelin)
Grey Wagtail

Lohit district : Wakro 2♂ (19, 20 Nov., 1998).

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
2♂	82, 84	87, 88	16 (2)

1885. *Motacilla alba dukhunensis* Sykes
White Wagtail

Barman (1996) reported this species from D'Ering Memorial W.L.S, Kameng district.

Datta *et al.* (1998) reported this bird from Pakhui W.L.S, East Kameng district.

Population fairly good near Ranga river and State Agricultural Farm both at Yazali, Lower Subansiri district in Jan, 1997 and also in the cultivated field near Forest Rest House, Tezu, Lohit district in Nov., 1998.

1887. *Motacilla alba alboides* Hodgson
Hodgson's Pied Wagtail

Tirap district : 77 mile base Camp 2♀ (2 Feb., 1987);

Lohit district : Wakro 1♂, 1♀ (18 nov., 1998).

Ali & Ripley (1948) collected specimens from Tezu, Lohit district.

A flock consisting of 5-6 birds were seen in Hayuliang, Lohit district in Nov., 1998.

One example was seen along the Subansiri river, Dumporijo, Upper Subansiri district.

Measurements :	Wing	Tail	Bill
1♂	90	87	20
3♀	82-88	79-83	20 (3)
	(81)	(81)	

1888. *Motacilla alba leucopsis* Gould
Whitefaced Pied Wagtail

We noted this bird as very common on the shore of Kameng river, Dirang, West Kameng district.

1891. *Motacilla maderaspatensis* Gmelin
Large Pied Wagtail

Choudhury (2000) reported eastern most record of this species from Tezu, Lohit district (Singh, 1995).

Family DICAEDIDAE

1892, 1894. *Dicaeum agile agile* (Tickell)
Thickbilled Flowerpecker

1895. *Dicaeum chrysorrheum chrysochlore* Blyth
Yellowvented Flowerpecker

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

A flock consisting of 15-20 birds was observed in the thick bush, Hayuliang, Lohit district, in Nov., 1998.

1896. *Dicaeum melanoxanthum* (Blyth)
Yellowbellied Flowerpecker

Ali & Ripley (1983) reported this species from Arunachal Pradesh (Jookotollee, Dibrugarh district, specimen in Brit. Mus.).

1898. *Dicaeum trigonostigma rubropygium* Baker
Orangebilled Flowerpecker

1899. *Dicaeum erythrorhynchos*
erythrorhynchos (Latham)
Tickell's Flowerpecker

1901. *Dicaeum concolor olivaceum* Walden.
Plaincoloured Flowerpecker

Ali & ripley (1948) reported this species from Tezu, Lohit district.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1904. *Dicaeum cruentatum cruentatum* (Linnaeus)
Scarletbacked Flowerpecker

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

A flock consisting of 7-10 birds was noted near Hayuliang, Lohit district in Nov., 1998.

1905. *Dicaeum ignipectus ignipectus* (Blyth)
Firebreasted Flowerpacker

Ali & Ripley (1948) collected 1 ♀ from Dening and noted this species at Dreyi, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Family NECTARINIIDAE

1906. *Anthreptes singalensis rubinigentis* (Baker)
Rubycheek

Dutta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1910. *Nectarina sperata brasiliiana* (Gmelin)
Van Hasselt's Sunbird

1917. *Nectarinia asiatica asiatica* (Latham)
Purple Sunbird

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

1918. *Nectarinia asiatica intermedia* (Hume)
Assam Purple Sunbird

We noted a thin population in the dense forest, near Pita Pool, Yazali, Lower Subansiri district, in Jan., 1997.

1919. *Aethopyga gouldiae gouldiae* (Vigors)
Mrs. Gould's Sunbird

Ludlow (1944) reported this species, the locality now falls under Arunachal Pradesh.

1920. *Aethopyga gouldiae isolata* Baker
Manipur Yellowbacked Sunbird

1921. *Aethopyga gouldiae dabryi* (Verreaux)
Dabry's Sunbird

1924. *Aethopyga nipalensis koelzi* Ripley
Eastern Yellowbacked Sunbird

Dibang Valley district : Mayudiya 2♂ (24, 25 mar., 1999);

Tawang district : 4th Bridge 1♂ (16 Nov., 2000).

Ali & Ripley (1948) collected 6♂ and 2♂ at Dreyi, Mishmi Hills.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

We noted a small flock at Wakro, Lohit district.

Measurements :	Wing	Tail	Bill
3♂	56-57 (56.5)	61-72 (65)	25 (3)

1926. *Aethopyga saturata assamensis* (McClelland)
Assam Blackbreasted Subird

Tirap district : Firmbase Camp 1♂ (18 Apr., 1981), Chiria Camp 1♂ (23 Apr., 1981), Gandhigram (c. 1100 m.), 6♂, 5♀ (26, 29 Dec., 1984; 21, 24, 25 Jan., 1987; 23, 25 Feb., 5 may, 1988), 124 km. on MV Road 7♂, 2♀ (4, 5, 8, 9, 13, 16 Jan., 1985), Ridge Top (c 2500 m.) 1♀ (25 Feb., 1988).

Ali & Ripley (1984) collected 1♂ and 2♀ at Dening, Mishmi Hills.

Betts (1956) reported this species as widely distributed in Apa Tani Valley upto 6000 ft., Subansiri area.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
15♂	52-54 (53)	70-78 (74)	24-25 (24.5)
8♀	44-47 (46)	-	22-23 (22.5)

1928. *Aethopyga siparaja labecula* (Horsfield)
Assam Yellowbacked Sunbird

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1930. *Aethopyga ignicauda ignicauda* (Hodgson)
Firetailed Yellowbacked Sunbird

1931. *Arachnothera longirostris longirostris* (Latham)
Little Spiderhunter

Tirap district : Gibbon's land 1 ♂, 1 unsexed (2 May, 1981, 19 Dec., 1982); Miao Camp 1 ♂, 1 ♀ (5 May., 1981);

Lohit district : Tezu 1 ♂ (5 May., 1988);

Dibang Valley district : Koronu 2 ♂, 5 ♀, 1 unsexed (30 Mar., 1, 2, 3, 4 Apr., 1999).

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

This little Spider hunters are found at all places in Arunachal Pradesh during the flowering of wild bananas.

Measurements :	Wing	Tail	Bill
5 ♂	65-67 (66)	41-42 (41.5)	36-38 (37)
6 ♀	62-68 (65)	41-42 (41.5)	35-37 (36)
2 unsexed	64, 68	42 (2)	36, 37

1932. *Arachnothera magna magna* (Hodgson)
Streaked Spiderhunter

Tirap district : Chiria Camp 1 ♂, 3 ♀ (21, 22, 24, 25 Apr., 1981), Upper Camp 1 ♀ (28 Feb., 1988);

Dibang Valley district : Koronu 2 ♂, 1 ♀ (29, 30 Mar., 2 Apr., 1999); Upper Subansiri district : Doparijo 5 ♂, 3 ♀ (10, 12, 13, 14, 22 Apr., 2001).

Ali & Ripley collected specimens at Dening and noted this species at Tezu, Lohit district.

Athreya (1996) reported this species from Namdapha, Changlang district.

Datta *et al.* (1998) also recorded this bird from Pakhui W.L.S, East Kameng district.

This bird is equally distributed with that of preceeding race in the same habitat but we found them in more numbers than that of earlier race.

Measurements :	Wing	Tail	Bill
8 ♂	87-95 (92)	44-52 (47)	46-49 (47)
8 ♀	79-84 (82)	40-45 (43)	42-45 (43)

Family ZOSTEROPIDAE

1933. *Zosterops palpebrosa palpebrosa* (Temminck)
White-eye

West Kameng district : Bomdila 1 ♂, 2 ♀ (11, 12 Nov., 2000);

Upper Subansiri district : Daporijo 1 ♂, 1 ♀ (10, 20 Apr., 2001).

Ali & Ripley (1948) noted this species at Dening, Mishmi Hills.

Barman (1996) reported this species from D'Ering Memorial Hills, East Kameng district.

Datta *et al.* (1998) also found this species in Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
2 ♂	47, 52	35, 37	12 (2)
3 ♀	50-52 (51)	35-37 (36)	12 (3)

Family PLOCEIDAE

1942. *Passer montanus melaccensis* Dubois
Malay Tree Sparrow

1943. *Passer montanus tibetanus* Baker
Tibetan Tree Sparrow

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

1944. *Passer montanus hepaticus* Ripley
Mishmi Tree sparrow

Tirap district : Gibbon's land 1 ♂ (18 Dec., 1982), Gandhigram (c 1100 mm) 2 ♂ (22 Jan., 1987); Lower Subansiri district : Yachuli 1 ♂ (12 Jan., 1997), Yazali 1 ♀ (20 Jan., 1997).

Ali & Ripley (1948) collected specimens at Tezu, Lohit district and noted this bird at Dening, Mishmi Hills.

Measurements :	Wing	Tail	Bill
4♂	67-68 (67.5)	52-54 (53)	13-14 (13.5)
1♀	68	54	

1946. *Passer rutilans cinnamomeus* (Gould)
Himalayan Cinnamon Tree Sparrow

Upper Subansiri district : Daporijo 2♂ (21, 22 Apr., 2001).

Stevens (1914-15) reported this species from a locality now under Arunachal Pradesh.

Betts (1956) noted this species in fair numbers at Duta (5000 ft.), Apa Tani Valley in May.

Measurements :	Wing	Tail	Bill
2♂	67, 68	50, 51	11 (2)

1947. *Passer rutilans intensior* Rothschild
Yunnan Cinnamon Tree Sparrow

1959. *Ploceus philippinus burmanicus* Ticehurst
Eastern Baya

1961. *Ploceus benghalensis* (Linnaeus)
Blackthroated Weaver Bird

1963. *Ploceus manyar peguensis* Baker
Burmese Streaked Weaver Bird

1967. *Lonchura stricata acuticauda* (Hodgson)
Whitebacked Munia

Tirap district : Ridge Top 1♂ (3 Mar., 1988).

Betts (1956) found this species common all over the hills in Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
1♂	51	40	12

1975. *Lonchura punctulata subundulata*
(Godwin-Austen)
Burmese Spotted Munia

Lohit district : Tezu 1♀ (5 Nov., 1998).

Barman (1996) reported this species from D'Ering Memorial W.L.S, East Siang district.

A flock of 9 birds were seen near Hayuliang, Lohit district in Nov., 1998.

Measurements :	Wing	Tail	Bill
1♀	51	32	12

1977. *Lonchura malacca atricapilla* (Vieillot)
Eastern Blackheaded Munia

Betts (1956) noted this species in the swamps at the hills in Subansiri area.

Family FRINGILLIDAE

1983. *Mycerobas affinis* (Blyth)
Allied Grosbeak

1985. *Mycerobas carnipes carnipes* (Hodgson)
Himalayan Whitewinged Grosbeak

1956. *Mycerobas melanozanthos* (Hodgson)
Sportedwinged Grosbeak

1990. *Carduelis spinoides spinoides* Vigors
Himalayan Greenfinch

West Kameng district : Derang, Bomdila 2♂,
(14 Nov., 2000).

Measurements :	Wing	Tail	Bill
2♂	73, 75	45	14 (2)

1991. *Carduelis spinoides taylori* (Kinnear)
Tibetan Greenfinch

1992. *Carduelis spinoides hienrichi* Stresemann
Mt. Victoria Greenfinch

1993. *Carduelis thibetana* (Hume)
Tibetan Siskin

2000. *Leucosticte nemoricola nemoricola* (Hodgson)
Eastern Plaincoloured Mountain Finch

2011. *Carpodacus erythrurus roseatus* (Blyth)
Rosefinch

Ali & Ripley (1948) collected a specimen at Tezu, Lohit district.

2015. *Carpodacus nipalensis nipalensis* (Hodgson)
Nepal Dark Rosefinch

Tirap district : Gandhigram 1 ♂, 1 ♀ (22, 25 Jan., 1987).

Measurements :	Wing	Tail	Bill
1 ♂	87	64	15
1 ♀	89	58	16

Ludlow (1944) reported this species as plentiful in Western Arunachal Pradesh.

Ali & Ripley (1983) reported this species upto c 3100-3600 m in Arunachal Pradesh.

2022. *Carpodacus thura feminius* Rippon
Yunnan Whitethroated Rosefinch

2024. *Carpodacus pulcherrimus waltoni* (Sharpe)
Tibet Beautiful Rosefinch

2025. *Carpodacus edwardsii rubicunda* (Greenway)
Sikkim Large Rosefinch

Tirap district : Mayudiya 1 ♂ (21 Mar., 1999).

Measurements :	Wing	Tail	Bill
1 ♂	80	63	14

2026. *Carpodacus trifusciatus* Verreaux
Threebanded Rosefinch

2031. *Carpodacus puniceus puniceus* (Blyth)
Eastern Redbreasted Rosefinch

2032. *Loxia curvirostra himalayensis* Blyth
Crossbill

2033. *Propyrrhula subhimachala* (Hodgson)
Redheaded Rosefinch

Dibang Valley district : Mayudiya 1 ♂ (20 Mar., 1999);

Measurements :	Wing	Tail	Bill
1 ♂	100	81	16

2034. *Haematospiza sipahi* (Hodgson)
Scarlet Finch

Tirap district : Chiria Camp. 1 ♂, 1 ♀ (24 Apr., 1981);

Dibang Valley district : Koronu 1 ♂ (4 Apr., 1999).

Datta *et al.* (1998) reported this species from Pakhui W.L.S. East Kameng district.

Measurements :	Wing	Tail	Bill
2 ♂	99, 100	64, 65	18 (2)
1 ♀	99	66	19

2035. *Pyrrhoptes epauletta* (Hodgson)
Goldheaded Black Finch

2036. *Pyrrhula nipalensis nipalensis* Hodgson
Nepal Brown Bullfinch

2037. *Pyrrhula nipalensis rickatti* La Touche
Chinese Brown Bullfinch

2038. *Pyrrhula erythaca erythaca* Blyth
Beavan's Bullfinch

Dibang Valley district : Mayudiya 2 ♂ (26 Mar., 1999).

Measurements :	Wing	Tail	Bill
2 ♂	82, 84	73, 74	13 (2)

Family EMBERIZIDAE

2045. *Emberiza rutila* Pallas
Chestnut Bunting

Tirap district : Ridge Top 1 ♂ (7 Mar., 1988).

Measurements :	Wing	Tail	Bill
1 ♂	68	53	14

2046. *Emberiza aureola aureola* Pallas
Yellowbreasted Bunting

2047. *Emberiza spodocephala sordida* Blyth
Blackfaced Bunting

Barman (1996) reported this species from D'Ering Memorial W.L.S. East Siang district.

2053. *Emberiza cia khamensis* Sushkin
Tibetan Rock Bunting

2054. *Emberiza cia yunnanensis* Sharpe
Yunnan Rock Bunting

2055. *Emberiza fucata fucata* Pallas
Amur Greyheaded Bunting

2056. *Emberiza pusilla* Pallas
Little Bunting

Tirap district : Gandhigram (c 1100 m) 2 ♂ 1 ♀, 1 unsexed (23, 25 Jan., 1987, 12 Feb., 1987); Ridge Top 1 ♂, 1 ♀ (2, 7 Mar., 1988); Lower

Subansiri district : Yachuli 2 ♀ (12 Jan., 1997);
Tawang district : Zemithang 1 ♂ (21 Nov., 2000).

Ali & Ripley (1948) collected a pair of this species at Dreyi, Mishmi Hills.

Betts (1956) noted this bird as a fairly common winter migrant at Apa Tani Valley in Subansiri area.

Datta *et al.* (1998) reported this species from Pakhui W.L.S, East Kameng district.

Measurements :	Wing	Tail	Bill
4 ♂	70-77 (74)	57-59 (58)	12
4 ♀	67-71 (69)	55-56 (55.3)	10-12 (11)
1 unsexed	67	54	12

2060. *Melophus lathami* (Gray)
Crested Bunting

Betts (1956) noted this bird in flocks in Winter at Apa Tani Valley in Subansiri area.

Datta *et al.* (1998) noted this species from Pakhui W.L.S, East Kameng district.

SUMMARY

This paper is dealt with the collections now preserved in the National Zoological Collection. Altogether 964 species and subspecies of birds vide Annexure I to IV are listed in this paper and out of which 827 species and subspecies of birds are dealt with in ornithological account.

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REFERENCES

- ALI, S. & RIPLEY, S.D. 1948. The birds of the Mishmi Hills. *J. Bombay nat. Hist. Soc.*, **48** : 1-37.
- ALI, S. & RIPLEY, S.D. 1983. *The handbook of the birds of India and Pakistan*. Compact edn. Oxford Univ. Press, New Delhi.
- ALI, S., BISWAS, B. & RIPLEY, S.D. 1996. Birds of Bhutan. *Rec. zool. Surv. India, Occ. Pap.* **136** : 1-207.
- BAKER, E.C.S. 1904. The occurrence of the Masked Finfoot (*Heliopsis personata*) in Lakhimpur. *J. Bombay nat. Hist. Soc.*, **16** : 156.
- BAKER, E.C.S. 1913. On a small collection of birds from the Mishmi Hills, NE Frontier. *Rec. Ind. Mus.*, **9** : 251-254.
- BAKER, E.C.S. 1922-30. *The Fauna of British India - Birds*. 8 Vols. Taylor and Francis, London.
- BAKER, E.C.S. 1935 - *The nidification of birds of the Indian Empire*. 4 Vols. Taylor and Francis, London.
- BETTS, F.N. 1954. Occurrence of the Blacknecked Crane in Indian limit. *J. Bombay nat. Hist. Soc.*, **52** : 605-6.
- BETTS, F.N. 1956. Notes on the birds of Subansiri area, Assam. *J. Bombay nat. Hist. Soc.*, **53** : 397-414.

- CHOUHDURY, A. 2000. *The Birds of Assam*. Gibbon Books, Guwahati, Assam.
- DAS, R.K. 1995. White-winged Duck in Namery Sanctuary, Assam. IWRB TWRG Newsletter **8** : 17-18.
- GODWIN-AUSTEN, H.H. 1877. Description of three new species of birds of the genera *Pellorneum*, *Actinura* and *Pomatorhinus* lately collected in the neighbourhood of Sadiya, Assam, by Mr. M.T. Ogle of the Topographical Survey. *J. Asiatic Soc. Bengal*, **46** (2) : 41-45.
- KATTI, M., SINGH, P., MANJREKAR, N., MUKHERJEE, S., & SHARMA, D. 1992. A ornithological survey in eastern Arunachal Pradesh. *Forktail*, **7** : 75-89.
- PARSON, R.E. 1938. Migration routes of geese (Sadiya Frontier Tract, Assam). *J. Bombay nat. Hist. Soc.*, **40** : 764-765.
- PARSON, R.E. 1939. Notes on wild duck and geese in Sadiya Frontier Tract, Assam. *J. Bombay nat. Hist. Soc.*, **41** : 422-426.
- RAHMANI, A.R. 1989. Status of the Black-necked Stork in the Indian subcontinent. *Forktail*, **5** : 99-110.
- RIPLEY, S.D. 1961. A synopsis and a new subspecies of birds from Tirap District, Arunachal Pradesh, and comments on the subspecies of *Stachyris nigriceps* Blyth. *J. Bombay nat. Hist. Soc.*, **77** (1) : 1-5.
- RIPLEY, S.D. 1984. A note on the status of *Brachypteryx criptice*. *J. Bombay nat. Hist. Soc.*, **81** : 700-701.
- RIPLEY, S.D., SAHA, S.S. & BECHLER, B. 1991. Notes on birds from the Upper Noa Dihing, Arunachal Pradesh, North-eastern India. *Bull. B.O.C.*, **1991**, III (1) : 19-28.
- STEVENS, H. 1914-15. Notes on the birds of Upper Assam. 3 parts. *J. Bombay nat. Hist. Soc.*, **23** : 234-268, 547-570, 721-736.
- SAHA, S.S. 1981. Blacknacked Crane in Bhutan and Arunachal Pradesh A survey report for Jan.-Feb., 1978. *J. Bombay nat. Hist. Soc.*, **77** : 326-328.
- SAHA, S.S. 1985. Fauna of Namdapha, Arunachal Pradesh. *Rec. zool. Surv. India*, **82** : 303-318.
- SINGH, P. 1995. Recent bird records from Arunachal Pradesh, India. *Forktail*, **10** : 65-104.

ANNEXURE - I

List of birds said to occur in Arunachal Pradesh from logical inference, collection, reliable sight record and distributional point of view as referred in Ali & Ripley's Handbook of the birds of India and Pakistan, vols. 1-10 (1968-1974). The following abbreviations have been used.

W. V. = Winter visitor., R = Resident. P = Palearctic., O = Oriental., OIC = IC = Indochinese.

SL. NO.	NAME	HB NO.	DISTRIBUTION		STATUS		HABITAT
			A. P.	India	Extralimital		
1.	<i>Podiceps c. cristatus</i> (Linnaeus) Great Crested Grebe	3	Foothills	NE. India, S. to Rajasthan to Orissa	P	W. V.	Jheels, littoral water
2.	<i>Podiceps ruficollis capensis</i> Salvadori Little Grebe	5	Foothills	All India	O & P	R	Jheels, littoral water
3.	<i>Pelecanus p. philippensis</i> Gmelin Grey Pelican	21	Plains and Foothills	All India	O-L	R	Well watered tracts
4.	<i>Phalacrocorax carbo sinensis</i> (Shaw) Large Cormorant	26	Plains and Foothills	All India	O & P	R	Jheels and littoral water
5.	<i>Phalacrocorax fuscicollis</i> Stephens Indian Shag	27	Plains and Foothills	All India	O	R	Jheels and littoral water
6.	<i>Phalacrocorax niger</i> (Vieillot) Little Cormorant	28	Plains and Foothills	All India	O	R	Jheels and littoral water
7.	<i>Anhinga rufa melanogaster</i> Pennant Darter	29	Plains and Foothills	All India	O	R	Jheels and littoral water
8.	<i>Ardea cinerea rectirostris</i> Gould Eastern Grey Heron	36	Plains and Foothills	All India	O. IC & P	R	Swamps, marshes
9.	<i>Ardeola g grayii</i> (Sykes) Indian Pond Heron	42	Plains and Foothills	All India	O-M	R	Marshes, paddyfield, swamps

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimalal		
10.	<i>Bubulcus ibis coromandus</i> (Boddaert) Cattle Egret	44	Plains and Foothills	All India	O-IC & M	R	Arshes. paddyfield. swamps
11.	<i>Ardea alba modesta</i> J. E. Gray Eastern Large Egret	46	Plains and Foothills	All India	O	R	Arshes, paddyfield. swamps
12.	<i>Egretta i. intermedia</i> (Wagler) Median Egret	47-48	Plains and Foothills	All India	O	R	Arshes, paddyfield. swamps
13.	<i>Egretta g. garzetta</i> (Linnaeus) Little Egret	49	Plains and Foothills	All India	O & P	R	Arshes, paddyfield. swamps
14.	<i>Nycticorax n. nycticorax</i> (Linnaeus) Night Heron	52	Plains and Foothills	All India	O & P	R	Arshes, paddyfield. swamps
15.	<i>Ixobrychus cinnamomeus</i> (Gmelin) Chestnut Bittern	56	Plains and Foothills	All India	O	R	Reed beds
16.	<i>Anastomus oscitans</i> (Boddaert) Openbill Stork	61	Plains and Foothills	All India	O	R	Jheel, marshes
17.	<i>Ciconia e. episcopus</i> (Boddaert) Whitenecked Stork	62	Plains and Foothills	All India	O	R	Seepage march, rainfilled puddle, irrigated ploughed field, flooded grasslandand fallows
18.	<i>Ephippiorhynchus a. asiaticus</i> (Latham) Blacknecked Stork	66	Plains and Foothills	All India	O	R	Lowland marshes, Jheel
19.	<i>Thereskiornis aethiopica melanocephala</i> Latham White Ibis	69	Plains and Foothills	All India	O	R	Plain, plateau country
20.	<i>Dendrocitta javanica</i> (Horsfield) Lesser Whistling Teal	88	Plains and Foothills	All India	O	R	Reedy and vegetation covered water bodies

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
21.	<i>Tadorna ferruginea</i> (Pallas) Brahminy Duck	90	Plains and Foothills	All India	O & P	W. V.	Large lakes, river etc.
22.	<i>Anas acuta</i> Linnaeus Pintail	93	Plains and Foothills	All India	O & P	W. V.	Brackish lagoons
23.	<i>Anas c. crecca</i> Linnaeus Common Teal	94	Plains and Foothills	All India	O & P	W. V.	Marshes
24.	<i>Anas s. strepera</i> Linnaeus Gadwall	101	Plains and Foothills	All India	O & P	W. V.	Open water-spread of dammed reservoirs
25.	<i>Anas querquedula</i> Linnaeus Bluewinged Teal	104	Plains and Foothills	All India	O & P	W. V.	Open water-spread of dammed reservoirs
26.	<i>Anas clypeata</i> Linnaeus Shovellar	105	Plains and Foothills	All India	O & P	W. V.	Flooded ditches
27.	<i>Nettapus c. coromandelianus</i> (Gmelin) Cotton Teal	114	Plains and Foothills	All India	O	R	Vegetation covered Jhel
28.	<i>Elanus caeruleus vociferus</i> (Latham) Blackwinged Kite	124	Foothills	All India	O	R	Deciduous biotope, secondary scrub country and grassland with cultivation
29.	<i>Pernis ptilorhynchus ruficollis</i> Lesson Crested Honey Buzzard	130	Foothills	All India	O	R	Semi-evergreen welwooded country
30.	<i>Milvus migrans govinda</i> Sykes Pariah Kite	133	Foothills	All India	O	R	Urban localities and human habitations
31.	<i>Haliastur i. indus</i> (Boddaert) Brahminy Kite	135	Foothills	All India	O	R	Well watered localities

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
32.	<i>Gyps bengalensis</i> (Gmelin) Indian Whitebacked Vulture	185	Foothills	All India	O	R	Cultivation, populous villages with livestock
33.	<i>Lerwa lerwa</i> (Hodgson) Snow Partridge	227	Hills c. 3000-5000 m.	Entire Himalayas	O -IC.		R Alpine pastures open hillside above treeline.
34.	<i>Tetraogallus tibetanus centralis</i> Sushkin Central Tibetan Snowcock	231	Abor and Mishmi Hills (c. 3500 m up)	Entire Himalayas	Tibet	R	Stony hillside, scrubbed ridges above treeline
35.	<i>Tetraogallus szechenyii</i> Madarasz	233	Upper Subansiri and siyom drainage c.3350-4600 m.	Entire Himalayas	O-IC.R		Rocky covered ravines in the alpine zone
36.	<i>Coturnix coromandelica</i> (Gmelin) Rain Quail	252	Foothills	All India	O-I	R	Grass and scrub jungle standing crops.
37.	<i>Arborophila t. torqueola</i> (Valenciennes) Common Hill Partridge	267	Foothills along N. of the Brahmaputra river	Himalayas-U. P. Assam	Tibet R		Ravines, evergreen trees and shrubs
38.	<i>Arborophila r. rufogularis</i> (Blyth) Rufousthroated Hill Partridge	270	Mishmi Hills c. 1000-2400 m	Himalayas-U. P. Assam	Nepal, Bhutan	R	Dense scrub jungle, heavy undergrowth in evergreen jungle
39.	<i>Arborophila atrogularis</i> (Blyth) White Cheeked Hill Partridge	272	Dafla, Miri, Mishmi Hills	NE. India	Bangladesh, Burma	R	Dense scrub jungle, heavy undergrowth in evergreen jungle

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
40.	<i>Arborophila mandellii</i> (Hume) Redbreasted Hill partridge	273	Hills and hills along N of the Brahma- Putra river	Sikkim, Assam	Tibet	R	Dense scrub jungle, heavy undergrowth in evergreen jungle
41.	<i>Ithaginis cruentus tibetanus</i> (Baker) Tibetan Blood Pheasant	283	Kameng, Upper Subansiri c. 3350-4400 m	Sikkim, Assam	Bhutan, Tibet	R	Scrub near snow Line
42.	<i>Ithaginis cruentus kuseri</i> Beebe Mishmi Blood Pheasant	284	Abor and Mishmi Hills c. 2500-4500 m	Sikkim, Assam	Tibet	R	Scrub near snow Line
43.	<i>Tragopan satyra</i> (Linnaeus) Satyr Tragopan	286	Western A. P. c. 1800-4250m	Himalayas- U. P. to Assam	Nepal, Bhutan	R	Heavy undergrowth in moist and deep evergreen forest.
44.	<i>Tragopan blythii molesworthi</i> Baker Tibetan Greybellied Tragopan	287	Western A. P. east to Mishmi hills. c. 1800- 3300 m.	Himalayas-U. P. to Assam	Bhutan, Tibet	R	Heavy undergrowth in moist and deep evergreen forest
45.	<i>Tragopan temminckii</i> (J. E. Gray) Chinese Crimson Horned Pheasant	289	Lohit-Mishmi Hills, Upper Dibang, Tsangpo valleys c. 2100-3500m	Himalayas-U. P. to Assam	Bhutan O-IC.	R	Heavy undergrowth in moist and deep evergreen forest
46.	<i>Lophophorus sclateri</i> Jerdon Mishmi Monal Pheasant	291	Kameng, Subansiri Siang, Lohit. c. 3000-4000m.	Himalayas-U. P. to Assam	Tibet, Burma, Yunan	R	Silver fir forest
47.	<i>Crossoptilon crossoptilon hermani</i> Elwes Elwes's Eared Pheasant	292	Siang, Subansiri Lohit c. 3000-5000m	Himalayas-U. P. to Assam	Tibet	R	Grassy hills and juniper

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			A. P.	India	Extralimalal		
48.	<i>Lophura leucomelana lathami</i> (J. E. Gray) Blackbreasted Kaleej Pheasant	296	Hiils and foot hills along N. of the Brahma-putra river	NE. India	O-IC.	R	Dense undergrowth in evergreen forest
49.	<i>Gallus gallus murghi</i> Robinson & Kloss Indian Red Junglefowl	299	Foothills	All India	O-I (except Sri Lanka)	R	All kind of forest
50.	<i>Gallus gallus spadiceous</i> (Bonnaterre) Burmese Red Junglefowl	300	Eastern Mishmi Hills	All India	O-M	R	All kind of forest
51.	<i>Polyplectorn bicalcaratum bakeri</i> Lowe Bhutan Peacock-pheasant	310	Dafla hills, Kameng, Suban-siri, Mishmi Hills	NE. India, W. Bengal	Bhutan, Bangladesh	R	Dense evergreen forest
52.	<i>Pavo cristatus</i> Linnaeus Indian Peafowl	311	Foothills	All India	O-I (except Sri Lanka)	R	Dense evergreen forest
53.	<i>Grus nigricollis</i> Przevalski Blacknecked Crane	321	Apa Tani Valley Zemithang, Tawan	Ladakh	P	W. V.	Open fallow paddy field and swamp.
54.	<i>Gallinula chloropus indica</i> Blyth Indian Moorhen	347	Foothills	All India	O	R	Reedy swamps inundated paddyfield.
55.	<i>Fulica a. atra</i> Linnaeus Coot	350	Foothills	All India	O & P	R	Rush bordered weedy jheels and open water
56.	<i>Eupodotis b. bengalensis</i> (Gmelin) Bengal Florican	356	Foothills	NE. India	Nepal, Bhutan Bangladesh	R	Tall grassland, scattered scrubs and bushes.
57.	<i>Vanellus vanellus</i> (Linnaeus) Green Plover	364	Subansiri	Along the Himalayas, NE. India	O-I & P	W. V.	Irrigated field, marshland, jheels

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			A. P.	India		
58.	<i>Tringa t. totanus</i> (Linnaeus) Common Redshank	393-94	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
59.	<i>Tringa stagnatilis</i> (Bechstein) Little Greenshank	395	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
60.	<i>Tringa nebularia</i> (Gunner) Greenshank	396	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
61.	<i>Tringa ochropus</i> Linnaeus Green Sandpiper	397	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
62.	<i>Tringa glareola</i> Linnaeus Wood Sandpiper	398	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
63.	<i>Tringa hypoleucos</i> Linnaeus Common Sandpiper	401	Plains and Foothills	All India	O & P	W. V. River banks, swamps, inundated cultivated field.
64.	<i>Gallinago s. solitaria</i> (Hodgson) Eastern Solitary Snipe	404	Plains and Foothills	Himalayas, NE. India and Peninsula (Scarce)	P	R (S) Boggy mountain streams with spongy grass, wet paddy stubbles in high hills
65.	<i>Gallinago nemoricola</i> (Hodgson) Wood Snipe	405	Plains and Foothills	All India	O	R (S) Boggy mountain streams with spongy grass, wet paddy stubbles in high hills
66.	<i>Gallinago stenura</i> (Bonaparte) Pintail Snipe	406	Plains and Foothills	All India	P	W. V. River banks, swamps, inundated cultivated field.

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			A. P.	India	Extralimal		
67.	<i>Gallinago g. gallinago</i> (Linnaeus) Fantail Snipe	409	Plains and Foothills	All India	P	W. V.	River banks, swamps, inundated cultivated field.
68.	<i>Gallinago minima</i> (Briinnich) Jack Snipe	410	Plains and Foothills	All India	O & P	W. V. (irregular)	River banks, swamps, seepage marshes, waterlogged cultivated field.
69.	<i>Scolopax r. rusticola</i> Linnaeus Woodcock	411	Plains and Foothills	Kashmir to Assam and NE India to whole peninsula	O & P	R (S)	Swampy glades with dense scrubby under growth in the Himalayan forest
70.	<i>Calidris temminckii</i> (Leisler) Temminck's Stint	417	Plains and Foothills	All India	O & P	W. V.	River banks. swamps, marshes, waterlogged cultivated field.
71.	<i>Philomachus pugnax</i> (Linnaeus) Ruff	426	Plains and Foothills	All India	O & P	W. V.	River banks. swamps, seepage marshes, waterlogged cultivated field.
72.	<i>Rostratula b. benghalensis</i> (Linnaeus) Painted Snipe	429	Plains and Foothills	All India	O & P	R	Swampy glades with dense scrubby undergrowth in the Himalayas forest
73.	<i>Himantopus h. himantopus</i> (Linnaeus) Indian Blackwinged Stilt	430	Plains and Foothills	All India	O & P	R	River banks, swamps, seepage marshes, waterlogged cultivated field.
74.	<i>Ibidorhyncha struthersii</i> Vigors Ibishill	433	West to east (Lohit) Plains and Foot hills	Ladakh to Assam to NE. India	Nepal, Bhutan & P	R (S)	Fastflowing Himalayan streams
75.	<i>Burhinus oedicnemus indicus</i> (Salvadori) Indian Stone Curlew	436	Plains and Foothills	All India	O-I & O-M	R	Stony hillside, dry riverain tracts

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			A. P.	India	Extralimal		
76.	<i>Treron a. apicauda</i> Blyth Pintailed Green Pigeon	493	Plains and Foothills	Himalayas-Kumaun to Manipur	Nepal, Bhutan, Bangladesh & O-M	R	Fruiting forest trees
77.	<i>Treron s. sphenura</i> (Vigors) Wedgetailed Green Pigeon	494	Foothills West to east	Himalayas-Kashmir to Assam, Nagaland	Nepal, Bhutan, Bangladesh & O-M	R	Fruiting forest trees
78.	<i>Treron curvirostris nipalensis</i> (Hodgson) Thickbilled Green Pigeon	495	Foothills West to east	NE. India	Nepal, Bhutan, Bangladesh Indochina	R	Fruiting forest trees
79.	<i>Treron pompadora phayrei</i> (Blyth) Ashyeated Green pigeon	499	Plains and Foothills extreme southern parts	W. B. Assam Manipur	Bangladesh Indochina	R	Fruiting forest trees
80.	<i>Ducula badia insignis</i> Hodgson Nepal Maroonbacked Imperial Pigeon	510	Plains and Foothills water and SW parts	Sikkim and Assam	Nepal, Bhutan	R	Tall fruiting forest
81.	<i>Columba leuconota gradaria</i> Hartert East Himalayan Snow Pigeon	514	Western parts c 3000-4500 m	Sikkim	O-IC	R	Rocky cliffs in the alpine zone
82.	<i>Columba livia intermedia</i> Strickland Indian Blue Rock Pigeon	517	Plains	All India	O-I	R	Rocky cliffs in the alpine zone
83.	<i>Columba hodgsoni</i> Vigors Speckled Wood Pigeon	520	Hills and Foot hills	Kashmir to NE. India	Nepal, Bhutan Burma, W. China	R	Tall evergreen hill forest
84.	<i>Columba pulchricollis</i> Blyth Ashy Wood Pigeon	523	Plains and Foothills	NE. India, Sikkim, W. Bengal	Nepal, Bhutan, Burma, Thailand Taiwan	R	Mixed deciduous and evergreen forest
85.	<i>Macropygia unchall insalvia</i> (Blyth) Bartailed Cuckoo-Dove	526	Hills and Foothills	Kashmir to NE. India	Nepal, Bhutan, Burma, Thailand	R	Dense evergreen forest
86	<i>Streptopelia o. orientalis</i> (Latham) Rufous Turtle Dove	530	Plains and Foothills	Sikkim	Bhutan & P	R	Mixed deciduous forest around cultivation

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			A. P.	India	Extralimital		
87.	<i>Streptopelia orientalis agricola</i> (Tickell) Eastern Turtle-Dove	532	Hills and Foothills	NE. India	Nepal, Bhutan, Burma, Tenasserim	R	Mixed deciduous forest around cultivation
88.	<i>Streptopelia chinensis edvardi</i> Ripley NEFA Spotted Dove	540	Eastern Parts	NE. India	—	R	Scrub jungle and open cultivated land
89.	<i>Chalcophaps i. indica</i> (Linnaeus) Indian Emerald Dove	542	Hills and Foothills	All India	O-IC & M	R	Thick mixed bamboo jungle
90.	<i>Psittacula eupatria nipalensis</i> (Hodgson) Large Indian Parakeet	545	Plains and Foothills	All India	O-I. except Sri Lanka	R	Forest and wellwooded country
91.	<i>Psittacula alexandri fasciata</i> (P. L. S. Müller) Indian Redbreasted Parakeet	551	Plains and Foothills	U. P. to NE. India	Nepal, Bhutan, Bangladesh, O-IC.	R	Moist deciduous biotope
92.	<i>Psittacula derbyana</i> (Fraser) Lord Derby's Parakeet	554	Siang Subanasiri	U. P. to NE. India	O-IC	R	Cultivated valleys and Conifer forest.
93.	<i>Psittacula finschii</i> (Hume) Eastern Slatyheaded Parakeet	563	Hills and Foothills	NE. India	Bhutan O-IC.	R	Wellwooded hillside and valleys
94.	<i>Loriculus vernalis</i> (Sparman) Indian Lorikeet	566 567	Plains and Foothills	All India	O	R	Evergreen and moist deciduous forest
95.	<i>Clamator coromandus</i> (Linnaeus) Redwinged Crested Cuckoo	569	Plains and Foothills	U. P. to NE. India to Peninsula	Nepal, Bhutan, Bangladesh, O-M	R	Evergreen moist deciduous forest
96.	<i>Cuculus s. sparveroides</i> Vigors Large Hawk Cuckoo	572	Hills and Foothills West to east	Kashmir to NE. India to peninsula and NE India	O. except Sri Lanka	R breeding)	Wellwooded hillsides and valleys
97.	<i>Cuculus fugax niscolor</i> Blyth Hodgson's Hawk Cuckoo	575	Hills and Foothills	NE. India	O. except Pakistan and Sri Lanka	R	Wellwooded hillsides and valleys

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			A. P.	India	Extralimal		
98.	<i>Cuculus m. micropterus</i> Gould Indian Cuckoo	576	Hills evergreen biotope, upto c. 2300 m	Himalayas west to east, All India except arid zone	Pakistan, Nepal Bhutan Bangladesh and O-IC. & I-M	R	Wellwooded hillsides and valleys
99.	<i>Cuculus canorus bakeri</i> Hartert Khasi Hills Cuckoo	579	Hills and Foothills	NE. India	Bhutan & P and O-IC.	R (breeding)	Wellwooded country and orchards
100.	<i>Cuculus s. saturatus</i> Blyth Himalayan Cuckoo	580	Hills and Foothills	Kashmir to Assam to gangetic plains and Peninsula (both scarce)	Pakistan, Nepal, Bhutan and O-IC.	S. V.	Wellwooded country and orchards
101.	<i>Cuculus p. poliocephalus</i> Latham Small Cuckoo	581	Hills and Foothills	All India (Scattered)	Pakistan, Nepal, Bhutan, O-IC. & P	S. V. (breeding)	Wellwooded country and orchards
102.	<i>Cacomantis merulinus querulus</i> Heine Burmese Plaintive Cuckoo	585	Hills and Foothills	NE. India and Peninsula (occasional)	Nepal, Bhutan Bangladesh & O-IC.	R (Local)	Well wooded country gardens, scrub jungle
103.	<i>Chalcites maculatus</i> (Gmelin) Emerald Cuckoo	586	Hills and Foothills	Garhwal to Manipur	Nepal, Bhutan, Bangladesh, O-M, P (part)	R	Evergreen jungle
104.	<i>Surniculus lugubris dicruroides</i> (Hodgson) Indian Drongo Cuckoo	588	Hills and Foothills	Punjab, H. P. to Manipur to	Nepal, Bhutan, Bangladesh, O-IC.	Uncertain	Secondary forest
105.	<i>Eudynamys s. scolopacea</i> (Linnaeus) Indian Koel	590	Foothills to hills upto c. 1800 m.	All India except Assam	Pakistan, Nepal, Bhutan	R	Edge of the forest and secondary jungle
106.	<i>Eudynamys scolopacea malayana</i> Cabnis & Heine Malay Koel	591	Southern parts	Assam to Tripura	Bangladesh O-M	R	Edge of the forest and secondary jungle
107.	<i>Rhopodytes t. tristis</i> (Lesson) Large Greenbilled Malkoha	593	East to Mishmi Hills	Garhwal to Tripura to Gangetic Plains Sikkim	Bhutan, Bangladesh	R	Dense thickets shrubbery in evergreen jungle

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			A. P.	India	Extralimital		
108.	<i>Rhopodytes tristis saliens</i> Mayr Burmese Large Greenbilled Malkoha	594	SE. parts upto Mishmi Hills	Nagaland	O-M	R	Dense thickets shrubbery in evergreen jungle
109.	<i>Taccocua leschenaultii infuscata</i> Blyth Sirkeer Cuckoo	597	Western parts	Kumaon to Assam to Peninsula	Nepal, Bhutan Bangladesh	R	Covered hillsides wooded country
110.	<i>Otus s. spilocephalus</i> (Blyth) Eastern Spotted Scops Owl	612	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh. Burma	R	Dense evergreen forest
111.	<i>Otus bakkamoena lettia</i> (Hodgson) Burmese Collared Scops Owl	624	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh, Burma, Thailand	R	Steep mountain sides. bare rocky cliffs
112.	<i>Glaucidium b. brodiei</i> (Burton) Collared Pygmy Owlet	635	Hills and Foothills	Punjab, Kashmir to NE. India	O. except Sri Lanka	R	Sub-montane terai
113.	<i>Glaucidium cuculoides austerum</i> Ripley East Himalayan Barred Owlet	640	Hills and Foothills	Nagaland, Sikkim	Bhutan SW. Burma	R	Evergreen jungle in the Foothills
114.	<i>Ninox scutulata lugubris</i> (Tickell) Indian Brown Hawk Owl	642	Hills and Foothills	Sikkim, Assam to Gangetic Plains	Pakistan, Nepal, Bhutan	R	Well wooded country
115.	<i>Athene noctua ludlowi</i> Baler Tibet Owlet	649	Northern parts	Sikkim	Bhutan, Tibet	R	Clay cliffs and bluffs of rivers, stone walls of ruins
116.	<i>Strix aluco nivicola</i> (Blyth) Himalayan Wood Owl	662	Hills and Foothills	H. P. to Mizoram	Pakistan, Nepal, Bhutan O-IC.	R	Deep forest
117.	<i>Caprimulgus indicus hazarae</i> Whistler & Kinnear Himalayan Jungle Nightjar	670	Plains and Foothills	NE. India	Pakistan, Nepal, Bhutan. Bangladesh O-M	R	Scrubbed ravines and hillside jungle
118.	<i>Caprimulgus macrurus albonotatus</i> Tickell Indian Longtailed Nightjar	675	Plains and Foothills	Punjab, H. P. to Nagaland to Gangetic Plains	Nepal, Bhutan	R	Shady wooded Nullahs moist deciduous forest

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			A. P.	India	Extralimital		
119.	<i>Collocalia b. brevirostris</i> (Horsfield) Himalayan Swiftlet	683	Plains and Foothills	U. P. to Mizoram	Nepal, Bhutan, Bangladesh, Burma, Thailand	R	Dark underground caves and hilly groves
120.	<i>Chaetura caudacuta nudipes</i> (Hodgson) White Throated Spinetail Swift	688	Plains and Foothills	Sikkim	Pakistan, Nepal Bhutan	R	Dark underground caves and hilly groves
121.	<i>Apus melba nubifuga</i> Koelz Indian Alpine Swift	694	Plains and Foothills	Himalayas west to east to Peninsula	Nepal, Bhutan, Pakistan	R	Dark underground caves and hilly groves
122.	<i>Apus pacificus leuconyx</i> (Blyth) Himalayan Whiterumped Swift	700	Plains and Foothills	Himalayas west to east to Peninsula	Nepal, Bhutan, Pakistan	R	Dark underground caves and hilly groves
123.	<i>Cypsiurus parvus infumatus</i> (Sclater) Eastern Palm Swift	708	Subansiri	NE. India	O-M	R	Dark underground caves and hilly groves
124.	<i>Hemiprocne longipennis coronata</i> Creasted Tree Swift	709	Plains and Foothills	All India	O-IC. & M	R	Well wooded deciduous forest
125.	<i>Harpacted erythrocephalus helenae</i> Mayr Mishmi Redheaded Trogon	714	Plains and Foothills	Nagaland, Manipur	Bhutan, Burma, to Yunan	R	Well wooded deciduous forest
126.	<i>Harpactes wardi</i> (Kinnear) Ward's Trogon	716	Hills between c. 1500 m and 300 m.		Bhutan, Burma, N. Vietnam	R	Evergreen under growth and bamboo in tall hill forest
127.	<i>Ceryle lugubris guttulata</i> Stejneger East Himalayan Pied Kingfisher	718	Hills and Foothills	Assam, Nagaland, Manipur	Bhutan O-IC.	R	Rocky streams and torrents and rivers
128.	<i>Aleedo hercules</i> Laubmann Great Blue Kingfisher	721	Plains and Foothills	Sikkim, Assam, Nagaland, Manipur, W. Bengal	Bhutan, Bangladesh, Burma, to Hainan	R	Rocky streams and torrents and rivers
129.	<i>Ceyx e. erithacus</i> (Linnaeus) Indian Threetoed Kingfisher	727	Plains and Foothills	NE. India, W. Bengal to Peninsula	Nepal, Bhutan, Bangladesh, O-IC & M	R	Shady jungle streamlets moist deciduous & evergreen bilotope

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
130.	<i>Eurystomus orientalis cyanicollis</i> Vieillot Himalayan Broadbilled Roller	758 (761)	Hills and Foothills	Garhwal to Manipur	Nepal, Bhutan, Bangladesh, O-IC & M	R	Evergreen and deciduous forest
131.	<i>Aceros nipalensis</i> (Hodgson) Rufousnecked Hornbill	771	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh,	R	Tall evergreen forest
132.	<i>Rhyticeros undulatus ticehursti</i> Deignan Assam Wreathed Hornbill	772	Hills and Foothills	NE. India W. Bengal	Bhutan, Bangladesh, O-IC & M	R	Tall evergreen forest
133.	<i>Anthracoceros m. malabaricus</i> (Gmelin) Indian Pied Hornbill	774	Hills and Foothills	Punjab. U. P. W. Bengal, NE. India to Gangetic Plain	Nepal, Bhutan, Bangladesh, O-M	R	Tall evergreen forest
134.	<i>Buceros bicornis homrai</i> Hodgson Great Pied Hornbill	776	Hills and Foothills	Peninsula and Kumaon to NE. India (disjunct)	Nepal, Bhutan, Bangladesh, O-IC. M	R (disjunct)	Tall evergreen forest
135.	<i>Megalaima virens magnifica</i> Baker Assam Great Barbet	778	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh	R	Evergreen and temperate forest
136.	<i>Megalaima virens mayri</i> Ripley Assam Great Barbet	779	Mishmi Hills	Assam		R	Evergreen and temperate forest
137.	<i>Megalaima f. franklinii</i> (Blyth) Goldenthroated Barbet	787	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh, O-M	R	Well wooded forest and garden
138.	<i>Megalaima a. asiatica</i> (Latham) Bluethroated Barbet	788	Plains and Foothills	Kashmir to NE. India	Nepal, Bhutan, Bangladesh, O-IC & M	R	Thin forest, garden
139.	<i>Megalaima haemacephala indica</i> (Latham) Coppersmith	792	Plains and Foothills	All India	O	R	Thin forest, garden
140.	<i>Indicator xanthonotus fulvus</i> Ripley Nepal orangerumped Honeyguide	795	Eastern Parts	Assam. Nagaland, Manipur	NE. Burma	R	Mixed broad leaf and conifer forest

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
141.	<i>Picumus innominatus malayorum</i> Hartert Southern Speckled Piculet	799	Mishmi Hills	W. Ghats, W. Peninsula, W. Bengal, NE. India	Bangladesh, O-M	R	Low jungle and tangled brushwood with bamboos
142.	<i>Sasia o. ochracea</i> Hodgson Himalayan Rufous Piculet	800	Hills and Foothills	Kumaon to Assam	Nepal, Bhutan,	R	Low jungle and tangled brushwood with bamboos
143.	<i>Picus canus gyldenstolpei</i> Baker Assam Blacknaped Green Woodpecker	810	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Open mixed forest
144.	<i>Picus canus kogo</i> (Bianchi) Tibetan Blacknaped Green Woodpecker	811	Siang and Lohit	A. P.	Tibet, China	R	Open mixed forest
145.	<i>Picus f. flavinucha</i> Gould Eastern Large Yellownaped Woodpecker	813	Plains and Foothills	NE. India to Gangetic Plain	Nepal, Bhutan Bangladesh, Burma, Iran	R	Open mixed forest
146.	<i>Picus c. chlorolophus</i> Vieillot East Himalayan Small Yellownaped Woodpecker	815	Plains and Foothills	NE. India to Gangetic Plain	Nepal, Bhutan Bangladesh, Burma, Iran	R	Mixed forest
147.	<i>Dinopium s. shorii</i> (Vigors) Himalayan Goldenbacked Threetoed Woodpecker	824	Plains and Foothills	Garhwal to Manipur	Nepal, Bhutan Bangladesh, Arakan and Burma	R	Tall deciduous and semivergreen forest
148.	<i>Gecinulus g. grantia</i> (Horsfield) Paleheaded Woodpecker	827	Hills and Foothills	NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Tall deciduous and semivergreen forest
149.	<i>Mulleripicus pulverulus mohun</i> Ripley Nepal Grest Slaty Woodpecker	828	Hills and Foothills	U. P. to Assam	Nepal, Bhutan	R	Tall deciduous and semievergreen forest
150.	<i>Hypopicus h. hyperythrus</i> (Vigors) Eastern Rufousbellied Woodpecker	833	Hills and Foothills	Kumaon to NE. India	Nepal, Bhutan, Bangladesh, O-IC	R	Temperate and subtropical forest

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
151.	<i>Picoides d. darjellensis</i> (Blyth) Darjeeling Pied Woodpecker	838, 839	Hills C. 1700-4000 m	NE. India	Nepal, Bhutan, Iran, Burma, N. Vietnam	R	Subtropical wet forest
152.	<i>Picoides c. cathpharius</i> (Blyth) Himalayan Crimsonbreasted Pied Woodpecker	840	Foothills to high hills C. 700-4000 m	Sikkim, Darjeeling	Nepal, Bhutan,	R	Higher evergreen forest
153.	<i>Picoides m. macei</i> (Vicillot) Indian Fulvousbreasted Pied Woodpecker	845	Plains to hills upto c. 2000 m	Himalayas west to east, to Gangetic Plain to Andhra Pradesh	Pakistan, Nepal, Bhutan, Bangladesh, Burma	R	Open forest and wooded country
154.	<i>Picoides tridactylus funebris</i> Verreaux Yellowcrowned Threetoed Pied Woodpecker	855	High hills, Conifer forest		China, Tibet	uncertain	High altitude forest
155.	<i>Blythipicus p. pyrrhotis</i> (Hodgson) Redheaded Bay Woodpecker	857	Hills and Foothills	NE. India	Nepal, Bhutan Bangladesh, Burma, Thailand N. Vietnam	R	Dense evergreen climax forest
156.	<i>Chrysocolaptes lucidus guttacristatus</i> (Tickell) Eastern Larger Goldenbacked Woodpecker	861	Hills and Foothills	NE. India to Gangetic Plain upto M. P.	Nepal, Bhutan Burma, Iran Thailand	R	Wellwooded mixed forest
157.	<i>Serilophus lunatus rubropygius</i> (Hodgson) Nepal Collared Broadbill	864	Hills and Foothills upto 1700 m.	NE. India	Nepal, Bhutan Bangladesh, Arakan, Burma	R	Mixed forest, bamboo jungle, evergreen biotope
158.	<i>Psarisomus d. dalhousiae</i> (Jameson) Longtailed Broadbill	865	Hills and Foothills	Garhwal to NE. India	Nepal, Bhutan, Bangladesh, O-IC.	R	Mixed forest, bamboo jungle, evergreen biotope
159.	<i>Pitta n. nipalensis</i> (Hodgson) Bluenaped Pitta	866	Evergreen forest upto c. 2000 m.	NE. India W. Bengal	Nepal, Bhutan Bangladesh, Arakan, Burma N. Vietnam	R	Forest with densely overgrown clearings

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimal		
160.	<i>Pitta sordida cucullata</i> Hartlaub Greenbreasted Pitta	869	Hills and Foothills upto c. 2000 m	U. P. to NE. India	Nepal, Bhutan, Bangladesh, O-IC.	R	Forest with densely overgrown clearings.
161.	<i>Pitta .c. cyanea</i> Blyth Blue pitta	871	Hills and Foothills upto c. 2000 m	NE. India	Bhutan, Burma, Bangladesh, Thailand, O-IC.	R	Forest with densely overgrown clearings.
162.	<i>Eremophila alpestris elvesi</i> (Blandford) Elwes's Horned Lark	897	High altitude c. 3000-5000 m	Ladakh, Sikkim	(P) (Part)	R	stony hillsides scanty tufts of grass
163.	<i>Aluda gulgula inopinata</i> Bianchi Yunan Small Skylark	906	Hills above c. 1600 m		Tibet, N. Burma, Yunan	W. V.	Upland pastures, grassland and cultivation
164.	<i>Hirundo rustica gutturalis</i> Scopoli Eastern Swallow	917	Plains to hills upto c. 3000 m	All India (Scatterd)	O-I (except Pakistan)	R (breeding)	Open country and cultivation
165.	<i>Hirundo rustica tyleri</i> Jerdon Chestuntbellied Swallow	918	Plains and Foothills	NE. India W. Bengal (Stragglar)	Bhutan, Bangladesh, N. Burma, P (Part)	W. V.	Open country and cultivation
166.	<i>Hirundo d. daurcia</i> Linnaeus Redrumped Swallow	923	Plains and Foothills	Sikkim	P	W. V.	Open country and cultivation
167.	<i>Hirundo daurica nipalensis</i> Hodgson Himalayan Striated Swallow	925	Plains and Foothills	All India	Nepal, Bhutan, Burma, China	R (breeding)	Open country and cultivation
168.	<i>Delichon urbica cashmeriensis</i> (Gould) Kishmir House Martin	931	Plains to hills upto 5000 m.	Himalayas west to east to Gangetic Plain	O-IC & P	R (brdding)	Openvalleys, grassy hillsides and mountain villages
169	<i>Delichon n. nipalensis</i> Moore Nepal House Martin	932	Plains to hills upto 2000 m	Garhwal to NE. India	Nepal, Bhutan, N. Burma, N. Vietnam	R	Open valleys, grassy hillsides and mountain villages

SL. NO.	NAME	HB NO.	DISTRIBUTION		STATUS	HABITAT
			A. P.	India		
170.	<i>Lanius t. tephronotus</i> (Vigors) Eastern Tibet Greybacked Shrike	945	Plains to upto 35000 m	Garhwal to NE. India to Gangetic Plain	O-IC. & P R (breeding)	Open scrub, village cultivation
171.	<i>Lanius c. cristatus</i> Linnaeus Brown Shrike	949	Plains to Foothills	All India	O-I (except Pakistan) & P R	Open scrub, village cultivation
172.	<i>Oriolus xanthornus</i> (Linnaeus) North Indian Blackheaded Oriole	958	Plains to Foothills	Himalayas west to east to Gangetic Plain upto M. P.	Nepal, Bhutan, Bangladesh, O-IC R	Forest and around and cultivation
173.	<i>Oriolus t. traillii</i> (Vigors) Indian Maroon Oriole	961	Foothills to hills upto 2400 m	Himalayas west to east	Nepal, Bhutan, Bangladesh, O-IC R	Forest and around villages and cultivation
174.	<i>Dicrurus leucophaeus hopwoodi</i> Baker Assam Grey Drongo	966	Foothills to hills upto 2100 m.	NE. India W. Bengal	Bhutan, Bangladesh, O-IC R (breeding)	Light hill forest and open wooded country
175.	<i>Dicrurus a. aeneus</i> Vicillot Bronzed Drongo	971	Plains to hills upto 2000 m	U. P. to NE. India to Gangetic Plain to Peninsula	Nepal, Bhutan, O-IC R	Dense moist deciduous and evergreen forest
176.	<i>Dicrurus remifer tectirostris</i> (Hodgson) Lesser Racket-tailed Drongo	972	Foothills upto c. 2000 m	Kumaon to NE. India	Nepal, Bhutan, Bangladesh, O-IC R	Dense moist deciduous and evergreen forest
177.	<i>Dicrurus h. hottentottus</i> (Linnaeus) Haircrested Drongo	973	Foothills upto c. 2000 m	Kalka to NE. India to Gangetic Plain to M. P. to peninsula	Nepal, Bhutan, Bangladesh, O-IC R	Dense moist deciduous and evergreen forest
178.	<i>Dicrurus paradiseus grandis</i> (Gould) Northern Large Racket-tailed Drongo	976	Plains to hills upto 1500 m.	Kumaon to NE. India West to c. 21° N & c. 17° N south	Nepal, Bhutan, Bangladesh, Burma, Yunan, Iran R	Dense moist deciduous and evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
179.	<i>Artamus fuscus</i> Vieillot Ashy Swallow Shrike	982	Plains to hills upto c. 1700 m	All India	Nepal, Bhutan, Bangladesh, O-IC	R	Open Wooded country
180.	<i>Sturnus m. malabaricus</i> (Gmelin) Greyheaded Myna	987	Plains to Foothills	All India	Nepal, Bhutan, Bangladesh,	R	Thinly wooded country and villages
181.	<i>Sturnus contra sordidus</i> Ripley Eastern Pied Myna	1003	Mishmi Foothills Lohit alley	Assam	—	R	Thinly wooded country and villages
182.	<i>Acridotheres t. tristis</i> (Linnaeus) Indian Myna	1006	Plains to Foothills	All India	O-I & IC.	R	Thinly wooded country and villages
183.	<i>Acridotheres fuscus fumidus</i> Ripley Eastern Jungle Myna	1011	Plains to Foothills (Sadiya-Mishmitract)	Nagaland, Assam	—	R	Thinly wooded country and villages
184.	<i>Gracula religiosa intermedia</i> A. Hay Northern Hill Myna	1015	Plains to hills upto c. 2000 m	Almorah to NE. India	Nepal, Bhutan Bangladesh, O-IC.	R	Moist deciduous and evergreen forest
185.	<i>Garrulus glandarius interstinctus</i> Hartert East Himalayan Redcrowned Jay	1021	Hills 1500-3500 m	W. Bengal, & NE. India	Nepal, Bhutan, Bangladesh, China and Burma	R	Tropical zone in winter and temperate in summer
186.	<i>Cissa c. chinensis</i> (Boddaert) Green Magpie	1023	Foothills to hills upto 1200 mm	Garhwal to NE. India	Nepal, Bhutan, Bangladesh,	R	Wet evergreen jungle
187.	<i>Cissa f. flavirostris</i> (Blyth) Eastern Yellowbilled Blue Magpie	1026	Hills c. 1000-3300 m.	Sikkim W. Bengal	Nepal, Bhutan, Burma. Tibet. Yunnan.	R	Wet evergreen jungle
188.	<i>Dendrocitta v. vagabunda</i> (Latham) Northern Tree Pie	1032	Plains to hills upto c. 2000 m	Assam, Manipur, Gangetic plain to 17°N South	Nepal, Bangladesh	R	Village groves and jungle

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			A. P.	India	Extralimital		
189.	<i>Dendrocitta f. frontalis</i> Horsfield Blackbrowed Tree Pie	1035	Abor and Mishmi hills	Sikkim, Assam, Nagaland, Manipur	Bangladesh. Burma	R	Mixed evergreen forest
190.	<i>Dendrocitta formosae himalayensis</i> Blyth East Himalayan Tree Pie	1038 1039	Abor, Miri, Mishmi hills, Tirap	NE. India West Bengal	Nepal, Bhutan, Bangladesh, D-IC	R	Mixed evergreen forest
191.	<i>Nucifraga caryocatactes macella</i> Thayer & Bangs Yunan Nutcracker	1044	Abor and Mishmi hills c. 2000-3000 m	Sikkim	N. Burma & P (Part)	R	Temperate and alpine conifer forest.
192.	<i>Pyrrhonorax graculus digitatus</i> Hemprich & Ehrenberg Alpine Chough	1045	High altitude, 2400-5000 m	Main Himalayas, West to east	P	R (winter)	Temperate high mountain biotope
193.	<i>Pyrrhonorax pyrrhonorax himalayanus</i> (Gould) East Himalayan Redbilled Chough	1047	High altitude, 2400-5000 m	Kumaon to W. Bengal	P	R (winter)	Temperate high mountain biotope
194.	<i>Corvus s. splendens</i> Vieillot Indian House Crow	1049	Plains	All India except Kerala	O-I. except Pakistan & Sri Lanka	R	Human habitation
195.	<i>Corvus macrorhynchos tibetosinensis</i> Kleinschmidt & Weigold Tibetan jungle Crow	1056	Mishmi hills upto c. 3800 m	Sikkim	P (Part)	R	Forest villages
196.	<i>Corvus corax tibetanus</i> Hodgson Tibetan Raven	1060	High altitude upto 5000 m	Ladakh, Garhwal, H. P., Sikkim	P	R	Country above tree-line
197.	<i>Hemipus picatus capitalis</i> (Horsfield) Brownbacked Pied Flycatcher-shrike	1064	Abor and Mishmi hills	H. P. to NE. India	Nepal, Bhutan, O-IC.	R	Scrub jungle and bush in evergreen forest
198.	<i>Pericrocotus b. brevirostris</i> (Vigors) Shortbilled Minivet	1084	Hills c. 1800-2400 m	Sikkim, Assam to Nagaland, Manipur	Nepal, Bhutan, Bangladesh, Burma, Yunan	R	Edges of evergreen forest.

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			A. P.	India	Extralimital		
199.	<i>Pericrocotus ethologus laetus</i> Mayr East Himalayan Longtailed Minivet	1086	Hills between c. 1500 m and 3300 m.	Sikkim, Assam to Gangeti Plains	Nepal, Bhutan, Bangladesh	R	Edges of evergreen forest
200.	<i>Pycnonotus jocosus monticola</i> (Mc Clelland) Assam Redwhiskered Bulbul	1121a	Foothills to hills upto 1100 m.	W. Bengal, Assam	Bhutan, Indochina, Burma	R	Dense jungle and scrub country
201.	<i>Pycnonotus l. leucogenys</i> (Gray) Whitecheeked Bulbul	1125	Western A. P. upto Dibang river, Foothills to c. 2100 m.	Kashmir to Sikkim	Pakistan, Nepal, Bhutan	R	Dense jungle and scrub country
202.	<i>Pycnonotus cafer bengalensis</i> Blyth Bengal Redvented Bulbul	1131	Plains and Foothills	Kumaon to Assam	Nepal, Bhutan, Bangladesh	R	Dense jungle and scrub country
203.	<i>Pycnonotus cafer stanfordi</i> Deignan Burmese Redvented Bulbul	1132	Extreme Eastern A. P.	Assam, Manipur	Burma, Yunan	R	Dense jungle and scrub country
204.	<i>Pycnonotus s. striatus</i> (Blyth) Striated Green Bulbul	1133	Western A. P. as far as Abor hills. c. 1200-2400 m.	Sikkim, Assam, Manipur	Nepal, Bhutan, Burma	R	Dense jungle and scrub country
205.	<i>Pycnonotus striatus arctus</i> Ripley Mishmi Striated Green Bulbul	1134	Dreyi, Mishmi hills	Assam. Naga hills		R	Dense jungle and scrub country
206.	<i>Criniger f. flaveolus</i> (Gould) Whitethroated Bulbul	1140	Plains to Foothills	NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Dense jungle and scrub country
207.	<i>Hypsipetes m. meclellandi</i> Horsfield Rufousbellied Bulbul	1146	Foothills to hills upto 2700 m.	U. P. to NE. India	Nepal, Bhutan, Bangladesh	R	Wellwooded jungle
208	<i>Hypsipetes f. flavalus</i> (Blyth) Brownared Bulbul	1147	Foothills to hills upto	U. P. to NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Wellwooded jungle

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
209.	<i>Hypsipetes madagascariensis psaroides</i> Vigors Himalayan Black Bulbul	1148	Western A. P. upto Dafla hills	Kashmir to Sikkim	Pakistan, Nepal, Bhutan	R	Tall forest
210.	<i>Hypsipetes madagascariensis nigrescens</i> Baker Assam Black Bulbul	1151	A. P. east to Dafla hills	Assam. Nagaland. Manipur	Bangladesh, Burma	R	Tall forest
211.	<i>Pellorneum ruficeps mandellii</i> Blanford Sikkim Spotted Babbler	1153	Western A. P. east to Subansiri River	Sikkim	Nepal, Bhutan	R	Heavy bush. bamboo jungle, secondary growth.
212.	<i>Pellorneun ruficups pectorale</i> Godwin-Austen Mishmi Spotted Babbler	1157	Mishmi hills	Assam		R	Heavy bush, bamboo jungle, secondary growth.
213.	<i>Pellorneun palustre</i> Gould Marsh Spotted Babbler	1160	Miri to Mishmi hills	Assam	Bangladesh	R (endemic)	Tall grass and scrub jungle
214.	<i>Pellorneum a. albiventre</i> (Godwin-Austen) Assam Brown Babbler	1164	South-eastern A. P.	NE. India	Bhutan, Burma Bangladesh	R	Bush, scrub growth, mixed forest.
215.	<i>Pellorneum albbiventre ignotum</i> Hume Mishmi Brown Babbler	1165	Mishmi hills	Assam		R	Bush, scrub growth, mixed forest.
216.	<i>Trichastoma tickelli assamensis</i> (Sharpe) Tickell's Babbler	1166	A. P. Dafla to Mishmi hills	Assam	Bangladesh, Burma	R	Open forest, scrub jungle
217.	<i>Trichastoma a. abbotti</i> (Blyth) Abbott's Babbler	1167	Western A. P. to Mishmi hills	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Thailand.	R	Open forest, scrub jungle
218	<i>Pomatorhinus s. schisticeps</i> Hodgson East Himalayan Scimitar Babbler	1169	Western A. P. to Dibang River	Kumaon to NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Heavy secondary growth, dense bush, undergrowth forest
219	<i>Pomatorhinus schisticeps salimalii</i> Ripley Mishmi Slatyheaded Scimitar Babbler	1170	Tezu, Mishmi hills			R	Heavy secondary growth, dense bush, undergrowth forest

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			A. P.	India	Extralimital		
220.	<i>Pomatorhinus ruficollis godwini</i> Kinnear Sikkim Rufousnecked Scimitar Babbler	1179	Western A. P. to Dafla hills	Nepal, Bhutan	-	R	Heavy secondary growth, dense bush, undergrowth forest
221.	<i>Pomatorhinus erythrogenys maclellandi</i> Godwin-Austen Assam Rustycheeked Scimitar Babbler	1184	Foothills to hills upto 1800 m.	Assam, Nagaland, Manipur	Bangladesh, Burma	R	Heavy secondary growth, dense bush, undergrowth forest
222.	<i>Pomatorhinus h. hypoleucos</i> (Blyth) Large Scimitar Babbler	1185	Dafla hills	Assam	Bangladesh, Burma	R	Dense bamboo, reeds, tall grass jungle
223.	<i>Pomatorhinus f. ferruginosus</i> Blyth Sikkim Coralbilled Scimitar Babbler	1186	Western A. P. east to Dibang river	Sikkim, W. Bengal	Nepal, Burma	R	Dense bamboo, reeds, tall grass jungle
224.	<i>Pomatorhinus ochraceiceps stenorhynchus</i> Godwin-Austen Mishmi Longbilled Scimitar Babbler	1189	Mishmi hills	Sikkim, W. Bengal	Burma	R	Dense bamboo, reeds, tall grass jungle
225.	<i>Xiphirhynchus superciliaris intextus</i> Ripley Assam Slenderbilled Scimitar Babbler	1192	Mishmi hills	Assam, Nagaland, Manipur	Bangladesh	R	Thick bush, bamboo, grassy hillside
226.	<i>Rimator malacoptilus</i> Blyth Longbilled Wren-Babbler	1193	Mishmi hills	Sikkim, Assam, Manipur	Bhutan, Burma	R	Forest undergrowth, dense scrub
227.	<i>Nepothera epilepidota guttaticollis</i> (Ogilvie-Grant) Grant's Wren-Babbler	1196	Mishmi hills	Sikkim, Assam, Manipur	Bhutan, Burma	R	Forest undergrowth, dense scrub
228.	<i>Pnoepyga p. pusilla</i> Hodgson Brown Wren-Babbler	1199	Hills, C. 1500-3000 m	Sikkim, W. Bengal Assam, Nagaland	Nepal, Bhutan, Bangladesh	R	Forest undergrowth, dense scrub
229	<i>Spelaeornis badeigularis</i> Ripley Mishmi Wren-Babbler	1201	Dreyi, Mishmi hills	Sikkim, W. Bengal Assam, Nagaland	-	R	Forest undergrowth, dense scrub

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
230.	<i>Spelaeornis formosus</i> (Walden) Spotted Short-tailed Wren-Babbler	1206	Western A. P. east to Dafla hills	NE. India, W. Bengal	Bhutan, Bangladesh, Burma, Yunnan	R	Forest undergrowth, dense scrub
231.	<i>Sphenocichla h. humei</i> (Mandelli) Sikkim Wedgebilled Wren	1207	Aka hills, Mishmi hills	Sikkim, Assam	-	R (rare)	Forest undergrowth, dense scrub.
232.	<i>Stachyris rufifrons ambigua</i> (Harington) Assam Redfronted Babbler	1209	Foothills and hills	NE. India	Bhutan, Bangladesh,	R	Bamboo and scrub jungle
233.	<i>Stachyris r. ruficeps</i> Blyth Redheaded Babbler	1210	Mishmi hills	Assam, Nagaland, Manipur, Orissa (straggler)	Nepal, Bhutan	R	Bamboo and scrub jungle
234.	<i>Stachyris c. chrysaea</i> Blyth Nepal Goldenheaded Babbler	1212	Western A. P. east to Mishmi hills	NE. India	Nepal, Bhutan, Burma, Yunnan	R	Bamboo and scrub jungle
235.	<i>Stachyris n. nigriceps</i> Blyth Blackthroated Babbler	1214	Western A. P. to Mishmi hills	Sikkim	Nepal, Bhutan	R	Bamboo and scrub jungle
236.	<i>Stachyris nigriceps coel</i> Ripley Mishmi Blackthroated Babbler	1215	Dreyi, Mishmi, hills	Sikkim	-	R	Bamboo and scrub jungle
237.	<i>Paradoxornis unicolor</i> (Hodgson) Brown Parrotbill	1237	Tawang c. 2700-3400 m	Sikkim W. Bengal	Nepal, Bhutan P (Part)	R	High altitude temperate zone
238.	<i>Paradoxornis fulvifrons chayulensis</i> (Kinnear) Tibetan Fulvousfronted Parrotbill	1239	Dafla-Miri hill tracts	Sikkim, W. Bengal	Tibet	R	High altitude temperate zone
239	<i>Paradoxornis nipalensis poliotis</i> (Blyth) Assam orange Parrotbill	1242	Western A. P. east to Mishmi hills	Nagaland, Manipur	Bhutan, Burma, Yunnan	R	High altitude temperate zone
240	<i>Paradoxonis a. atrosuperciliaris</i> (Godwin-Austen) Blackbrowed Parrotbill	1246	Mishmi and Abor-Miri hills	Assam	Bangladesh, Burma, Yunnan	R (uncommon)	Reed-bamboo, high grass, scrub jungle

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
241.	<i>Paradoxonis r. ruficeps</i> Blyth Greater Redheaded Parrotbill	1247	Western A. P. to Dibang river	Sikkim, W. Bengal	Bhutan	R	Reed-bamboo, high grass, scrub jungle
242.	<i>Paradoxornis ruficeps bakeri</i> (Hartert) Assam Redheaded Parrotbill	1248	Mishmi hills east to Dibang river	Nagaland, Manipur, Mizoram	Bangladesh, Burma	R	Reed-bamboo, high grass, scrub jungle
243.	<i>Paradoxornis g. gularis</i> Gray Greyheaded Parrotbill	1249	A. P. west to east c. 900-1500 m	Sikkim, W. Bengal	Bhutan	R	Reed-bamboo, high grass, scrub jungle
244.	<i>Paradoxornis f. flavirostris</i> Gould Blackthroated Parrotbill	1251	Western A. P. to Mishmi hills upto 1900 m	Sikkim, W. Bengal Assam, Nagaland	Nepal, Bhutan, Bangladesh	R	Reed-bamboo, high grass, scrub jungle
245.	<i>Garrulax a. albogularis</i> (Gould) Eastern Whitethroated Laughing Thrush	1274	Western A. P. to Shergaon (27° N, 92°15' E)	Sikkim, Assam	Nepal, Bhutan	R	Dense evergreen forest
246.	<i>Garrulax m. moniliger</i> (Hodgson) Necklaced Laughing Thrush	1275	Western A. P. upto 1400 m.	Sikkim, W. Bengal Assam, Nagaland, Manipur	Nepal, Bhutan, Bangladesh, Burma	R	Dense forest with thick undergrowth
247.	<i>Garrulax monileger badius</i> Ripley Mishmi Necklaced Laughing Thrush	1276	Tezu, Mishmi hills	Sikkim, W. Bengal Assam, Nagaland, Manipur		R	Dense forest with thick undergrowth
248.	<i>Garrulax pectoralis melanotis</i> Blyth Assam Blackgorgeted Laughing Thrush	1278	Western A. P. east to Mishmi hills	Sikkim, W. Bengal Assam, Nagaland, Manipur	Bhutan, Burma, Bangladesh, Yunan	R	Dense forest with thick undergrowth
249.	<i>Garrulax striatus cranbrooki</i> (Kinnear) Assam Striated Laughing Thrush	1282	Western A. P. east to Mishmi hills	Assam, Nagaland,	Bhutan, Burma	R	Dense forest with thick undergrowth

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
250.	<i>Garrulax l. leucolophus</i> (Hardwicke) Himalayan Whitecrested Laughing Thrush	1283	Western A. P. east to Mishmi hills	Chamba to W. Bengal	Bhutan, Nepal	R	Dense forest with thick undergrowth
251.	<i>Garrulax chinensis nuchalis</i> Godwin-Austen Chestnutbacked Laughing Thrush	1285	Mishmi hills	Assam, Nagaland Manipur	Burma	R	Dense forest with thick undergrowth
252.	<i>Garrulax delesserti gularis</i> (McClelland) Yellowbreasted Laughing Thrush	1288	Hills C. 1000-1800m	Assam, Nagaland Manipur	Bhutan, Burma, Bangladesh	R	Dense forest with thick undergrowth
253.	<i>Garrulax r. rufogularis</i> (Gould) Rufouschinned Laughing Thrush	1294	Western A. P. to Mishmi hills C. 600-1900 m	Sikkim, W. Bengal	Nepal, Bhutan	R	Dense forest with thick undergrowth
254.	<i>Garrulax o. ocellatus</i> (Vigors) Whitespotted Laughing Thrush	1299	Tawang, Upper Subansiri, 2100-c 3450 m.)	Sikkim, W. Bengal	Nepal, Bhutan	R	Dense forest with thick undergrowth
255.	<i>Garrulax c. caerulatus</i> (Hodgson) Himalayan Greysided Laughing Thrush	1300	A. P.	Sikkim, W. Bengal	Nepal, Bhutan	R	Dense forest with thick undergrowth
256.	<i>Garrulax ruficollis</i> (Jardine & Selby) Rufousnecked Laughing Thrush	1303	Western A. P. to Mishmi hills upto 1500 m.	W. Bengal NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Dense forest with thick undergrowth
257.	<i>Garrulax lineatus imbricatus</i> Blyth Bhutan Streaked Laughing Thrush	1316	Western A. P. (Tawang) C. 1500-3000m	W. Bengal NE. India	Bhutan, Tibet	R	Edge of the forest, bushes, Grassland, uncultivated area
258.	<i>Garrulax squamatus</i> (Gould) Bluwinged Laughing Thrush	1319	Western A. P. to Mishmi hills	NE. India, W. Bengal	Nepal, Bhutan, Burma, Yunan, N. Vietnam	R	Edge of the forest, bushes, Grassland, uncultivated area

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
259.	<i>Garrulax s. subunicolor</i> (Blyth) Plaincoloured Laughing Thrush	1320	Western A. P. to Mishmi hills	Sikkim, W. Bengal	Nepal, Bhutan, Tibet, Burma, Yunan	R	Edge of the forest, bushes, grassland, uncultivated area
260.	<i>Garrulax affinis bethelae</i> Rand & Fleming Eastern Blackfaced Laughing Thrush	1323	Western A. P. (Tawang) Tsu Valley, Mishmi hills 2400-4200	Sikkim, W. Bengal	Nepal, Bhutan, Tibet	R	Edge of the forest, bushes, grassland, uncultivated area
261.	<i>Garrulax erythrocephalus nigrimentus</i> (Oates) Sikkim Redheaded Laughing Thrush	1326	Western A. P. (Tawang) 2000-3000 m	Sikkim, W. Bengal	Nepal, Bhutan, Tibet	R	Edge of the forest, bushes, grassland, uncultivated area
262.	<i>Garrulax erythrocephalus imprudens</i> Ripley NEFA Redheaded Laughing Thrush	1327	Tidding Saddles, Dreyi, Mishmi hills, Dafla hills			R	Edge of the forest, bushes, grassland, uncultivated area
263.	<i>Garrulax p. phoeniceus</i> (Gould) Himalayan Crimsonwinged Laughing Thrush	1331	Western A. P. to Mishmi hill c. 900-1800 m.	Sikkim, W. Bengal	Nepal, Bhutan	R	Undergrowth, dense thickets of evergreen forest
264.	<i>Leiothrix a. argentauris</i> (Hodgson) Himalayan Silvereared Mesia	1333	Western A. P. to Dibang river upto c. 2100 m.	Garhwal to Sikkim	Nepal, Bhutan	R	Evergreen forest (outskirts)
265.	<i>Leiothrix argentauris vernayi</i> (Mayr & Greenway) Burmese Silvereared Mesia	1334	Mishmi hills	Assam, Nagaland, Manipur	Burma, Yunan	R	Evergreen forest (outskirts)
266.	<i>Leiothrix lutea calipyga</i> (Hpdgson) Eastern Redbilled Leiothrix	1336 1337	Western A. P. to Abor and Miri hills upto 2100 m	NE. India W. Bengal	Nepal, Bhutan, Burma	R	Evergreen forest (outskirts)

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
267.	<i>Myzornis pyrrhoura</i> Blyth Firetailed Myzornis	1338	Pachakshiri	Sikkim, W. Bengal	Nepal, Bhutan, Tibet	R	Temperate forest
268.	<i>Cutia n. nipalensis</i> Hodgson Nepal Cutia	1339	Foothills to hills upto c. 2500 m.	NE. India, W. Bengal	Nepal, Bhutan, Burma	R	Temperate forest
269.	<i>Pteruthius rufiventer</i> Blyth Rufousbilled Shrike-Babbler	1340	Western A. P. to Mishmi hills	NE. India, W. Bengal	Nepal, Bhutan, Burma, Yunan	R (sparse)	Dense, moss covered oak and evergreen
270.	<i>Pteruthius flaviscapis validirostris</i> Koelz Redwinged Shrike Babbler	1341	Western A. P. to Mishmi hills	Kashmir to NE. India	Nepal, Bhutan, Burma, Yunan	R	Dense, moss covered oak and evergreen forest
271.	<i>Pteruthius x. xanthochlorus</i> Gray Eastern Green Shrike Babbler	1343	Tawang c. 2100-3000m	Sikkim, W. Bengal	Nepal, Bhutan	R	Coniferous forest
272.	<i>Pteruthius m. melanotis</i> Hodgson Chestnut throated Shrike Babbler	1345	Western A. P. to Mishmi hills c. 1800-2700m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma to N. Vietnam	R (uncommon)	Humid deep evergreen forest
273.	<i>Gampsorhynchus r. rufulus</i> Blyth Whiteheaded Shrike Babbler	1347	Western A. P. to Mishmi c. 1800-2700m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma to N. Vietnam & O-M	R	Grass jungle and undergrowth in evergreen forest
274.	<i>Actinodura e. egertoni</i> Gould Himalayan Barwing	1348	Western A. P. to Mishmi hills c. 1200-2000m.	Sikkim, W. Bengal	Nepal, Bhutan	R	Dense undergrowth, scrub in evergreen forest
275.	<i>Actinodura egertoni lewisi</i> Ripley Mishmi Barwing	1349	Dreyi, Mishmi hills			R	Dense undergrowth, scrub in evergreen forest

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
276.	<i>Actinodura waldeni daflaensis</i> Godwin-Austen NEFA Barwing	1354	Dafla to Mishmi hills c. 1500-3300m		Tibet	R	Dense undegrowth, scrub in evergreen forest
277.	<i>Minla i. ignotincta</i> Hodgson Redtailed Minla	1357	Hills. c. 1800-3100m.	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh	R	Humid dense evergreen forest
278.	<i>Minla strigula yunnanensis</i> (Rothschild) NEFA Barthroated Siva	1360	Dafla to Mishmi hills c. 1300-3600m.	Nagaland	Tibet, Burma, Yunan, N. Vietnam	R	Humid dense evergreen forest
279.	<i>Minla c. cyanouroptera</i> (Hodgson) Bluewinged Siva	1362	Western A. P. to Mishmi	Nainital to NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, Burma	R	Humid dense evergreen forest
280.	<i>Yuhina castaneiceps rufigenis</i> (Hume) Sikkim Whitebrowed Yuhina	1363	Western A. P. to Subansiri river	Sikkim, W. Bengal	Bhutan	R	Secondary forest with shrubby undergrowth
281.	<i>Yuhina castaneiceps plumbeiceps</i> (Godwin-Austen) Mishmi Whitebrowed Yuhina	1364	Dibang valley to Mishmi hills	Nagaland	Burma, Yunan	R	Secondary forest with shrubby undergrowth
282.	<i>Yuhina bakeri</i> Rothschild Whitenaped Yuhina	1366	Western A. P. to Mishmi hills	Sikkim, W. Bengal, Nagaland, Manipur, Assam.	Nepal, Bhutan, Bangladesh, Burma	R	Secondary forest with shrubby undergrowth
283.	<i>Yuhina f. flavicollis</i> Hodgson Eastern Yellownaped Yuhina	1368 1369	Western A. P. to Abor. Miri hills c. 1800-3000m.	Sikkim, W. Bengal	Nepal, Bhutan	R	Secondary forest with shrubby undergrowth
284.	<i>Yuhina flavicollis rouxi</i> (Oustalet) Assam Yellownaped Yuhina	1370	Mishmi Hills	Nagaland, Manipur Assam	Bangladesh	R	Secondary forest with shrubby undergrowth

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			A. P.	India	Extralimital		
285.	<i>Yuhina o. occipitalis</i> Hodgson Slatyheaded Yuhina	1373	Hills. c. 2400-3900m	Sikkim, W. Bengal	Nepal, Bhutan, Tibet	R	Secondary forest with shrubby undergrowth
286.	<i>Yuhina n. nigrimenta</i> Hodgson Blackchinned Yuhina	1374	Hills.	Garhwal to NE. India, W. Bengal	Nepal, Bhutan, Bangladesh	R	Secondary forest with shrubby undergrowth
287.	<i>Yuhina x. xantholeuca</i> (Hodgson) Whitebellied Yuhina	1375	Foothills to hills	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Thailand	R	Secondary forest with shrubby undergrowth
288.	<i>Alcippe c. chrysotis</i> (Blyth) Himalayan Goddenbreasted Tit-Babbler	1376	High altitude, c. 2400-3000m.	Sikkim, W. Bengal	Nepal, Bhutan	R (Scarce)	Dense growth on steep hillsides
289.	<i>Alcippe cinerea</i> (Blyth) Dusky-Green Tit-Babbler	1378	Hills, c. 1000-2100m.	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, N. Vietnam	R	Dense growth on steep hillsides
290.	<i>Alcippe c. castaneiceps</i> (Hodgson) Chestnut-headed Tit-Babbler	1379	Hills, c. 1500-3000m	Sikkim, W. Bengal, Assam, Nagaland, Manipur	Nepal, Bhutan, Bangladesh, O-M	R	Dense growth on steep hillsides
291.	<i>Alcippe cinereiceps ludlowi</i> (Kinnear) Himalayan Brownheaded Tit-Babbler	1384	Tawang, Upper Subansiri c. 2200-3500m		Bhutan, Tibet	R	Dense growth on steep hillsides
292.	<i>Alcippe r. rufogularis</i> (Mandelli) Himalayan Redthroated Tit-Babbler	1386	Western A. P. to Dibang river	W. Bengal, Sikkim	Bhutan	R	Dense growth on steep hillsides
293.	<i>Alcippe rufogularis collaris</i> Walden Assam Redthroated Tit-Babbler	1387	Plains to Foothills	NE. India	Bangladesh	R	Dense growth on steep hillsides
294.	<i>Alcippe n. nipalensis</i> (Hodgson) Nepal Quaker Babbler	1392	Hills, c. 1500-2400m	Sikkim, W. Bengal, Assam	Nepal, Bhutan	R	Dense growth on steep hillsides

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			A. P.	India	Extralimital		
295.	<i>Alcippe nipalensis commoda</i> Ripley Mishmi Quaker Babbler	1393	Dening, Mishmi, Dafla hills	Nagaland, Manipur, Assam	Bangladesh, Burma	R	Dense growth on steep hillsides
296.	<i>Heterophasia a. annectens</i> (Blyth) Chestnutbacked Sibia	1395	Hills. c. 1200-2300m	NE. India	Bhutan, Burma, Yunan	R (Scarce)	Dense humid evergreen forest
297.	<i>Heterophasia capistrata bayleyi</i> (Kinnear) Eastern Blackcapped Sibia	1398	Western A. P. to Dafla hills c. 1800-2500m	Sikkim. W. Bengal	Nepal, Bhutan	R	Dense humid evergreen forest
298.	<i>Heterophasia pulchella</i> (Godwin-Austen) Beautiful Sibia	1400	Dafla to Mishmi hills c. 1200-2700m	Nagaland, Assam	Tibet, Burma, Yunan	R	Dense humid evergreen forest
299.	<i>Heterophasia p. picaoides</i> (Hodgson) Longtailed Sibia	1401	Western A. P. to Mishmi hill	Sikkim. W. Bengal. Nagaland	Nepal, Bhutan, Burma	R	Dense humid evergreen forest
300.	<i>Muscicapa sibirica cacabata</i> Penar Nepal Sooty Flycatcher	1406	Western A. P. c. 2400-3600m	Sikkim. W. Bengal.	Nepal, Bhutan	R	Open conifer forest
301.	<i>Muscicapa ferruginea</i> (Hodgson) Ferruginous Flycatcher	1410	Upper Subansiri c. 1800-3300m	NE. India W. Bengal	Nepal, Bhutan, Burma, Tibet, O-IC	S. V.	Humid stunted oak forest and dense mixed jungle
302.	<i>Muscicapa parva albicilla</i> Pallas Eastern Redbreasted Flycatcher	1412	Abor, Miri, Dafla hills	All India	O-IC (except Pakistan Sri Lanka) & P	R	Humid stunted oak forest and dense mixed jungle
303.	<i>Muscicapa s. strophilata</i> (Hodgson) Orangeorgeted Flycatcher	1414	Foot to hills	Himalayas west to east to Manipur	Nepal, Bhutan, Bangladesh, Burma, Thailand, SW. China	R	Humid stunted oak forest and dense
304.	<i>Muscicapa monileger leucops</i> (Sharpe) Assam Whiteorgeted Flycatcher	1416	Mishmi hills	NE. India	Bangladesh, Burma	R (uncommon)	Humid stunted oak forest and dense mixed jungle

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			A. P.	India	Extralimital		
305.	<i>Muscicapa h. hyperythra</i> Blyth Rufousbreasted Blue Flycatcher	1417	Western A. P. to Mishmi hills	Kumaon to NE. India, W. Bengal	Nepal, Bhutan, Burma, Thailand, Nepal	R	Humid stunted oak forest and dense mixed jungle
306.	<i>Muscicapa hodgsonii</i> (Verreaux) Rustybreasted Blue Flycatcher	1418	Western A. P. to Mushmi hills	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, SW. China, Thailand	R	Humid stunted oak forest and dense mixed jungle
307.	<i>Muscicapa westermanni australorientis</i> Ripley Eastern Little Pied Flycatcher	1420	Foothills to hills c. 1200-2400 m	Nagaland, Manipur Assam	Bhutan, Bangladesh, Yunnan, N. Vietnam	R (summer)	Humid stunted oak forest and dense mixed jungle
308.	<i>Muscicapa superciliaris aestigma</i> Gray Little Blue-and-White Flycatcher	1422	Hills. c. 2000-2700 m	Sikkim, Assam, Nagaland, Manipur to Gangetic plain	Nepal, Bhutan, Bangladesh Tibet, Yunnan	S. V.	Humid stunted oak forest and dense mixed jungle
309.	<i>Muscicapa leucomelanura minuta</i> (Hume) Eastern Slaty Blue Flycatcher	1424	Hills c. 2000-2700 m	W. Bengal, Sikkim Assam	Nepal, Bhutan, Tibet, Burma	R (summer)	Humid stunted oak forest and dense mixed jungle
310.	<i>Muscicapa g. grandis</i> Blyth Large Niltava	1428	Western A. P. to Mishmi	NE. India W. Bengal	Nepal, Bhutan, O-IC & M	R	Dense humid forest, vicinity of streams
311.	<i>Muscicapa macgrigoriae signata</i> Horsfield Eastern Small Niltava	1430	Plains to hills upto 2000 m.	NE. India	Bhutan	R	Dense humid forest, vicinity of streams
312.	<i>Muscicapa s. sundara</i> (Hodgson) Eastern Rufousbellied Niltava	1432	Plains to hills upto 2000 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Yunnan	R	Dense humid forest, vicinity of streams
313.	<i>Muscicapa vivida oatesi</i> (Salvadori) Rufousbellied Blue Flycatcher	1433	Hills, c. 2100-2700 m	Assam, Manipur, Nagaland	Burma, to Yunnan	R (rare)	Dense humid forest, vicinity of streams
314.	<i>Muscicapa poliogenys cachariensis</i> (Madarasz) Eastern Brook's Flycatcher	1437	Plains to hills upto 1500 m	Nagaland, Assam, Manipur	Burma	R	Dense humid forest, vicinity of streams

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
315.	<i>Muscicapa u. unicolor</i> (Blyth) Pale Blue Flycatcher	1439	Plains to Foothills	Garhwal to NE. India	Nepal, Bhutan, Bangladesh, O-M	R (uncommon)	Dense humid forest, vicinity of streams
316.	<i>Muscicapa r. rubeculoides</i> (Vigors) Bluethroated Flycatcher	1440	Hills upto 2100 m.	Kashmir to Manipur	Nepal, Bhutan, Bangladesh,	(R. S.)	Dense humid forest, vicinity of streams
317.	<i>Muscicapa banyumas magnirostris</i> (Blyth) Largebilled Blue Flycatcher	1441	Miri Hills	Sikkim, Assam Nagaland, Manipur	Nepal, Bangladesh, O-IC	R (rare)	Dense humid forest, vicinity of streams
318.	<i>Muscicapa t. thalassina</i> (Swainson) Verditer Flycatcher	1445	Plains to hills upto 2700 m.	Himalayas west to east to peninsula	Pakistan, Nepal, Bhutan, Bangladesh, W. China	S. V.	Dense humid forest, vicinity of streams
319.	<i>Muscicapella h. hodgsoni</i> (Moore) pugmy Blue Flycatcher	1447	Foothills to hills c. 1800-3000 m	NE. India W. Bengal	Nepal, Bhutan, Yunan, Thailand	R (scarce)	Dense humid forest, vicinity of streams
320.	<i>Culicicapa ceylonensis calochrysea</i> Oberholser Northern Greyheaded Flycatcher	1448	Plains to hills upto 3000 m.	Kashmir to NE. India to Gangetic Plain	Nepal, Bhutan, Sri Lanka	R(S)	Dense humid forest, vicinity of streame
321.	<i>Rhipidura hypoxantha</i> Blyth Yellowbellied Fantailed Flycatcher	1450	Western A. P. to Mishmi Hills	Kashmir to NE. India	Nepal, Bhutan, Bangladesh, Tibet, O-IC	R(S)	Secondary jungle and bushes
322.	<i>Rhipidura albicollis stanleyi</i> Baker NEFA Whitethroated Fantailed Flycatcher	1456	Abor Hills	Assam, Nagaland, Manipuir	Bhutan, Burma	R	Secondary jungle and bushes
323.	<i>Monarcha azurea styani</i> (Hartlaub) Indian Blacknaped Monarch Flycatcher	1465	Plains to Foothills	All India except Western part	Nepal, Bhutan, O-IC.	R	Secondary jungle and bushes
324.	<i>Tesia cyaniventer</i> Hodgson Yellowbrowed Ground Warbler	1471	Hills, above 1800 m	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, Tibet, O-IC	R	Dense shady forest near streams with undergrowth

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
325.	<i>Tesia olivea</i> (Mc Clelland) Slatybellied Ground Warbler	1472	Hills, above c. 1800 m	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Yunan, Vietnam	R	Dense shady forest near streams with undergrowth
326.	<i>Tesia c. castaneocoronata</i> (Burton) Chestnutheaded Ground Warbler	1473	Western A. P. to Mishmi hills above c. 2400m	Kangra to Mizo Hills	Nepal, Bhutan, Bangladesh, Burma	R	Dense shady forest near streams with undergrowth
327.	<i>Cettia p. pallidipes</i> (Blanford) Indian Palefooted Bush Warbler	1474	Foothills to hills	Dehra Dun to khasi Hills, W. Bengal	Nepal, Bhutan, Bangladesh, Burma	R (scarce)	Grass and bush jungle
328.	<i>Cettia f. fortipes</i> (Hodgson) Strongfooted Bush Warbler	1478	Hills c. 2100-3300 m	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma	R(S)	Grass and bush jungle
329.	<i>Cettia f. flavolivacea</i> (Hodgson) Himalayan Aberrant Bush Warbler	1481	Hills, c. 2100-3300 m	Garhwal to Sikkim	Nepal, Bhutan, Tibet	R	Grass and bush jungle
330.	<i>Cettia acanthizoides brunnescens</i> (Hume) Verreaux's Bush Warbler	1484	Hills c. 2400-3300 m	Garhwal to Sikkim	Nepal, Bhutan, Tibet	R (uncommon)	Grass and bush jungle
331.	<i>Cettia brunnifrons muiroides</i> (Koelz) Arunachal Rufouscapped Bush Warbler	1487	Hills, c. 3000-4000 m	Assam, Meghalaya	Tibet, Yunan,	R	Grass and bush jungle
332.	<i>Bradypterus l. thoracicus</i> (Blyth) Eastern Spotted Bush Warbler	1490	Hills, c. 3300-4350 m	Sikkim, W. Bengal	Nepal, Bhutan, Bangladesh, Tibet	R	Heavy grass jungle and reed beds
333.	<i>Bradypterus l. luteoventris</i> (Hodgson) Brown Bush Warbler	1493	Hills, NW. parts of A. P.	Sikkim, Meghalaya, Nagaland	Nepal, Bhutan, Burma, O-IC.	R	Heavy grass jungle and reed beds
334.	<i>Cisticola exilis tytlteri</i> Jerdon Yellowheaded Fantail Warbler	1497	Foothills to hills	Kumaon to NE. India	Nepal, Bhutan, Bangladesh, Burma	R	Tall grass jungle and reed beds
335.	<i>Cisticola juncidis cursitans</i> (Franklin) Streaked Fantail Warbler	1498	Plains to hills	All India	O-I except Sri Lanka	R	Tall grass jungle and reed beds

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			A. P.	India	Extralimal		
336.	<i>Prinia hodsonii rufula</i> Godwin-Austen Northern Ashy-grey Wren-Warbler	1502	Plains to hills upto c. 1200 m.	Himalayas west to east	O-I except to Sri Lanka, Burma	R	Long grassland. grass under groves
337.	<i>Prinia subflava fusca</i> (Hodgson) Eastern Plain Wren-Warbler	1512	Plains to hills upto c. 1200 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh	R	Long grassland. grass under groves
338.	<i>Prinia c. criniger</i> Hodgson Himalayan Brown Hill Warbler	1527	Foothills to hills c. 600-2000 m.	Kashmir to A. P.	Pakistan, Nepal, Bhutan	R	Low bush on grassy slopes and open pine forest
339.	<i>Prinia a. atrogularis</i> (Moore) Himalayan Blackthroated Hill Warbler	1529	Hills c. 1000-2500 m	Sikkim, W. Bengal	Nepal, Bhutan, Tibet	R	Hillsides bush and to terrace cultivation
340.	<i>Orthotomus sutorius luteus</i> Ripley Mishmi Tailor Bird	1537	Tezu, Mishmi Hills	Assam, Nagaland, Manipur		R	Bushy jungle and pine forest
341.	<i>Orthotomus cucullatus coronatus</i> Blyth Goldenheaded Tailor Bird	1541	Western A. P. to Mishmi Hills upto 1800 m	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, Burma	R	Scrub. grass, bamboo jungle, climax forest
342.	<i>Megalurus palustris toklao</i> (Blyth) Striated Marsh Warbler	1548	Plains to Foothills	Himalayas west to east to Gangetic plain to Peninsula	O-I except Sri Lanka	R	Tall grass, thick damp undergrowth and overgrown cultivation
343.	<i>Phylloscopus f. fuligiventer</i> (Hodgson) Smoky Leaf Warbler	1582	Foothills to hills	Sikkim, Assam, W. Bengal	Nepal, Bhutan	W. V.	Dense bushes, grass and sedges
344.	<i>Phylloscopus fuligiventer tibetanus</i> Ticehurst Tibetan Leaf Warbler	1583	Foothills to hills upto 3500 m	-	Tibet	W. V.	Dense bushes, grass and sedges
345.	<i>Phylloscopus fuscatus weigoldi</i> Stresemann Szechuan Dusky Leaf Warbler	1584	Foothills to hills upto 3500 m	-	Nepal, China	W. V.	Dense bushes, grass and sedges

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
346.	<i>Phylloscopus p. pulcher</i> Blyth Eastern Orangebarred Leaf Warbler	1588 1589	Foothills to hills upto 4300 m	NE. India W. Bengal	Nepal, Bhutan, Bangladesh	R (S)	Dense bushes, grass and sedges
347.	<i>Phylloscopus proregulus newtoni</i> Gatetke Eastern Pallas's Leaf Warbler	1596	Foothills to hills upto 4200 m	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma, China	R (S)	Dense bushes, grass and sedges
348.	<i>Phylloscopus m. maculipennis</i> (Blyth) Eastern Greyfaced Leaf Warbler	1599	Foothills to hills upto 3200 m	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Yunan, China	R (S)	Dense bushes, grass and sedges
349.	<i>Phylloscopus t. trochiloides</i> (Sundevall) Eastern Greenish Leaf Warbler	1604	Foothills to hills upto 4200 m.	Garhwal to NE. India to W. Bengal	O-IC	W. V.	Dense bushes, grass and sedges
350.	<i>Phylloscopus reguloides assamensis</i> Hartert Assam Crowned Leaf Warbler	1610	Foothills to hills upto 3600 m.	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh	R (breeding)	Dense bushes, grass and sedges
351.	<i>Seicercus affinis</i> (Hodgson) Allied Flycatcher Warbler	1613	Foothills to hills upto 2300 m.	NE. India, W. Bengal	Nepal, Bhutan, Burma, Vietnam	R (S)	Dense, humid, evergreen forest and bushes
352.	<i>Seicercus b. burkii</i> (Burton) Eastern Blackbrowed Flycatcher-Warbler	1615	Hills, c. 2000-3700 m	NE. India, W. Bengal to Gangetic Plain	Nepal, Bhutan, Bangladesh, O-IC	W. V.	Dense, humid, evergreen forest and bushes
353.	<i>Seicercus x. xanthoschistos</i> (Gray) Nepal Greyheaded Flycatcher-Warbler	1617	Foothills to hills upto c. 2000 m.	Sikkim, W. Bengal	Nepal, Bhutan	R	Dense, humid, evergreen forest and bushes
354.	<i>Seicercus xanthoschistos flavogularis</i> (Godwin-Austen) Mishmi Greyheaded Flycatcher-Warbler	1618	Abor and Mishmi Hills		Burma	R	Dense, humid, evergreen forest and bushes
355.	<i>Seicercus poliogenys</i> (Blyth) Greycheeked Flycatcher-Warbler	1620	Foothills to hills upto c. 3000 m	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, O-IC	R	Dense, humid, evergreen forest and bushes

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
356.	<i>Seicercus c. castaniceps</i> (Hodgson) Chestnut-headed Flycatcher-Warbler	1621	Foothills to hills upto c. 3000 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Yunan, Burma	R	Dense, humid, evergreen forest and bushes
357.	<i>Abroscopus superciliaris drasticus</i> Deignan Arunachal Yellowbellied Flycatcher Warbler	1623	Foothills to hills upto 1500 m.		Burma, Bhutan	R	Mixed bamboo forest, bush scrub jungle
358.	<i>Abroscopus a. albogularis</i> (Horsfield & Moore) Whitethroated Flycatcher-Warbler	1626	Foothills to hills to c. 1200 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh	R	Grassland, streams in deep forest
359.	<i>Regulus regulus sikkimensis</i> R. & A. Meinertzhagen Sikkim Goldcrest	1630	Dafla and Abor Hills, c. 2600-4000 m	Sikkim. W. Bengal	Nepal, Bhutan	R (W-uncommon)	Temperate conifer forest
360.	<i>Rugulus regulus yunnanensis</i> Rippon Yunan Goldcrest	1631	Northern A. P. c. 2200-3500 m		Tibet, Yunan	R	Temperate conifer forest
361.	<i>Brachyperyx s. stellata</i> Gould Gould's Shortwing	1635	Upper Subansiri, c. 2200-4200 m	Kumaon to Sikkim	Nepal, Bhutan, Burma, N. Vietnam	R (S)	Dense fir forest and bush in alpine zone
362.	<i>Brachyperyx leucophrys nipalensis</i> Moore Lesser Shortwing	1639	Hills, c. 1500-3900 m	NE. India, W. Bengal	Nepal, Bhutan, Burma, Yunan	R (scarce)	Forest undergrowth, scrub and reeds
363.	<i>Brachypteryx montana cruralis</i> (Blyth) Whitebrowed Shortwing	1640	Hills, c. 1500-3300 m	NE. India, W. Bengal	Nepal, Bhutan, Burma, Yunan	R	Damp, shady conifer forest
364.	<i>Erithacus pectoralis confusus</i> (Hartert) Eastern Rubythroat	1648	Foothills to hills	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh	W. V.	Dense scrub, hedges and under bush near villages
365.	<i>Erithacus pectoralis tschebaiewi</i> (Przevalski) Tibetan Rubythroat	1649	Foothills to hills upto 4500 m. Northern to southern parts of A. P.	Ladakh to NE. India, W. Bengal	P	R (breeding)	Conifer forest and bush

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
366.	<i>Erithacus brunneus</i> (Hodgson) Indian Blue Chat	1650 1651	Foothills to hills upto 3300 m.	All India (Scattered)	O-I	R (breeding)	Conifer forest and bush
367.	<i>Erithacus cyanurus rufilatus</i> (Hodgson) Eastern Redflanked Bush Robin	1655	Foothills to hills upto 3300 m.	NE. India	P (Part) & O-IC.	R (S)	Dense undergrowth of conifer forest
368.	<i>Erithacus i. indicus</i> (Vieillot) Whitebrowed Bush Robin	1659	Hills c. 2000-3000 m	Garhwal to NE. India	Nepal, Bhutan	R (S)	Mixed sub-alpine forest and bush
369.	<i>Erithacus hyperythrus</i> (Blyth) Rufousbellied Bush Robin	1660	Foothills to hills upto c. 3500 m	Sikkim, Assam, Meghalaya	Nepal, Bhutan, Yunan	R (S)	Mixed sub-alpine forest and bush
370.	<i>Copsychus malabaricus indicus</i> (Baker) Indian Shama	1667	Plains to Foothills	All India except southern peninsule	Nepal, Bhutan, Bangladesh	R	Human habitation and cultivation
371.	<i>Phoenicurus ochruros fufiventer</i> Vieillot Eastern Black Redstart	1672	Foothills to hills c. 4500 m	Himalayas west to east, Gangetic plain to Peninsula	Nepal, Bhutan, Bangladesh	W. V.	Boulder-stream ground and upland villages
372.	<i>Phoenicurus hodgsoni</i> (Moore) Hodgson's Redstart	1674	Foothills to hills upto c. 2800 m.	Nainital to NE. India	P	W. V.	Dry river beds, grassland
373.	<i>Phoenicurus frontalis</i> (Vigors) Bluefronted Redstart	1675	Hills, c. 1500-4500 m	Himalayas west to NE. India	Pakistan, Bhutan, Bangladesh. P (part)	R (S)	Juniper, birch. bush, above tree line
374.	<i>Phoenicurus schisticeps</i> (Gray) Whitethroated Redstart	1676	Hills, c. 2700-4900 m	A. P.	Nepal, W. China, E. Tibet to Kansu	R (S)	Juniper, birch, bush, above treeline
375.	<i>Phoenicurus aureus leucopterus</i> (Blyth) Daurian Redstart	1677	Hills, c. 2800-3700 m	Sikkim, W. Bengal Assam, Nagaland, Manipur	Tibet, Bangladesh P (part)	R (S)	Juniper, birch, bush, above tree line
376	<i>Phoenicurus erythrogaster grandis</i> (Gould) Guldenstandt's Redstart	1678	Hills, c. 3600-5200 m	Ladakh to Sikkim	Pakistan, Nepal, Tibet, P (part)	R (S)	Juniper, birch, bush above tree line

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
377.	<i>Rhyacornis f. fuliginosus</i> (Vigors) Plumbeous Redstart	1679	Foothills to hills upto 3500 m.	Himalayas west to east upto Manipur	Pakistan, Nepal, Bhutan, P (part)	R (S)	Juniper, birch, bush above tree line
378.	<i>Hodgsonius p. phoenicuroides</i> (Gray) Whitebellied Redstart	1680	Foothills to hills upto 3900 m.	Himalayas west to east upto A. P.	Pakistan, Nepal, Yunan	R (S)	Juniper, birch, bush above tree line
379.	<i>Cinclidium leucurum</i> (Hodgson) Whitetailed Blue Robin	1681	Foothills to hills upto c. 2700 m.	NE. India	Nepal, Bhutan, O-IC-IM	R	Shady undergrowth evergreen forest
380.	<i>Grandala coelicolor</i> Hodgson Grandala	1683	Hills, c. 2200-5400 m	Kashmir to A. P.	Yunan to Kansu	R	Alpine meadows
381.	<i>Enicurus s. scouleri</i> Vigors Little Forktail	1684	Hills, c. 1800-3700 m	Kashmir to NE. India	Pakistan, P	R	Torrential rocky streams
382.	<i>Enicurus immaculatus</i> (Hodgson) Blackbacked Forktail	1685	Foothills to hills upto c. 1450 m	Garhwal to NE. India	Nepal, Bhutan, Bangladesh, Burma, Thailand	R	Torrential rocky streams
383.	<i>Enicurus schistaceus</i> (Hodgson) Slatybacked Forktail	1686	Foothills to hills upto c. 1450 m.	Garhwal to NE. India	Nepal, Bhutan, Bangladesh, Burma, Thailand, O-IC.	R	Torrential rocky streams
384.	<i>Enicurus leschenaulti indicus</i> Hartert Leschenault's Forktail	1687	Plains to Foothills	NE. India	Nepal, Bhutan, Bangladesh, Burma, to Vietnam	R	Torrential rocky streams
385.	<i>Enicurus maculatus guttatus</i> Gould Eastern Forktail	1689	Hills, c. 1400-2600 m	NE. India	Nepal, Bhutan, Burma, Yunan	R	Torrential rocky streams
386.	<i>Saxicola torquata przewalskii</i> (Pleske) Tibetan Collared Bush Chat	1696	Foothills to hills upto 1300 m.	Kangra to NE. India	Tibet, W. China	W. V.	High grass, paddy fields

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
387.	<i>Saxicola torquata indica</i> (Blyth) Indian Collared Bush Chat	1697	Plains to Foothills	Himalayas west to east to Gangetic Plain to peninsula	Pakistan, Nepal, Bhutan. Bangladesh.	S. V. (breeding)	High grass, paddy fields
388.	<i>Saxicola jerdoni</i> (Blyth) Jerdon's Bush Chat	1704	Plains to Foothills	NE. India to Gangetic Plain	Bangladesh, Burma. to Vietnam	R	High grass, paddy fields
389.	<i>Saxicola ferrea</i> Gray Dark-grey Bush Chat	1705	Plains to hills upto 3000 m.	Himalayas west to NE. India to Gangetic Plain	Bangladesh, O-IC	R	High grass, paddy fields
390.	<i>Chaimarrornis leucocephalus</i> (Vigors) Whitecapped Redstart	1716	Plains to hills upto 3300 m	Himalayas west to NE. India	p	R	Rocky running streams
391.	<i>Monticola cinclorhynchus</i> (Vigors) Blueheaded Rock Thrush	1723	Plains to hills upto 2200 m	All India (Sporadic)	Pakistan, Nepal, Bhutan, Bangladesh. Burma.	R	Rocky running streams
392.	<i>Monticola rufiventris</i> (Jerdine & Selby) Chestnutbellied Rock Thrush	1724	Plains to hills upto 3000 m	Himalayas west to NE. India	Nepal, Bhutan, Bangladesh, Burma. China, Pakistan,	R	Moist deciduous and evergreen forest
393.	<i>Monticola solitarius pandoo</i> (Sykes) Indian Blue Rock Thrush	1726	Plains to hills upto 3000 m.	All India	O-I. Tibet, Burma	S. V.	Moist deciduous and evergreen forest
394.	<i>Myiophonus caeruleus temminckii</i> (Vigors) Himalayan Whistling Thrush	1729	Western A. P. to Dibang river (c.95°-96°E long)	Himalayas west to NE. India	Pakistan, Nepal, Bhutan, Bangladesh, O-IC & M	R	Ravines, gorges in heavy forest
395.	<i>Myiophonus caeruleus eugenei</i> (Hume) Burmese Whistling Thrush	1730	Mishmi Hills east to Dibang river		Burma to Vietnam	R	Ravines, gorges in heavy forest
396.	<i>Zoothera wardii</i> (Blyth) Pied Ground Thrush	1731	Hills, c. 1200-2400 m	U. P. to Assam to peninsula (disjunct)	Nepal, Sri Lanka	S. V. (uncommon)	Wellwooded ravines

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
397.	<i>Zoothera c. citrina</i> (Latham) Orangeheaded Ground Thrush	1733	Plains to Foothills	All India	O-I	W. V. (partial)	Wellwooded ravines.
398.	<i>Zoothera m. mollissima</i> (Blyth) Eastern Plainbacked Mountain Thrush	1739	Hills, c. 1300-3600 m	NE. India W. Bengal	Nepal, Bhutan, SW. Szechuan	R (S)	Boulder-stream slopes with dense bushes
399.	<i>Zoothera dixonii</i> (Seeborn) Longtailed Mountain Thrush	1740	Hills, c. 1500-4000 m	Himalayas west to NE. India	O-IC & P (Part)	R (S)	Dense fores near timber line
400.	<i>Zoothera d. dauma</i> (Latham) Smallbilled Mountain Thrush	1741	Hills, c. 1500-4000 m.	Himalayas east to west to Gangetic Plain	P (Part)	R (S)	Dense fores near timber line
401.	<i>Zoothera m. monticola</i> Vigors Large Brown Thrush	1745	Foothills to hills upto 2700 m.	Kulu to NE. India. W. Bengal	Nepal, Bhutan, Burma	R (scarce)	Small mountain streams in dense forest
402.	<i>Zoothera marginata</i> Blyth Lesser Brown Thrush	1746	Foothills to hills upto 2100 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh. east to Vietnam	R (uncommon)	Small mountain streams in dense forest
403.	<i>Turdus unicolor</i> Tickell Tickell's Thrush	1748	Hills, c. 1500-1800 m. Subansiri Part	Himalayas west of east to Gangetic Plain to Peninsula upto eastern M. P.	Pakistan, Nepal, Bhutan. Bangladesh	W. V.	Damp wellwooded forest
404.	<i>Turdus albocinctus</i> Royle Whitecollared Blackbird	1749	Foothills to hills upto c. 4200 m.	Chamba to NE. India W. Bengal	Nepal, Bhutan. Tibet to Szechuan	R	Dense humid forest
405.	<i>Turdul bholhoul</i> (Latham) Greywinged Blackbhrd	1750	Foothills to hills upto c. 4200 m.	Chamba to NE. India W. Bengal	Nepal, Bhutan, Tibet to Szechuan, Burma, Thailand	R	Dense humid forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
406.	<i>Turdus merula maximus</i> (Seebohm) Tibetan Blackbird	1752	Hills, c. 3000-4000 m.	Kashmir to Sikkim (Sporadic)	Nepal, Bhutan, Tibet, Afganistan	R	Dense bumid forest
407.	<i>Turdus obscurus</i> Gmelin Dark Thrush	1762	Hills	NE. India, and A. & N. Islands (straggler)	O-IC & P	W. V.	Open forest
408.	<i>Turdus ruficollis atrogularis</i> Jarocki Blackthroated Thrush	1763	Foothills to hills upto 3000 m.	Himalayas west to NE. India	P	W. V.	Open forest
409.	<i>Turdus r. ruficollis</i> Pallas Redthroated Thrush	1764	Foothills to upto 3000 m.	Himalayas west to NE. India	P	W. V.	Open forest
410.	<i>Troglodytes troglodytes nipalensis</i> Blyth Nepal Wren	1771	Hills, c. 2200-4700 m.	Garhwal to Sikkim	Tibet, Bhutan, Nepal	R	Rocks in fir forest near timber line
411.	<i>Cinclus pallasii dorjei</i> Kinnear East Himalayan Brown Deeper	1776	Hills, c. 1000-4000 m.	NE. India	Bhutan, Tibet, N. Burma	R	Torrents, hill stream in dense forest
412.	<i>Prunella collaris nipalensis</i> (Blyth) Eastern Alpine Accentor	1779	Hills, c. 2000-4500 m.	Sikkim, W. Bengal	Nepal, Bhutan, Yunan	R	Rock-stream meadows in dense evergreen forest
413.	<i>Prunella himalayana</i> (Blyth) Altai Accentor	1780	Hills, c. 2000-4500 m.	Kashmir to Sikkim	P	W. V.	Bare rocky hillside
414.	<i>Prunella s. strophciata</i> (Blyth) Eastern Rufousbreasted Accentor	1783	Hills, c. 1300-4200 m.	Sikkim	P (Part)	R	Dense bushy jungle near Timber line
415.	<i>Prunella immaculata</i> (Hodgson) Maroonbacked Accentor	1788	Hills, c. 1000-4200 m	Sikkim, W. Bengal	P (Part)	R (scarce)	Low scrub, boulder- strewn hillsides
416.	<i>Melanochlora s. sultanea</i> (Hodgson) Sultan Tit	1789	Foothils to hills upto 1900 m.	NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, O-I-M.	R	Foothills evergreen forest
417.	<i>Parus m. monticolus</i> Vigors Greenbacked Tit	1799	Foothills to hills upto 2410 m.	Himalayas west to NE. India	Pakistan, Nepal, Bhutan	R	Light deciduous and secondary jungle, scrub, bushes

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			A. P.	India	Extralimital		
418.	<i>Parus d. dichrous</i> Hodgson Eastern Brown Crested Tit	1808	Hills, c. 2700-4000 m		Nepal, Yunan to Szechuan	R	Light deciduous and secondary jungle, scrub, bushes
419.	<i>Parus s. spilonotus</i> Bonaparte Himalayan Blackspotted Yellow Tit	1812	Western A. P. to Mishmi Hills, c. 1600-2400 m	Sikkim, W. Bengal	Nepal, Bhutan, Burma	R	Light deciduous and secondary jungle, scrub, bushes
420.	<i>Sylviparus m. modestus</i> Burton Eastern Yellowbrowed Tit	1814	Hills, c. 1500-3200 m	NE. India	Nepal, Bhutan, Tibet, Szechuan	R	Light deciduous and secondary jungle, scrub, bushes
421.	<i>Aegithalos i. iouschistos</i> (Hodgson) Rufousfronted Tit	1823	Hills, c. 2700-3600 m	-	Nepal, Tibet, SW. Szechuan	R	Light deciduous and secondary jungle, scrub, bushes
422.	<i>Sitta castanea cinnamomeiventris</i> Blyth Eastern Chestnutbellied Nuthatch	1828	Foothills to hills upto 1500 m.	NE. India	Nepal, Bangladesh	R	Deciduous and pine forest
423.	<i>Sitta h. himalayensis</i> Jardine & Setby Himalayan Whitetailed Nuthatch	1834	Hills, c. 1800-2700 m	Chamba to Sikkim	Nepal, Yunan, O-IC	R	Deciduous and pine forest
424.	<i>Sitta formosae</i> Blyth Beautiful Nuthatch	1837	Dafra, Abor and Mishmi Hills	NE. India	Bhutan, Pakistan, east to N. Vietnam	R	Deep forest
425.	<i>Sitta f. frontalis</i> Swainson Velvetfronted Nuthatch	1838	Foothills and hills	All India (Hills)	Nepal, Bhutan, Bangladesh, Burma	R	Deep forest
426.	<i>Tichodroma muraria nepalensis</i> Bonaparte Wall Creeper	1839	Foothills and hills	Himalayas west to A. P.	P	R	Gorges, vertical cliffs near stream
427.	<i>Certhia familiaris mandellii</i> Brooks Mandell's Tree Creeper	1843	Western A. P. upto Twang	Kulu to A. P.	Bhutan	R	Fir forest
428.	<i>Certhia familiaris khamensis</i> Bianchi Tibetan Tree Creeper	1844	Hills, North western A. P. c. 2900-4000 m		Bhutan	R	Fir forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
429.	<i>Certhia d. discolor</i> Blyth Sikkim Tree creeper	1849	Foothills to hills upto 2700 m	Sikkim	Nepal	R	Fir forest
430.	<i>Certhia nipalensis</i> Blyth Nepal Tree Creeper	1851	Western A. P. C. 1500-3500 m	Sikkim	Nepal, Bhutan, N. Burma. NE. Tibet	R	Deciduoud forest and pine woods
431.	<i>Anthus h. hodgsoni</i> Richmond Indian Tree Pipit	1852	Foothills and hills	All India	P (Part)	W. V.	Grassland and cultivation
432.	<i>Anthus roseatus</i> Blyth Vinaceousbreasted Pipit	1865	Hills, c. 1500-4200 m	Himalayas west to east and Peninsula (scattered)	P & O-IC.	S. V. (breeding)	Alpine meadow, Grassy slopes
433.	<i>Motacilla c. caspica</i> (Gmelin) Grey Wagtail	1884	Plains to hills	All India	O-I & P	W. V.	Rocky stream, stony river beds, cultivation
434.	<i>Matacilla alba alboides</i> Hodgson Hodgson's Pied Wagtail	1887	Plains to hills	Himalayas down to Gangetic Plain P & O-M	Nepal, Bhutan, Bangladesh	S. V. (breeding)	River beds, rocky stream, wet field
435.	<i>Dicaeum chrysorrheum chrysochlore</i> Blyth Yellowvented Flowerpecker	1895	Plains to hills	NE. India W. Bengal	Nepal, Bhutan, Bangladesh. east to Vietnam	R	Flowering and fruiting trees, shrubs in the evergreen forest.
436.	<i>Dicaeum concolor olivaceum</i> Walden Plaincoloured Flowerpecker	1901	Plains to hills upto 1800 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh O-IC	R	Bushes, orchards, edges of the evergreen forest
437.	<i>Dicaeum c. cruentatum</i> (Linnaeus) Scarletbacked Flowerpecker	1904	Plains to hills upto 1800 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, O-IC	R	Bushes, orchards, edges of the evergreen forest
438.	<i>Dicaeum i. ignipectus</i> (Blyth) Firebreasted Flowerpecker	1905	Plains to hills 2000 m.	Kashmir to NE. India	Nepal, Bhutan, O-IC	R	Bushes, orchards, edges of the evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
439.	<i>Aethopyga g. gouldiae</i> (Vigors) Mrs. Gould's Sunbird	1919	Hills-high altitudes	Sikkim, W. Bengal	Pakistan, Nepal, Bhutan, east to Szechuan	R	Deciduous and coniferous forest
440.	<i>Aethopyga nipalesis koelzi</i> Ripley Eastern Yellowbacked Sunbird	1924	Dening-Dreyi, Mishmi Hills	Meghalaya, Nagaland, Manipur	Bhutan, Bangladesh, east to N. Vietnam	R	Dense forest, scrub jungle and garden
441.	<i>Aethopyga saturata assamensis</i> (McClelland) Assam Blackreasted Sunbird	1926	Foothills to hills upto c. 1800 m.	NE. India	Bangladesh east to Yunan	R	Dense forest, scrub jungle and garden
442.	<i>Aethopyga siparaja labecula</i> (Horsfield) Assam Yellowbacked Sunbird	1928	Foothills to hills upto c. 1800 m.	NE. India	Bhutan	R	Dense forest, scrub jungle and garden
443.	<i>Aethopyga i. ignicauda</i> (Hodgson) Firetailed Yellowbacked Sunbird	1930	Hills, c. 1200-4000 m	Garhwal to NE. India	Bangladesh to Yunan	R (uncommon)	Coniferous, juniper, dense growth
444.	<i>Arachnothera l. longirostris</i> (Latham) Little Spiderhunter	1931	Plains to Foothills	Peninsula and NE. India (disjunct)	Nepal, Bhutan, Bangladesh, Burma, O-IC	R	Dense, moist evergreen forest with dense undergrowth
445.	<i>Arachnothera m. magna</i> (Hodgson) Streaked Spiderhunter	1932	Plains to hills upto c. 2000 m.	NE. India W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Yunan	R	Dense, moist evergreen forest with dense undergrowth
446.	<i>Zosterops p. palpebrosa</i> (Temminck) Indian White-eye	1933	Plains to Foothills	All India except SW Peninsula	O-IC except Pakistan	R	Forest, groves, garden
447.	<i>Passer montanus tibetanus</i> Baker Tibetan Tree Sparrow	1943	Hills, c. 1800-2700 m		Tibet, Nepal, Bhutan, to Szechuan	R	Edge of the forest, human habitation
448.	<i>Passer montanus hepaticus</i> Ripley Mishmi Tree Sparrow	1944	Tezu, Mishmi hills	Assam, Manipur		R	Edge of the forest, human habitation
449.	<i>Passer rutilans cinnamomeus</i> (Gould) Himalayan Cinnamon Tree Sparrow	1946	Plains to hills	Kashmir, Sikkim to W. Bengal	Pakistan, Nepal, Bhutan, Tibet	R	Light forest, human habitation

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
450.	<i>Lonchura striata acuticauda</i> (Hodgson) Whitebacked Munia	1967	Plains to hills upto c. 1500 m	Garhwal to NE. India, W. Bengal	Nepal, Bhutan, Bangladesh, Burma, Thailand	R	Open country, light scrub-jungle, secondary growth
451.	<i>Mycerobas affinis</i> (Blyth) Allied Grosbeak	1983	Hills, c. 1800-4000 m	Sikkim	P (Part)	R (flock)	Oak, rhododendron, conifer
452.	<i>Mycerobas c. carnipes</i> (Hodgson) Himalayan Whitewinged Grosbeak	1985	Hills, c. 1800-4000 m	Kashmir to A. P.	P (Part)	R (flock)	Juniper, fir forest with bamboo undergrowth
453.	<i>Mycerobas melanozanthos</i> (Hodgson) Spottedwinged Grosbeak	1986	Hills c. 1800-4000 m	Himalayas west to NE. India	Pakistan, Bhutan, Tibet, O-IC	R	Juniper, fir forest with bamboo undergrowth
454.	<i>Carduelis s. spinoides</i> Vigors Himalayan Greenfinch	1990	Hills, c. 1800-4000 m	Himalayas west to A. P.	Pakistan, Nepal, Bhutan	S. V.	Above timber line, cultivation and open forest in winter
455.	<i>Carduelis spinoides taylori</i> (Kinnear) Tibetan Greenfinch	1991	Hills, c. 2800-3100 m		Tibet to Szechuan	R	Cultivation, meadows edge of the forest
456.	<i>Carpodacus n. nipalensis</i> (Hodgson) Nepal Dark Rosefinch	2015	Hills c. 1400-3500 m	Sikkim	Nepal, Bhutan, Tibet	R (flock)	Silver fir, grassy slopes above forest zone, bush and cultivation
457.	<i>Carpodacus rubescens</i> (Blanford) Blanford's Rosefinch	2016	Hills, c. 1800-3600 m	Sikkim	Nepal, Bhutan, Tibet, Yunan, SW. Kansu.	R (flock)	Conifer jungle
458.	<i>Carpodacus thura femininus</i> Rippon Yunan Whitebrowed Rosefinch	2022	Northern A. P. C 1800-3600 m		Tibet, Yunan, W. Szechuan	R (flock)	Hillsides scrub
459.	<i>Carpodacus pulcherrimus waltoni</i> (Sharpe) Tibet Beautiful Rosefinch	2024	Hills, c. 3600-4500 m		Tibet	R (flock)	Terraced cultivation and bush in high valley

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
460.	<i>Carpodacus edwardsii rubicunda</i> (Greenway) Sikkim Large Rosefinch	2025	Hills, c. 2000-3900 m	Sikkim, W. Bengal	Nepal, Bhutan, Yunan, SW. Szechuan	R (flock)	Rhododendron and silver fir forest
461.	<i>Carpodacus p. puniceus</i> (Blyth) Eastern Redbreasted Rosefinch	2031	Hills, c. 2000-3900 m	Sikkim	Nepal, Bhutan, Tibet	R (flock)	Steep rocky and boulder stream slopes in the Alpine zone
462.	<i>Loxia curvirostra himalayensis</i> Blyth Crossbill	2032	Hills, c. 2700-4000 m	H. P. to A. P. Sikkim	W. China to Kansu	uncommon	Conifer forest
463.	<i>Propyrrhula subhimachala</i> (Hodgson) Redheaded Rosefinch	2033	Hills c. 3500-4200 m	NE. India	Nepal, Bhutan, Yunan to Szechuan	R	Rhododendron, juniper, timber line.
464.	<i>Haematospiza sipahi</i> (Hodgson) Scarlet Finch	2034	Hills-High altitude	Sikkim, W. Bengal, Assam, Meghalaya	Nepal, Bhutan, to N. Yunan	R	Pine, Oak, conifer
465.	<i>Pyrrhoplectes epauletta</i> (Hodgson) Goldheaded Black Finch	2035	Hills, c. 1400-3900 m	Simla to A. P.	Nepal, Bhutan, N. Yunan to SW. Szechuan	R	Dense thickets and bush forest
466.	<i>Pyrrhula n. nipalensis</i> Hodgson Nepal Brown Bullfinch	2036	Hills c. 1800-3000 m	Dharmashala to A. P.	Nepal, Bhutan,	R	Dense oak, rhododendron forest
467.	<i>Pyrrhula nipalensis rickelli</i> La Touche Chinese Brown Bullfinch	2037	Hills, c. 2000-4000 m	Nagaland, Manipur	Tibet, SW. Szechuan, N. Burma, Yuna to Vietnam	R	Dense oak, rhododendron forest
468.	<i>Pyrrhula e. erythaca</i> Blyth Beavan's Bullfinch	2038	Hills, c. 2500-3800 m	Sikkim, W. Bengal	Bhutan east to Yunan to Konsu	R	Conifer and rhododendron forest
469.	<i>Emberiza a. aureola</i> Pallas Yellowbreasted Bunting	2046	Foothills to hills upto 1500 m.	Manipur, Meghalaya, Assam, W. Bengal	Bangladesh, Nepal & P	W. V.	Cultivation, grassland, garden

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
470.	<i>Emberiza cia khamensis</i> Sushkin Tibetan Rock Bunting	2053	Hills, c. 2200-4200 m	–	Tibet, Nepal, P (part)	R	High grass, bamboo and scrub jungle
471.	<i>Emberiza f. fucata</i> Pallas Amur Greyheaded Bunting	2055a	Foothills to hills	NE. India, W. Bengal	Nepal, Bhutan, P	W. V.	Hillside bush and swampy ground
472.	<i>Emberiza pusilla</i> Pallas Little Bunting	2056	Foothills to hills	NE. India, W. Bengal	Nepal, Bhutan, P	W. V.	Reeds, grass, rice strubbles
473.	<i>Melophus lathami</i> (Gray) Creasted Bunting	2060	Foothills to hills	All India (scattered)	O-I (except Sri Lanka)	R	Stony bush and grassland

ANNEXURE-II

Additional list of birds said to occur in Arunachal Pradesh from logical inference, collection, reliable sight record and distributional point of view as referred in Ali & Ripley's Hand book of the birds of India and Pakistan, Vols. 1-10 (1968-1974). The following abbreviations have been used. W.V. = Winter visitor; R = Resident; P = Palearctic; O = Oriental; IC = Indochinese; IM = Indomalayan.

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
1.	<i>Ardea insignis</i> Hume Great White-bellied Heron	33	Namdapha N. P.	E. Himalayas through Sikkim east to NE. Assam	Nepal, Bangladesh,	R	Large swamps and lakes
2.	<i>Ardea purpurea manilensis</i> Meyen Eastern Purple Heron	37	—	Elsewhere in India specially NE Parts	Pakistan, Bangladesh, Sri Lanka	R	Reedy swamps and low land marshes
3.	<i>Butorides striatus javanicus</i> (Bonaparte) Little Green Heron	38	Lohit, E. Siang districts	"	Nepal, Bangladesh, Pakistan, Sri Lanka	R	"
4.	<i>Ardeola bacchus</i> (Bonaparte) Chines Pond Heron	43	Changleng districy	Assam, Manipur, Andamans	Bangladesh	R	Moist ditches and paddy field
5.	<i>Gorsachius m. melanolophus</i> (Raffles) Malay or Tiger Bittern	53		Southern Bombay to Western Peninsula, east to Assam, Manipur	IC & IM	R	Swampy forest or reedbeds
6.	<i>Ixobrychus m. minutus</i> (Linnaeus) Little Bittern	55		Along the lower Himalayas	Pakistan, Nepal	R	Swampy and marshy reedbeds
7.	<i>Ixobrychus sinensis</i> (Gmelin) Yellow Bittern	57		Elsewhere in India in suitable biotope	Pakistan, Bangladesh, China to Philippines.	R	"
8.	<i>Ixobrychus flavicollis flavicollis</i> (Latham) Black Bittern	58		"	Pakistan, Bangladesh, Sri Lanka, and IC & IM	R	Wooden swamps, reeds, and bamboo clumps
9.	<i>Ciconia ciconia boyciana</i> Swinhoe Eastern White Stork	64		Assam, W. Bengal & P	Bangladesh, Myanmar	W. V.	Marshy field and low-lying paddy areas
10.	<i>Ciconia nigra</i> (Linnaeus)	65	Changlag, E.Siang	Elsewhere in India	P	W. V.	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
11.	<i>Leptilos dubius</i> (Gmelin) Adjutant Stork	67		"	IC & IM	R	Marshes and lowlands.
12.	<i>Leptilos javanicus</i> (Horsfield) Lesser Adjutant Stork	68	E. Siang district	Southern Bombay, M.P., East to Assam	Nepal, Bangladesh, Sri Lanka	R	Marshes and lowland
13.	<i>Anser anser rubrirostris</i> Swinhoe Eastern Greyleag Goose	81	E. Siang district	Elsewhere in India (sporadic)	P	W. V.	All water bodies
14.	<i>Anser indicus</i> (Latham) Barheaded Goose	82	A. P.	"	Central Asia to Pakistan	R	"
15.	<i>Tadorna tadorna</i> (Linnaeus) Comreon Shelduck	91	—	"	Holarctic	W. V.	"
16.	<i>Anas poecilorhyncha haringtoni</i> (Oates) Spotbill Duck	98	East Siang	Eastern Assam	Myanmar & IC	R	"
17.	<i>Anas platyrhynchos</i> Linnaeus Mallard	100	East Siang district	"	Holarctic	W. V.	"
18.	<i>Anas penelope</i> Linnaeus Wigeon	103	"	"	P	"	"
19.	<i>Aythya ferina</i> (Linnaeus) Common Pochard	108	"	"	"	"	"
20.	<i>Aythya fuligula</i> (Linnaeus) Tufted Pochard	111	East Siang	Eastern Assam	P	W. V.	All water bodies
21.	<i>Cairina scutulata</i> (S. Müller) Whitewinged Wood Duck	116	Lohit, E.Siang, Changlang, W. Kameng, Tirap, Diban valley districts	Northern and Eastern Assam	Greater Sunda Islands	R	Dense seampy forest
22.	<i>Bucephala clangula clangula</i> (Linnaeus) Goldeneye Duck	118	East Siang district	Elsewhere in India (vagrant)	Holarctic	W. V.	All water bodies

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
23.	<i>Mergus merganser orientalis</i> Gould Eastern Merganser	121	Lohit, Tirap, E. Siang, E. Kameng districts	Along the Himalayas east to Assam.	"	"	"
24.	<i>Aviceda j jerdoni</i> (Blyth) Blyth's Baza	125	E. Kameng district	Assam	Sikkim, Bangladesh and IC	R	Tropical evergreen and moist deciduous forest
25.	<i>Accipiter gentilis schvedowi</i> (Menzbier) Eastern Goshawk	136	—	Kashmir east to Assam	Holarctic	Winter Vagrant	"
26.	<i>Accipiter badius dussumieri</i> (Temminck) Shikara	138	E. Kameng district	India except Kerala	Pakistan	R	Tropical evergreen and moist deciduous forest
27.	<i>Accipiter trivirgatus indicus</i> (Hodgson) North Indian Crested Goshawk	144	Siang dist.	Garhwal east to Assam south to Andhra (part)	Nepal & IC	R	"
28.	<i>Accipiter nisus melaschistos</i> Hume Sparrow-Hawk	148	E. Siang, E. Kameng district	Himalayas, Kashmir east to Assam	Pakistan, Nepal, Bhutan, China (Tibet)	R	Forest edges in the lower hills and adjacent plains
29.	<i>Accipiter virgatus affinis</i> Hodgson East Himalayan Besra Sparrow-Hawk	150	Dibang valley district	"	Nepal, China	R	"
30.	<i>Buteo buteo japonicus</i> (Temminck Schlegel) Buzzard	156	Siang dist.	Breed in Ladakh, winters to western Peninsula	P	Resident (part) W.V.	Open high country to 7000 feet
31.	<i>Spizaetus nipalensis nipalensis</i> (Hodgson)	158	East Kameng district	Kashmir east to Assam and Manipur	Nepal, China and IC & IM	R	"
32.	<i>Spizaetus cirrhatus cirrhatus</i> (Gmelin) Crested Hawk-Eagle	161	Mishmi Hills	Sporadically elsewhere in India	Sri Lanka	R	Well wooded areas
33.	<i>Hieraaetus k. kienerii</i> western Peninsule	165	Changlang dist.	Assam, Western Ghats south to	Nepal, Bangladesh, Sri Lanka	R	Moist deciduous and evergreen forest
34.	<i>Aquila pomarina hastata</i> (Lesson) Lesser Spotted Eagle	171	East Siang district	Elsewhere in India	Pakistan, Bangladesh	R	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
35.	<i>Ictinaetus malayensis pereriger</i> (Hodgsoh) Black Eagle	172	Mishmi Hills, Dibang valley, Changlang districts	"	Sri Lanka IC & IM	R	"
36.	<i>Haliaeetus leucoryphus</i> (Pallas) Ring-tailed Fishing Eagle	174	Lohit dist.	"	Nepal, Pakistan, Bangladesh, Myanmar	R	"
37.	<i>Ichthyophaga i. ichthyaetus</i> (Horsfield) Greyheaded Fishing Eagle	175	Lohit, East Siang dist.	"	IC & IM	R	"
38.	<i>Ichthyophaga nana plumbea</i> (Jerdon) Himalayan Greyheaded Fishing Eagle	177	Lohit, Changlang dist.	Elsewhere in India	IC & IM	R	Moist deciduous and evergreen forest
39.	<i>Gyps himalayensis</i> Hume Himalayan Griffon Vulture	181	East Siang district	Western Assam	Central Asia	R	Open country near cliffs between 4000 and 8000 feet
40.	<i>Gyps i. indicus</i> (Scopoli) Longbilled Vulture	182	Lohit dist.	Elsewhere in India	IC	R	Open country in the lower Himalayas
41.	<i>Gypaetus barbatus aureus</i> (Hablizl) Bearded Vulture or Lammergier	188	West Kameng, Dibang Valley districts	Kashmir to Assam	SE. Europe, Africa east to S. Africa	R	On the high Himalayas
42.	<i>Circus c. cyaneus</i> (Linnaeus) Hen Harrier	189	East Kameng district	Northern India	Pakistan, Myanmar and P	W.V.	Plains near lakes and cultivation
43.	<i>Circus melanoleucos</i> (Pennant) Pied Harrier	192	East Siang, East Kameng district	Elsewhere in India	Nepal, Bangladesh, Sri Lanka, IC	W.V.	"
44.	<i>Circaetus g. gallicus</i> (Gmelin) Short-toed Eagle	195	East Siang, East Kameng	" district	P (part), Pakistan, Bangladesh	W.V.	Open deciduous and and scrub and thrown forest country
45.	<i>Spilorrnis cheela cheela</i> (Latham) Crested Serpent Eagle	196	Tirap, East Siang,	Kashmir to Assam East Kameng dists.	Pakistan, IC and IM	R	Forested and open country

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
46.	<i>Pandion h. haliaetus</i> (Linnaeus) Osprey	203	East Kameng Changlang, E Siang dists.	Elsewhere in India	P	W.V.	Near large Water bodies
47.	<i>Microhierax c. caerulescens</i> (Linnaeus) Redbreasted Falconet	204	A.P.	Kumaon to Assam	IM (part) and IC	R	Deciduous and evergreen forest
48.	<i>Microhierax melanoleucos</i> (Blyth) White-legged Falconet	205	Tirap, E. Kameng districts	Assam	Bangladesh IC	R	"
49.	<i>Falco s. severus</i> Horsfield Burmese Hobby	215	Lohit dist.	Assam	Bangladesh	R	"
50.	<i>Falco naumanni</i> Fleischer Lesser Kestrel	221	East Siang dist.	Peninsula	Bangladesh, P (part)	W.V.	Open country
51.	<i>Falco vespertinus amurensis</i> Redlegged Falcon	220	A.P.	Assam (straggler)	P	W.V.	"
52.	<i>Falco tinnunculus objurgatus</i> (Baker) Kestrel	224	East Kameng district				
53.	<i>Francolinus francolinus melanonotus</i> Hume Black Partridge	239		Assam	Nepal, Bangladesh,	R	Edge of the forest and grassland
54.	<i>Francolinus gularis</i> (Temminck) Swamp Partridge	247	East Siang dist.	U.P. to Assam	Nepal, Bangladesh,	R	High cane and elephant grass
55.	<i>Perdica a. asiatica</i> (Latham) Jungle Bush Quail	255	East Siang dist.	Elsewhere in India	–	R	Grassland and semicultivation
56.	<i>Lophophorus impejanus</i> (Latham) Impeyan or Monal Pheasant	290	Tawang dist.	Kashmir to Sikkim	Pakistan, Afganistan, Bhutan, Nepal, Tibet (China)	R	Temperate and coniferous forest
57.	<i>Turdix sylvatica dussumier</i> (Temminck) Bustard Quail	313		Himalayas south to Karnataka. east to Assam	Bangladesh, Myanmar	R	Scrub jungle and cultivation

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
58.	<i>Turnix t. tanki</i> Blyth Indian Yellowlegged Button Quail	314		Elsewhere in India	Pakistan, Nepal	R	Scrub and grassland
59.	<i>Grus grus lilfordi</i> Sharpe Eastern Common Crane	320	Mishmi Hills	"	P	N.V.	Large waterbodies
60.	<i>Amaurornis bicolor</i> (Walden) Elwe's Crake	341	East Siang dist.	Assam	Nepal, Bangladesh	R	Swampy forest edges and paddy field
61.	<i>Amaurornis a. akool</i> (Sykes) Brown Crake	342	Papumpare dist.	Elsewhere in India	Nepal, SE. China	R	Dense swamps
62.	<i>Amaurornis phoenicurus chinensis</i> (Boddaert) Whitebreasted Waterhen	343	East Kameng, U.Subuansiri district	"	Nepal, Myanmar China	R	Swampy tracts and nullahs
63.	<i>Gallicrex cinerea cinerea</i> (Gmelin) Water Cock or Kora	346	U.Subuansiri district	"	Pakistan, Sri Lanka, IC & Im	R	"
64.	<i>Heliopais personata</i> G.R. Gray Masked Finfoot	351	East Kameng district	Assam	Bangladesh, Myanmar, Malaya, Sumatra	R	Lowland jungle swamps and ponds
65.	<i>Hydrophasianus chirurgus</i> (Scopoli) Pheasant-tailed Jacana	358	Lohit, West Kameng dists.	Elsewhere in India	IC & Im	R	"
66.	<i>Metopidius indicus</i> (Latham) Bronzewinged Jacana	359	West Kameng, Papumpare dists.	"	"	R	"
67.	<i>Vanellus cinereus</i> (Blyth) Greyheded Lapwing	365	East Siang district Assam, Andamans	Kashmir, Bihar,	IC	R	Mashy areas
68.	<i>Vanellus i. indicus</i> (Boddaert) Red-wattled Lapwing	366	Lohit, E. Siang districts	Elsewhere in India	Pakistan, Nepal, Bangladesh	R	Semi-cultivation and swamps

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
69.	<i>Vanellus spinosus duvaucelli</i> (Lesson) Spurwinged Plover	369	Elsewhere in A.P.	"	Bangladesh	R	"
70.	<i>Charadrius dubius jerdoni</i> (Legge) Little Ringed Plover	380	Lohit, E. Siang E. Kameng dist.	Elsewhere in India	P	W.V.	Near all water bodies
71.	<i>Limosa limosa melanuroides</i> Gould Black-tailed Godwit	390	E. Siang, E. Memeng dists.	"	P	W.V.	"
72.	<i>Recurvirostra avosetta</i> Linnaeus Avocet	432		Gujarat, Assam (rare)	Pakistan, Sri Lanka, P (part)	W.V.	Mudflats and large swamps
73.	<i>Esacus magnirostris recurvirostris</i> (Cuvier) Great Stone Plover	437	East Siang district	Elsewhere in India (sporadic)	Pakistan, Sri Lanka, Myanmar and IC	R	Inland river beds
74.	<i>Glareola pratincola meldivarum</i> J.R. Foster Large Pratincola	443	Lohit dist.	"	Bangladesh, Sri Lanka	W.V. (part) R (part)	Mudflats, burned grassland
75.	<i>Glareola lactea</i> Temminck Small Indian Pratincole	444	E. Siang, E. Kameng district	Assam, South to Karnata and Kerala	Pakistan, Bangladesh, Sri Lanka	R	Sand banks and river beds
76.	<i>Larus ichthyaetus</i> Pallas Great Blackheaded Gull	453	E. Siang, Changlang districts	Elsewhere in India	Pakistan, Bangladesh, Sri Lanka, Myanmar and P (part)	W.V.	All flowing water bodies
77.	<i>Larus brunnicephalus</i> Jerdon Brownheaded Gull	454	East Siang district	"	"	"	"
78.	<i>Larus r. ridibundus</i> Linnaeus Blackheaded Gull	455	"	"	"	"	"
79.	<i>Sterna aurantia</i> J.E. Gray Indian River Tern	463	E. Siang, E. Kameng dists.	"	Pakistan, Bangladesh	R	"
80.	<i>Sterna acuticauda</i> J.E. Gray Blackbellied Tern	470	East Siang district	"	Pakistan, Bangladesh,	R	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
81.	<i>Rynchops albigollis</i> Swainson Indian Skimmer	484	"	"	Pakistan, Bangladesh, Myanmar, Sri Lanka	R	"
82.	<i>Treron b. bicincta</i> (Jerdon) Orangebreasted Green Pigeon	501		Elsewhere in India	Bangladesh, IC & IM	R	Deciduous forest
83.	<i>Treron p. phoenicoptera</i> (Latham) Bengal Green Pigeon	503		U.P., east to Assam	Bangladesh	R	Deciduous forest, gardens, cultivated areas
84.	<i>Columba punicea</i> Blyth Purple Wood Pigeon	524	Lohit, Dibang Valley dists.	Assam	Bangladesh, Sri Lanka, (vagrant)	R	"
85.	<i>Streptopelia d. decaocto</i> (Fridvaldszky) Ring Dove	534	East Siang West Kameng districts	Elsewhere in India	Pakistan, Bangladesh, Sri Lanka	R	"
86.	<i>Streptopelia tranquebarica humilis</i> (Temminck) Burmese Red Turtle Dove	536	Tirap dist.	Sikkim, Assam	Nepal, Bangladesh, Tibet (China), Andamans.	R	"
87.	<i>Streptopelia chinensis suratensis</i> (Gmelin) Spotted Dove	537	Subansiri district	Elsewhere in India	Pakistan, Nepal	R	Sand banks and river beds
88.	<i>Streptopelia chinensis tigrina</i> (Temminck) Burmese Spotted Dove	539		—	Bangladesh, Myanmar		
89.	<i>Psittacula krameri borealis</i> (Neumann) Rose-ringed Parakeet	549	East Siang district	Panjab, East Assam south to Peninsula to lat 20° N	Pakistan, Nepal, Bangladesh	R	Deciduous forest, forest, gardens, cultivated areas
90.	<i>Psittacula cyanocephala bengalensis</i> (Forster) Blossmheaded Parakeet	557	Lohit dists.	Panjab. east to W. Bengal, south to lat 20°N	"	R	"
91.	<i>Cacomantis merulinus querulus</i> Heire Burmese Plaintive Cuckoo	585	Lohit, E. Kameng districts.	Assam. south to M.P. and Andhra Pradesh	Bangladesh	R	Open country and forest
92.	<i>Chalcites x. xanthorhynchus</i> (Horsfield) Violet Cuckoo	587		Assam and Andamans	IC & IM	R	Wet evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
93.	<i>Centropus s. sinensis</i> (Stephens) Common Crow Pheasant	600	Lohit, E. Siang U. Subansiri districts	Kashmir east to Assam and Manipur	Pakistan, China	R	Grassland, scrub forest
94.	<i>Centropus toulou bengalensis</i> (Gmelin) Lesser Coucal	605	Lohit, east Kameng dists.	Bombay to Bihar, Orissa, Assam, south to Peninsula	Bangladesh	R	Grassland, scrub forest
95.	<i>Tyto capensis longimembris</i> (Jerbon) Grass Owl	608		U.P., east to Assam, south to Peninsula	"	R	Long grassland forest
96.	<i>Phodilus badius saturatus</i> Robinson Sikkim Bay Owl	609		U.P., east to Assam,	Nepal	R	Moist deciduous and tropical evergreen forest
97.	<i>Otus scops sinia</i> (Hodgson) North Indian Scops Owl	616	East Kameng dists.	Garhwal east to Assam south Punjab to Bihar	Bangladesh, Myanmar	R	"
98.	<i>Bubo n. nipalensis</i> Hodgson Forest Eagle-Owl	628	"	Kumaon east to Assam, south to Peninsula	Nepal, Bangladesh	R	"
99.	<i>Glaucidium cuculoides rufescens</i> Baker Burmese Barred Owlet	641		Assam, Manipur	Bangladesh, Myanmar		Moist deciduous and tropical evergreen forest
100.	<i>Ninox scutulata burmanica</i> Hume Burmese Brown Hawk-Owl	643		Assam	Bangladesh	R	"
101.	<i>Athene brama indica</i> (Franklin) Northern Spotted Owlet	650		Himalayas foothills east to Assam, south to Lat 20°N	Pakistan	R	Open country
102.	<i>Athene brama ultra</i> Ripley East Assam Spotted Owlet	651	Tirap, E. Sing, E. Kameng districts.	Assam	—	R	"
103.	<i>Sirix leptogrammica newarensis</i> (Hodgson) Himalayan Brown Wood Owl	658	Dibang Valley districts.	H.P., east to Assam	Nepal	R	Deciduous, moist, temperate, and evergreen forest
104.	<i>Batrachostomus h. hodgsoni</i> (G.R. Gray) Hodgson's Frogmouth	667		W. Bengal, Sikkim Assam	Bhutan, Bangladesh	R	Evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
105.	<i>Caprimulgus a. asiaticus</i> Latham Little Nightjar	680		Elsewhere in India	Pakistan	R	Cultivated and scrub areas
106.	<i>Collocalia m. maxima</i> Hime Black-net Swiftlet	684a					
107.	<i>Chaetura c. cochinchinensis</i> Oustalet Spinetailed Swift	690	East Kameng dists.	Assam	Bangladesh, IC & IM	R	Edge of the forest
108.	<i>Chaetura gigantea indica</i> Hume Large Brownthroated Spinetail Swift	691	Apa Tani Valley	Assam and the Peninsula	Bangladesh and Sri Lanka	R	"
109.	<i>Apus pacificus kanoi</i> (Yamashina) Tibetan Whiterumped Swift	701	Daporijo, U. Subansiri districts	Assam, (W.V.)	Tibet (China)	R	"
110.	<i>Apus affinis subfuscatus</i> (Blyth) Malay House Swift	706	Dibang valley Lohit, E. Siang E. Kameng districts	Assam, Manipur	Bangladesh, Myanmar	R	"
111.	<i>Cypsiuru parvus batasiensis</i> (J. E. Gray)	707	Subansiri districts	Elsewhere in India	Sri Lanka	R	Edge of the forest
112.	<i>Ceryle rudis leucomelanura</i> Reichenbach Lesser Pied Kingfisher	719	Lohit, E. Siang, E. Kameng districts	"	Pakistan, Nepal, Bangladesh, Sri Lanka	R	Open country near water bodies
113.	<i>Alcedo atthis bengalensis</i> Gmelin Indin Small Blue Kingfisher	723	Tirap, Lohit, E. Sing, E. Kameng districts.	"	Pakistan, Nepal, Bangladesh	R	"
114.	<i>Alcedo meninting coltarti</i> Baker Assam Blue-eared Kingfisher	725	Tirap, East Kemeng dists.	Sikkim, Assam south to Peninsula	—	R	"
115.	<i>Pelargopsis c. capensis</i> (Linnaeus) stork-billed Kingfisher	730	Lohit, Changlang, E. Kameng districts.	Kumaon east to Assam, south to Peninsula, M.P. Gujarat	Nepal, Bangladesh	R	"
116.	<i>Halcyon c. coromanda</i> (Latham) Indian Ruddy Kingfisher	733	Tirap, East Kameng dists.	Sikkim, Assam south to Peninsula	Nepal, Bangladesh	R	Forest streams in mixed deciduous and evergreen forest
117.	<i>Halcyon smyrensis perpulchra</i> Madarasz Eastern Whitebreasted Kingfisher	737	Tirap, Dibang valley, E. Siang, E. Kameng dists.	M.P. Andhra Pradesh Orissa, W. Bengal to Assam	Bangladesh	R	Swampy areas and near all water bodies

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
118.	<i>Halcyon pileata</i> (Boddaert) Blackcapped Kingfisher	739	West Kameng dist.	Coastal India, east to Assam	Bangladesh, Sri Lanka	R	"
119.	<i>Merops l. leschenaulti</i> Vieillot Chestnutheaded Bee-eater	744	East Kameng dist.	Elsewhere in India	Nepal, Bangladesh, Sri Lanka	R	Plains and well-wooded country
120.	<i>Merops p. philippinus</i> Linnaeus Bluetailed Bee-eater	748	"	"	Pakistan, Nepal, Bangladesh, Sri Lanka and IC.	R	"
121.	<i>Merops orientalis birmanus</i> Neumann Burmese Small Green Bee-eater	751	—	Assam	Myanmar	R	"
122.	<i>Nyctornis a. athertoni</i> (Jardine & Selby) Blue beared Bee-eater	753	Lohit Changlang E. Kameng districts	Elsewhere in India	Nepal, Bangladesh,	R	Plains and well-wooded country
123.	<i>Coracias benghalensis affinis</i> Horsfield Burmese Roller	757	Elsewhere in A.P.	Sikkim, Assam W. Bengal	Bangladesh, Bhutan	R	"
124.	<i>Upupa epops saturata</i> Lonnberg Tibetan Hoopoe	764	Lohit, Dibang valley E. Siang, E. Kameng districts	Sikkim, Bihar, Orissa, W. Bengal Assam	Tibet (China) Nepal, Bangladesh	R	Open country near water bodies
125.	<i>Upupa epops longirostris</i> Jerdon Burmese Hoopoe	766		Assam	Bangladesh	R	
126.	<i>Ptilolaemus tickelli austeni</i> (Jerdon) Assam Blackbacked Hornbill	770	Tirap, Changlang dists.	Assam	Nepal, Bangladesh	R	Forest streams in mixed deciduous and evergreen forest
127.	<i>Megalaima zeylonica caniceps</i> (Franklin) Large Green Barbet	780	East Siang dist.	Elsewhere in India	Nepal	R	Deciduous and and evergreen forest
128.	<i>Megalaima lineata hodgsoni</i> (Bonaparte) Assam Lineated Barbet	784	E. Siang, E. Kameng dists.	Bihar, W. Bengal, Sikkim, Assam	Nepal	R	Deciduous and and evergreen forest
129.	<i>Megalaima australis cyanotis</i> (Blyth) Blue-eared Barbet	789	E. Kameng dist.	Sikkim, Assam	Bangladesh	R	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
130.	<i>Indicator x. xanthonotus</i> Blyth Nepal Orangerumped Honeyguide	794				R	"
131.	<i>Jynx torquilla chinensis</i> Hesse Chinese Wryneck	797	Lohit dist.	Elsewhere in India	Pakistan, Bangladesh. P	W.V.	Open forest
132.	<i>Picumnus i. innominatus</i> Burton Northern Speckled Piculet	798	Tirap, Lohit, Dibang Valley, Subansiri, E. Kameng dists.	Kumaon, east to Assam	Pakistan, Bhutan, Nepal	R	Wet evergreen forest
133.	<i>Micropterrnus brachyurus phaiiceps</i> Blyth Eastern Rufous Woodpecker	803	Tirap, Dibang Valley, Lohit, E. Kameng districts	E. Himalayas, W. Bengal, Orissa, Andhra Pradesh	Nepal, Bangladesh	R	Deciduous forest
134.	<i>Dinopium b. benghalense</i> (Linnaeus) Lesser Goldenbacked Woodpecker	819	E. Kameng dists.	Panjab, east to Assam, and Gangetic Plain	Nepal, Bangladesh	R	Deciduous and semi-evergreen forest
135.	<i>Mulleripicus pulverulentus harterti</i> Hesse Mishmi Great Slaty Woodpecker	829	Lohit dist.	Assam	Bangladesh	R	Moist evergreen forest
136.	<i>Pecoides cathpharius pyrrohothorax</i> (Hume) Manipur Crimsobreasted Pied Woodpecker	841		Assam. Nagaland. Mizoram, Manipur	—	R	"
137.	<i>Pecoides atratus</i> (Blyth) Stripebreasted Pied Woodpecker	844	E. Siang dist.	—	Bangladesh	R	"
138.	<i>Pecoides canicapillus semicoronatus</i> (Malherbe)	849	E. Kameng dist.	W. Bengal. Sikkim. Assam, Nagaland	—	R	"
139.	<i>Pecoides n. nanus</i> (Vigors) Pigmy Woodpecker	851	Subansiri area	U.P. east to Assam	Pakistan, Nepal, Bangladesh	R	"
140.	<i>Alauda gulgula vernayi</i> Mayr Yunan Small Skylark	909	East Kameng dist. Myanmar	—	Tibet (China) Bhutan.	R	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
141.	<i>Riparia riparia ijimae</i> (Lonnberg) Eastern Collared Sand Martin	911	"	Assam	P	W.V.	Near cliffs or near water
142.	<i>Hirundo smithii filifera</i> Stephens Indian Wiretailed Swallow	921		Elsewhere in India	Pakistan	R	"
143.	<i>Hirundo striolata mayri</i> Hall Redrumped Swallow	929		Assam	Bangladesh	R	"
144.	<i>Lanius schach tricolor</i> (Hodgson) Blackheaded Sbrike	948	Subansiri area Changlang, E. Siang, E. Kameng dists.	U.P. east to Assam W. Bengal, Bihar	Nepal, Bangladesh, Myanmar	R	Gardens and open country
145.	<i>Dicrurus adsimilis albirictus</i> (Hodgson) North Indian Black Drongo	962	East Siang, East Kameng dists	Kashmir, east to Assam, W. Bengal, Rajasthan, Bihar	Pakistan, Nepal, Bangladesh	R	Gardens and open country
146.	<i>Dicrurus annectans</i> (Hodgson) Crowbilled Drongo	970	Tirap dist.	U.P. east to Assam, W. Bengal	Nepal, Bangladesh	R	Deciduous and evergreen forest
147.	<i>Sturnus pagodarum</i> (Gmelin) Brahminy Myna	994	Lohit, Changlang W. Kameng, E. Kameng dist.	Elsewhere in India	Pakistan, Nepal, Sri Lanka	R	Dry and moist deciduous forest
148.	<i>Sturnus contra superciliaris</i> (Blyth) Burmese Pied Myna	1004		Manipur	Myanmar	R	"
149.	<i>Mino coronatus</i> (Blyth) Goldcrested Myna	1014	Tirap dist.	Assam, Manipur	-	R	Deciduous and evergreen forest
150.	<i>Pica pica bottanensis</i> Delessert Blackrumped Magpie	1030		Sikkim	Tibet (Chine) Bhutan	R	Bushes, cultivation and alpine forest
151.	<i>Corvus macrorhynchos levaillantii</i> Lesson Eastern Jungle Crow	1055	Changlang, E. Siang, E. Kameng dist.	Sikkim, W. Bengal Assam	Bangladesh	R	Deciduous and wet evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
152.	<i>Pericrocotus flammeus speciosus</i> (Latham) Scarlet Minivet	1080	Lower Subansiri Lohit, Dibang Valley dists.	H.P., east to Assam	Nepal	R	"
153.	<i>Pericrocotus ethologus mariae</i> Ripley Nagaland Longtailed Minivet	1087		Assam, Manipur, Nagaland, Mizoram	Myanmar	W.V.	Deciduous and evergreen forest
154.	<i>Aegithina t. tiphia</i> (Linnaeus) Common Iora	1098	Lohit, E. Siang, E. Kameng dists.	U.P. east to Assam, W. Bengal	Nepal, Myanmar	R	Cultivation and edge of the forest
155.	<i>Chloropsis aurifrons frontalis</i> (Pelzeln) Leaf Bird	1104	E. Siang, E. Kameng dists.				
156.	<i>Chloropsis h. hardwickii</i> Jardine & Selby Orangebellied Chloropsis	1106	Lohit, Tirap, Changlang, E. Kameng dists.	H.P., east to Assam	Nepal, Bhutan, Bangladesh, IC.	R	Deciduous and evergreen forest
157.	<i>Pycnonotus melanicterus flaviventris</i> (Tickell) Blackcrested Yellow Bulbul	1115	Tirap, W. Kameng, E. U. Subansiri dists.	U.P. east to Assam, south to M. P., Orissa Andhra Pradesh	Nepal, Bangladesh	R	"
158.	<i>Pellorneum ruficeps chameum</i> Deignan Assam Spotted Babbler	1156	E. Kameng dist.	Meghalaya, Nagaland, Manipur	—	R	"
159.	<i>Pellorneum ruficeps ripleyi</i> Deignan Lakhimpur Spotted Babbler	1158	Tirap dist.	Assam	—	R	"
160.	<i>Pomatorhinus schisticeps cryptanthus</i> Hartert Lakhimpur Slatyheaded Scimiter Babbler	1171		Assam	—	R	"
161.	<i>Pomatorhinus ochraceiceps austeni</i> Hume Manipur Longbilled Scimiter Babbler	1190		Assam, Nagaland, Manipur	Myanmar	R	"
162.	<i>Pericrocotus flammeus speciosus</i> (Latham) Scarlet Minivet	1194	Lohit, Tirap dists.	Assam, Manipur	Myanmar	R	Deciduous and evergreen of the forest
163.	<i>Pnoepyga a. albiventer</i> (Hodgson) Eastern Scalybreasted Wren-Babblers	1198		Assam, Sikkim, W. Bengal	Nepal, Bhutan, Tibet, (China), Myanmar	R	Evergreen tropical and temperate forest

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			A. P.	India	Extralimital		
164.	<i>Spelaerornis formosus</i> (Walden) Spotted Short-tailed Wren-Babbler	1204		Assam	–	R	"
165.	<i>Turdoides longirostris</i> (Hodgson) Slenderbilled Babbler	1257		Sikkim, W. Bengal, Assam			
166.	<i>Turdoides s. striatus</i> (Dumont) Bengal Jungle Babbler	1265	E. Siang, dist.	Jammu, east to Assam, south to W. Bengal to Andhra Pradesh	Nepal, Bangladesh	R	Secondary scrub forest and near cultivation
167.	<i>Babax w. waddelli</i> Dresser Giant Babax	1271		Sikkim	Tibet (China)	R	Pines and arid scrub of Tibetan Plateau
168.	<i>Garrulax leucolophus patkaicus</i> Reichenow Assam Whitecrested Laughing Thrush	1284	Tirap, Changlang dists.	Assam	Myanmar	R	Wet, Pine and temperate forest
169.	<i>Garrulax g. galbanus</i> Godwin-Austen Yellowthroated Laughing Thrush	1286	Changlang dist.	Assam, Nagaland, Manipur, Mizoram	–	R	Wet evergreen forest
170.	<i>Garrulax c. cineraceus</i> (Godwin-Austen) Ashy Laughing Thrush	1291		"	Myanmar	R	"
171.	<i>Garrulax rufogularis rufiberbis</i> Koelz Burmese Rofouschinned Laughing Thrush	1295a		Assam, Nagaland	"	R	"
172.	<i>Garrulax rufogularis assamensis</i> (Hartert) Assam Rofouschinned Laughing Thrush	1296		Assam, Nagaland	Myanmar	R	"
173.	<i>Garrulax caerullatus livingstoni</i> Ripley Nagaland Greyheaded Laughing Thrush	1302	Tirap dist.	Nagaland, Manipur	–	R	Subtropical wet forest
174.	<i>Garrulax m. merulinus</i> Blyth Assam Spottedbreasted Laughing Thrush	1304		Meghalaya, Nagaland, Mizoram	–	R	Dense scrub, bamboo clumps, subtropical wet and pine forest
175.	<i>Garrulax merulinus toxostominus</i> (Koelz) Spottedbreasted Laughing Thrush	1305	Tirap dist.	Assam, Nagaland, Manipur	Myanmar	R	"

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			A. P.	India	Extralimital		
176.	<i>Garrulax virgatus</i> (Godwin-Austen) Manipur Streaked Laughing Thrush	1317		"	Myanmar, Bangladesh	R	"
177.	<i>Garrulax a. austeni</i> (Godwin-Austen) Browncapped Laughing Thrush	1318		"	—	R	"
178.	<i>Garrulax henrici</i> (Oustalet) Prince Henry's Laughing Thrush	1321		Assam	Tibet (China)	R	Temperate forest
179.	<i>Garrulax erythrocephalus erythrolaema</i> (Hume) Redheaded Laughing Thrush	1330		Manipur, Nagaland, Mizoram	Myanmar, Bangladesh	R	Subtropical wet forest
180.	<i>Garrulax phoeniceus bakeri</i> (Hartert) Assam Crimsonwinged Laughing Thrush	1332	Tirap dist.	Assam, Manipur, Nagaland	Myanmar, Bangladesh	R	Subtropical wet forest
181.	<i>Leothrix argentauris aureigularis</i> (Koelz) Assam Silvereared Mesia	1333a					
182.	<i>Pteruthius Xanthochlorus hybridus</i> (Harrington) Chin Hills Green Shrike Babbler	1344		Assam, Nagaland,	Myanmar	R	Temperate forest
183.	<i>Actinodura egertoni khasiana</i> Godwin-Austen Assam Barwing	1350	Tirap dist.	Assam, Nagaland, Manipur	—	R	Wet forest
184.	<i>Actinodura egertoni ripponi</i> Ogilvie-Grant Mizo Barwing	1351		Assam	Myanmar	R	"
185.	<i>Actinodura w. waldeni</i> Godwin-Austen Manipur Barwing	1355		Assam, Nagaland, Manipur	—	R	"
186.	<i>Minla strigula cinereigenae</i> (Ripley) Assam Barthroated Siva	1361		Assam, Nagaland	—	R	Dense subtropical wet forest
187.	<i>Yuhina g. gularis</i> (Hodgson) Eastern Stripethroated Yuhina	1372	Apa Tani Valley, Dibang Valley, Tawang dists.	Sikkim, Assam, W. Bengal	Nepal, Bhutan, Tibet (China)	R	"

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			A. P.	India	Extralimital		
188.	<i>Alcippe chrysotis albilineata</i> (Koelz) Assam Goldenbreasted Tit Babbler	1377		Assam, Nagaland, Manipur	–	R	"
189.	<i>Alcippe vinipectus chumbiensis</i> (Kinnear) Eastern Whitebrowed Tit Babbler	1382		Assam, Sikkim, W. Bengal, Assam	Nepal, Bhutan	R	Temperate forest
190.	<i>Alcippe vinipectus austeni</i> (Ogilvie-Grant) Assam Whitebrowed Tit Babbler	1383		Assam, Nagaland, Manipur	–	R	Sub-tropical wet forest
191.	<i>Alcippe cinereiceps manipurensis</i> (Ogilvie-Grant) Manipur Brownheaded Tit Babbler	1385	Tirap, Dibang Valey dists.	–	Myanmar, Yunan	R	"
192.	<i>Alcippe striaticollis</i> (Verreaux) Streakthroated Tit Babbler	1385a	Upper Subansiri dist.				
193.	<i>Alcippe brunnea mandelli</i> (Godwin-Austen) Rufousheaded Tit Babbler	1388		Assam, Nagaland, Manipur	–	R	"
194.	<i>Alcippe poioicephala fusca</i> Godwin-Austen Assam Quaker Babbler	1391		"	Bangladesh, Myanmar	R	Evergreen forest
195.	<i>Heterophasia gracilis</i> (McClelland) Grey Sibia	1399	Apa Tani Valley	Assam, Meghalaya, Manipur, Nagaland	–	R	Sub-tropical wet forest
196.	<i>Muscicapa m. maonileger</i> (Hodgson) Himalayan Whitegorgetted Flycatcher	1415	Subansiri area	Assam, Myanmar	Nepal	R	Deciduous and scrub forest
197.	<i>Muscicapa leucomelamra cerviniventris</i> (Sharpe) Manipur Slaty Blue Flycatcher	1425		Manipur	Myanmar	R	Reeds and high grass
198.	<i>Muscicapa sapphira</i> (Blyth) Sapphireheaded Flycatcher	1426	Tirap dist.	Assam, Sikkim, W. Bengal, Manipur	Nepal, Bhutan, Myanmar, Yunan, IC	R	Light deciduous forest
199.	<i>Muscicapa concreta cyanea</i> (Hume) Whitetailed Blue Flycatcher	1434	Tirap dist.	Assam, Nagaland	Myanmar	R	"
200.	<i>Rhipidura aureola burmanica</i> (Hume) Eastern Whitebrowed Fantail Flycatcher	1453		Assam	Myanmar	R	Scrub and secondary growth

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			A. P.	India	Extralimital		
201.	<i>Rhipidura a. albicollis</i> (Vieillot) Whitethroated Fantail Flycatcher	1455	Lohit dist.	W. Bengal, Sikkim, south to Bihar, U.P.	Nepal, Bangladesh	R	Deciduous and evergreen forest
202.	<i>Terpsiphone paradisi saturator</i> (Solomonsen) East Himalayan Paradise Flycatcher	1463	Tirap, E. Kameng, Suban siri dists.	Sikkim, Assam	Bhutan, Bangladesh	R	"
203.	<i>Cettia m. major</i> (Moore) Himalayan Large Bush Warbler	1479		Garwal, east to Sikkim, Assam	Nepal, Bhutan, Tibet (China)	R	Deciduous and evergreen forest
204.	<i>Prinia r. rufescens</i> Blyth Rufous Wren Babbler	1501		Sikkim, W. Bengal, Assam	Nepal, Bhutan, Bangladesh	R	Evergreen forest
205.	<i>Primia gracilis stevensi</i> Hartert Eastern Streaked Wren Babbler	1509		Assam	Bangladesh	R	"
206.	<i>Prinia socialis inglisi</i> Whistler & Kinnear Assam Ashy Wren Babbler	1516		Assam	Nepal, Bhutan, Bangladesh	R	"
207.	<i>Prinia f. flaviventris</i> (Delessert) Assam Yellowbellied Wren Babbler	1525	Subansiri	W. Bengal, Assam	"	R	"
208.	<i>Prinia criniger catharria</i> Reichenow Assam Brown Hill Warbler	1528		Assam, Nagaland, Manipur	Myanmar	R	"
209.	<i>Prinia albogularis khasiana</i> (Godwin-Austen) Blackthroated Hill Warbler	1530		"	"	R	"
210.	<i>Graminicola b. bengalensis</i> Jerdon Grass Warbler	1534		W. Bengal, Assam, Manipur	Nepal, Bhutan, Bangladesh	R	Dense grass and reeds
211.	<i>Locustella naevia straminea</i> Seebohm Eastern Grasshopper Warbler	1545		Elsewhere in India	Pakistan P	W.V.	Grassland damp pushy places
212.	<i>Chaetornis striatus</i> (Jerdon) Bristled Grass Warbler	1547		"	Nepal, Bhutan	R	"
213.	<i>Acrocephalus stentoreus brunnescens</i> (Jerdon) Indian Great Reed Warbler	1550		"	Pakistan P	W.V.	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
214.	<i>Acrocephalus stentoreus amya</i> Baker Assam Great Reed Warbler	1552		Assam	P	"	"
215.	<i>Acrocephalus dumetorum</i> Blyth Blyth's Reed Warbler	1556		Elsewhere in India	P	"	"
216.	<i>Acrocephalus a. agricola</i> (Jerdon) Indian Paddyfield Warbler	1557		"	P	"	"
217.	<i>Acrocephalus concinens stevensi</i> Baker Assam Bluntwinged Paddyfield Warbler	1560		Assam	Bangladesh, Myanmar, IC	W.V.	Grassland dump bushy places
218.	<i>Hippolais c. caligata</i> (Lichtenstein) Siberian Booted Tree Warbler	1562		Elsewhere in India	P	W.V.	Bushes and grass land
219.	<i>Phylloscopus a. affinis</i> (Tickell) Tickell's Leaf Warbler	1579	East Kameng dist.	"	Pakistan, Nepal, Bhutan, Bangladesh	R	Gardens, scrub, edge of the forest
220.	<i>Phylloscopus fuscatus mariae</i> Ripley Manipur Dusky Leaf Warbler	1585					
221.	<i>Phylloscopus inornatus mandellii</i> (Brooks) Yellowbrowed Leaf Warbler	1591	A.P. upto 2000 m	Sikkim, W. Bengal, Assam	Tibet (China) Yunan, Myanmar	W.V.	Deciduous and evergreen forest
222.	<i>Phylloscopus i. inornatus</i> (Blyth) Siberian Yellowbrowed Leaf Warbler	1592	East Kameng dist.	"	Bhutan, Bangladesh		Open forest, gardens and scrub
223.	<i>Phylloscopus magnirostris</i> Blyth Largebilled Leaf Warbler	1601	Mishmi Hills	Elsewhere in India	Pakistan, Afganistan, Nepal, Bhutan, Tibet (China)	R	Tropical and temperate forest
224.	<i>Phylloscopus c. cantator</i> (Tickell) Blackbrowed or Yellowfaced Warbler	1612	East Kameng dist.	Sikkim, Assam, Bihar, W. Bengal	Bangladesh	R	Open forest, gardens, scrub
225.	<i>Seicercus xanthoschistos tephrodinas</i> Sick Assam Greyheaded Flycatcher Warbler	1619		Assam, Nagaland, Manipur	Myanmar	R	Evergreen and Pine forest

SL. NO.	NAME	HB NO.				STATUS	HABITAT
				DISTRIBUTION			
			A. P.	India	Extralimal		
226.	<i>Abroscopus superciliaris flaviventris</i> (Jerdon) Sikkim Yellowbellied Flycatcher Warbler	1622		Sikkim, W. Bengal, Assam	Bhutan	R	"
227.	<i>Abroscopus schisticeps flavimentalis</i> (Baker) Assam Blackfaced Flycatcher-Warbler	1625	Apa Tani Valley	Assam, Manipur	Bhutan, Tibet, (China)	R	Sub-tropical wet forest
228.	<i>Abroscopus h. hodgsoni</i> (Moore) Broadbilled Flycatcher Warbler	1627	L. Subansiri, E. Kameng dists.				
229.	<i>Leptopoecile elegans</i> Przevalski Crested Tit-Warbler	1632			Tibet (China)	R	Temperate and alpine forest
230.	<i>Leptopoecile sophiae obscura</i> Przevalski Tibeten Tit-Warbler	1634		Sikkim, Assam	Nepal, Bhutan, Tibet, (China)	R	"
231.	<i>Brachypteryx hyperythra</i> Jerdon & Blyth Rustybilled Shortwing	1636	Dafla Hills, Changlang, Lohit dists.	W. Bengal, Assam, Nagaland	—	R	Temperate forest
232.	<i>Erithacus calliope</i> (Pallas) Rubythroat	1643		Assam, Nepal, W. Bengal, south to M. P.	Bhutan, Nepal, Bangladesh	W.V.	Grass jungle, reeds, cultivation
233.	<i>Erithacus pectardens</i> (David) Firethroat	1652		Sikkim, Assam	Bhutan, Tibet (China)	W.V.	"
234.	<i>Erithacus c. chrysaeus</i> (Hodgson) Eastern Golden Bush Robin	1658		Kumaon, east to Assam	Nepal, Bhutan, Tibet (China)	R	Temperate forest
235.	<i>Copsychus saularis erimelas</i> Oberholser Assam Magpie Robin	1663	Lohit, E. Siang Changlang, E. Kameng dists.	Assam, W. Bengal	Bhutan, Bangladesh, Myanmar	R	Gardens and semi-cultivation
236.	<i>Cochoa purpurea</i> Hodgson Purple Cochoa	1690	Lower Subansiri dist.	Almora, east to Assam	Nepal	R	Temperate and Pine forest
237.	<i>Cochoa viridis</i> Hodgson Green Cochoa	1691	Papumpare dist.	Kumaon, east to Assam, Nagaland, Manipur	Nepal	R	Temperate forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
238.	<i>Saxicola caprata burmanica</i> Baker Burmese Pied Bush Chat	1701		Elsewhere in India	Bangladesh	R	Semi-cultivation, open scrub
239.	<i>Turdus d. dissimilis</i> Blyth Blackbreasted Thrush	1747		NE. India	Bangladesh	R	Tropical and evergreen forest
240.	<i>Turdus rubrocanus gouldii</i> (Verreaux) Greyheaded Thrush	1759	Changlang dist.	Assam	Tibet (China) Myanmar (once)	W.V.	Pine and temperate forest
241.	<i>Turdus kessleri</i> Przevalski Kessler's Thrush	1760		Sikkim (straggler)	Tibet (China)	W.V.	"
242.	<i>Cinclus cinclus przewalskii</i> Bianchi Eastern Whitebreasted Dipper	1774			Bhutan, Tibet (China)	R	Streams
243.	<i>Prunella rubeculoides</i> (Moore) Robin Accentor	1781		Kashmir, east to Sikkim, W. Bengal	Pakistan, Nepal, Tibet (China)	R	Open bare ground
244.	<i>Parus major vauriei</i> Ripley Lakhimpur Grey Tit	1796	East Kameng dist.	Assam	-	R	Tropical and deciduous forest
245.	<i>Parus hypermelas</i> (Berezovski & Bianchi) Blackbibbed Tit	1801		Nagaland, Manipur	Myanmar	R	Tropical and deciduous forest
246.	<i>Parus ater aemoidius</i> Hodgson Himalayan Coal Tit	1803		W. Bengal, Sikkim, Assam	Nepal, Bhutan Tibet (China)	R	Temperate and alpine forest
247.	<i>Parus rubidiventris beavani</i> (Jerdon) Sikkim Black Tit	1806		"	"	R	"
248.	<i>Parus s. spilonotus</i> Burmese Blackspotted Yellow Tit	1812a	Apa Tani Valley				
249.	<i>Aegithalos concinnus rubricapillus</i> (Ticehurst) Eastern Redheaded Tit	1819	Abor-Miri Hills, Mishmi Hills, Apa Tani Valley	W. Bengal, Sikkim, Assam	Nepal, Bhutan	R	Temperate forest
250.	<i>Aegithalos concinnus manipurensis</i> (Hume) Manipur Redheaded Tit	1820	Tirap dist.	Assam, Nagaland, Manipur, Mizoram	-	R	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimal		
251.	<i>Sitta europaea nagaensis</i> Godwin-Austen Naga Nuthatch	1826		Assam, Nagaland, Manipur, Mizoram	Myanmar	R	Sub-tropical forest
252.	<i>Sitta leucopsis przewalskii</i> Berezovski & Bianchi Whitecheeked Nuthatch	1833		—	Tibet (China)	R	Temperate and alpine forest
253.	<i>Sitta himalayensis australis</i> Koelz Assam Whitetailed Nuthatch	1835		Assam, Nagaland, Manipur, Mizoram	—	R	"
255.	<i>Certhia discolor manipurensis</i> Hume Manipur Tree Creeper	1850		Nagaland, Manipur and Assam	Chin Hills east through Burma, Laos and Vietnam	R	Deciduous forest, occasionally pine woods
255.	<i>Anthus novaeseelandiae rufulus</i> (Vieillot) Puddyfield Pipit	1859		Assam, Sikkim and W. Bengal	Nepal, Bhutan, Burma & Thailand	R	Open grass and stony country, fallow fields and edges of cultivation
256.	<i>Anthus godlewskii</i> (Taczanowskii) Blyth's Pipit	1863		Northeastern India & India Peninsula	Bhutan, Nepal, & Bangladesh	W.V.	"
257.	<i>Motacilla flava thumbergi</i> Billberg Greyheaded Yellow Wagtail	1875	W. Kameng dist	Throughout India	Pakistan	W.V.	Pastures & moist grassy land
258.	<i>Motacilla alba leucopsis</i> Gould Whitefaced Pied Wagtail	1888	"	Northeastern India	Nepal & Bangladesh	W.V.	Dry riverbeds, streams, ponds, roads & cultivation
259.	<i>Motacilla maderaspatensis</i> Gmelin Large Pied Wagtail	1891	Lohit dist.	Entire Indian peninsula from Himalayan Foothills to Kanyakumari	Bangladesh	R	Smooth-running rocky streams & dammed irrigation tanks
260.	<i>Dicaeum a. agile</i> (Tickell) Thickbilled Flowerpecker	1892		Indian Peninsula	Nepal, Bhutan, Bangladesh & Burma	R	Orchards, Village grooves and suburban gardens
261.	<i>Dicaeum melanoanthum</i> (Blyth) Yellowbellied Flowerpecker	1896	A.P.	Northeastern India	Burma, Thailand, & Vietnam	R	Tall trees in open forest & clearings in dense forest
262.	<i>Dicaeum trigonostigma rubropygium</i> Baker Orangebilled Flowerpecker	1898	A.P.	Assam & W. Bengal	Burma, Malaysia, Indonesia and Philippines	R	Glades and margins of evergreen forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
263.	<i>Dicaeum e. erythrorhynchos</i> (Latham) Tickell's Flower pecker	1899	A.P.	Himalayan Foothills to Indian Perinsula	Nepal & Bhutan	R	Deciduous and orchards
264.	<i>Anthreptes singalensis rubinigensis</i> (Baker) Rubycheck	1906	E. Kameng dist.	NE. India	Nepal, Bhutan and Bangladesh	R	Open forest and scrub jungle in dense evergreen forest
265.	<i>Nectarinia a. asiatica</i> (Latham) Purple Sunbird	1917	E. Siang dist.	All India	Sri Lanka	R	light deciduous forest, semi cultivation and gardens
266.	<i>Nectarinia asiatica intermedia</i> (Hume) Assam Purple Sunbird	1918	Lower Subansiri dist.	Assam	Bangladesh	R	"
267.	<i>Aethopyga gouldiae isolata</i> Baker Manipur Yellowbacked Sunbird	1920	A.P.	Assam, Nagaland and Manipur	Bangladesh	R	Evergreen forest and deciduous scrub jungle
268.	<i>Aethopyga gouldiae dabryi</i> (Verreaux) Darby's Sunbird	1921		Assam, Nagaland and Manipur	Burma and Western China	W.V.	Evergreen forest and deciduous scrub jungle
269.	<i>Passer montanus malaccensis</i> Dubois Malay Tree Sparrow	1942		NE. India	Nepal, Bhutan and Bangladesh	R	Villages and fields
270.	<i>Passer rutilans intensior</i> Rothschild Yunnan Cinnamon Tree Sparrow	1947		NE. India	Yunnan, N. Vietnam and Laos	R	Forest, Jungle. Garden and cultivation near Village
271.	<i>Ploceus philippinus burmanicus</i> Ticehurst Eastern Baya	1959		Assam, E. Bihar and West Bengal	Nepal, Bhutan and Bangladesh	R	Open country near cultivation
272.	<i>Ploceus beghalensis</i> (Linnaeus) Blackthroated Weaver Bird	1961		North and Northeast India, Punjab through Gangetic Plain	Bangladesh	R	Reed swamps and grassy plains
273.	<i>Ploceus manyar peguensis</i> Baker Streaked Weaver Bird	1963		E. Bihar, West Bengal and Assam	Bangladesh & Burma	R	Reed swamps and tall grass
274.	<i>Lonchura punctulata subundulata</i> (Godwin-Austen) Burmese Spotted Munia	1975	Lohit, E. Siang dist.	Assam	"	R	Open country with scrub and trees

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
275.	<i>Lonchura malacca atricapilla</i> (Vieillot) Eastern Blackheaded Munia	1977	Subansiri area	Assam and Manipur	Nepal, Bangladesh	R	Cultivation, swamps and grass fields
276.	<i>Carduelis spinoides heinrichi</i> Stressemann Mt. Victoria Greenfinch	1992		The hills of Nagaland	Burma	R	Trees in clearings and neighbourhood of cultivation
277.	<i>Carduelis thibetana</i> (Hume) Tibetan Siskin	1993		Eastern Himalaya	Breeds in Tibet and Szechuan and winters in Burma and Yunnan	R	light deciduous forest. semi cultivation and gardens
278.	<i>Leucosticte n. nemoricola</i> (Hodgson) Eastern Plaincoloured Mountain Finch	2000		Sikkim	Nepal and Bhutan	R	Alpine meadows and boulder fields
279.	<i>Carpodacus erythrinus roseatus</i> (Blyth) Rosefinch	2011	Lohit dist.	Garhal, Sikkim and Assam	Nepal, Bangladesh, Tibet and China	S.W.	Openly wooded country, cultivation, scrub and bushes
280.	<i>Carpodacus trifasciatus</i> Verreaux Threebanded Rosefinch	2026			SE. Tibet, W. China, N. Yunnan to SW. Kansu	W.V.	Orchards and hedges in cultivated fields
281.	<i>Emberiza spodocephala sordida</i> Blyth Blackfaced Bunting	2047			Nepal, Bangladesh	W.V.	High grass, bamboo and scrub jungle
282.	<i>Emberiza cia yunnanensis</i> Sharpe Yunnan Rock Bunting	2054			SE. Tibet, N. Yunnan, NW Szechuan and W. Hupeh	W.V.	Grassy and bushclad slopes in rocky country

ANNEXURE-III

Further list of birds said to occur in Arunachal Pradesh with a point of doubt and based on the remarks made by Ali & Ripley in the Handbook of birds of India and Pakistan, Vols. 1-10 (1968-1974).

The following abbreviations have been used.

W. V. = Winter visitor; R = Resident; P = Palaearctic; O = Oriental; IC = Indochinese;
IM = Indomalayan.

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
1.	<i>Perdix h. hodgsoniae</i> (Hodgson) Tibetan Partridge	249	Possibly in NEFA	Sikkim	Nepal, Tibet	R	High covered rocky hillsides and bushes in the alpine zone
2.	<i>Cuculus canorus subtelephonus</i> Zarudny Asiatic Cuckoo	577	May also occur in NEFA	—	P	Passage migrant	
3.	<i>Chalcites x. xanthorhynchus</i> (Horsfield) Violet Cuckoo	587	NEFA (?)	NE. India, W.Bengal	Bangladesh, O-M	Uncertain	Evergreen jungle
4.	<i>Otus scops sunia</i> (Hodgson) North Indian Scops owl	616	NEFA (?)	Kashmir to NE. India to Gangetic Plain to M. P.	Pakistan, Nepal, Bhutan, Afganistan	R	Deciduous evergreen forest, orchards and cultivation
5.	<i>Bubo bubo tibetanus</i> Bianchi Tibetan Horned or Eagle-owl	626	Perhaps also in NEFA	Sikkim ?	Bhutan ? P (Part)	R (Range hypothetical)	Steep mountain sides, bare rocky cliffs
6.	<i>Bubo n. nipalensis</i> Hodgson Forest Eagle-owl	628	NEFA (?) upto c. 2100 mto	Kumaon to NE India Peninsula	Nepal, Bhutan, Thailand to Vietnam,	R	Dense evergreen and deciduous forest
7.	<i>Apus pacificus kanoi</i> (Yamashina) Tibetan Whiterumped Swift	701	May occur in NEFA	—	Tibet	R.	Dark underground caves and hilly groves
8.	<i>Alcedo meninting coltarti</i> Baker Blue-cared Kingfisher	725	NEFA ?	NE. India to peninsula	Nepal, Bhutan, O-OC.		Hill streams in evergreen forest
9.	<i>Upupa epops saturata</i> Lonnberg Tibetan Hoopoe	764	NEFA ?, above c. 1700 m	Sikkim, W. Bengal, Bihar	Nepal, Bhutan, Bangladesh	R	Open wooden country and cultivation
10.	<i>Indicator x xanthonotus</i> Blyth Nepal orangerumped Honeyguide	794	NEFA (?) c. 1500-3500 m	Sikkim	Nepal, Bhutan	R (Presumably)	Mixed broad-leaf and conifer forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
11.	<i>Picocides cathpharius ludlowi</i> (Vaurie) (Tibetan Crimsonbreasted Pied woodpecker)	840a	Doubtless encroaching into NEFA	—	NE. Tibet	R	Higher evergreen forest
12.	<i>Riparia riparia ijimae</i> (Lonnberg) Eastern Collared Sand Martin	911	NEFA ?	Nagaland (?) Manipur	Bangladesh, O-IC & P (part)	R	Open reverain tracts
13.	<i>Hirundo smithii filifera</i> Stephens Indian Wiretailed Swallow	921	NEFA (?) upto c. 1500 m	Kashmir to NE. India to Peninsula (Sporadic)	O (Part) & P (Part)	R (breeding)	Open country and cultivation
14.	<i>Lanius schach tricolor</i> (Hodgson) Blackheaded Shrike	948	NEFA (?) c. 3000-4300 m	Garhwal to NE. India to Gangetic Plain	Nepal, Bhutan Bangladesh. Burma to Vietnam	R (breeding)	Open scrub, village cultivation
15.	<i>Pica pica bottanensis</i> Delessert Blackrumped Magpie	1030	Perhaps also c. 3400-4500 m	—	Bhutan, Tibet to Sikang	R (uncertain)	Forest around upland village
16.	<i>Xiphixhynchus s. superciliaris</i> Blyth Slenderbilled Scimitar Babbler	1191	Probably NEFA, c. 2100-3400 m	Sikkim	Nepal, Bhutan		
17.	<i>Pnoepyga a. albiventer</i> (Hodgson) Eastern Scalybreasted Wren-Babller	1198	Probably NEFA, c. 2700-3900 m	Assam, Sikkim, Meghalaya, Nagaland	Nepal, Bhutan, Szechuan to Vietnam	R.	Forest undergrowth. dense scrunb
18.	<i>Conostoma aemodium</i> Hodgson Great Parrotbill	1236	Probably NEFA, c. 2700-3600 m	Sikkim	Nepal, Bhutan, SE Tibet, Burma to Szechuan	R (springly)	High altitude temperate zone
19.	<i>Babax w. waddelli</i> Dresser Giant Babax	1271	Possibly northern NEFA c. 2800- 4500 m	NE. Sikkim	SE. Tibet	R	Arid scrub and thickets
20.	<i>Garryulx henrici</i> (oustaket) Prince Henry's Laughing Thrush	1321	Probably NEFA Upper Subansiri) c. 2700-4500 m	—	Tibet, Nepal	R	Edge of the forest, bushes, grassland. uncultivated area

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
21.	<i>Alcippe vinipectus chumbiensis</i> (Kinnear) Eastern Whitebrowed Tit-Babbler	1382	Probably occurs through NEFA	West Bengal, Sikkim	Nepal, Bhutan N. Burma	R	Dense growth on steep hillside
22.	<i>Alcippe striaticollis</i> (Verreaux) Streakthroated Tit-Babbler	1385a	East upto the Dihang river, upto c. 900 m.	W. Bengal	—	R	Dense growth on steep hillside
23.	<i>Muscicapa m. monileger</i> (Hodgson) Himalayan Whitegorgeted Flycatcher	1415	NEFA probably to the Dihang river upto c. 2000 m	W. Bengal, Sikkim	Nepal, Bhutan	R (Scarce)	Humid stunted oak forest and dense mixed jungle
24.	<i>Muscicapa sapphira</i> (Blyth) Sapphireheaded Flycatcher	1426	NEFA (?) c. 1700-2100 m	NE. India, W. Bengal	Nepal, Bhutan, Yunan, N. Laos	(R-S)	Humid stunted oak forest and dense mixed jungle
25.	<i>Prinia r. rufescens</i> Blyth Rufous Wren-Warbler	1501	A.P. (?) upto c. 1800 m	NE. India	Nepal, Bhutan, Bangladesh east to Vietnam	R	Long grassland, grass under groves
26.	<i>Phylloscopus inornatus mandellii</i> (Brooks) Mandelli's Yellowbrowed Leaf Warbler	1591	Probably the, ranges of A.P. from 2800 m up.	NE. India	Nepal, Bhutan, Bangladesh, N. Burma, W. China	W. V.	Dense bushes, grass and sedges
27.	<i>Phylloscopus c. cantator</i> (Tickell) Yellowfaced Leaf Warbler	1612	May be expected in A. P.	Assam, Manipur, Sikkim, W. Bengal	Bhutan, Bangladesh, east to Vietnam	uncertain	Dense bushes, grass and sedges
28.	<i>Abroscopus schisticeps flavimentalis</i> (Baker) Assam Blackfaced Flycatcher-Warbler	1625	A. P. (?) c. 1500-2400 m	NE. India	Bhutan, SE Tibet, Burma to N. Vietnam	R	Grassland, streams in the deep forest
29.	<i>Abroscopus h. hodgsoni</i> (Moore) Broadbilled Flycatcher-Warbler	1627	A. P. (?) c. 1100-2700 m	NE. India	Nepal, Bhutan, Burma	R	Grassland, streams in the deep forest
30.	<i>Leptopoecile elegans</i> Przevalski Crested Tir-Warbler	1632	Presumably also occurs in adjacent N. of A. P. C. 2800-4300 m.	—	Tibet, W. China	R (S)	Fir forest and juniper scrub

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
31.	<i>Leptopoecile sophiae obscura</i> Przevalski Tibetan Tit-Warbler	1634	May be expected in A. P. c. 2000-4000 m	—	Nepal, Tibet, W. China	R	Fir forest and juniper scrub
32.	<i>Turdus kessleri</i> Przevalski Kessler's Thrush	1760	Might occur in winter in N. of A. P.	Sikkim	Tibet, Bhutan, W. China	Straggler	Dense humid forest
33.	<i>Cinclus cinclus przewalskii</i> Bianchi Eastern Whitebreasted Dipper	1774	Presumably A. P. above c. 3600 m.	—	Bhutan, Tibet, W. China	R	Torrents, hill stream in dense forest
34.	<i>Prunella rubeculoides</i> (Moore) Robin Accentor	1781	Presumably A. P. c. 3000-5300 m	Ladakh, Sikkim, H. P.	Pakistan, Bhutan, Szechuan	R	Bare rocky hillsides, streams.
35.	<i>Prunella fulvescens sushkini</i> Collin & Hartert Tibet Brown Accentor	1785	May be expected in winter in N. of A. P. c. 2100-5000 m	Sikkim	Nepal, Bhutan, Tibet	W. V.	Low scrub, boulderstream hillsides
36.	<i>Parus hypermelas</i> (Berexovski & Bianchi) Blackbilled Tit	1801	May occur in A. P.	—	Burma, SE. Tibet, W. China	R	Light deciduous and secondary jungle, scrub, bushes
37.	<i>Parus ater aemodius</i> Hodgson Himalayan Coal Tit	1803	(Arunachal Pradesh ?) c. 2500-2800 m.	—	Nepal, Bhutan, Tibet, Yunan, Szechuan	R	Light deciduous and secondary jungle, scrub, bushes
38.	<i>Parus rubidiventris beavani</i> (Jerdon) Sikkim Black Tit	1806	Probably A. P. c. 2700-4200 m	W. Bengal, Sikkim	Nepal, Bhutan, SE. Tibet, N. Yunan.	R	Light deciduous and secondary jungle, scrub, bushes
39.	<i>Sitta europaea montium</i> La Touche Chinese Nuthatch	1825	May occur in A.P. c. 2800-3300 m	—	Tibet, N. Burma, Yunan, Szechuan	R	Deciduous and pine forest
40.	<i>Sitta leucopsis przewalskii</i> Berezovski & Bianchi Eastern Whitefaced Nuthatch	1833	May occur in N. of A. P. c. 2800-3000 m.	—	Tibet, W. China, Kansu	R	Deciduous and pine forest

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
41.	<i>Carpodacus erythrinus roseatus</i> (Blyth) Indian Rosefinch	2011	A. P. (?) c. 3900-4000 m	Garhwal to NE. India to Peninsula	Nepal, Bhutan, Bangladesh, Tibet, O-IC.	W. V.	Silver, fir, grassy slopes above forest zone, bush and cultivation
42.	<i>Carpodacus trifasciatus</i> Verreaux Threebanded Rosefinch	2026	A. P. (?) c. 2000-3000 m.	—	Tibet, W. China to Kansu	W. V.	Orchard, hedges, cultivated field
43.	<i>Emberiza cia yunnanensis</i> Sharpe Yunnan Rock Bunting	2054	May occur in the higher hills of A. P.	—	NE. Tibet, to Szechuan	W. V.	Bushy grassland in rocky country

ANNEXURE-IV

List of birds said to occur in the adjoining state ?? Assam, Nagaland etc., and countries, *vis.* China, Bhutan and Myanmar. These birds with possibilities are supposed to occur in Arunachal Pradesh. Since entire land mass doesn't have geographical barrier, birds are at liberty to cross all these political boundaries.

The following abbreviations have been used.

W. V. = Winter visitor; R = Resident; P = Palearctic; O = Oriental; IC = Indochinese; IM = Indomalayan.

SL. NO.	NAME	HB NO.		DISTRIBUTION		STATUS	HABITAT
			A. P.	India	Extralimital		
7.	<i>Pseudibis p. papillosa</i> (Temminck) Indian Black Ibis	70	—	Gangetic Plain and peninsula	IM & IC	R	Dry plains and cultivated country
8.	<i>Platalea leucorodia major</i> Temminck & Schlegel Spoonbill	72	—	Sporadically recorded elsewhere	P	Partly R partly W. V.	Marshes, jheels and rivers
9.	<i>Branta ruficollis</i> (Pallas) Redbreasted Goose	75	—	Rare straggler in M. P., Assam.	P	W. V.	Well watered bodies
10.	<i>Anser a. albifrons</i> (Scopoli) Whitefronted Goose	79	—	Sparsely recorded NW. India, U. P., Assam, Orissa.	P	W. V.	"
11.	<i>Anser erythropus</i> (Linnarus) Lesser Whitefronted Goose	80	—	Kashmir, Gangetic Plains, Assam, Maharashtra	P	W. V.	Well watered bodies
12.	<i>Dendrocygna bicolor</i> (Vieillot) Large Whistling Teal	89	—	India to Deccan, Assam, Manipur	P & O	R	"
13.	<i>Anas p. poecilorhyncha</i> J. R. F. Froster Spotbill Duck	97	—	Capriciously found elsewhere-Kashmir Assam, Mysore	Sri Lanka, Pakistan	R.	"
14.	<i>Anas poecilorhyncha zonorhyncha</i> Swinhoe Eastern Grey Duck	99	—	Bihar, Assam, Manipur	P	W. V.	Well watered bodies
15.	<i>Anas falcata</i> Georgi Falcated Teal	102	—	U. P. Punjab,	P	W. V.	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
16.	<i>Aythya nyroca</i> (Guldenstadt) White-eyed Podhard	109	—	Kashmir to Gangetic Plain to Peninsula, Assam, Manipur	P & O	R (breeding) winter elsewhere	„
17.	<i>Aythya baeri</i> (Radde) Baer's Pochard	110	—	Assam, Manipur Bihar	P (breeding) IM & IC (Winter)	W. V.	„
18.	<i>Aythya m. marila</i> (Linnaeus) Scaup Duck	112	—	Sporadic record elsewhere and Assam, Manipur	P	W. V.	„
19.	<i>Sarkidiornis m. melanotos</i> (Pennant) Comb Duck	115	—	Sporadically distributed elsewhere	Myanmar, SE. China	R	„
20.	<i>Aviceda l. leuphotes</i> (Dummont) Indian Blackcrested Baza	127	—	Scattered, from south to east E. Assam	Bangladesh	R	Foothills country, edge of forest and wide stream.
21.	<i>Buteo r. rufinus</i> (Cretzschmar) Longlegged Buzzard	153	—	Himalayas south to the Deccan Upper Assam	Pakistan, Nepal, P.	R	Hilly forest country with open glades
22.	<i>Butastur teesa</i> (Fanklin) White-eyed Buzzard-Eagle	157	—	Himalayas, south to Kanyakumari, east to Assam.	Pakistan, Bangladesh, Sri Lanka, Myanmar	R	Open deciduous forest and cultivated country
23.	<i>Spizaetus cirrhatus limnaeetus</i> (Horsfield) Changeable Hawk-Eagle	160	—	Sub-Himalayan terai east to Assam	IC & IM	R	Forest hiotope in the Foothills
24.	<i>Hieraaetus f. fasciatus</i> (Vieillot) Bonelli's Hawk-Eagle	163	—	„	Pakistan, Nepal, Sri Lanka, Bangladesh	R	„
25.	<i>Aguila clanga</i> Pallas Greater Spotted Eagle	170	—	N. India, Gangetic Plain east to Assam, Manipur	Pakistan, Bangladesh & P	R	Neighbourhood of jheels and marshes

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
26.	<i>Sarcogyps calvus</i> (Scopoli) King Vulture	178	—	All India	IM	R	Deciduous and semidesert biotope
27.	<i>Gyps fulvus fulvescens</i> Hume Indian Griffon Vulture	180	—	NW. India east to Assam	Pakistan, Sri Lanka, Nepal	R	Semi-desert tract
28.	<i>Gyps indicus tenuirostris</i> Himalayan Longbilled Vulture	184	—	Lower Himalayas, Gangetic plain, east to Assam.	IM & IC	R	„
29.	<i>Circus macrourus</i> (S. G. Gmelin) Pale Harrier	190	—	All India	Pakistan, Bangladesh, Sri Lanka, Nepal & P	W. V.	Open grassy hillside, edge of the forest, cultivation
30.	<i>Circus pygargus</i> (Linnaeus) Montagu's Harrier	191	—	„	„	„	„
31.	<i>Circus a. aeruginosus</i> (Linnaeus) Marsh Harrier	193	—	„	„	„	Jheels, marshes, flooded paddy fields
32.	<i>Circus aeruginosus spilonotus</i> Kemp Eastern Marsh Harrier	194	—	Assam, Manipur	P	„	„
33.	<i>Falco biarmicus jugger</i> J. E. Gray Laggar Falcon	208	—	All India including Assam and Manipur	Pakistan, Nepal, Bangladesh, Afganistan	R	Open thin jungle and cultivation
34.	<i>Falco peregrinus japonensis</i> Gmelin Eastern peregrine Falcon	209	—	All India including Assam and Manipur	P	W. V.	Neighbourhood of jheels and marshes
35.	<i>Falco peregrinus peregrinator</i> Sundeval Shahin Falcon	211	—	„	Pakistan, Bangladesh, Nepal, Myanmar	R	Foothills and open forest
36.	<i>Falco severus rufipedoides</i> Hodgson Indian Hobby	214	—	Assam, Manipur	Myanmar, Bangladesh, & IC.	R	Edge of the forest and paddy land.
37.	<i>Falco s. severus</i> Horsfield Burmese Hobby	215	—	Lower Himalayas, south to Kerala, east to Assam	Pakistan, Nepal, Bangladesh, Sri Lanka.	R	„

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
38.	<i>Falco c. chiquera</i> Duudin Redheaded Merlin	219	—	"	"	R	Edge of the forest and paddy land.
39.	<i>Falco vespertinus amurensis</i> Radde Eastern Redlegged Falcon	220	—	Sporadically elsewhere, Assam and Manipur	P	R. & W. V.	"
40.	<i>Falco tinnunculus interstinctus</i> McClelland East Himalayan Kestrel	223	—	"	P	—	"
41.	<i>Coturnix coturnix japonica</i> Temminck & Schlegel Japanese Grey Quail	251	—	All India	Bangladesh, Sri Lanka and IC.	R	Swampy grassland
42.	<i>Coturnix c. chinensis</i> (Linnaeus) Bluebreasted Quail	253	—	"	"	"	"
43.	<i>Perdicula manipurensis inglisi</i> (Ogilvie-Grant) Assam Painted Bush Quail	264	—	W. Bengal, Assam, (north of Brahmaputra river to Sadiya)	—	R	Grassland and deciduous scrub.
44.	<i>Perdicula m. manipurensis</i> Hume Manipur Painted Bush Quail	265	—	Assam, south Brahmaputra upto 3000 ft.	—	R	"
45.	<i>Tragopan b. blythii</i> (Jerdon) Greybellied Tragopan	288	—	Assam, Naga Hills, Manipur hills	Myanmar, Bangladesh, SW. Yunnan.	R	Steep wet and moist temperate forest
46.	<i>Syrnaticus humiae</i> (Hume) Mrs. Hume's Barredback Pheasant	308	—	Assam, Naga Hills, Manipur hills	Myanmar, Bangladesh, SW. Yunnan.	R	Steep wet and moist temperate forest
47.	<i>Pavo muticus spicifer</i> Shaw & Nodder Burmese Peafowl	312	—	Assam, Manipur, Mizoram	Myanmar, Bangladesh, Thailand to Malaya and Java	R	Evergreen and moist deciduous forest.
48.	<i>Turnix suscitator plumbipes</i> (Hodgson) Northern Bustard Quail	316	—	Assam, south of Brahmaputra river	P (Part), IC and IM (part)	W. V.	Grassland and scrub

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			A. P.	INDIA	EXTRALIMITAL		
49.	<i>Grus antigone sharpii</i> Blandford Burmese Sarus	324	—	East of Kamrup, Assam south to Manipur	Myanmar and Cochinchina	R	Large water bodies and swamps
50.	<i>Anthropoides virgo</i> (Linnaeus) Demoiselle Crane	326	—	India, east to Assam, south to Peninsula	P, Myanmar and China	W. V.	Marshes, vast irrigated field.
51.	<i>Rallus aquaticus indicus</i> Blyth Indian Water Rail	328	—	Assam	Myanmar, Bangladesh, IC	W. V.	Swamyps and marshy places
52.	<i>Rallus striatus albiventer</i> Swainson Indian Bluebreasted Banded Rail	329	—	India	IC.	—	„
53.	<i>Porzana p. pusilla</i> (Pallas) Eastern Baillon's Crake	337	—	„	P	W. V.	Reedy swamps
54.	<i>Porzana porzana</i> (Linnaeus) Spotted Crake	338	—	„	„	„	„
55.	<i>Amanuornis fuscus bakeri</i> (Hartert) Northern Ruddy Crake	339	—	Kashmir, Assam, W. Bengal	IC & IM	W. V.	Swamps and paddy field.
56.	<i>Gallicrex c. cinerea</i> (Gmelin) Kora or Watercock	346	—	India (part)	IC and IM	R	Wet swampy areas.
57.	<i>Porphyrio porphyrio poliocephalus</i> (Latham) Indian Purple Moorhen	349	—	„	Pakistan, Sri Lanka	R	„
58.	<i>Vanellus malabaricus</i> (Boddaert) Yellow-wattled Lapwing	370	—	„	Pakistan, Bangladesh, Sri Lanka	R	Near marshes, semicultivation
59.	<i>Pluvialis dominica fulva</i> (Gmelin) Eastern Golden Plover	373	—	India south to Peninsula	P	W. V.	Marshes and wet cultivated field

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	India	Extralimital		
60.	<i>Charadrius l. leschenaultii</i> Lesson Large Sand Plover	374	-	"	"	"	"
61.	<i>Charadrius a. alexandrinus</i> Linnaeus Kentish Plover	381	-	"	"	"	"
62.	<i>Charadrius placidus</i> J. E. Gray Longbilled Ringed Plover	383	-	Sikkim, Assam	P. Nepal, Bhutan, Bangladesh	"	River banks
63.	<i>Charadrius mongolus atrifrons</i> Wagler Pamirs Lesser Sand Plover	384	-	India, Sikkim, south to Peninsula	P	W. V.	River banks
64.	<i>Numenius phaeopus variegatus</i> (Scopoli) Eastern Whimbrel	386	-	North Cachar and Lakhimpur in Assam	P	"	"
65.	<i>Tringa erythropus</i> (Pallas) Dusky Redshank	392	-	India	P	"	Marshes and river banks
66.	<i>Tringa guttifer</i> (Nordmann) Armstrong's Sandpiper	399	-	"	P	"	"
67.	<i>Tringa terek</i> (Latham) Terek Sandpiper	400	-	"	P	"	"
68.	<i>Capella megala</i> (Swinhoe) Swinhoe's Snipe	407	-	India, Assam and Peninsula	P	"	"
69.	<i>Calidris tenuirostris</i> (Horsfield) Eastern Knot	413	-	India	P	W. V.	Swamps and mudflats
70.	<i>Calidris minutus</i> (Leisler) Little Stint	416	-	"	"	"	"
71	<i>Calidris subminutus</i> (Middendorff) Longtoed Stint	418	-	Assam (on migratory)	P	W. V.	Swamps and mudflats

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			A. P.	INDIA	EXTRALIMITAL		
72.	<i>Calidris alpinus centralis</i> Buturlin Dunlin	421	—	—	P	—	Swamps and mudflats
73.	<i>Eurynorhynchus pygmeum</i> (Linnaeus) Spoonbilled Sandpiper	423	—	Assam, W. Bengal	P	Winter vagrant	—
74.	<i>Chlidonias hybrida indica</i> (Stephens) Indian Whiskered Tern	458	—	N. India, east to Assam, south to Peninsula	Pakistan, Sri Lanka, Baluchistan	R	Inland jheels, marshes flooded paddy field
75.	<i>Sterna hirundo tibetana</i> Saunders Tibetan Common Tern	446	—	Sporadically entire India	Bangladesh, Pakistan, Tibet and Malay States	R (breeding) & W. V.	—
76.	<i>Sterna a. albifrons</i> Pallas Little Tern	475	—	N. India, east to Assam and Peninsula	P	W. V.	—
77.	<i>Ducula badia griseicapilla</i> Walden Greyheaded Imperial Pigeon	512	—	Nagaland, Manipur, Mizoram	Myanmar IM & IC	R	Evergreen biotope
78.	<i>Psittacula eupatria avensis</i> (Kloss) Large Burmees Parakeet	547	—	Assam, Nagaland, Manipur	Myanmar	R	Thin forest and edge of the forest
79.	<i>Psittacula himalayana</i> (Lesson) Himalayan Slatyheaded Parakeet	562	—	Himalayas west to east	Pakistan, Afganistan	R	—
80.	<i>Clamator jacobinus serratus</i> (Sparrman) Pied Crested Cuckoo	570	—	Himalayas, east Assam, Manipur	Pakistan, Bangladesh, Bhutan	Breeding visitor	Neighbourhood of thin jungle
81.	<i>Cacomantis s. sonneratii</i> (Latham) Indian Baybanded Cuckoo	582	—	Sporatically elsewhere	—	—	—
82.	<i>Cacomantis merulinus passerinus</i> (Vahl) Indian Plaintive Cuckoo	584	—	—	—	R	Wellwooded country
83	<i>Centropus sinensis intermedius</i> (Hume) East Pakistan Crow-Pheasant	601	—	Assam, Nagaland, Manipur, Tripura, Mizoram	Bangladesh and IC	R	Scrub and bush jungle and tall grassland

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			A. P.	India	Extralimital		
84.	<i>Tyto alba stertens</i> Hartert Indian Burn owl	606	-	Himalayas, east to Assam, South to Peninsula	Pakistan, Nepal, Bhutan Bangladesh, Myanmar	R	Ruins of any kind of buildings
85.	<i>Bubo bubo bengalensis</i> (Franklin) Indian Great-Horned owl	627	-	Sporadically recorded elsewhere	Pakistan, Nepal, Bhutan Bangladesh, Myanmar	R	Humid evergreen forest
86.	<i>Athene brama ultra</i> Ripley East Assam Spotted owlet	651	-	Assam	-	R	Wellwooded forest and edge of the forest
87.	<i>Strix leptogrammica newarensis</i> (Hodgson) Himalayan Brown wood owl	658	-	Himalayas west to east and NE. states	Myanmar	R	"
88.	<i>Asio f. flammeus</i> (Pontoppidan) Shorteared owl	664	-	All India	Pakistan, Sri Lanka, Nepal, Bangladesh, P	W. V.	"
89.	<i>Eurostopodus macrotis cerviniceps</i> (Gould) Burmese Great Eared Nightjar	668	-	Assam, Nagaland, Manipur	IM	R	Moist-deciduous biotope and Foothills country
90.	<i>Caprimulgus affinis monticola</i> Franklin Franklin's Nightjar	682	-	Submontane Himalayas east to NE. states south to Peninsula	Pakistan, Nepal, Bhutan, Myanmar etc.	R	"
91.	<i>Chaetura sylvatica</i> (Tickell) Whiterumped Spinetail Swift	692	-	Himalayas east to NE. states south Peninsula	Bangladesh	R	Evergreen and moist deciduous biotope
92.	<i>Apus affinis nipalensis</i> (Hodgson) Nepal House Swift	705	-	Sikkim, Assam	Nepal, Bhutan	R	Neighbourhood of urban habitations.
93.	<i>Harpactes erythrocephalus hodgsonii</i> (Gould) Nepal Redheaded Trogon	713	-	Himalayas from west to east to NE. states	Nepal, Bhutan	R	Dense evergreen jungle
94.	<i>Sasia ochracea reichenowi</i> Hesse Burmese Rufous Piculet	801	-	NE. States	Bangladesh, IM	R	Deciduous scrub and bamboo jungle

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			A. P.	India	extralimital		
95.	<i>Dinopium javanense intermedium</i> (Blyth) Burmese Goldenbacked Threetoed Woodpecker	826	—	”	”	R	Deciduous scrub and bamboo jungle
96.	<i>Picoides major stresemanni</i> (Rensch) Redcrowned Pied Woodpecker	834	—	Assam, Nagaland Manipur, Mizoram	Myanmar and IC	R	”
97.	<i>Picoides c. canicapillus</i> (Blyth) Burmese Greycrowned Pygmy Wood-pecker	850	—	Manipur, Mizoram Tripura	Bangladesh, Myanmar and IC	R	”
98.	<i>Hemicircus canente</i> (Lesson) Heartspotted Woodpecker	856	—	Western Ghats east to Assam, Manipur	Bangladesh IM & IC	R	Deciduous scrub and bamboo jungle
99.	<i>Pitta brachyura</i> (Linnaeus) Indian Pitta	867	—	Sub-Himalayas east to Assam, Gangetic Plain and Peninsula.	Bangladesh and Sri Lanka	R	Deciduous and evergreen forest
100.	<i>Mirafra a. assamica</i> Horsfield Bengal Bush Lark	873	—	U. P., east to Assam south to M. P.	Nepal, Bangladesh	R	Grassland and cultivation
101.	<i>Eremopterix grisea</i> (Scopoli) Ashy-crowned Finch-Lark	878	—	India (part)	Pakistan, Nepal, Bangladesh	R	Dry deciduous biotope
102.	<i>Calandrella acutirostris tibetana</i> Brooks Tibet Short-toed Lark	888	—	Kashmir east to W. Bengal, south to Peninsula	Iran, Pakistan, Tibet, Nepal, Bangladesh	R	”
103.	<i>Calandrella r. raytal</i> (Blyth) Ganges Sand Lark	891	—	Punjab south to H. P. to Assam and W. Bengal.	Nepal, Myanmar	R	”
104.	<i>Alauda g. gulgula</i> Franklin Indian Small Skylark	907	—	Deccan to Penin- sula, east to Assam & W. Bengal	Sri Lanka, Bangladesh, Myanmar	R	Open grassland and semi cultivation
105.	<i>Riparia paludicola chinensis</i> (J. E. Gray) Indian Greythroated Sand Martin	912	—	Deccan, M. P., east to Assam and W. Bengal	Pakistan, Bangladesh	R	Near water bodies

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			A. P.	India	Extralimital		
106.	<i>Lanius colluroides</i> Lesson Chestnutrumped Shrike	938	—	Assam, Manipur	Myanmar, Bangladesh	R	Scrub and semicultivation
107.	<i>Oriolus oriolus kundoo</i> Sykes Indian Golden Oriole	953	—	Elsewhere in India	Pakistan, Sri Lanka, Bangladesh, Nepal	R	Deciduous and evergreen forest
108.	<i>Oriolus chinensis tenuirostris</i> Blyth Slenderbilled Blacknaped Oriole	955	—	Sikkim, W. Bengal, Assam	Nepal, Bhutan	R	„
109.	<i>Saroglossa spiloptera</i> (Vigors) Spottedwinged Stare	984	—	H. P., east to Assam, Manipur	Nepal, Bangladesh	R	„
110.	<i>Aplonis panayensis affinis</i> (Blyth) Tipperah Glossy Stare	985	—	Assam, (Garo, Khasi and Cachar hills) Tripura	Myanmar, Bangladesh	R	„
111.	<i>Sturnus malabaricus nemoricola</i> (Jerdon) Whitewinged Myna	989	—	Cachar in Assam, Manipur	Myanmar, IC	R	„
112.	<i>Sturnus c. contra</i> Linnaeus Indian Pied Myna	1002	—	Punjab east to Assam	Bhutan, Bangladesh	R	Open country and cultivation
113.	<i>Acridotheres f. fuscus</i> (Wagler) Northern Jungle Myna	1009	—	Jammu, east to Assam	Pakistan, Nepal, Bhutan, Bangladesh	R	„
114.	<i>Acridotheres javanicus infuscatus</i> (Baker) Orangebilled Jungle Myna	1012	—	Naga Hills, Manipur Lushai Hills	Myanmar, Bangladesh	R	„
115.	<i>Acridotheres albocinctus</i> Godwin-Austen & Walden Collared Myna	1013	—	Assam, Manipur	Myanmar NW Yunan	R	„
116.	<i>Cissa erythrorhyncha magnirostris</i> (Blyth) Burmese Redbilled Blue Magpie	1028	—	Sikkim, Assam, Nagaland, Manipur, south to eastern Ghats.	Nepal, Bhutan, Bangladesh	R	Secondary jungle and well-wooded country
117.	<i>Tephrodornis gularis pelvica</i> (Hodgson) Nepal wood sbrike	1067	—				

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			A. P.	India	Extralimital		
118.	<i>Tephrodornis p. pordicerianus</i> (Gmelin) Indian Wood Shrike	1070	—	Himalayas west to east, Deccan, Peninsula	Nepal, Bangladesh, Thailand	R	Jungly gardens, in and around villages
119.	<i>Coracina novaehollandiae nipalensis</i> (Hodgson) Himalayan Large Cuckoo-Shrike	1073	—	Sporadically in Himalayas west to east, Assam.	Pakistan, Bangladesh, Nepal	R	Scrub jungle
120.	<i>Coracina m. melaschistos</i> (Hodgson) Dark Grey Cuckoo-Shrike	1077	—	"	"	R	"
121.	<i>Coracina melanoptera sykesi</i> (Strickland) Peninsular Blackheaded Cuckoo-Shrike	1079	—	Sporadically NW India, NE. states	Nepal, Bangladesh, Sri Lanka.	R	Jungly gardens and Scrub jungle
122.	<i>Pericrocotus flammeus fraterculus</i> Swinhoe Burmese Scarlet Minivet	1082	—	NE. states	Bangladesh	R	Open deciduous and Scrub jungle
123.	<i>Pericrocotus s. solaris</i> Blyth Yellowthroated Minivet	1088	—	Assam, Manipur, W. Bengal, Sikkim	Bangladesh, Myanmar	R	Open forest
124.	<i>Pericrocotus r. roseus</i> (Vieillot) Rosy Minivet	1089	—	Himalayas west to east to Assam, Manipur and recorded elsewhere	Pakistan, Bangladesh, Nepal, China, Myanmar	Partial migrant	Deciduous evergreen forest
125.	<i>Pericrocotus cinnamomeus thai</i> Deignan Eastern Small Minivet	1092					
126.	<i>Chloropsis c. cochinchinensis</i> (Gmelin) Goldmantled Chloropsis	1108	—	Assam, Manipur	Bangladesh, Myanmar, IC,	R	Jungly gardens
127.	<i>Irena puella sikkimensis</i> Whistler & Kinnear Fairy Bluebird	1110	—	Western Ghats, south India, Sikkim. W. Bengal, Assam, Manipur	Nepal, Bhutan, Bangladesh and IC		Moist deciduous evergreen forest
128.	<i>Spizixos c. canifrons</i> Blyth Finchbilled Bulbul	1111	—	NE. States	IM	R	"

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			A. P.	India	Extralimital		
129.	<i>Pycnonotus a. atriceps</i> (Temminck) Blackheaded Bulbul	1112	—	"	IM & IC	R	"
130.	<i>Pycnonotus f. flavescens</i> Blyth Blyth's Bulbul	1137	—	"	Myanmar, Bangladesh,	R	Scrub jungle
131.	<i>Hypsipetes viridescens cacharensis</i> (Deignan) Olive Bulbul	1141	—	Assam, Manipur, Meghalaya	Bangladesh, Myanmar, IM	R	Scrub jungle
132.	<i>Pomatorhinus ferruginosus formosus</i> Koelz Assam Coralbilled Scimitor Babbler	1187	—	Assam, Nagaland Manipur	—	R	Thick forest and dense undergrowth
133.	<i>Napothera epilepidota roberti</i> (Godwin-Austen & Walden) Austen's Small Wren-Babbler	1195	—	"	—	R	Mossy boulder, orchids, old stumps
134.	<i>Spelaeornis c. chocolatinus</i> (Godwin-Austen & Walden) Streaked Longtailed Wren-Babbler	1203	—	Nagaland, Manipur, Assam	—	R	"
135.	<i>Sphenocichla humei roberti</i> Godwin-Austen & Aalden Cachar Wedgebilled Wren	1208	—	Assam, Nagaland, Manipur	Myanmar	R	Evergreen forest with
136.	<i>Stachyris nigriceps coltarti</i> Harington Nagaland Blackthroated Babbler	1217	—	Assam, Nagaland	Myanmar	R	Evergreen forest with dense undergrowth
137.	<i>Macronous gularis rubricapilla</i> (Tickell) Yellowbreasted Babbler	1228	—	Sikkim, Assam, W. Bengal, Nagaland, Manipur, south to Peninsula	Nagaland, Bhutan	R	Forest with bushes and undergrowth
138.	<i>Chrysomma s. sinense</i> (Gmelin) Yellow-eyed Babbler	1231	—	Nasik, south to Nilgiris and east to Assam, Nagaland, Manipur	Nepal, Bhutan, Vietnam, China	R	Bush-clad grassy hillsides
139.	<i>Chrysomma altiloastre griseigulare</i> (Hume) Hume's Babbler	1234	—	Assam, Nagaland, W. Bengal	Bhutan, Bangladesh, Myanmar	R	"

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			A. P.	INDIA	EXTRALIMITAL		
140.	<i>Paradoxornis gularis transfluvialis</i> (Hatert) Assam Greyheaded Parrotbill	1250	—	Assam, Manipur, Nagaland	Bangladesh, Thailand, Myanmar	R	Forest and bamboo jungle
141.	<i>Paradoxornis guttaticollis</i> David Whitethroated Parrotbill	1252	—	Assam, Nagaland	Bangladesh, Myanmar, Vietnam.	R	"
142.	<i>Turdoides e. earlei</i> (Blyth) Striated Babbler	1256	—	Punjab to Gangetic Plain east to Assam	Nepal, Bangladesh, Myanmar	R	Tall grass, reed-beds swamps
143.	<i>Garrulax sannio albosuperciliaris</i> Godwin-Austen Whitebrowed Laughing Thrush	1306	—	Assam (Cachar), Naga Hills, Manipur	Myanmar, IC	R	Subtropical wet forest
144.	<i>Garrulax erythrocephalus godvini</i> (Harrington) Nagaland Redheaded Laughing Thrush	1329	—	"	—	R	"
145.	<i>Muscicapa latirostris</i> Raffles Brown Flycatcher	1407	—	H.P., east to Assam, south to Peninsula	P	W.V.	Woodland, scrub and cultivation
146.	<i>Muscicapa t. tickelliae</i> (Blyth) Tickell's Redbreasted Blue Flycatcher	1442	—	Gujarat, east to Assam, south to Peninsula	IC. & IM.	R	"
147.	<i>Cettia major vafer</i> (Koelz) Assam Large Bush Warbler	1480	—	Meghalaya, Nagaland	—	R	Scrub jungle and bushes.
148.	<i>Orthotomus atrogularis nitidus</i> Hume Blacknecked Tailor Bird	1540	—	Sikkim, W. Bengal, Assam, Nagaland, Manipur	Bangladesh		Heavy scrub and edges of evergreen forest
149.	<i>Acrocephalus orientalis</i> (Temminck & Schlegel) Eastern Great Reed Warbler	1554	—	Sporadically in Assam, Manipur	P & IC.	W.V.	Reed beds
150.	<i>Acrocephalus b. bistrigiceps</i> Swinhoe Blackbrowed Reed Warbler	1555	—	W. Bengal, Assam, Manipur	Myanmar, Thailand, IC	W.V.	Reed beds
151.	<i>Phylloscopus f. fuscatus</i> (Blyth) Siberian Dusky Leaf Warbler	1586	—	Himalayan Foothills east to Assam	P. & IC	W.V.	"

SL. NO.	NAME	HB NO.	DISTRIBUTION			STATUS	HABITAT
			A. P.	INDIA	EXTRALIMITAL		
152.	<i>Phylloscopus occipitalis coronatus</i> (Temminck & Schlegel) Eastern Crowned Leaf Warbler	1607	—	Mizoram, Nagaland, Manipur	Sikkim, Meghalaya, P	W.V.	Hedges, edge of the forest.
153.	<i>Phylloscopus r. reguloides</i> (Blyth) Blyth's Crowned Leaf Warbler	1609	—	Himalayas east to Assam	Myanmar	R	"
154.	<i>Saxicola torquata stejnegeri</i> (Parrot) East Siberian Collared Bush Chat	1698	—	Assam, W. Bengal	Bhutan, Bangladesh, IM	W.V.	Sparse scrub on stony wasteland
155.	<i>Turdus feai</i> (Salvadori) Fea's Thrush	1761	—	Nagaland, Manipur, Meghalaya, Assam	Myanmar, China	W.V.	Low scrub, dense bushy jungle
156.	<i>Turdus naumanni eunomus</i> Temminck Dusky Thrush	1765	—	Assam, Meghalaya	Nepal, P	W.V.	"
157.	<i>Parus major nipalensis</i> Hodgson Nepal Grey Tit	1793	—	Himalayas from west to NE. states	Nepal, Bangladesh, Myanmar and P	W.V.	Deciduous forest edge, gardens and cultivation
158.	<i>Anthus novaeseelandiae richardi</i> Vieillot Richard's Pipit	1857	—	Gangetic plains, Peninsula and NE states	Nepal, P	W.V.	Damp grassy ground/heel margins
159.	<i>Motacilla indica</i> Gmelin Forest Wagtail	1874	—	SW. India, east to W. Bengal, Meghalaya, Nagaland, Manipur	P	W.V.	Glades and tract in deep evergreen forest
160.	<i>Motacilla c. citreola</i> Pallas Northern Yellowheaded Wagtail	1881R	—	Himalayas west to east-south to Peninsula	P	W.V.	"
161.	<i>Motacilla alba ocularis</i> Swinhoe Streaked Pied Wagtail	1889	—	Assam, Nagaland, Manipur	Bangladesh, P	W.V.	Open country in the vicinity of water sources
162.	<i>Passer domesticus indicus</i> Jardine & Selby Indian House Sparrow	1938	—	Elsewhere in India	Pakistan, Bangladesh, Sri Lanka, Myanmar	R	Domestic house
163.	<i>Estrilda a. amandava</i> (Linnaeus) Red Munia	1964	—	Elsewhere in India	Pakistan, Bangladesh, Sri Lanka, Myanmar	R	Edge of the forest and near cultivation

ANNEXURE - V

List of existing and proposed National Parks in Arunachal Pradesh

State	Biotic Province	Existing National Park	Size	Proposed National Park	
Arunachal Pradesh Km ²	OZD		Km ²		Km ²
		Mouling	483.00	D'ering	100.00
		Namdapaha	1985.23	Dibang	500.00
				Tawang	300.00
				Tirap	100.00
				Walong	300.00
				Pakhui	500.00
				Mouling (Ext)	517.00
Total		2	2468.23	6	2317.00

List of existing and proposed Wildlife Sanctuaries in Arunachal Pradesh

State	Biotic Province	Existing Wildlife Sanctuaries	Size	Proposed Wildlife Sanctuaries	Size
Arunachal Pradesh	OZD		Km ²		Km ²
		D'ering Memorial (Lali)	190.00	D'ering	20.00
		Dibang	4149.00	Lado	500.00
		Eagle Nest	217.00	Mouling	700.00
		Itanagar	140.00	Palin	250.00
		Kamlang	783.00	Rangeghat	20.00
		Mehao	281.50	Tawang	300.00
		Pakhui	861.95	Walong	300.00
		Sessa Oocid	100.00	D'ering Memorial (Red.)	-100.00
		Tale Valley	337.00	Dibang (Red.)	-500.00
		Kane	55.00	Pakhui (Red.)	-500.00
Total		10	7114.45	7	990.00

[Wildlife Protected Area. Network in India : A Review by Rodgers., W.A, Panwar, H.S., Mathur, V.B. Wildlife Institute of India, Dehradun, 2000.]

ANNEXURE VI

Wildlife Sanctuary, National Parks And Proposed Conservation Areas of Arunachal Pradesh.

I. WILDLIFE SANCTUARY

1.	Itanagar Wildlife Sanctuary	Papum Pare District.
2.	Pakhui " "	East Kameng "
3.	Eagles Nest " "	West Kameng "
4.	Kane " "	West Siang "
5.	D'Ering " "	East Siang "
6.	Dibang Valley " "	Debang Valley "
7.	Mehao " "	Debang Valley "
8.	Kamlang " "	Lohit "
9.	Taley Valley " "	Lower Subansiri "

II. NATIONAL PARK

1.	Mouling National Park	Upper Siang District
2.	Namdapha " "	Changlang "

III. PROPOSED HIGH PRIORITY CONSERVATION AREAS

1.	Zemethang	Tawang	District
2.	Jang	"	"
3.	Thingbu	"	"
4.	Mago	"	"
5.	Taksiang	Upper Subansiri	District
6.	Majha	" "	"
7.	Machuka	West Siang	District
8.	Lorgin	" "	"
9.	Metang	Lohit	District
10.	Mithuman	"	"
11.	Maibung	"	"
12.	Ditchu reserve	"	"

[Information supplied by the Department of Forest, Govt. of Arunachal Pradesh]

REPTILIA

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INTRODUCTION

Reptilian fauna of Arunachal Pradesh remained more or less unknown until the publication of the zoological results of the Abor Expedition in 1911-1912 by Dr. N. Annandale and Fauna Namdapha : Arunachal Pradesh by D.P. Sanyal & N.C. Gayen (1986) and Ghosh (1987), Mathew (1983) and Smith's works on the reptilia fauna of India, (1931, 1935, 1943). So the present paper will be the first detailed account on reptilian fauna and constitute new locality records from the state. The present paper is based upon the recent comprehensive reptilian collections made from Arunachal Pradesh by the authors along with other group of experts during 1987-1989 field surveys comprising Tirap, Lohit, Upper and Lower Subansiri, Dibang valley, East and West Kameng, East and West Siang and Changlang districts of Arunachal Pradesh, together with earlier collections made by Zoological Survey of India, survey parties including the Namdapha Biosphere Reserve collections during 1981 to 1987. Abor expedition collection made during 1911-1912, Swiss Entomological expeditions in 1961, Subansiri Expedition in 1974-75, Daphabum Expeditions in 1969-70. Tawang district not included in this paper due to non availability of specimen. In some cases measurement could not be given due to damaged condition of the specimens.

It comprises 78 species, 46 genera under 12 families. The classification followed is after Malcom Smith. Colouration of specimens described is of specimens preserved in formalin and stored in alcohol.

All the species in this paper have been dealt with their latest scientific names, references, keys,

material examined together with figures of interesting species. It also included map depicting state of Arunachal Pradesh, collection centres, border lines and rivers.

This paper have been submitted in the year 1994, Synonymies and records have been reduced to avoid over repetition but included the original and most recent references up to 1994. The authors are not responsible for the changes in nomenclature, records etc. after 1994.

MATERIAL AND METHOD

Reptiles are either aquatic, terrestrial or arboreal. Aquatic form has been collected with the help of water net, cast net and fishing hook. Both terrestrial and arboreal forms have been collected by hand or long forceps. The reptiles reported in this paper have been collected by parties of Zoological Survey of India from different ecological niches of Arunachal Pradesh. In the field, notes have been taken regarding the habits and habitats of reptiles. For collection, aquatic vegetations, bushes, scrub, jungles, heap of rotten leaves or straw burrows, dark corners of village huts, undersurface of barks of trees, soil under stones etc. are explored. Nocturnal fauna has been explored with the help of lamps. The collected material is first chloroformed and then put into 5% formalin solution for at least 24 hours for fixation. Before putting in the formalin, an incision on the abdomen for the bigger specimens and injection of 10% formalin solution inside abdomen for smaller specimen are given for the fixation of viscera. The fixed material along with labels containing the data of locality, altitude, habitat, date of collection and name of collector, are packed properly and kept in the laboratory.

SYSTEMATIC LIST

- Class REPTILIA
 Order (I) TESTUDINES
 Suborder (i) CRYPTODIRA
 Family 1. BATAGURIDAE
1. *Pyxidea mouhotii* (Gray)
 2. *Melanochelys tricarinata* (Blyth)
 3. *Kachuga tecta* (Gray)
 4. *Kachuga sylhetensis* (Jerdon)
- Order (II) SQAMATA
 Suborder (ii) SAURIA
 Family 2. GEKKONIDAE
5. *Cyrtodactylus khasiensis* (Jerdon)
 6. *Hemidactylus brookii* (Gray)
 7. *Hemidactylus frenatus* (Schlegel)
 8. *Cosymbotus platyurus* (Schlegel)
- Family 3. AGAMIDAE
9. *Draco maculatus* (Blyth)
 10. *Ptyctolaemus gularis* Peters
 11. *Myctopholis austeniana* (Annandale)
 12. *Oriocalotes paulus* Smith
 13. *Japalura andersoniana* (Annandale)
 14. *Calotes versicolor* (Daudin)
 15. *Calotes jerdoni* Gunther
- Family 4. SCINCIDAE
16. *Mabuya macularia* (Blyth)
 17. *Sphenomorphus indicum* (Gray)
 18. *Sphenomorphus maculatum* (Blyth)
 19. *Sphenomorphus courcyanum* Annandale
 20. *Scincella sikkimensis* (Blyth)
- Family 5. LACERTIDAE
21. *Takydromus sexlineatus khasiensis* Boulenger
- Family 6. ANGUIDAE
22. *Ophisaurus gracilis* (Gray)
- Family 7. VARANIDAE
23. *Varanus bengalensis* (Daudin)
- Suborder (iii) SERPENTES
 Family 8. TYPHLOPIDAE
24. *Ramphotyphlops braminus* (Daudin)
 25. *Typhlops jerdoni* Boulenger
 26. *Typhlops diardii* Schlegel
- Family 9. BOIDAE
27. *Python molurus bivittatus* Schlegel
- Family 10. COLUBRIDAE
28. *Pears monticola* (Cantor)
 29. *Elaphe radiata* (Schlegel)
 30. *Elaphe taeniura* (Cope)
 31. *Elaphe cantoris* (Boulenger)
 32. *Elaphe porphyracea* (Cantor)
 33. *Elaphe prasina* (Blyth)
 34. *Elaphe mandarina* (Cantor)
 35. *Ptyas mucosus* (Linnaeus)
 36. *Ptyas korros* (Schlegel)
 37. *Zoacys nigromarginatus* (Blyth)
 38. *Liopeltis frenatus* (Günther)
 39. *Liopeltis stoliczkae* (Sclater)
 40. *Oligodon albobinctus* (Cantor)
 41. *Oligodon melanozonotus* Wall
 42. *Oligodon cinereus* (Günther)
 43. *Oligodon erythracraxis* Wall
 44. *Dendrelaphis ahaetulla* (Linnaeus)
 45. *Dendrelaphis cyanochloris* (Wall)
 46. *Dendrelaphis gorei* (Wall)
 47. *Dendrelaphis trisris* (Daudin)
 48. *Ahaetulla prasina* (Reinwardt)
 49. *Chrysopelea ornata* (Shaw)
 50. *Ophites laoensis* (Günther)
 51. *Ophites jara* (Shaw)
 52. *Sibynophis collaris* (Gray)
 53. *Xenochrophis punctulata* (Günther)
 54. *Xenochrophis piscator* (Schneider)
 55. *Pseudoxenodon macrops* (Blyth)
 56. *Amphiesma stolata* (Linnaeus)
 57. *Amphiesma modesta* (Günther)
 58. *Amphiesma platyceps* (Blyth)
 59. *Trachischium monticola* (Cantor)
 60. *Trachischium tenuiceps* (Blyth)
 61. *Rhabdophis himalayanus* (Günther)
 62. *Rhabdops bicolor* (Blyth)
 63. *Blythia reticulata* (Blyth)

64. *Boiga ochracea* (Günther)
65. *Boiga gokool* (Gray)
66. *Boiga quincunciata* (Wall)
67. *Boiga multifasciata* (Blyth)
68. *Boiga cynodon* (Boie)
69. *Psammodynastes pulverulentus* (Boie)

Family 11. ELAPIDAE

70. *Bungarus fasciatus* (Schneider)
71. *Bungarus niger* Wall
72. *Calliophis maclellandi* (Reinhardt)
73. *Naja naja kaouthia* (Lesson)
74. *Ophiophagus hannah* (Cantor)

Family 12. VIPERRIDAE

75. *Trimeresurus mucrosquamatus* (Cantor)
76. *Trimeresurus monticola* (Günther)
77. *Trimeresurus garminaeus* (Shaw)
78. *Trimeresurus stejnegeri* Schmidt.

SYSTEMATIC ACCOUNT

- Class REPTILIA
Order (I) TESTUDINES
Suborder (i) CRYPTODIRA
Family 1. EMYDIDAE

Key to genera of family EMYDIDAE

1. Plastron united to carapace by ligamentous tissue *Pyxidea*
- Plastron united to carapace by suture. 2
2. Vertebral shields short sided anteriorly *Kachuga*
- Vertebral shields short sided posteriorly *Melanochelys*

Genus 1. *Pyxidea* Gray, 1864.1. *Pyxidea mouhotii* (Gray)
Keel Box Turtle

1862. *Cyclemys mouhoti* Gray, Ann. Mag. Nat. Hist. (3), 10 : 157.
1864. *Pyxidea mouhoti* Günther, Rept. Brit. Ind., : 16, Pl. 4.

Material examined : Changlang Dist. 1 ex., Deban, 27 km. from Miao, 27.iv.1981; Dr. S. Biswas.

Measurement : Carapace length & breadth 182 mm. & 178mm. Plastron length & Breadth 153 mm. & 87 mm.

Diagnostic character : The head is moderately small, snout shorter than the orbit and truncate, skin of the posterior part of head is divided into large shields. Plastron united to carapace by ligamentous tissue. Neurals hexagonal, limbs are with half webbed digits. Hind limbs club-shaped, its lower part and the sole of the foot with imbricate, pointed, horny shields.

Distribution : Arunachal Pradesh : as stated in the "material" Assam, Meghalaya.

Elsewhere : Myanmar (Burma), Thailand, Cambodia, Laos, Vietnam and Namfong in Hainan, China.

Remarks : The species is one of the several Malayan elements in the fauna of Indian subcontinent, its distribution including north-eastern India, southwards to south-east Asia.

Status : Indeterminate.

Genus 2. *Melanochelys* Gray, 18692. *Melanochelys tricarinata* (Blyth)
Tricarinate Hill Turtle

1856. *Geoemyda tricarinata* Blyth, Jour. Asiat. Soc. Bengal, 24 : 714.
1879. *Chaihassia tricarinata* Anderson, Zool. Res. II: Yunnan, : P. 718.

Material examined : East Siang Dist. : 1 ex., Dafla Hills; coll. Godwin Austin, (A. C. E.). (A.C.E.) = Abor country Expedition (1911-12).

Diagnostic character : The head moderately small, snout shorter than the orbit, truncate, upper jaw feebly notched at the middle, carapace elongated, tricarinate, shell arched with steep sides; carapace wheels low, Vertebral shields short sided posteriorly. Limbs with long claws, fingers half webbed; toes with rudimentary webs only. Tail short.

Distribution : Arunachal Pradesh : as stated in the "material"; Bihar, Uttar Pradesh, West Bengal.

Remarks : It inhabits the hilly terrestrial areas. It is mainly herbivorous.

Status : Indeterminate, probably vulnerable.

Genus 3. *Kachuga* Gray, 1989.

Key to species of genus *Kachuga*

1. Second Vertebral shield longer than third *tecta*
- Second Vertebral shields shorter than third ..
..... *sylhetensis*

3. *Kachuga tecta* (Gray)

Indian Roofed Turtle

1830. *Emys tectum* Gray, *Illus. Ind. Mus.* Pt. 2.

1890. *Kachuga tectum* Boulenger, *Fauna. Brit. Ind.*, : 43.

Material examined : East Siang Dist. 1 ex., Dehong, coll. S. W. Kemp, (A. C. E.).

Diagnostic character : The head moderately small, pointed, shorter than the orbit. Carapace elevated, oval with a distinct vertebral spiked keel, especially on vertebral shield longer than third; plastron truncated anteriorly, notched posteriorly. Limbs with fully and broadly webbed digits and have transversely enlarged scales.

Distribution : Arunachal Pradesh : as stated in the "material"; Assam, Meghalaya, Bihar, Uttar Pradesh, West Bengal, Punjab, Rajasthan, Jammu, Madhya Pradesh, Gujarat.

Remarks : The species is completely aquatic and inhabits freshwater bodies with plenty of aquatic vegetation.

Status : It has become extremely vulnerable and its population has been reduced due to over exploitation for food.

4. *Kachuga sylhetensis* (Jerdon)

Assam Roofed Turtle

1870. *Pangshura sylhetensis* Jerdon, *Proc. Asiat. Soc. Bengal.*, : 69.

1889. *Kachuga sylhetensis* Boulenger, *Cat. Chel. Brit. Mus.*, 57. and *Fauna Brit. Ind.*, 1890. : 42.

Material examined : East Kameng Dist. 1 ex., Namuri, ca 50 km. NW of Seijusa; 11.x.1987; coll. D. P. Sanyal.

Mesurements : Length 65 mm., Breadth -58 mm. Height 48 mm. Plastron Length 55 mm., Breadth 42.

Diagnostic character : The head moderately small; snout pointed, shorter than the orbit and projecting much beyond the lower jaw. Carapace strikingly elevated, oval and markedly serrated posteriorly; vertebral 1 as wide as long or wider than long, vertebral 3 and 4 longer than wide, the plastron consists of paired gular, humeral, oxillary, pectoral, abdominal, inguinal, femoral and anal shields. Limbs with fully and broadly webbed digits and with transversely enlarged scales.

Distribution : Arunachal Pradesh : as stated in the "material"; Its distribution is restricted to the evergreen forest tracts northeast of the Indian subcontinent and records exist both north and south of the Brahmaputra river.

Remarks : The species is fully aquatic and inhabits stagnant and slow running waters in the hilly terrain with plenty of vegetation. It is mainly herbivorous.

Status : Insufficiently known.

Order (II) SQUAMATA

Suborder (ii) SAURIA

Key to families of sub order SAURIA

1. Tongue slender, forked VARANIDAE
- Tongue neither slender nor forked 2
2. Top of head with symmetrical shields 3
- Top of head without symmetrical shields 4
3. Body covered with osteodermal plates; femoral pores absent SCINCIDAE
- Body covered with osteodermal plates; femoral pores present LACERTIDAE
4. Eyes with movable eyelids; digits free 5

- Eyes without movable eyelids; digits clawed GEKKONIDAE
- 5. Tongue broad and short AGAMIDAE
- Tongue not broad and short ANGUIDAE

Family 2. GEKKONIDAE

Key to genera of family GEKKONIDAE

- 1. Digits strongly dilated *Cosymbotus*
- Digits not dilated *Cyrtodactylus*
- Inner digit well developed, with free terminal phalange *Hemidactylus*

Genus 4. *Cyrtodactylus* Gray, 1827

5. *Cyrtodactylus khasiensis* (Jerdon) Khasi Hill Rock Gecko

1870. *Pentactylus khasiensis* Jerdon, *Proc. Asiat. Soc. Beng.*, : 75.
1871. *Gymnodactylus khasiensis* Anderson, *Proc. Zool. Soc.*, : 162.

Material examined : East Kammeng Dist. 1 ex., Seppa, 26.xi.1990. coll. S. Sur. East Siang Dist. 2 ex., Upper Rotung and 2 ex., Kobo; coll. S. W. Kemp & 32nd Sikh pioneer, (A. C. E.). 1 ex., Batiab Kunda, 6.iii.1961, coll. Dr. K. C. Jayramkrishna. Changlang Dist. 5 ex., Hornbill, ca 30 km. NE of Miao, 13.iv.1981 and 13.xii.1983 to 16.xii.1983, coll. Dr. S. Biswas.

Measurements : Snout to vent 45-62 mm., tail 52-64 mm.

Diagnostic character : Head moderate 10 to 12 upper and lower labials. Body and limbs above with small granular scales, intermixed with much larger rounded keeled tubercles. Tail covered with small flat scales. Grey-brown above with dark spots more or less regularly arranged. Tail with brown bands; belly whitish.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Assam; Darjeeling district (West Bengal).

Elsewhere : Upper Myanmar (Burma).

Remarks : Usually dwell among rocks and on the forest floor. It feeds largely on insects.

Status : Indeterminate.

Genus 5. *Hemidactylus* Oken, 1817

Key to species of genus *Hemidactylus*

- Tubercles very large, crowded, separated from one another by spaces about equal to the diameters of the tubercles; numerous small tubercles present on head *brookii*
- Tubercles smaller, not crowded, sometimes sparse, nearly always separated by spaces equal to several diameters of a tubercles, head devoid of tubercles *frenatus*

6. *Hemidactylus brookii* Gray Brook's Gecko

1845. *Hemidactylus brooki* Gray, *Cat. Liz. Brit. Mus.* : 153.
1965. *Hemidactylus brooki* Smith, *Fauna Brit. Ind.* 2 : 89-91.

Material examined : West Siang. Dist. 2 ex., Bomte village 12.ii.1988; coll. D. P. Sanyal. East Siang Dist. 1 ex., Belong, 22 km. NW of Pegu, 27.xi.1988, coll. D. P. Sanyal. Lohit Dist. 1 ex., Jasu, 19.i.1970, coll. J. M. Julka. Changlang Dist. 2 ex., Miao, 9.xi.1982, coll. Dr. S. Biswas.

Measurements : Snout to vent 30-33 mm., tail 21-35 mm.

Diagnostic character : Head distinct from neck, snout blunt, eye large; ear opening oval, about one-third of diameter of eye; body flattened dorsoventrally, no lateral fold. Body scales granular with rows trihedral large tubercles, separated from one another by spaces about equal to the diameters of the tubercles; numerous small tubercles present on the head. Light brown or grayish above, with dark brown spots, usually more or less regularly arranged; a dark streak along the side of the head; dirty whitish below.

Distribution : Arunachal Pradesh : as mentioned in the "material" The whole of India.

Elsewhere : Sri Lanka.

Remarks : Lives in a variety of habitats, on trees, rocks, under stones and on buildings.

Status : Common.

7. *Hemidactylus frenatus* Schlegel Southern House Gecko

1836. *Hemidactylus frenatus* Schlegel, *Erp. Gen.*, **3** : 366.

1935. *Hemidactylus frenatus* Smith, *Fauna Brit. Ind.*, **2** : 95-96.

Material examined : West Kameng Dist. : 4 ex., Jameri, 14.x.1987, coll. D. P. Sanyal. 1 ex. Likabali, 14.xii.1988, coll. D. P. Sanyal. East Kameng Dist. : 6 ex., Seijusa, 10.x.1987, coll. D. P. Sanyal, Lohit Dist. : 29 ex., from Namsai, Lathao and Kamglong, 18.ii.1987, coll. D. P. Sanyal. Tirap Dist. : 12 ex., Khunsa, 12.ii.1987; Deomali, 12.ii.1987; Bordumsa, 16.ii.1987, coll. D. P. Sanyal. Changlang Dist. : 4 ex., Namsang, 10.ii.1987, 3 ex., Miao, 5.v.1981 & 8.v.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 12-50 mm., tail 30-53.

Diagnostic character : Head large, snout obtusely pointed; 10-12 upper and 8-10 lower labials; mental large, subtriangular; back with smaller tubercles, not crowded, sometimes sparse, nearly always separated by spaces equal to several diameters of tubercles; head devoid of tubercles; 4-5 lamellae under 1st. toe, 9-10 under 4th.

Distribution : Arunachal Pradesh : as mentioned under "material"; Southern India, West Bengal.

Remarks : A common house gecko in South India. It breeds in warm climate.

Status : Common.

Genus 6. *Cosymbotus* Fitzinger, 1843

8. *Cosymbotus platyurus* (Schneider) Field House Gecko

1792. *Stellio platyurus* Schneider, *Amphib. physiol.*, **2** : 30.

1922. *Cosymbotus platyurus* Taylor, *Liz. Philipp. Is.*, : 59.

Material examined : East Siang Dist. : 1 ex., Rotung, coll. S. W. Kemp; 1 ex., Upper Rotung, coll. 32 Sikh pioneer; (A. C. E.). Changlang Dist. 1 ex, Miao, 4.iv.81, 2 ex., Deban, 27 km. E. of Miao, 27.iv.1981; coll. Dr. S. Biswas.

Measurements : Snout to vent 35-54 mm., tail 40-56 mm.

Diagnostic character : Snout obtusely pointed, distinctly longer than the distance between the eye and the ear-opening; 9-11 upper and 8 or 9 lower labials. Digits webbed, strongly dilated, with divided lamellae beneath. Dorsal scales small, granular, intermixed with larger tubercles. Greyish brown above and spotted with darker colour on the back and bands on the tail.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Sikkim, Darjeeling in India.

Elsewhere : Sri Lanka, Nepal, Indo-China, Hongkong, Formosa; The East Indian Archipelago.

Remarks : Distinguished from other house geckos by the fringe of skin along the sides of the body.

Family 3 AGAMIDAE

Key to genera of family AGAMIDAE

1. Body with a wing like lateral membrane *Draco*
- Wing like lateral membrane is absent 2
2. Three parallel longitudinal folds forming U-shaped marking present on throat *Ptyctolaemus*
- No such U-shaped fold on the throat 3
3. Dorsal scales equal *Calotes*
- Dorsal scales unequal 4
4. Tympanum exposed, gular sac present *Myctopholis*
- Tympanum concealed or partially naked, gular sac small or absent 5
5. A post orbital spine is present *Oriocalotes*

– Post orbital spine is absent *Japalura*

Genus 7. *Draco* Linnaeus, 1758

9. *Draco maculatus* (Gray)

Flying Lizard

1845. *Dracunculus maculatus* Gray *Cat. Liz. Brit. Mus.*, : 262

1864. *Draco maculatus* Günther, *Rept. Brit. Ind.*, : 125.

Material examined : East Siang Dist. 1 ex., Yabung, coll. S. W. Kemp, (A. C. E.).

Measurement : Snout to vent 57 mm., tail 90 mm.

Diagnostic character : Body with a large, lateral, winglike membrane, a gular appendage and a lateral flap on either side of the throat. Tail long. Colouration cryptic, resembling the bark of the tree on which the lizards live.

Distribution : Arunachal Pradesh : as mentioned in the "material"; The whole of the Indo-Chinese peninsula from Assam to Hainan.

Remarks : Inhabits primarily evergreen biotopes up to 1000 m.

Status : Commonest Flying Lizards of the Indo-Chinese Region.

Genus 8. *Ptyctolaemus* Boulenger, 1885

10. *Ptyctolaemus gularis* Peters

Blue Throated Lizard

1864. *Otocryptes gularis* Peters, *Mon. Aked. Berlin.*, : 386.

1885. *Ptyctolaemus gularis* Boulenger, *Cat. Liz. Brit. Mus.*, 1. : 273.

Material examined : East Siang Dist. 2 ex., Kobo, coll. S. W. Kemp & Capt. M. de Courcey; 1 ex., Routang, coll. S. W. Kemp, (A. C. E.). Changlang Dist. 5 ex. Horn bill, 30 km. N. E. of Miao, 10-16.iv.81. 1 ex. Deban 27 km. E. of Miao, 27.iv.1981; coll. Dr. S. Biswas.

Measurements : Snout to vent 43-65 mm., tail 90-145 mm.

Diagnostic character : Body compressed; no dorsal crest, limbs moderate, fourth toe much longer than third. Male with a low nuchal fold.

Olive brown above; a dark stripe from below the eye to the angle of the mouth.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Assam, Meghalaya.

Remarks : A ground-lizard preferring the neighbourhood of shady forest.

Status : Common.

Genus 9. *Mictopholis* Boulenger, 1885

11. *Mictopholis austeniana* (Annandale)

1908. *Salea austeniana* Annandale, *Rec. Ind. Mus.*, 2 : 97.

1935. *Mictopholis austeniana* Smith, *Fauna Brit. Ind.*, 2 : 165.

Material examined : West Kameng Dist. 1 ex., Bomdila, 17.xi.1990, coll. S. Sur.

Diagnostic character : Body compressed, dorsal scales very unequal, irregularly shaped. A small gular fold. Third and fourth fingers equal, fourth toe distinctly longer than third.

Distribution : Arunachal Pradesh : as mentioned in the "material" Dafla Hills.

Status : Indeterminate.

Genus 10. *Oriocalotes* Gunther, 1864

12. *Oriocalotes paulus* Smith

1845. *Calotes minor* Gray, *Cat. Liz. Brit. Mus.*, 244.

1935. *Oriocalotes paulus* Smith, *Fauna Brit. Ind.*, 2 : 166.

Material examined : East Siang Dist. 1 ex., Upper Rotung, coll. S. W. Kemp.

Measurements : Snout to vent 25 mm., tail 65 mm.

Diagnostic character : Dorsal crest present with mere denticulation. No gular sac. Tail rounded, Pale brownish-olive above, light brown below, the throat with dark transverse streaks.

Distribution : Arunachal Pradesh : as mentioned in the "material"; The Khasi Hills, Sikkim.

Status : Indeterminate.

Genus 11. *Japalura* Gray, 185313. *Japalura andersoniana* Annandale
(Japalura Lizard)

1905. *Japalura andersoniana* Annandale, *Jour. Asiat. Soc. Bengal.*, 1 : 85. pl. 2. fig. 4.

Material examined : East Siang Dist. 1 ex., Abore country, coll. George Dumber, (A. C. E.).

Measurements : Snout to vent 75 mm., tail 160 mm.

Diagnostic character : Body compressed; gular sac indicated by a fold. Limbs slender, fourth much longer than third. Tail compressed, covered with keeled scales. Dark brown above.

Distribution : Arunachal Pradesh : as stated in the "material" Dafla Hills.

Status : Indeterminate.

Genus 12. *Calotes* Refinesque, 1815.Key to species of genus *Calotes*

Two separated spines above the tympanum
..... *versicolor*

Two parallel rows of compressed scales above the tympanum *jerdoni*

14. *Calotes versicolor* (Daudin)
(Common Garden Lizard)

1802. *Agama versicolor* Daudin, *Hist. Nat. Rept.*, 3 : 361, pl. 42.

1853. *Calotes versicolor* Jerdon, *Asiat. Soc. Bengal.*, 22 : 470.

Material examined : Changlang dist. 1 ex. Miao, 5.xii.1982. coll. Dr. S. Biswas.

Measurement : Snout to vent 70 mm., tail 180 mm.

Diagnostic characters : The head is large and high and the snout is short and pointed. Two separated spines above the tympanum. The entire body and tail are covered with strongly keeled

scales. The dorso-nuchal crest is prominent. The tail is rounded and extremely long.

Distribution : Arunachal Pradesh : as mentioned in the "material" whole of India.

Elsewhere : Indo-Chinese subregions.

Remarks : It is found in the scrub jungle, open woods, hedges and city gardens. It is mainly an arboreal lizard occurring wherever trees and shrubs are found. During the breeding season the male assumes a brilliant crimson or scarlet colour which is the source of the misappropriate name "Blood Sucker" given to this harmless lizard.

Status : Common.

15. *Calotes jerdoni* Günther
Jerdon's Calotes
(Fig.- 1 & 2)

1845. *Calotes maria* Gray, *Cat. Liz. Brit. Mus.*, : 243.

1870. *Calotes jerdonii* Günther, *Proc. Zool. Soc. Nov.*, : 778.

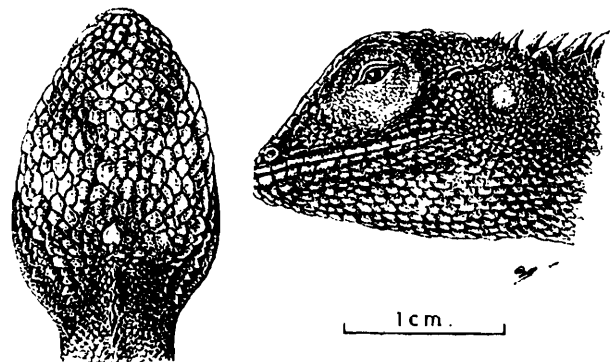


Fig. 1. Head (Dorsal view) of *Calotes jerdoni*

Fig. 2. Head (Lateral view) of *Calotes jerdoni*

Material examined : East Siang Dist. 1 ex., Komsang; 1 ex., Yambung, coll. S. W. Kemp, (A. C. E.) ; 2 ex., Pasighat, 19.xii.1988, coll. D. P. Sanyal.

Measurement : Snout to vent 60-85 mm., tail 205-295 mm.

Diagnostic character : Two parallel ridges above the tympanum not spinous, the lower one longer; starting from just behind the eye, separated

from the tympanum by two or three scales only. A bright green lizard with a pair of brown, black-edged, dorsal bands and a conspicuous fold ahead of the shoulder. Tail green at the base and posteriorly with bands.

Distribution : Arunachal Pradesh : as stated in the "material"

Elsewhere : Occurs in the hilly areas of NE India.

Remarks : Habits similar to those of other calotes lizards.

Family 4 SCINIDAE

Key to genera of family SCINIDAE

1. Pterygoid bones separated from one another, the palatal notch extending to the level of the centres of the eyes *Mabuya*
- Pterygoid bones usually in contact anteriorly, the palatal notch not reaching to the level of the centres of the eyes 2
- Limbs usually well developed, tympanum sunk, lower eyelid scaly *Sphenomorphus*
- Lower eyelid with a transparent disc *Scincella*

Genus 13. *Mabuya* Rafinesque, 1815

16. *Mabuya macularia* (Blyth) Bronze Grass Skink

1853. *Euprepes macularius* Blyth, *Jour. Asiat. Soc. Bengal.*, 22 : 652.

1887. *Mabuia macularia* Boulenger, *Cat. Liz. Brit. Mus.*, 3 : 182.

Material examined : East Siang Dist. 2 ex., Pasighat, coll. S. W. Kemp, (A. C. E.)

Diagnostic character : 28-30 rows of scales round the body; 7 keels on the dorsal scale and 12-13 lamellae under the fourth toe. The body colour is bronze with spots.

Distribution : Arunachal Pradesh : as mentioned in the "material" Throughout India.

Remarks : This skink is found in the grasslands and cultivated fields almost throughout India.

Status : Common.

Genus 14. *Sphenomorphus* Fitzinger, 1843

Key to species of genus *Sphenomorphus*

1. The adpressed limbs overlap 2
- The adpressed limbs do not overlap *courcyanum*
2. Rostral convex, 30-38 scales round the body *indicum*
3. Rostral flat or concave, 38-42 scales round the body *maculatum*

17. *Sphenomorphus indicum* (Gray)

Slender Skink

1853. *Hinulia indica* Gray, *Ann. Mag. Nat. Hist.*, (2) 12 : 388

1887. *Lygosoma indicum* Boulenger, *Cat. Liz. Brit. Mus.*, 3 : 241, pl. 16, fig. 1.

1928. *Sphenomorphus indicus* Schmidt., *Copeia.* : 80.

Material examined : East Siang Dist. : 3 ex., Rotung and Upper rotung, coll. S. W. Kemp, (A. C. E.)

Measurements : Snout to vent 52-80 mm., tail broken in all the specimens.

Diagnostic character : Rostral convex, 30-38 scales round the body. Brown above with small brown or black spots arranged in longitudinal lines and white below. There is a conspicuous black stripe.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas;

Elsewhere : S. E. Tibet, the whole of Indo-China, Hainan, S. China the Malayan Peninsula.

Status : A common species in mountainous districts of Eastern Himalayas.

18. *Sphenomorphus maculatum* (Blyth)

Slender Skink

1853. *Lissonota maculata* Blyth, *Jour. Asiat. Soc. Bengal.*, 22 : 653.

1887. *Lygosoma maculatum*. Boulenger. *Cat. Liz. Brit. Mus.*, 3 : 242.

1935. *Sphenomorphus maculatum* Pope. *Rept. China*. Newyork. : 483.

Material examined : Lower Subansiri Dist. 1 ex., near Tali, 30.1.1975; 1 ex., Ayumwing, Tali, 26.11.1975 and 2 ex., Pabin, 17.1.1975, coll. Dr. J. M. Julka. East Kameng Dist. 1 ex., palazl vill., Bana and 1 ex., Bana 21-22.x.1987. coll. D. P. Sanyal. Changlang Dist. 9 ex., Hornbill, 30 km. NE of Miao, 13-16.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 33-63 mm., tail 48-100 mm.

Diagnostic character : Rostral flat, 38-42 scales round the body. Bronzy or brown above with two vertebral series of small black spots and light indistinct series of golden-spots. A black lateral band extend from the head to base of the tail. The lower parts are whitish.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas, North Bengal, the Andaman and Nicobar Islands.

Status : Common.

19. *Sphenomorphus courcyanum* (Annandale) Slender Skink

1912. *Lygosoma courcyanum* Annandale, *Rec. Ind. Mus.* 8 : 43, pl. v. fig. 5.

1952. *Sphenomorphus courcyanus* Mittleman, *Smithsonian Misc. Coll.* Washington, 117 (17) : 23.

Material examined : East Siang Dist. 1 ex., Upper Rotung, coll. 32. Sikh pioneer; 1 ex., Rotung, coll. Capt. M-de.Courcey; (A. C. E.).

Measurements : Snout to vent 35 mm., tail 65 mm.

Diagnostic character : 26 scales round the body. A brown dorso-lateral band edged by a light one is always present.

Distribution : Arunachal Pradesh : as stated in the "material" Khasi Hills (Meghalaya).

Status : Rare.

Genus 15. *Scincella* Mittleman, 1950

20. *Scincella sikkimensis* (Blyth) Sikkim Ground Skink

1854. *Mococa sikkimense* Blyth. *Jour. Asiat. Soc. Bengal*, 22 : 652.

1935. *Leiolopisma sikkimense* Smith. *Fauna. Brit. Ind.*, 2 : 301.

1952. *Scincella sikkimense* Mittleman, *Smithsonian Misc. Coll.* Washington. 117 (17) : 30.

Material examined : Lower Subansiri Dist. 1 ex., Gelanio, 10.xii.1974. 2 ex. Galensiniak, 10.xii.1974, coll. Dr. J. M. Julka.

Diagnostic character : Bonze-brown above with small black spots or shorts stripes arranged longitudinally and light bluish below. There is a distinct dark brown dorso-lateral band.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas (Sikkim, Darjeeling);

Elsewhere : Nepal : Bangladesh; S. Tibet.

Status : Common.

Family 5 LACERTIDAE

Genus 16. *Tarkydromus* Doudin, 1802

21. *Tarkydromus sexlineatus khasiensis* (Boulenger)

Long-tailed Grass Lacerta (Fig. 3 & 4)

1890. *Tachydromus sexlineatus* Boulenger. *Fauna. Brit. Ind.*, 1 : 169.

1917. *Tachydromus khasiensis* Boulenger. *Mem. Asiat. Soc. Bengal.*, 5 : 221. pl. 47. fig. 1.

1935. *Tarkydromus sexlineatus khasiensis* Smith. *Fauna Brit. Ind.*, 2 : 369.

Material examined : East Siang Dist. 1 ex., Janakmukh, coll. S. Kemp (A. C. P.). Lohit Dist. 1 ex. Teju, 19.i.1970, coll. Dr. J. M. Julka. Tirap Dist. 1 ex. 27.i.1962, coll. C. B. Srivastava.

Changlang Dist. 3 ex. Hornbill, 30 km. NE. of Miao, 14-15.xii.1983, coll. Dr. S. Biswas.

Measurements : Snout to vent 35-46 mm., tail 150-160 mm.

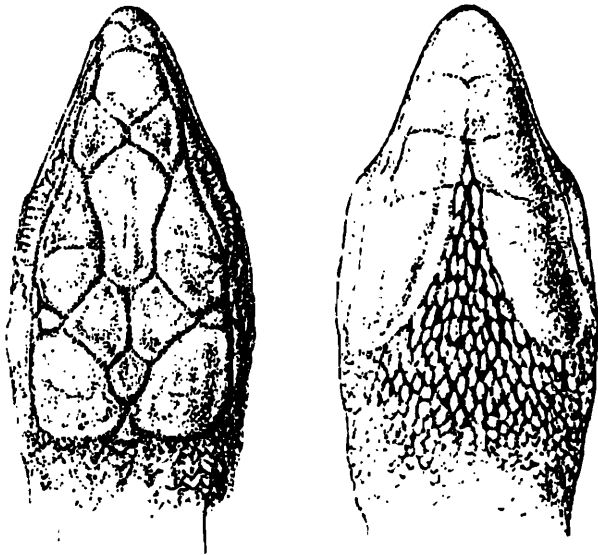


Fig. 3. Head (Dorsal view)

Fig. 4. Head (Ventral view) of *Takydromus sexlineatus* *Khasiensis*

Diagnostic character : Fronto-nasal often broader than long; scales on the flanks larger, pointed, keeled, bordered above and below by larger strongly keeled scales; 2 or 3 femoral pores on each side. Greenish brown above with a light dorso-lateral stripe dotted above and below with black and another black stripe along the side of the head and flanks. The belly is greenish-white.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Khasi Hills, (Meghalaya); Cachar (Assam);

Elsewhere : Myanmar.

Remarks : Insectivorous and diurnal in habits.

Status : Common.

Family 6 ANGUIDAE

Genus 17. *Ophisaurus* Daudin, 1803

22. *Ophisaurus gracilis* (Gray)

Indian Glass Snake

1845. *Pseudopus gracilis* Gray, *Cat. Liz. Brit. Mus.*, : 56.

1885. *Ophisaurus gracilis* Boulenger, *Cat. Liz. Brit. Mus.*, 2 : 283, pl. 15, fig. 1.

Material examined : East Siang Dist. 5 ex., Upper Rotung, coll. 32. Sikh Pioneer, (A. C. E.).

Measurements : Snout to vent 45-185 mm., tail 95-270 mm.

Diagnostic character : The body is elongated and snake like and lack of limbs, can be distinguished from the snakes by the presence of eyelids. Light brown or dark-brown above and pale brownish or yellowish on the lower surface. The dorsal pattern consists of a darker lateral band and scattered blue, black-edged spots.

Distribution : Arunachal Pradesh : as mentioned in the "material" Extreme northeastern India, adjacent territory of Myanmar (Burma) and is recently recorded from Simla (Himachal Pradesh).

Remarks : This species is the only representative of the family in India.

Status : Common at lower elevations in the hills of eastern India.

Family 7 VARANIDAE

Genus 18. *Varanus* Merrem, 1820

23. *Varanus bengalensis* (Daudin)

Common Indian Monitor

1758. *Lacerta monitor* Linnaeus, *Syst. Nat. Ed.*, 10 : 201.

1890. *Varanus bengalensis* Boulenger, *Fauna Brit. Ind.*, : 164.

Material examined : East Siang Dist. : 1 ex., Kobo, coll. D. C. of Macintyre, (A. C. E.); 2 ex. Pasighat, 19.xii.1988, coll. D. P. Sanyal.

Measurements : Snout to vent 160-190 mm., tail 225-265 mm.

Diagnostic character : Head long and narrow, snout pointed. It covered with small scales; body scales granular; limbs strong; neck long and mobile; tail laterally compressed. Young and adult differ in colouration. Young dark olive above with numerous light spots or ocelli alternating with dark bars and whitish on the undersides with narrow dark transverse bars sometimes broken up into spots. Adult brownish or olive above with blackish

dots on the back; lower parts yellowish, mottled with black.

Distribution : Arunachal Pradesh : as mentioned in the "material" Whole of India.

Elsewhere : Nepal; Myanmar (Burma).

Remarks : Diurnal in its habits and usually emerges from its hiding place two hours after sunrise and remains active till midday.

Status : Protected under Schedule I of India Wildlife Act, 1972.

Suborder : (iii) SERPENTES

Key to families of suborder SERPENTES

1. Eyes vestigial, body worm like, teeth only in upperjaw..... TYPHLOPIDAE
- Eyes not vestigial, teeth in both jaws..... 2
2. Vestiges of hind limbs present. BOIDAE
- Vestiges of hind limbs absent..... 3
3. Poison fangs present. 4
- Poison fangs absent..... COLUBRIDAE
4. Teeth present behind poison fangs, pupil round. ELAPIDAE
- Teeth absent behind poison fangs, pupil vertical. VIPERIDAE

Family 8 TYPHLOPIDAE

Key to genera of family TYPHLOPIDAE

1. Nasal suture terminating at the edge of preocular. *Ramphotyphlops*
- Nasal suture not terminating at the edge of preocular. *Typhlops*

Genus 19. *Ramphotyphlops* Fitzinger, 1843

24. *Ramphotyphlops braminus* (Daudin)

Common Blind Snake or Brahminy Blind Snake

1803. *Eryx braminus* Daudin, *Hist. Nat. Rept.*, 7 : 279.

1890. *Typhlops braminus* Boulenger, *Fauna Brit. India.*, : 236.

1980. *Ramphotyphlops braminus*, Nussabaum, *Herpetologica*, 36 : 215.

Material examined : East Kameng Dist. 5 exs., Bhairab-kunda, 4.iii.1961, coll. Dr. K. C. Jayram.

Measurements : Total length 95-160 mm.

Diagnostic character : Head bluntly rounded. Eyes indistinct, rostral large, snout rounded. Nasal suture terminating at the edge of preocular. Body uniformly cylindrical. Tail very short ending in a small sharp stiff point. Colour brown or blackish brown above, lighter below; snout, anal region and end of tail pale.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Throughout the Oriental region, Southern China including Hainam, Hong Kong and Taiwan. Introduced by human agency in several islands of the Pacific.

Remarks : Lives beneath the soil or stones or debris. They have also been found in flood plains forest under logs and stones. Often seen inside houses.

Status : The most wide spread species of the genus.

Genus 20. *Typhlops* Oppel, 1811

Key to species of genus *Typhlops*

1. Nasals completely divided, 22 scales round the body..... *jerdoni*
- Nasals incompletely divided, 24-26 scales round the body. *diardii*

25. *Typhlops jerdoni* Boulenger
Jerdon's Warm Snake

1890. *Typhlops jerdoni* Boulenger, *Fauna Brit. India.*, : 238.

Material examined : East Siang dist. : 1 ex., Pasighat, coll. Capt. R. S. Kennedy, (A. C. E.).

Diagnostic character : Snout round, strongly projecting nostril lateral. Nasal completely divided, the lower cleft passing to the 2nd labial; ocular and preocular longer than the posterior nasal. 22 scales round the body. Dark brown or blackish

above, light brown below; snout and anal region whitish.

Distribution : Arunachal Pradesh : as stated in "materials". Eastern Himalayas; Assam; Meghalaya.

Elsewhere : Upper Myanmar.

Remarks : Lives beneath the soil or stones or debris. It is preyed on by other snakes.

Status : Common.

26. *Typhlops diardii* Schlegel Diard's Blind Snake

1839. *Typhlops diardii* Schlegel, *Abbild. Amphib.*, : 39.

Material examined : East Siang Dist. 3 ex., Kobo, coll. S. W. Kemp; 4 ex. Janakumukh, coll. 32, Sikh Pioneer, Capt. J. S. O'Neill and Capt. R. S. Kennedy; 1 ex., Balik, coll. Capt. Wilson; 1 ex., Pasighat, coll. R. S. Kenedy; (All are from A. C. E.). Lower Subansiri Dist. 1 ex., New Itanagar, 31.iii.1981, coll. Dr. S. Biswas.

Measurements : Total length 250-277 mm.

Diagnostic character : Snout rounded, strongly projecting; nostril lateral. Nasal incompletely divided, the lower eleft passing to the 2nd labial; ocular and preocular shorter than posterior basal. 24-26 scales round the body. Colour black or blackish above, paler below or a uniform pale gray.

Distribution : Arunachal Pradesh : as mentioned in the "materials". West Bengal, Assam.

Elsewhere : Nepal, Bangladesh and Myanmar to Indo-china, south through Malayan Peninsula, Indonesia (Sumatra, Borneo).

Remarks : In habits, it resembles the common Blind Snake.

Status : Common.

Family 9 BOIDAE

Genus 21. *Python* Daudin, 1803

27. *Python molurus bivittatus* Mertens Rock Python

1930. *Python molurus bivittatus* Mertene, *Abhandl.*

Senckenb. Naturforsch. Gesellsch Frankfurt am Main, 42 : 287.

Material examined : Changlang Dist : 1., 77th mile camp from Miao on M. V. Road, 13.i.1987, coll. Dr. S. Biswas.

Measurements : Snout to vent 2210 mm., tail 320 mm.

Diagnosis character : Labials separated from eye by suboculars; lance-shaped mark on the head distinct throughout.

Distribution : Arunachal Pradesh : as mentioned on the "material"

Elsewhere : Sourthern Yunnan east to Fujian including Hainan, Macao and Hong Kong. Eastern Sichuan, China. Myanmar eastward through Indochina, Indonesia.

Remarks : Forest dweller occuring in dense as well as in open forest with rocky outcrops.

Status : Common.

Family 10 COLUBRIDAE

Key to genera of Family COLUBRIDAE

1. Mental groove present. 2
 - Mental groove absent. *Pareas*
2. All the maxillary teeth solid. 3
 - Last 2 or 3 maxillary teeth grooved. 17
3. Hydapophyses developed throughout the vertebral column. 4
 - Hydapophyses not developed on the posterior dorsal vertebrae. 11
4. Dentary bone freely movable on the articular; 30-50. Maxillary teeth present.
 - *Sibynophis*
 - Dentary bone not freely movable on the articular; usually less than 30 maxillary teeth. 5
5. Posterior maxillary teeth longest. 6
 - Posterior maxillary teeth equal. 9

6. Scales in 15-19 rows, not disposed obliquely. 7
 – Scales in 19 rows, disposed obliquely anteriorly. *Pseudoxenodon*
7. Hemipenis extending to the 7th caudal plate. *Rhabdophis*
 – Hemipenis extending beyond 7th caudal plate. 8
8. Inter nasal distinctly narrowed anteriorly. ... *Xenochrophis*
 – Inter nasal broadly truncate anteriorly. *Amphiesma*
9. Nostril directed forward. 10
 – Nostril not directed forward. *Rhabdops*
10. Maxillary teeth 20-22, those in the middle a little longer than the other. *Blythia*
 – Maxillary teeth 18-20, those in the middle not longer than the others. *Trachischium*
11. Some of the anterior maxillary teeth enlarged and fang-like; pupil vertically elliptic. *Ophites*
 – Anterior maxillary teeth not fang-like; pupil round. 12
12. Posterior maxillary teeth longest. 13
 – Posterior maxillary teeth not longest. 15
13. Longitudinal series of scales in odd numbers. 14
 – Longitudinal series of scales in even numbers. *Zaocys*
14. 20-28, teeth gradually enlarged and forming a continuous series. *Ptyas*
 – 6-16 teeth, the posterior strongly enlarged and compressed. *Oligodon*
15. Scales with apical pits. 16
 – Scales without apical pits. *Liopeltis*
16. Scales in 19-27 rows. *Elaphae*
 – Scales in 13-15 rows. *Dendrelaphis*

17. Pupil round. *Chrysopelia*
 – Pupil not round. 18
18. Pupil horizontal. *Ahaetulla*
 – Pupil vertical. 19
19. Maxillary teeth 10-14. *Boiga*
 – Maxillary teeth 18-20. *Psammodynastes*

Genus 22. *Pareas* Wagler, 1830

28. *Pareas monticola* (Cantor)
Assam Snail Eater

1839. *Dipsas monticola* Cantor, *Proc. Zool. Soc.*, : 53.

1864. *Pareas monticola* Günther, *Rept. Brit. Ind.* : 327.

Material examined : East Sing Dist., 1 ex., Rotung and 12 ex., Upper Rotung, coll. 32, Sikh. Pioneer; 1 ex., Sirpo Valley, coll. Capt. J. B. Oneill; (A. C. E.).

Measurements : Snout to vent 150-425 mm. tail 45-130 mm.

Diagnostic character : Eye large, its diameter greater than its distance from the mouth; inter nasals about half as long as the prefrontals, the latter touching the eye. Loreal in broad contact with the eye. No preocular, 2 postoculars, the lower elongated and extending below the eye. Brown above with vertical blackish bars on the sides; a black line from above the eye to the nape and another from behind the eye to the angle of the mouth; top of head more or less thickly spotted with black.

Distribution : Arunachal Pradesh : as mentioned in the "material" Eastern Himalayas, Assam, Meghalaya.

Remarks : Subarboreal in their habit. In disposition these small snakes are quiet and inoffensive. They are nocturnal and appear to live chiefly on small molluscs.

Status : Common.

Genus 23. *Elaphe* Fitzinger, 1833

Key to species of genus *Elaphe*

1. Colour green. *prasina*

- Colour not green. 2
- 2. Loreal large. 3
- Loreal small. *mandarina*
- 3. Last labial touching the temporals ... *Radiata*
- Last labial not touching the temporals 4
- 4. Scales of the ischiadic region, strongly keeled.
..... *porphyracea*
- Scales of the ischiadic region feebly keeled.
..... 5
- 5. Scales in 21 rows. *cantoris*
- Scales in 23 rows. *taeniura*

29. *Elaphe radiata* (Schlegel) Copperhead Snake

1837. *Coluber radiatus* Schlegel, *Essai. Physion. Serp.*, 2 : 135.

1929. *Elaphe radiata*, Pope, *Bull. Amer. Mus. Nat. Hist.*, : 58 : 446.

Material examined : East Siang Dist. 1 ex., Pasighat, 18.xi.1988, coll. D. P. Sanyal. Lower Subansiri Dist. 5 ex. Itanagar, coll. S. Ghosh, on 15.v.1987, P. T. Bhutia on 20.vi.1988, 17.vi.1988, 14.viii.1990 and B. D. Tamang on 25.ix.1990.

Measurements : Snout to vent 1180-1400 mm., tail 295-335 mm.

Diagnostic character : Snout twice as long as the eye. Scales in 21 or 19 : 19 : 17 rows, more or less distinctly keeled. It has a copper coloured head. It gets the specific name, *radiata* from the three black streaks radiating from the eye. The back is greyish to yellowish brown with four black stripes on the forepart of the body.

Distribution : Arunachal Pradesh : as mentioned in the "material". Sikkim, Eastern Himalayas, Assam, Orissa, West Bengal, Extended to the Doon valley in the west subregion.

Remarks : This snake is usually found in the field and gardens in the vicinity of village.

Status : Common.

30. *Elaphe taeniura* Cope Striped Racer Snake

1861. *Elaphe taeniurus* Cope, *Proc. Acad. Nat. Sci. Philadelphes*, 12 : 565.

1935. *Elaphe taeniurus*, Pope, *Rept. China*, : 271.

Material examined : East Siang Dist. 2 ex., Upper Rotung, coll. 32 Sikh Pioneer and Capt. Mitchell, 2 (A. C. E.). Changlong Dist. 1 ex. near Burmanala, 67 km, from Miao, on the M. V. Road, 24.iv.81 and 1 ex., 42 km from Miao on the M. V. Road, 26.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 1295-1560 mm., tail 280-377 mm.

Diagnostic character : Snout 2.5 times as long as the eye. 7 to 9 supralabials, 2 or 3, sometimes only one touching the eye. Scales in 23 : 23 : 19 rows. Light greyish or brownish above, the head and neck uniform except for a black on each side of the head, broadest behind the eye, anterior part of the back with a vertebral series of large black butterfly-shaped spots.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Darjeeling (West Bengal), Assam; Myanmar (Burma) east through Indo-china to Vietnam, south to northern half of Malayan Peninsula.

Remarks : When excited, it will assume an attitude of defence.

Status : Indeterminate.

31. *Elaphe cantoris* (Boulenger) Darjeeling Trinket Snake

1894. *Coluber cantoris* Boulenger, *Cat. Sn. Brit. Mus.*, 2 : 35.

1939. *Elaphe cantoris*, Shaw and other, *Jour. Darjeeling. Nat. Hist. Soc.*, 14 : 74.

Material examined : West Kameng Dist., 1 ex., 55 km. from Rupa Kalak Tang, 9.xi.1970, coll. A. S. Rao, Lower Subansiri Dist. 1 ex., Doju Bung, 15.xii.1974, coll. J. M. Julka.

Diagnostic character : Snout 2 to 2.5 times as long as the eye; 8 supralabials, 4th & 5th or 3rd to 5th touching the eye. Anterior half of the body grey, the interstitial skin and margins of the scales white and with large squarish black spots, the vertebral series usually united to form broad transverse bars; posterior part of the body and tail olive brown to blackish, with irregular light cross-bars.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas, Assam, Meghalaya.

Remarks : Generally present in forests and foot-hills but are also found in the agricultural areas and fields.

Status : Common.

32. *Elaphe porphyracea* (Cantor) Black Striped Trinket Snake

1839. *Coluber porphyracea* Cantor, *Proc. Zool. Soc.*, 51.

1935. *Elaphe porphyracea* Pope, *Rept. China*, : 253.

Material examined : East Siang Dist. 1 ex., Kalek, Mihing, coll. S. W. Kemp, (A. C. E.). Lohit Dist. 1 ex., Tapghar, Teju, 5.xii.1986, coll. Dr. C. B. Srivastava.

Diagnostic character : Snout 2.5 times as long as the eye; 8 supralabials, 4th & 5th touching the eye. Pale to deep reddish brown above, with broad dark brown, black-edged cross bars which narrow on sides of the body. Lower parts uniform yellowish.

Distribution : Arunachal Pradesh : as mentioned in the "material" Sikkim, West Bengal (Darjeeling dist.), Assam, Meghalaya.

Elsewhere : Myanmar (Burma); Thailand; Laos; Northern Vietnam; Malayan Peninsula and Indonesia.

Remarks : According to Smith (1945) two

forms of this species are recognisable depending on the number of cross-bar on the body. This snake having 19 cross-bars on dorsal surface belongs to the form *Elaphe porphyracea porphyracea* in which the rings range from 14-20.

Status : Common.

33. *Elaphe prasina* (Blyth) Green Tree Racer

1854. *Coluber prasinus* Blyth, *Jour. Asiatic. Soc. Bengal*, 23 : 291.

1930. *Elaphe prasina* Smith, *Bull. Raffles. Mus. Singapore*, 3 : 48.

Material examined : Lower Subansiri Dist. 1 ex., Subansiri, 30.i.1975, coll. Dr. J. M. Julka.

Diagnostic character : Snout twice as long as the diameter of the eye. Preocular often touching the frontal. 9 supralabials, 4th to 6th touching the eye. Uniform green above in the adult, the interstitial skin with black and white reticulations, the scales sometimes edged with black in the young.

Distribution : Arunachal Pradesh : as mentioned in the "material" From Eastern Himalayas through Assam.

Elsewhere : Upper Myanmar (Burma) and Yunnan to Tong-king south to the Malayan Peninsula; northern Thailand, Laos and Vietnam.

Remarks : Arboreal in its habits.

Status : Indeterminate.

34. *Elaphe mandarina* (Cantor) Mandarin Snake (Fig. 5 & 6)

1842. *Coluber mandarinus* Cantor, *Ann. Mag. Nat. Hist.* (ser. 1), 9 : 483.

1925. *Elaphe mandarinus* : L. Sejneger, *Proc. U. S. Natl. Mus. Washington*, 66 : 84.

Material examined : East Siang Dist. 1 ex., Upper Rotung, 13.xii.1911, coll. 32, Sikh Pioneer (A. C. E.). Changlang Dist. 1 ex., Gandhigram,

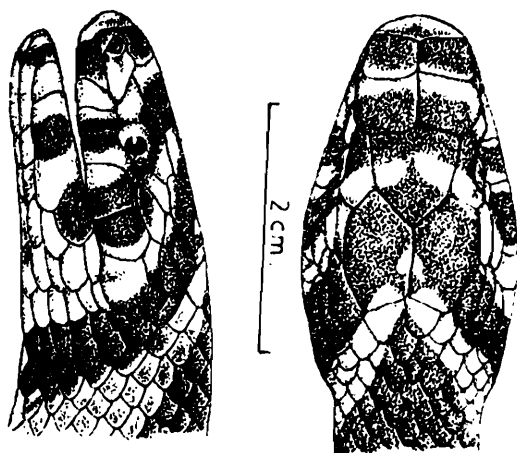


Fig. 5. Head (Lateral view)

Fig. 6. Head (Dorsal view) of *Elaphe mandarina*

ca 110 km. from Miao, on M. V. Road,
29.i.1987, coll. Dr. S. Biswas.

Measurements : Snout to vent 640 mm & 1075 mm., tail 108 mm and 200 mm.

Diagnostic character : Snout twice as long as the eye. 7 supralabials, 3rd and 4th touching the eye. Light brown or greyish above with a series of large, oval or rounded yellow spots, broadly edged with black. Yellowish below, with large black quadrangular spots which unite or alternate with one another; head above with black markings, a band across the snout, a crescentic mark on the top of the head passing through the eye where it divides into two and a V-shaped mark; its apex on the frontal shield and passing back on the side of the head behind the mouth to the throat.

Distribution : Arunachal Pradesh : as mentioned in the "material".

Elsewhere : Widely distributed over Southern China including Taiwan, Westward to south eastern Xizang (Tibet) and northward to Shanghai. Northern Myanmar, Laos and Vietnam.

Remarks : After a gap 75 years the species was recorded from Indian sub-continent.

Status : Rare.

Genus 24. *Ptyas* Fitzinger, 1843

Key to the species of genus *Ptyas*

1. Scales in 17 or 16 rows at mid-body; V. 190-213. *mucosus*

- Scales in 15 rows at mid-body; V. 160-187.
..... *korros*

35. *Ptyas mucosus* (Linnaneus)

Rat Snake, Dhaman

1758. *Coluber mucosus*. Linnæus. *Mus. Ad. Frid.* 1 : 37.

1860. *Ptyas mucosus* Gunther. *Rept. Brit. India* : 249.

Material examined : East Siang Dist. 1 ex., Janakmukh coll. 32 Sikh Pioneer, (A. C. E.).

Diagnostic character : Head long, distinctly wider than neck, snout bluntly pointed; rostral higher than wide, nostril between nasals and first upper labials; 3 loreals, 2 preocular, upper about four times size of lower, 2 postocular, 8 upper labials, 4th and 5th touching eye; 9 or 10 lower labials. Scales in 17 or 16 rows at mid-body. Eyes large and lustrous. Body robust, compressed, tapering towards both ends. Tail cylindrical about one-fourth of total length. Dorsally olivaceous brown, sometimes as dark as sepia or a light mustard yellow, lips and ventral scales margined with black. Belly greyish white.

Distribution : Arunachal Pradesh : as mentioned in the "material" Throughout the Indian sub-continent.

Elsewhere : Sri Lanka and Myanmar (Burma). In the west extends to Afghanistan and Turkestan. In the east to south China.

Remarks : Diurnal in its habit however not commonly seen during the day.

Status : A common snake in all parts of the country.

36. *Ptyas korros* (Schlegel)

Indo-Chinese Rat Snake

1837. *Coluber korros* Schlegel, *Physion. Serp.* 2 : 139.

1860. *Ptyas korros* Cope, *Proc. Acad. Nat. Sci. Philadelphia*, 12 : 563.

Material examined : East Siang Dist. 1 ex., Jinning vill; Along I.xi.1988, coll. D. P. Sanyal, Lower Subansiri Dist. 1 ex., Itanagar, 16.vi.1988, coll. T. Bhutia.

Measurements : Snout to vent 935-1030 mm., tail 490-585 mm.

Diagnostic character : Scales in 15 : 15 rarely 13 : 11 rows, smooth, olivaceous-green anteriorly, browner posteriorly, the scales on the posterior part of the body, edged or tipped with black. Yellowish-white below.

Distribution : Arunachal Pradesh : as mentioned in the "material".

Elsewhere : Southern China including Taiwan, Hong Kong and Hainan, Westward to Yunnan and Guzhou. Assam through Myanmar to Indonesia, south through Malayan Peninsula to Indonesia.

Remarks : It prefers to live away from habitations and has strong arboreal tendencies, seeming to prefer live in bushes or on low trees rather than on ground.

Status : Common.

Genus 25. *Zaocys* Cope, 1860

37. *Zaocys nigromarginatus* (Blyth) Green Rat Snake

1854. *Coluber nigromarginatus* Blyth, Jour. Asiatic. Soc. Bengal, 23 : 290.

1864. *Zaocys nigromarginatus* Günther, Rept. Brit. Ind., : 257.

Materials examined : Lower Subansiri Dist. 1 ex., Subansiri, 22.i.1975, coll. Dr. J. M. Julka.

Diagnostic character : Internasals nearly or quite as long as the prefrontals; loreal longer than high, 8 supralabials, 4th touching the eye. Dorsally it is greenish with four black stripes which extends to the whole length of body in the young and are confined to the posterior region in the adult.

Distribution : Arunachal Pradesh : as mentioned in the "material". India (Darjeeling, Sikkim, Assam).

Elsewhere : Nepal and northern Myanmar (Burma).

Remarks : It is found in the hills often at considerable altitude, upto 7,000 ft.

Status : Common.

Genus 26. *Liopelepis* Fitzinger, 1843

Key to species of genus *Liopelepis*

1. Snout projecting. *stoliczkae*
- Snout not projecting. *frenatus*

38. *Liopelepis frenatus* (Günther) Striped-neck Snake

1858. *Cyclophis frenatus* Günther, Catal. Colubr. Snakes. Coll. Brit. Mus. 120.

1923. *Liopelepis frenatus* Wall., Jour. Bombay Nat. Hist. Soc. 29 : 467.

Materials examined : East Siang Dist. 3 ex., Upper rotung, coll. 32 Sikh Pioneer, (A. C. E.).

Measurements : Snout to vent, 250-475 mm, tail 105-210 mm.

Diagnostic characters : Head not depressed, distinct from neck, snout not projecting. 7 supralabials, 3rd and 4th touching the eye. Scales in 15 : 15 : 15 rows. Olivaceous above, the scales edged with black, forming longitudinal lines on the anterior half of the body; broad black stripe from behind the eye; passing backwards and to the neck, and runs parallel on the opposite side.

Distribution : Arunachal Pradesh : as mentioned in the "material" Assam, Meghalaya.

Elsewhere : Myanmar (Burma); Laos and Vietnam.

Remarks : Generally found in hills at altitudes between 2,000 and 6,000 ft.

Status : Indeterminate.

39. *Liopelepis stoliczkae* (Sclater) Stoliczka's Striped-neck Snake

1891. *Ablabes stoliczkae* Sclater, Jour. Asiatic Soc. Bengal. 60 : 234, Pl. 6, fig. 1.

1924. *Liopelepis stoliczkae* Wall Jour. Bombay Nat. Hist. Soc., 29 : 863.

Material examined : Lower Subansiri Dist. 1 ex., Itanagar, 26.vi.1988, coll. P. T. Bhutia.

Measurements : Snout to vent. 270 mm, tail 170 mm.

Diagnostic character Head distinct from neck, much depressed, snout projecting, twice as long as the eye; nostril very small, in a long undivided nasal. 8 supralabials, 4th & 5th touching the eye. Greyish above, lighter below; broad black stripe on the side of the head, extending and gradually disappearing on the fore part of the body.

Distribution Arunachal Pradesh : as mentioned in the "material". Sikkim, West Bengal (Darjeeling district), Assam.

Remarks : It feeds on lizards and small birds.

Status, Rare.

Genus 27. *Oligodon* Boie, 1827

Key to species of genus *Oligodon*

1. Head shields complete, 2
Head shield incomplete, 3
2. Subcaudals 19-21. *albocinctus*
Subcaudals 15-17. *cinereus*
- 3 Subcaudals 15. *erythrorachis*
Subcaudals 17. *melazonotus*

40. *Oligodon albocinctus* (Cantor)

White-barred Kurki Snake

1839. *Coronella albocincta* Cantor, *Proc. Zool. Soc.*, : 50.

1923. *Oligodon albocinctus* Wall, *Rec. Ind. Mus.*, 25 : 326.

Materials examined : East Siang Dist. 1 ex., Sirpo Valley, coll. Capt. Wilson; 1 ex., Kobo, coll. Capt. M. de-Courcey; (A. C. E.). Lower Subansiri Dist. 1 ex., Banderdewa, 1977, coll. P. C. Roychowdhury.

Measurements : Snout to vent 515 mm, tail 170 mm,

Diagnostic characters : Ventral scales 177-208; subcaudals 40-69, 7 supralabials, 3rd and 4th touching the eye. Two distinct colour forms can be defined (Smith, 1943). Brown above with black

or dark brown black-edged crossbars; these may be simple bars or large rounded spots. The dark crossbars may disappear entirely with age, leaving the upper parts an almost uniform brown colouration.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas as far west as Sikkim. The whole of Assam east through Myanmar.

Remarks : Mainly diurnal and seen most often during the rainy season.

Status : A common snake in the Eastern Himalayas.

41. *Oligodon Melazonotus* Wall

Wall's Kurki Snake

1912. *Oligodon erythorhachis* Annandale, *Rec. Ind. Mus.*, 8 : 48.

1922. *Oligodon melazonotus* Wall, *Rec. Ind. Mus.*, 24 : 29.

Material examined : East Siang Dist. 2 ex., Upper Rotung, coll. 32 Sikh Pioneer, (A. C. E.).

Measurements : Snout to vent 460 mm., tail 90 mm.

Diagnostic character : No loreal, the frontal incontact with the 2nd labial; 6 upper labials, 3rd and 4th touching the eye. Ventral scales 171-173; caudals 42-45. Light brown above with a series of whitish black-edged crossbars. Whitish below with squarish black spots which occupy the whole of the ventral.

Distribution : Arunachal Pradesh : as mentioned in the "material" Eastern Himalayas.

Remarks : Only 2 specimens are known.

Status : Rare.

42. *Oligodon (Prox) cinereus* (Günther)

Black-barred Kurki Snake

1864. *Simotes cinereus* Günther, *Rept. Brit. India.* : 215.

1940. *Oligodon cinereus*, Smith, *Rec. Ind. Mus.*, 42 : 481.

Material examined : Changlang Dist. 1 ex., on the way, 57 km. from Miao, on M. V. Road. 23.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 177 mm., tail 33 mm.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : South China westward to Yunnan, including Hong Kong and Hainan. India (Assam) through Myanmar and Thailand to Laos, Cambodia and Vietnam, south to northern end of Malayan Peninsula.

Remarks : Though the specimens appears to agree with Indian material of *Oligodon cinereus* in many details, due to the difference in many major characters and colouration, we hesitate to regard it as that species fully. This snakes differ from *O. cinereus* as follows, scales round the middle of body in 15 rows (Vs. in 17 rows); subcaudal scales 49 (Vs. 29-42) and supralabials 7; 3rd, 4th and 5th touching the eye (Vs. 8; 4th and 5th touching the eye).

Status : Indeterminate.

43. *Oligodon erythrorhachis* Wall Red-striped Kurki Snake

1910. *Oligodon erythrorhachis* Wall, Jour. Bombay. nat. Hist. Soc., 19 : 923.

Material examined : Types deposited in British Museum, London. Description based on literature. Type locality Namsang.

Diagnostic character : No loreal, 7 upper labials, 3rd & 4th touching the eye; 1 anterior temporal. Scales in 15 rows. Ventrals 154, not angulate laterally; caudals 46. Brown above with a light vertebral striped and with 29 narrow, black, light edged crossbars on the body and 7 on the tail; yellowish below with squarish black spots at the outer margins of the ventrals and subcaudals.

Distribution : Arunachal Pradesh : as mentioned in the "material" Eastern Himalayas.

Remarks : Known only from the type-specimen. Locality Namsang, Assam. Now it is in Arunachal Pradesh.

Status : Rare.

Genus 28. *Dendrelaphis* Boulenger, 1890

Key to species of genus *Dendrelaphis*

1. Scales in 13 rows round the body. *gorei*
– Scales in 15 rows round the body. 2
2. Snout round. 3
– Snout not round. *cyanochloris*
3. Maxillary teeth 17-22. *tristis*
– Maxillary teeth 23-28. *ahaetulla*

44. *Dendrelaphis ahaetulla* (Linnaeus)

1758. *Coluber ahaetulla* Linnaeus, Syst. Nat. Ed., 10 : 225.

Material examined : Lower Subansiri Dist. 1 ex. Banderdewa 1977, coll. P. C. Roychowdhury; 1 ex., Itanagar, 11.vii.89, coll. P. T. Bhutia.

Measurements : Snout to vent 240-740 mm., tail 110-370 mm.

Diagnostic character : Maxillary teeth 23-28. Snout broadly rounded; eye as long as its distance from the nostril. Vertebral scales enlarged, variable in breadth, at mid-body broader than the outer row of scales, the posterior margin obtusely pointed or rounded or truncate. Bronze-brown above. Lower parts creamy white, a black stripe along the side of the head, strong on the temple and passing on to the neck, where it breaks up into oblique bars; upper lip and lower jaw yellow or white.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : The whole of Indo-Chinese region, from West Bengal and the Eastern Himalayas to southern China.

Remarks : Common in many places, both in the hills and in plains.

Status : Common.

45. *Dendrelaphis cyanochloris* (Wall)**Green Bronze-back Tree Snake**

1921. *Dendrophis pictus* Var. *cyanochloris* Wall. *Rec. Ind. Mus.*, 22 : 155.

Material examined : East Siang Dist. 1 ex., below Danida, coll. S. W. Kemp (A. C. E.). Changlang Dist. 1 ex., Hornbill, ca 30 km, N. E. of Miao, 11.xii.1993, coll. Dr. S. Biswas.

Measurements : Snout to vent 705 mm., tail 350 mm.

Diagnostic character : Snout squarish. Vertebrae enlarged at mid-body broader than the outer row of scales, the posterior margin truncate or concave. Bronzy olive above, the scales black-edged. Ventrals and outer scales-rows pale greenish or yellowish; a broad black temporal stripe, extending on to the neck and forebody, where it may be broken up into spots; lips and lower jaw yellowish.

Distribution : Arunachal Pradesh : as mentioned in the "material" Bengal (Darjeeling district); Andaman and Nicobar Islands. Assam north to the Thandaung Hills.

Elsewhere : Upper Myanmar; Tenasserim; Siam in the north-west.

Status : Indeterminate.

46. *Dendrelaphis gorei* (Wall)**HiMalayan Bronze-back Tree Snake**

1910. *Dendrophis gorei* Wall, *Jour. Bombay, Nat. Hist. Soc.*, 19 : 820.

1986. *Dendrelaphis gorei* W. S. Tian and Y. M. Jiang. *Identif. Man. Chin. Amphib. Rept.*, : 148.

Material examined : East Siang Dist. 1 ex., Kobo, coll. 32, Sikh Pioneer, (A. C. E.).

Diagnostic character : Scales in 13 rows round the body; snout broadly rounded; internasals shorter than the prefrontals. Bronzy brown above, greenish below; a more or less distinct yellowish stripe along scales rows 1 and 2; a black stripe along each side of the head, extending on to the neck where it breaks up into vertical bars.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas (Darjeeling), Assam.

Elsewhere : Myanmar (Burma), Tong-King.

Status : Indeterminate.

47. *Dendrelaphis tristis* (Daudin)**Common Indian Bronze-back**

1803. *Coluber tristis* Daudin *Hist. Nat. Rept.*, 6 : 430.

1894. *Dendrelaphis tristis* Boulenger, *Catal. Snakes Brit. Mus.*, 2 : 88.

Material examined : East Siang Dist. 1 ex., Janakmukh, coll. M. de-Courcey, (A. C. E.).

Diagnostic character : Maxillary teeth 17-22. Distinguished by the enlarged vertebrae and ridged ventrals. It is a slender and graceful snake with a flat head and large eye. The back is bronze-brown in colour which is marked with a distinctive dark stripe on the sides. The ventrals surfaces are whitish or light green.

Distribution : Arunachal Pradesh : as mentioned in the "material" Peninsular India from Sind in north west and Darjeeling in the north-east.

Elsewhere : Sri Lanka.

Remarks : It lives almost entirely on trees and shrubs; rarely coming to the ground. It is active even during the hottest part of the day.

Status : Common in south India and along the Western Ghats. Uncommon north of the Tapti in the Gangetic plain. Common in the HiMalayan foot-hills.

Genus 29. *Ahaetulla* Link, 1807**48. *Ahaetulla prasina* Reinwardt****Short-nose Whipe Snake**

1827. *Dryophis prasinus*, Reinwardt in F. Boie. *Isis. van Ken. Jana*, 20 : 544.

1933. *Ahaetulla prasina* Stejneger, *Copeia*, : 203.

Material examined : Lower Subansiri Dist. 1 ex., Sang, Nov. 1966, coll. Dr. S. K. Tandon; 1 ex., Banderdewa, 1977, coll. P. C. Roychowdhuri; 1 ex.

Itanagar, 23.ix.1990, coll. S. Das. West Siang Dist. 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal. East Siang Dist. 1 ex., Janakmukh, coll. 32. Sikh Pioneer; 1 ex., Balack, coll. Capt. Wilson; (A. C. E.).

Measurements : Snout to vent 710-890 mm, tail 450-510 mm.

Diagnostic character : Snout acuminate, without dermal appendage, 2 to 2.5 times as long as the eye; nasal in contact with the labials. 9 supralabials, all entire, 4th, 5th and 6th touching the eye. Green above, the interstitial skin black and white, forming oblique lines. Paler below.

Distribution : Arunachal Pradesh : as mentioned in the "material" From Bengal (Jalpaiguri dist.) and the Eastern Himalayas (Assam) Sikkim.

Elsewhere : Through Myanmar to Indo-China, south through Malayan Peninsula to Indonesia and the Philippines.

Remarks : A very gentle snake, quite unafraid and easily handled.

Status : Common throughout the Indo-Chinese region, both in the hills at low altitudes and in the plains.

Genus. 30 *Chrysopelea* Boie, 1826

49. *Chrysopelea ornata* (Shaw)

Golden Tree Snake

1802. *Coluber ornatus* Shaw, *Gen. Zool.*, 3(2) : 477.

1827. *Chrysopelea ornata*, Boie, *Isis. von Oken, Jena*, 20 : coll. 546.

Material examined : East Kameng Dist. 1 ex., Dibru, 12.x.1987, coll. D. P. Sanyal.

Diagnostic character : The lateral, sharp and pronounced keeled condition of the ventrals in association with the unenlarged vertebral row of scales distinguish snake. It is black above with yellow or white cross bands and a series of redish or orange flower shaped spots on the back. The belly is greenish.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Western Ghats, Orissa, Bihar, West Bengal (Darjeeling district); Sri Lanka;

Myanmar and Indo-China, south through Malayan Peninsula to Indonesia; Philippines.

Remarks : This handsome snake is essentially arboreal but is also frequently seen in grass and on low bushes. Diurnal. It feeds largely on geckos and other lizards.

Status : A common snake in Indo-China and Sri Lanka. It is rarely seen in its Indian range.

Genus 31. *Ophites* Wagler, 1830

Key to species of genus Ophites

1. Anterior nasal larger than posterior. *jara*
- Anterior nasals smaller than posterior.
..... *laoensis*

50. *Ophites laoensis* Günther

Wolf Snake

1864. *Lycodon laoensis* Günther, *Rept. Brit. Ind.*, 317.

Material examined : Changlang Dist. 1 ex., Zero Camp, Miao, 22.xii.1983, coll. Dr. S. Biswas.

Measurements : Snout to vent 350 mm, tail 98 mm.

Diagnostic character : Anterior and posterior nasals subequal; loreal not or just touching the internasal, not touching the eye. Brownish or bluish-black above, with bright yellow cross bars which expand laterally; a yellow bar on the nape; upper lip and lower parts whitish.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Yunnan, China, Laos, Vietnam, Thailand and Malayan Peninsula.

Remarks : The species is recorded first time from Indian subcontinent.

Status : Indeterminate.

51. *Ophites jara* (Shaw)

Yellow-speckled Wolf Snake

1802. *Coluber jara* Shaw, *Genl. zool.*, 3 : 525.

1871. *Lycodon jara* Stoliczka, *Jour. Asiatic. Soc. Bengal*, 40 : 442.

1923. *Ophitis jara* Wall, *Jour. Bombay, Nat. Hist. Soc.*, 612.

Material examined : East Kameng Dist. 1 ex., Sejusa, 10.x.1987, coll. D. P. Sanyal, Lower Subansiri Dist. 1 ex., Banderdewa, 1977, coll. P. C. Roy Chowdhury.

Measurements : Snout to vent 220-360 mm., tail 55-105 mm.

Diagnostic character : Anterior nasal usually larger than posterior; loreal in contact with the internasal, not touching the eye. Brownish or pulpy black above, stippled all over with white, the pattern being formed by small spots or short longitudinal lines, two on each side; upper lip and lower surface uniform white.

Distribution : Arunachal Pradesh : as mentioned in the "material" Bengal, Orissa, Assam. Recently it has been recorded from Kateranian Ghat (Bharaich dist. U. P.).

Status : Indeterminate.

Genus 32. *Sibynophis* Fitzinger, 1843

52. *Sibynophis collaris* (Gray)

Collared Black-headed Snake

1853. *Psamophis collaris* Gray, *Ann. Mag. Nat. Hist.*, (2) 12 : 390.

1930. *Sibynophis collaris*, Smith, *Bull. Raffles. Mus.*, 3 : 40.

Material examined : Kameng Div. 1 ex., 6 km. south of Batchling village, 14.x.1961, coll. S. Biswas. East Siang Dist. 2 ex., Upper Rotung, coll 32 Sikh Pioneer, (A. C. E.).

Measurements : Snout to vent 440 mm., tail broken.

Diagnostic character : Anterior temporal in contact with the 8th labial; 10 upper labials, 4th to 6th touching the eye. Brown above, usually with a vertebral series of small black spots; head with small black spots or vermiculations and two black transverse bars, one behind the eyes, the other across the occiput. Lower parts yellowish, each ventral shield with an outer black spot or streak.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Himalayas as far west as Simla. Assam, north to the Mishmi Hills.

Elsewhere : Western Yunnan; Laos; the whole of Myanmar and the hill country of Siam.

Remarks : Its chief food appears to be lizards, mainly skinks.

Status : Common in the Eastern Himalayas and Assam.

Genus 33. *Xenochrophis* Günther, 1864

Key to species of the genus *Xenochrophis*

1. Scales in 17 rows, smooth. *punctulata*
- Scales in 19 rows, keeled. *piscator*

53. *Xenochrophis punctulatu* (Günther)

Spotted Keel-back Water Snake

(Fig. 7 & 8)

1858. *Tropidonotus punctulatus* Günther, *Catal. Snakes.*, *Brit. Mus.* : 247.

1965. *Xenochrophis punctulata* Malnatic and Minton, *Proc. Acad. Nat. Sci. Philadelphia*, 117 (2) : 19-43.

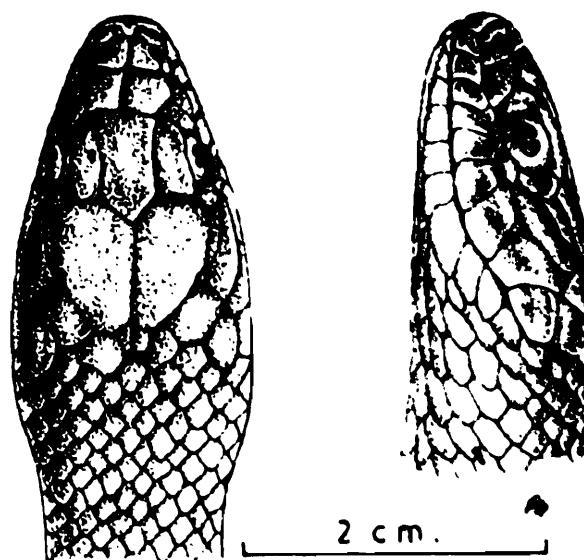


Fig. 7. Head (Dorsal view)

Fig. 8. Head (Lateral view) of *Xenochrophis punctulata*

Material examined : Lower Subansiri Dist. 1 ex., Itanagar, 14.iv.1990, coll. P. T. Bhutia.

Changlang Dist. 1 ex., Gandhigram, 26.i.1987, coll. Dr. S. Biswas.

Measurements : Snout to vent 580-850 mm., tail 195-270 mm.

Diagnostic character : Body moderately slender; scales in 17 rows, all smooth. Brown or black above, with small pale markings or dots; two outer rows of scales, ventrals and subcaudals yellowish, with dark margins; upper lip uniform yellowish; a light curved longitudinal streak on each side of the nape.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Tenasserim; Lower Myanmar.

Remarks : The species is recorded first time from Indian subcontinent.

Status : Indeterminate.

54. *Xenochrophis piscator* (Schneider)

Checkered Keelback

1799. *Hydrus piscator* Schneider, *Hist Amph.*, 1 : 247.

1965. *Xenochrophis piscator* Malnate and Minton, *Proc. Acad. Nat. Sci. Philadelphia*, : 117 : 19.

Material examined : West Kameng Dist : 1 ex., Dirang, 23.xi.1990, coll. S. Sur. East Kameng Dist. 1 ex., Seppa, 17.x.1987, coll. D. P. Sanyal; 1 ex., Sejusa, 9.xi.1990, coll. S. Sur. Lower Subansiri Dist. 1 ex., Siang, November 1966, coll. S. K. Tandon & G. S. Arora. West Siang Dist. 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal. East Siang Dist. 1 ex., Mathuri village, 16.ii.1973, coll. Dr. R. S. Pillai; 2 ex., Pasighat, 19.xi.1988, coll. D. P. Sanyal. Changlang Dist. 7 ex., Gibbon's land, Miao, 18.xii.1982, 2 ex., Miao, 1.xii.1982 & 5.xii.1982, all are collected by Dr. S. Biswas.

Measurements : Snout to vent 270-665 mm., tail 100-225 mm.

Diagnostic character : Scales in 19 rows, keeled. A fairly robust snake with oval head having slit like nostrils and moderately large eyes both with a decidedly upward inclination. Five rows black spots or an yellowish or olivaceous background, spots varying in size sometimes occupying most of the back. Number of rows not

constant throughout the body. Head olive brown with two black streaks one below and one behind the eye. Belly-white or yellowish.

Distribution : Arunachal Pradesh : as mentioned in the "material".

Elsewhere : Found through the Indian subcontinent from Baluchistan to Assam; upper Myanmar. Also occurs in the Malayan region; south China and Taiwan.

Remarks : Frequents water and is very common in tanks, paddy fields, pools and rivers; may be seen away from water.

Status : One of the commonest of Indian snakes.

Genus 34. *Pseudoxenodon* Boulenger, 1890

55. *Pseudoxenodon macrops* Blyth Mock Cobra

1854. *Tropidonotus macrops* Blyth, *Jour. Asiatic. Soc. Bengal*, 23 : 296.

1890. *Pseudoxenodon macrops*, Boulenger, *Fauna. Brit. Ind.*, : 340.

Material examined : East Siang Dist. 1 ex., near Sidi stream, coll. 32, Sikh Pioneer. Lohit Dist. 1 ex., Khamlong nagar, 18.xii.1986, coll. Dr. C. B. Srivastava.

Measurements : Snout to vent 580 mm., tail 165 mm.

Diagnostic character : Nostril large, between two nasals, loreal large, a little longer than high. The colouration is pretty but is extremely variable. It is brownish above and yellowish below. The dorsal pattern consists of vertebral series of orange or yellowish spots or crossbars. There is also a lateral series of black spots. The nape sometimes bears a chevron shaped mark.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : The Eastern Himalayas as west as Nepal; Assam, Myanmar, Malayan Peninsula.

Remarks : It gets the common name from the habit of widening the neck to a marked degree when excited.

Status : Common.

Genus 35. *Amphiesma* Dumeril & Bibron, 1854

Key to species of genus *Amphiesma*

1. Internasals truncate anteriorly. *modesta*
– Internasals not truncate anteriorly. 2
2. Internasals narrowed anteriorly. *stolata*
– Internasals not narrowed anteriorly.
..... *platyceps*

56. *Amphiesma modesta* (Günther)

Günther's Keelback

1875. *Tropidonotus modestus* Günther, *Proc. Zool. Soc.*, : 232.

1960. *Amphiesma modesta* Malnate, *Proc. Acad. Nat. Hist. Philadelphia*, 112 : 50.

Material examined : Changlang Dist., 1 ex., near 31st mile post on M. V. Road, 24.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 320 mm., tail 120 mm.

Diagnostic character : Internasals as long as or nearly as long as the prefrontals, truncate anteriorly. Brown above with small black spots regularly arranged and a dorso-lateral series of small yellow spot which may be united to form an indistinct stripe; lower parts yellowish with black spots on the sides of the ventrals sometimes forming continuous lines. A yellow stripe on each side of the head starting from behind the eye and converging towards its yellow on the neck, labials edged with black; top of head with indistinct vermiculation.

Distribution : Arunachal Pradesh : as mentioned in the "material" Assam.

Elsewhere : Upper Myanmar; North Siam; Thailand to Cambodia

Remarks : Found in the hills at between 2,000 and 5,000 feet altitude.

Status : A widely distributed and very variable species.

57. *Amphiesma stolata* (Linnaeus)

Striped Keelback

1758. *Colubar stolatus* Linnaeus, *Syst. Nat. Ed. 10. 1* : 219.

1854. *Amphiesma stolatum* Dumerill & Bibron, *Erpetol. Gen.*, 7 (1) : 727.

Material examined : Lower Subansiri dist. 1 ex., Banderdewa, 1977, coll. P. C. Roychowdhury; 1 ex., Indira Park, Itanagar, 20.vii.1989, coll. K. Allia. West Siang Dist. 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal.

Measurements : Snout to vent 430-500 mm., tail 135-150 mm.

Diagnostic character : Internasals narrowed anteriorly; nostrils directed slightly upwards. A graceful little snake with a relatively short body and long tail. Neck fairly evident. Body tapers to vent. Eyes large, pupil round, flecked with gold. A pair of conspicuous buff stripes covering one whole or two half rows of scales from neck or forebody to tip of tail. Some black or blackish irregular crossbars on body. Head olivaceous brown. Belly white with some small scattered black spots.

Distribution : Arunachal Pradesh : as mentioned in the "material" Found throughout India both in the plains and hills.

Elsewhere : Also from Sind in the west to south China in the east; Indo-China.

Remarks : It inhabits banks of rivers etc. and marshy areas.

Status : Common.

58. *Amphiesma platyceps* (Blyth)

Mountain Keelback

1854. *Tropidonotus platyceps* Blyth, *Jour. Asiatic Soc. Bengal*, 23 : 297.

1960. *Amphiesma platyceps*, Malnate, *Proc. Acad. Nat. Sci. Philadelphia*, 112 : 50.

Material examined : West Kameng Dist. 1 ex., Bomdila, 18.xi.1990, coll. S. Sur. East Siang

dist. 1 ex., Upper Rotung, coll. 32, Sikh Pioneer, (A. C. E.).

Measurements : Snout to vent 210 mm., tail 57 mm.

Diagnostic character : Nostrils lateral, internasals not narrowed anteriorly. Colouration very variable. Olive brown above, with small black spots. Lips white or yellow, belly yellowish with or without blackish dots.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Himalayas from Kashmir eastward to Assam.

Elsewhere : Nepal; China.

Status : A common snake.

Genus 36. *Trachischium* Günther, 1858

Key to species of genus *Trachischium*

1. Scales in 15 rows round the body.
..... *monticola*
- Scales in 13 rows round the body
..... *tenuiceps*

59. *Trachischium monticola* (Cantor)

Assam Oriental Worm Snake

1839. *Calamaria monticola* Cantor, *Proc. Zool. Soc.*, : 50.

1890. *Trachischium monticola* Boulenger, *Fauna Brit. Ind.*, : 286.

Material examined : East Siang Dist. 2 ex., Upper Rotung, coll. 32, Sikh Pioneer; 1 ex., Sipro Valley, coll. Capt. M. de-course; (A. C. E.). Lohit Dist. 1 ex., Gogdi Camp, 19.xi.1969, coll. Dr. J. M. Julka. Changlang Dist. 1 ex., Zero Camp, Miao, 24.xii.1983, coll. Dr. S. Biswas.

Measurements : Snout to vent 90 mm., tail 20 mm.

Diagnostic character : Scales in 15 rows round the body, those of the sacral region quite smooth. Dark brown above and yellowish below. The dorsal pattern consists of two vertebral blackish lines and two or more less prominent reddish or light lateral stripes.

Distribution : Arunachal Pradesh : as mentioned in the "material" West Bengal, Assam; Meghalaya.

Elsewhere : Bangladesh.

Status : Common.

60. *Trachischium tenuiceps* (Blyth)

Orange-bellied Oriental Worm Snake

1854. *Calamaria tenuiceps* Blyth, *Jour. Asiatic Soc. Bengal*, 23 : 288.

1890. *Trachischium tenuiceps* Boulenger, *Fauna Brit. Ind.*, : 286.

Material examined : East Kameng Dist. 1 ex., Seppa, 28.xi.1990. coll. S. Sur; 1 ex., Shergaon, 7.iii.1961, coll. Dr. K. C. Jayram,

Measurements : Snout to vent 103-235 mm., tail 21-50 mm.

Diagnostic characters : Scales in 13 rows round the body. Dark brown to blackish above, yellow below; tail mottled below with brown and with a brown mesial line.

Distribution : Arunachal Pradesh : as mentioned in the "material" Sikkim, West Bengal (Darjeeling).

Elsewhere : Nepal and Bangladesh.

Status : Indeterminate.

Genus 37. *Rhabdophis* Fitzinger, 1843

61. *Rhabdophis hiMalayanus* (Günther)

HiMalayan Keelback

1864. *Tropidonotus hiMalayanus* Günther, *Rept. Brit. Ind.*, : 265.

1923. *Rhabdophis hiMalayanus* Wall, *Jour. Bombay. Nat. Hist. Soc.*, 29 : 605.

Material examined : East Kameng Dist. 1 ex., Denzi village, 15.iii.1961; 1 ex., Bitselling, 16.v.1961, coll. Dr. K. C. Jayramkrishnan; 1 ex., Nargum village, 16.x.1961, coll. S. Biswas. Lower Subansiri Dist.; 1 ex., Indira Park, Itanagar, 20.vii.1989, coll. K. Allia. East Siang Dist. 1 ex., Abore hills, coll. George Dumber, (A. C. E.); 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal; 1 ex., Upper Rotung, coll. 32 Sikh Pioneer, (A. C. E.);

2 exi, Pasighat, 19.xi.1988, coll. D. P. Sanyal.

Measurements : Snout to vent 250-695 mm., tail 70-225 mm.

Diagnostic character : A nuchal groove, more or less distinct, the three median rows of scales of that region narrower than the others, the vertebral row sometimes hidden between the two adjacent rows. Olive above with small black spots. Lower parts yellowish, speckled with brown or black or nearly entirely greyish or blackish. Labials yellow with black sutures. Neck and forebody sometimes with a reticulation of black and yellow colours confined very largely to the interstitial skin.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas as far west Sikkim, Assam.

Elsewhere : Nepal; Bhutan; Bangladesh and Northern Myanmar.

Status : Common.

Genus 38. *Rhabdops* Boulenger, 1893

62. *Rhabdops bicolor* (Blyth)

Black & Yellow Forest Snake

1854. *Calamaria bicolor* Blyth, *Jour. Asiatic Soc. Bengal*, 23 : 289.

1893. *Rhabdops bicolor* Boulenger, *Catal. Snakes Brit. Mus.*, 1 : 301.

Material examined : Changlang dist. 1 ex., Namdapha Camp, 58 km. East of Miao, 23.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 360 mm., tail 95 mm.

Diagnostic character : Snout broadly rounded; nostrils directed slightly upwards; rostral large. Dark brown or blackish above, yellowish white below. Tail uniform below or spotted with black.

Distribution : Arunachal Pradesh : as mentioned in the "material" Assam, Meghalaya.

Elsewhere : Northern Myanmar; Western Yunnan.

Remarks : Found in the hills. It feeds on worms and slugs.

Status : Common.

Genus 39. *Blythia* Theobald, 1868

63. *Blythia reticulata* (Blyth)

Iridescent Hill Snake

1854. *Calamaria reticulata* Blyth, *Jour. Asiatic Soc. Bengal*, 23 : 287.

1868. *Blythia reticulata* Theobald, *Cat. Rept. Mus. Bengal*, 37 (extra no. 146) : 44.

Material examined : East Siang Dist. 2 ex., Upper Rotung; 1 ex., Janakmukh, 13.xii.1911, coll. 32, Sikh Pioneer; 1 ex., Sirpo Valley, coll. Capt. M. de-Coursey (A.C.E.).

Measurements : Snout to vent 162-355 mm., tail 12-30 mm.

Diagnostic character : Rostral as high as broad, visible from above. Olive to blackish above, highly iridescent, the scales sometimes with light specks or borders.

Distribution : Arunachal Pradesh : as mentioned in the "material" Assam.

Elsewhere : Myanmar.

Status : Indeterminate.

Genus 40 *Bolga* Fitzinger, 1826

Key to species of genus *Bolga*

1. Scales in 19-21 rows. 2
- Scales in 23-29 rows. *cynodon*
2. Preocular reaching the upper surface of the head. 3
- Preocular not reaching the upper surface of the head. 4
3. Scales in 19 rows. *quincunciata*
- Scales in 21 rows. *multifasciata*

4. Hemipenis extending to the 10th-12th caudal plate, the cups feebly scalloped.*ochracea*
- Hemipenis extending to the 10th caudal plate, the cups finely scalloped.*gokool*

64. *Bioga ochracea* (Günther)
Tawny Cat Snake

1868. *Dipsas ochracea* Günther, *Ann. Mag. Nat. Hist.* (4)
1 : 425.

Material examined : West Kameng Dist. 1 ex., 23.xi.1990, coll. S. Sur.

Measurements : Snout to vent 425 mm., tail 110 mm.

Diagnostic character : Anterior genials about as long as the posterior, latter in contact with one another or separated by small scales, vertebrals strongly enlarged. Greyish, reddish or yellowish brown above, some of the scales finely edged with black and forming more or less distinct transverse lines or bars, best marked in the young; the vertebral series of scales sometimes lighter than the others; paler below; lips and chin whitish.

Distribution : Arunachal Pradesh : as mentioned in the "material" Eastern Himalayas, Assam.

Remarks : In disposition it is fierce and bites readily when handled.

Status : A common snake.

65. *Boiga gokool* (Grey)
Eastern Gamma

1834. *Dipsas gokool* Grey, *Ill. Ind. Zool.*, 2 : Pl. 83, fig. 1.

Material examined : Changlang dist. 1 ex., Gibbon's land, Miao, 22.xii.1982, coll. Dr. S. Biswas.

Measurements : Snout to vent 360 mm., tail 85 mm.

Diagnostic character : Posterior genials in contact with one another. Scales in 21 : 21 : 17 rows, vertebrals strongly enlarged. Yellowish brown above, with a series of vertical Y-shaped

or T-shaped markings on each side of the back, separated from one another by a light vertebral line. A black stripe from the eye to the angle of the mouth.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Eastern Himalayas as far as West Bengal (Darjeeling), Assam.

Elsewhere : Bangladesh (Chittagong).

Remarks : It feeds mainly on lizards but will also devour small birds and mammals killing them by constriction.

Status : Common.

66. *Boiga quincunciata* (Wall)
Assam Cat Snake

1908. *Dipsadomorphus quincunciatus* Wall, *Jour. Bombay. Nat. Hist. Soc.*, 18 : 272.

1940. *Boiga quincunciata* Smith, *Rec. Ind. Mus.*, 42 : 484.

Material examined : East Kameng Dist. 1 ex., Pashighat, 19.xi.1988. coll. D. P. Sanyal. Lower Subansiri Dist. 1 ex., Banderdewa, 1977, coll. P. C. Roychowdhuri.

Measurements : Snout to vent 620 mm and 850 mm tail 265 & 270 mm.

Diagnostic characters : 1 Preocular, reaching the upper surface of the head. Scales in 19 : 19 : 15 or 13 rows, vertebrals strongly enlarged. Yellowish or greyish brown above, finely speckled with dark brown and with a vertebral series of dark brown or black spots or blotches; each spot covers from 5 to 8 scales and each scale edged with white; between the spots are more or less distinct whitish areas; sides of the body speckled or spotted with brown; nape with three longitudinal stripes; top of head brown, the frontal and parietals black edged with white.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Assam.

Elsewhere : Upper Burma.

Remarks : Known from four specimens and the type.

Status : Rare.

67. *Boiga multifasciata* (Blyth)**HiMalayan Cat Snake**

1861. *Dipsas multifasciata* Blyth, *Jour. Asiatic Soc. Bengal*.
29 : 114.

Material examined : East Kameng Dist. 1 ex., Ankaling village, 14.x.1961, coll. S. Biswas.

Measurements : Snout to vent 630 mm., tail 190 mm.

Diagnostic character : 1 sometimes 2 preoculars, reaching the upper surface of the head. Scales in 21 : 21 : 15 rows, vertebrals not strongly enlarged. Greyish brown above, finely speckled with black and with narrow black, transverse or oblique bars. A black longitudinal stripe on the nape and two more on the top of the head; another from the eye to the angle of the mouth; lower parts whitish, thickly spotted and speckled with black.

Distribution : Arunachal Pradesh : as mentioned in the "material" The Himalayas (Western and Eastern Himalayas).

Remarks : Found generally above, 4500 ft., altitude.

Status : Indeterminate.

68. *Boiga cynodon* (Boie)**Bengal Cat Snake**

1827. *Dipsas cynodon* Boie, *Isis.* : 549.

1924. *Boiga cynodon* Wall, *Jour. Bombay, Nat. Hist. Soc.*,
29 : 874.

Material examined : Lower Subansiri Dist. 1 ex., Bandardewa, 1977, coll. P. C. Roychowdhury; 1 ex., Nampeng, 16.vi.1972., coll. J. Jesep.

Measurements : Snout to vent 815 mm., tail 280 mm.

Diagnostic character : Scales in 23 rarely 25 rows strongly enlarged. Brownish, greyish or pinkish above with dark brown or black, chevron-shaped spots, very distinct anteriorly but which

may become indistinct or disappear entirely, posteriorly. Nape with two longitudinal, parallel, black stripes another from the eye to the angle of the mouth. Yellowish or greyish below more or less thickly powdered with brown black.

Distribution : Arunachal Pradesh : as mentioned in the "material"; West Bengal, Assam.

Elsewhere : Myanmar; Siam; Cambodia; Malayan Peninsula.

Remarks : It is found in plains and hills at low altitudes.

Status : Common.

Genus 41. *Psammodynastes* Günther, 1858

69. *Psammodynastes pulverulentus* (Boie)**Mock viper**

1827. *Psammophis pulverulenta* Boie, *Isis.* : 547.

1890. *Psammodynastes pulverulentus*, Boulenger, *Fauna. Brit. Ind.*, : 363.

Material examined : Lower Subansiri Dist., 1 ex., Subansiri, 25.xi.1974, coll. Dr. J. M. Julka. West Siang Dist., 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal. East Siang Dist., 3 ex., Upper rotung, 1 ex., Kobo, coll. 32, Sikh Pioneer; 1 ex., Renging, coll. S. W. Kemp; 2 ex., Sipro valley, 1 ex., Balek, coll. M-de-courcey (A. C. E.).

Measurements : Snout to vent 170-435 mm., tail 38-90 mm.

Diagnostic character : The body is short and stoky with a moderate tail. The large eye with vertical pupils. The colouration is variable. It is usually dark brown, blackish or reddish above and the lower surface are mottled with brown or grey or sometimes with dark spots or longitudinal lines.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Eastern Himalayas and Khasi hills, Sikkim, Meghalaya.

Elsewhere : Nepal; Myanmar to Laos and Vietnam; south through Malayan Peninsula to Indonesia.

Remarks : It feeds largely on frogs and lizards.

Status : Common.

Family 11 ELAPIDAE

Key to genus of family ELAPIDAE

1. Maxillary bone extending forward beyond the palatine. 2
- Maxillary bone not extending forward beyond the palatine *Bungarus*
2. Vertebral series of scales enlarged.
..... *Ophiophagus*
- Vertebral series of scales not enlarged. 3
3. Scales oblique. *Naja*
- Scales not oblique. *Calliophis*

Genus 42. *Bungarus* Daudin, 1803Key to species of genus *Bungarus*

1. Tail ending in a point, dorsal vertebrae not forming a ridge on the back. *niger*
- Tail not ending in a point, dorsal vertebrae forming a ridge on the back. *fasciatus*

70. *Bungarus fasciatus* (Schneider)

Banded Krait

1801. *Pseudoboa fasciata* Schneider, *Hist. Amph.*, 2 : 283.

1858. *Bungarus fasciatus*, Gunther, *Catal. Colubr. Snakes Coll. Brit. Mus.*, : 220.

Material examined : East Kameng Dist., 1 ex., Sejusa; 10.xi.1990, coll. S. Sur.

Measurements : Snout to vent 1230 mm., tail 130 mm.

Diagnostic character : Head broad and depressed; snout short, eye black, pupil very faintly outlined in yellow. Neck distinct. Body smooth and glossy with a conspicuous ridge down the spine and tail short and ending in a finger-like tip. Alternately banded with broad canary-yellow and black bands, completely encircling the body. Nape has a large, elongate, black patch, rounded behind. Lips lone, chin and throat yellow.

Distribution : Arunachal Pradesh : as mentioned in the "material"; North-east peninsular India, the southern most record being Hyderabad.

Elsewhere : Indo-china; south through Malayan Peninsula to Indonesia.

Remarks : Largely nocturnal. Extremely sluggish and remains lethargic even under provocation.

Status : Fairly common throughout the Indo-chinese sub region.

71. *Bungarus niger* Wall

Black Krait

(Fig. 9 & 10)

1908. *Bungarus niger* Wall, *Jour. Bombay. Nat. Hist. Soc.*, 18 : 715.

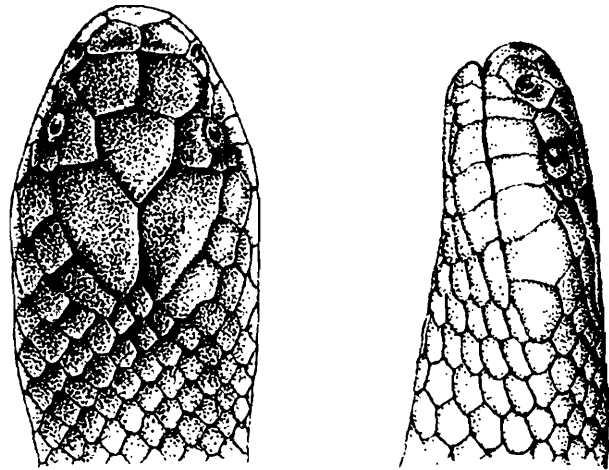


Fig. 9. Head (Dorsal view)

Fig. 10. Head (Lateral view) of *Bungarus niger*

Material examined : West Siang Dist. 1 ex., Along, 1.xii.1988, coll. D. P. Sanyal.

Measurements : Snout to vent 750 mm., tail 130 mm.

Diagnostic character : Scales in 15 rows throughout. Dorsal vertebrae not forming a ridge on the back. Tail ending in a point. Uniform black or bluish-black above, white below, with a more or less distinct dark mottling at the bases of the ventral and subcaudal shields.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Eastern Himalayas, Assam.

Elsewhere : China.

Remarks : In disposition it is quiet and inoffensive.

Status : Indeterminate.

Genus 43. *Calliophis* Gray, 1835

72. *Calliophis maclellandi* (Reinhardt)

Maclelland's Coral Snake

1844. *Elaps maclellandii* Reinhardt, *Calcutta, Jour. Nat. Hist.*, 4 : 532.

1907. *Calliophis maclellandii* Stejneger, *Bull. U. S. Natl. Mus.*, 58 : 391.

Material examined : Lower Subansiri Dist. 1 ex., Siang, November 1966, coll. S. K. Tandon & G. S. Arora. East Siang dist. 2 ex., Upper Rotung, coll. 32 Sikh Pioneer; 1 ex., Abore hills, coll. Sri George Dumber; (A. C. E.).

Measurements : Snout to vent 25-570 mm., tail 18-65 mm.

Diagnostic characters : The broad enamel-white band across head distinctive. It is a boldly marked species which is red or brownish above, with narrow black transverse bars on the body. The belly is yellowish with black cross-bars or spots.

Distribution : Arunachal Pradesh : as mentioned in the "material".

Elsewhere : From the Western Himalayas to southern China and Taiwan.

Remarks : Prefers thick forests between 1200-1800 mt., but may occur at lower elevation.

Status : Common.

Genus 44. *Naja* Laurenti, 1768

73. *Naja naja kaouthia*, Lesson

Bengal Cobra

1831. *Naja kaouthia* Lesson, *Bull. Universal. Sci. Indust. Ferussac* (Sect. 2., *Bull. Sci. Nat. Goel*) Paris, 25 : 122.

1940. *Naja naja kaouthia* Smith, *Rec. Indian Mus.*, 42 : 485.

Material examined : Lower Subansiri dist. 1 ex., Bandaidewa, 1977, coll. P. C. Roychowdhury; 1 ex., New Itanagar, 27.ix.1988, coll. T. B. Rai.

Measurements : Snout to vent 675 mm., tail 125 mm.

Diagnostic character : This Cobra has a rather rounded and smaller head. The overall colouration varies from yellow to green. The distinguishing characteristic is the presence of a yellow or orange coloured, O-shaped (Monocellate) mark on the hood in place 'spectacle' There is a black spot on either side of the lower surface of the hood and one or two black cross-bars on the belly slightly below the underside of the hood. The rest of the belly is of the same colour as the back but lighter.

Distribution : Arunachal Pradesh : as mentioned in the "material". Commonly found in Uttar Pradesh, Bihar, Orissa, West Bengal, Assam and the Andamans.

Status : Common.

Genus 45. *Ophiophagus* Günther, 1864

74. *Ophiophagus hannah* (Cantor)

King Cobra or Hamadryad

1836. *Hamadryas hannah* Cantor, *Asiatic Rex.*, 19 (1) : 87.

1945. *Ophiophagus hannah* Bogert, *Copeia, Ann. Arbor.* : 47.

Material examined : Changlang Dist. 1 ex., near Burma, Nala, 67 km. from Miao on M. V. Road, 24.iv.1981, coll. Dr. S. Biswas.

Measurements : Snout to vent 2210 mm., tail 475 mm.

Diagnostic character : The head is moderate in size and markedly depressed. The nostril is fairly large. The eye is moderately large with round pupil. The body is fairly robust. Colour blackish-brown above and dirty white below.

Distribution : Arunachal Pradesh : as mentioned in the "material" It is found in the dense forests of HiMalayan foot hills, West Bengal, Bihar, Assam, Orissa, Western Ghats and in the mangrove swamps of Sunderbans (West Bengal & Orissa) and the Andamans.

Remarks : It is diurnal snake feeds entirely on snakes.

Status : It is common nowhere and is partial to a jungle environment although it is sometimes met with in the plains and mangrove swamps.

Family 12. VIPERIDAE

Genus 46. *Trimeresurus* Lacepede, 1804

Key to species of genus *Trimeresurus*

1. 19-21, scales round the body. 2
- 23-27 scales round the body. 3
2. Dorsal scale keeled. *stejnegeri*
- Dorsal scale not keeled. *gramineus*
3. Ventrals 127-176. *monticola*
- Ventrals 200-218. *mucrosquamatus*

75. *Trimeresurus mucrosquamatus* (Cantor)

Brown Spotted Pit Viper

Fig. 11 & 12

1839. *Trigonocephalus mucrosquamatus* Cantor, *Proc. Zool. Soc. London*, : 32.

1864. *Trimeresurus mucrosquamatus* Günther, *Rept. Brit. India.*, London, : 390.

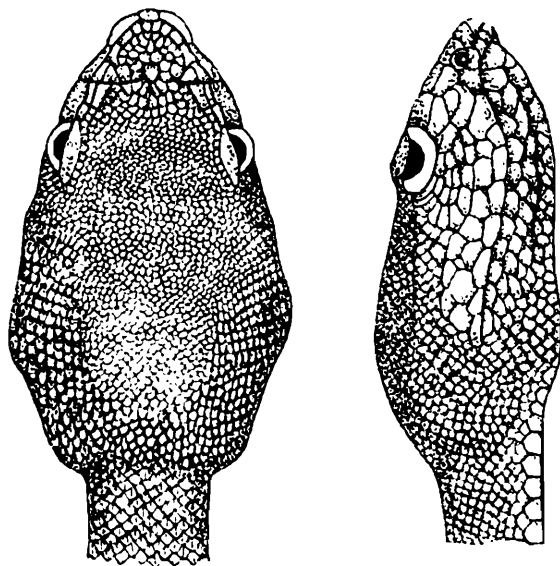


Fig. 11. Head (Dorsal view)

Fig. 12. Head (Lateral view) of *Trimeresurus mucrosquamatus* (Cantor)

Material examined : West Siang Dist. 1 ex.,

Along, 1.xii.1988, coll. D. P. Sanyal. Changlang Dist. 1 ex., Hornbill, Miao, 13.xii.1983, Dr. S. Biswas.

Measurements : Snout to vent 435-532 mm., tail 105-120 mm.

Diagnostic character : Head rather elongate; snout 2-3 times as long as the diameter of the eye. Upper head scales very small, unequal, obtusely keeled on the posterior part. Ventrals 200-218. Greyish or olive brown above, with a dorsal series of large brown, dark-edged, irregularly shaped spots and a lateral series of smaller ones; whitish below, heavily powdered with light brown. Head brown above, paler below. Tail light brown, with dorsal series of conspicuous black spots.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Assam.

Elsewhere : Bangladesh; Myanmar. Widely distributed over southern China including Hainan and Taiwan.

Remarks : Oviparous.

Status : Common.

76. *Trimeresurus monticola* Günther

Blotched Pit Viper

1864. *Trimeresurus monticola* Günther, *Rept. Brit. Ind. London*, : 388.

Material examined : E. Kameng Dist. 2 ex., Mursing, 17.ix.1961; 1 ex., Domkho village, 23.ix.1961, coll. S. Biswas; 1 ex., 10 km. from Kalaktong to Rupa, 20.xi.1970, coll. A. S. Rao. East Siang Dist. 1 ex., Rotung; 1 ex., Upper Rotung, coll. 32 Sikh Pioneer (A. C. E.). Tirap Dist. 1 ex., 1990, Dr. Panigrahi. Changlang Dist. 1 ex., Deban, Miao, 8.xii.1982, coll. S. Biswas.

Measurements : Snout to vent 190-750 mm., tail 32-105 mm.

Diagnostic character : Eye small; snout more than twice as long as the diameter of the eye. Upper head scales unequal, smooth, feebly imbricate. Ventrals 127-176. Light or dark brown above, with large, squarish, irregularly placed dark brown spots or markings upon the back and smaller ones upon the sides. head dark brown above; usually a light streak from the eye to the

angle of the jaw; lips pale yellowish or spotted with brown or entirely brown; lower parts whitish, spotted or powdered with brown.

Distribution : Arunachal Pradesh : as mentioned in the "material"; Eastern Himalayas, West Bengal (Darjeeling), Sikkim, the whole of Assam.

Elsewhere : Myanmar to Thailand and Vietnam, South through Malayan Peninsula to Indonesia (Sumatra).

Remarks : Oviparous. The eggs are guarded by the parent until the young emerge.

Status : Common.

77. *Trieresurus gramineus* (Shaw)

Bamboo Pit Viper

1802. *Coluber gramineus* Shaw, *Gen. Zool.*, 3 : 420.

1937. *Trimeresurus gramineus*, Smith, *Jour. Bombay. Nat. Hist. Soc.*, 39 : 730.

Material examined : East Siang Dist. 1 ex., Kobo, coll. 32 Sikh Pioneer (A. C. E.).

Diagnostic character : Snout twice as long as the diameter of the eye. Upper head-scales small, subequal, subimbricate, smooth. Dorsal scale not keeled. The head is flattened and appears unduly broad owing to the constricted neck. Body stout. Tail short and tapering, prehensile. Glass green above, glossy white, yellow or greenish below and on upper lip, chin and throat. Tail yellowish or reddish mottled dark golden.

Distribution : Arunachal Pradesh : as mentioned in the "material" It is found in most of the Peninsular India, West Bengal and Gujarat but is rare in Western Ghats, South of Goa.

Remarks : Its slow-moving habits and the habit of lying motionless in the foliage of trees and shrubs pose danger to the lives of people plucking tea, cutting bamboo or clearing undergrowth who are most often bitten.

Status : Not uncommon.

78. *Trimeresurus stejnegeri* Schmidt

Stejneger's Pit Viper

1925. *Trimeresurus stejnegeri* Schmidt, *Amer. Mus. Novit.*, Newyork, 157 : 4.

Material examined : Lower Subansiri Dist., 1 ex., Banderdewa, 1977. Coll. P. C. Roychowdhury, 1 ex., 70 km. from Zeropoint to Sebla, 20.i.1970. coll. A. S. Rao.

Measurement : Snout to vent 425 mm., tail 85 mm.

Diagnostic character : Snout twice as long as the diameter of the eye. Upper head-scales small, unequal, subimbricate, smooth. A single series of scales between the labials and the elongate subocular; temporal scales small, smooth. Dorsal scales keeled. Green above, pale green or whitish below. A light stripe, bordered below with orange or chocolate along the flank and base of the tail. Upper lip pale green; end of the tail usually pinkish.

Distribution : Arunachal Pradesh : as mentioned in the "material"

Elsewhere : Darjeeling to Vietnam. Southern China including Taiwan and Hainan.

Remarks : Found in hills.

Status : Common.

SUMMARY

The paper deals with the reptilian fauna of Arunachal Pradesh based on the collections made by the authors along with other experts during 1987-89, field surveys comprising Tirap, Lohit. Upper and Lower Subansiri, Dibang valley, East and West Kameng, East and West Siang and Changlang districts of Arunachal Pradesh, together with earlier collection made by Zoological Survey of India, Survey parties including the Namdapha Biosphere Reserve collections made during 1981 to 1987, Abor Expedition collection made during 1911-12. Swiss Entomological Expedition in 1961, Subansiri Expedition in 1974-75 and Daphabum Expedition in 1969-70. It comprises 78 species, 46 genera and 12 families. *Ophites laoensis* and *Zenochrophis punctulata*

recorded for the first time from India. The reptilian fauna represent one genus of Emydid freshwater tortoises *Pyxidea* a genus which is known to radiate southwards and southeast of main Indo-Chinese centre of differentiation. In the rest of the reptilian fauna, some genera like *Hemidactylus* and *Calotes* are known from both palaearctic and Oriental region; however most of the reptilian fauna are of Indo-Chinese origin and even the two newly recorded species of *Ophites* and *Xenochrophis* from India only help to extend the distribution range from Thailand, Malaysiansia, China and Myanmar (Burma) to India. Some species show remarkably restricted distribution viz. *Boiga gokool* which is confined to eastern Himalayas whereas others like *Trimeresurus monticola* extends from Yunnan to southeast Tibet through

Assam-Myanmar (Burma) mountains southwards to Malayasia.

ACKNOWLEDGEMENT

Authors are highly indebted to the Director, Zoological Survey of India, for providing us all sorts of facilities to carry out this work and Shri A.K. Sarkar, Scientist 'SE' and Sri B. Dattagupta, Sr. Zoological Assistant for helping to carry out these studies and to all collector for collecting the materials and handing over the same to us for the study. Thanks are also due to the Department of Forests, Revenue and Fishery, Government of Arunachal Pradesh for providing necessary help in various ways.

REFERENCES

- ANNANDALE, N. 1912. Zoological results of the Abore Expedition, 1911-12 II, Reptilia. *Rec. Ind. Mus.*, **8** : 37-55; supplement, **8** : 357-358.
- GHOSH, A. K. 1988. *Qualitative Analysis of Faunal Resources, Proposed Namdapha Biosphere Reserve, Arunachal Pradesh*, Technical Report. P. 104-106.
- MATHEW, R. 1983. On a collection of snakes from north-east India (Reptilia Serpentes). *Rec. zool. Surv. India*, **80** : 251-263.
- SANYAL, D. P. & Gayen, N. C. 1987. Fauna of Namdapha, Biosphere Reserve, (Part Reptilia). *Rec. zool. Surv. India*, **82** (1-4) : 297-302.
- SMITH, M. A. 1931. *The Fauna of British India including Ceylon and Burma, Reptilia and Amphibia*. Vol. I. Loricata, Testudines. Taylor and Francis, London : 185 pp., figs. Maps.
- SMITH M. A. 1935. *The Fauna of British India including Ceylon and Burma, Reptilia and Amphibia*. Vol. 2. Sauria, Taylor and Francis, London. xii + 440 pp. figs. Maps.
- SMITH M. A. 1943. *The Fauna of British India including Ceylon and Burma, Reptilia and Amphibia*. Vol. 3. Serpentes, Taylor and Francis, London. xiii + 583 pp. figs. Maps.

CHART SHOWING THE DISTRICTWISE DISTRIBUTION OF SPECIES

Name of species	Name of Districts										
	Tawang Dt.	West Kameng Dt.	East Kameng Dt.	Lower Subansiri Dt.	Upper Subansiri Dt.	West Siang Dt.	East Siang Dt.	Debang Valley Dt.	Lohit	Tirap	Changlang Dt.
	1	2	3	4	5	6	7	8	9	10	11
1. <i>Pyxidea mouhoti</i>		-	-	-	-	-	-	-	-	-	+
2. <i>Melanochelys tricarinata</i>		-		-	-	-	+	-	-		-
3. <i>Kachuga tecta</i>		-	-	-	-	-	+	-	-		-
4. <i>Kachuga sylhetensis</i>	-	-	+					-	-	-	
5. <i>Cytrodactylus khasiensis</i>		-	+	-		-	+	-	-	-	+
6. <i>Hemidactylus brookii</i>	-		-		-	+	+		+		+
7. <i>H. frenatus</i>		+	+	-				-	+	+	+
8. <i>Cosymbotas platyrus</i>		-					+		-		+
9. <i>Draco maculatus</i>	-	-	-	-			+		-		
10. <i>Ptyctolaemus gularis</i>				-			+			-	+
11. <i>Myctopholis austiana</i>		+							-	-	
12. <i>Oriocalotes pavlvs</i>							+	-			
13. <i>Japalura andersoniana</i>							+				
14. <i>Calotes versicolor</i>											+
15. <i>C. jerdoni</i>							+				
16. <i>Mabuya macularia</i>						-	+				
17. <i>Sphenomorphus indicum</i>							+				

Found +
Not found -

Name of species	T 1	EK 2	EK 3	LS 4	US 5	WS 6	ES 7	D 8	E 9	T 10	C 11
18. <i>S. maculatum</i>			+	+		-					+
19. <i>S. courcyanum</i>			-	-	-		+			-	
20. <i>Scincella sikimensis</i>			-	+	-					-	
21. <i>Takydromus sexilineatus khasiensis</i>		-			-		+		+	+	
22. <i>Ophisaurus gracilis</i>		-	-	-	-		+				-
23. <i>Varanus bengalensis</i>			-	-		-	+			-	
24. <i>Rhamphotyphlops braminus</i>	-	-	+			-					
25. <i>Typhlops jerdoni</i>	-				-		+				
26. <i>T. diardii</i>				+		-	+		-		
27. <i>Python molurus bivittatus</i>	-					-				-	+
28. <i>Pareas monticola</i>							+	-	-	-	-
29. <i>Elaphe radiata</i>	-	-	-	+			+	-	-		-
30. <i>E. taeniura</i>	-	-					+	-	-	-	+
31. <i>E. cantoris</i>		+		+							
32. <i>E. prophyracea</i>	-			-			+		+	-	-
33. <i>E. prasina</i>	-	-	-	+	-	-		-	-	-	-
34. <i>E. mandarina</i>	-	-	-		-		+	-	-	-	+
35. <i>Ptyas mucosus</i>	-	-	-		-	-	+		-	-	-
36. <i>P. korros</i>		-		+	-	-	+		-	-	-
37. <i>Zoacys nigromarginatus</i>		-	-	+					-	-	-
38. <i>Liopeltis frenatus</i>		-				-	+		-	-	-
39. <i>L. stoliczkae</i>	-	-	-	+	-		-	-	-	-	-

Name of species	T 1	EK 2	EK 3	LS 4	US 5	WS 6	ES 7	D 8	E 9	T 10	C 11
40. <i>Oligodon albocinctus</i>		-	-	+	-	-	+	-	-	-	-
41. <i>O. melazonotus</i>	-	-	-	-	-	-	+	-	-	-	-
42. <i>O. cinereus</i>	-	-	-	-	-	-	-	-	-	-	+
43. <i>O. erythrorachis</i>	-	-	-	-	-	-	-	-	-	-	+
44. <i>Dendrelaphis ahaetulla</i>		-	-	+	-	-	-	-	-	-	-
45. <i>D. cyanochloris</i>	-	-	-	-	-	-	+	-	-	-	+
46. <i>D. gorei</i>		-	-		-	-	+	-	-	-	-
47. <i>D. tristis</i>	-	-	-		-	-	+	-	-	-	-
48. <i>Ahaetulla prasinus</i>	-	-	-	+	-	+	+	-	-	-	-
49. <i>Crysopelea ornata</i>		-	+	-	-	-	-	-	-	-	-
50. <i>Ophites laeensis</i>		-	-	-	-	-	-	-	-	-	+
51. <i>O. jara</i>		-	+	+	-		-	-	-	-	-
52. <i>Sibynophis collaris</i>	-	-	+	-		-	+	-		-	-
53. <i>Xenochrophis punctulata</i>		-	-	+	-	-	-	-		-	+
54. <i>X. piscator</i>	-	+	+	+		+	+	-	-		+
55. <i>Pseudoxenodon macrops</i>	-		-	-	-	-	+	-	+	-	
56. <i>Amphiesma stolata</i>			-	+		+	-	-	-	-	-
57. <i>A. modesta</i>			-				-	-	-		+
58. <i>A. platyceps</i>		+					+	-			
59. <i>Trachischium monticola</i>				-			+		+		+
60. <i>T. tenuiceps</i>			+								
61. <i>Rhabdophis hiMalayanus</i>			+	+			+				
62. <i>Rhabdops bicolor</i>			-	-							+

Name of species	T 1	EK 2	EK 3	LS 4	US 5	WS 6	ES 7	D 8	E 9	T 10	C 11
63. <i>Blythia reticulata</i>							+				
64. <i>Boiga ochracea</i>		+									
65. <i>B. gokool</i>											+
66. <i>B. quincunciata</i>			+	+							
67. <i>B. multifasciata</i>			+								
68. <i>B. cynodon</i>				+							
69. <i>Psammodynastes pulverulentus</i>				+		+	+				
70. <i>Bungarus fasciatus</i>			+								
71. <i>Bungarus niger</i>						+					
72. <i>Calliophis macclellandi</i>			-	+			+				
73. <i>Naja naja kaouthia</i>				+							
74. <i>Ophiophagus hannah</i>			-		-						+
75. <i>Trimeresurus mucrosquamatus</i>						+				-	+
76. <i>T. monticola</i>		-	+				+			+	+
77. <i>T. gramineus</i>							+		-	-	-
78. <i>T. stejnegeri</i>				+	-	-		-	-	-	-

AMPHIBIA

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INTRODUCTION

Amphibian fauna of Arunachal Pradesh was least known till the publication of Zoological Results of the Abor Expedition, 1911-1912 by N. Annandale in 1912. It was further focused when faunal resource of Namdapha Biosphere Reserve of Arunachal Pradesh was brought out to light by Sarkar and Sanyal in 1985 (amphibia only), Ghosh in 1987 (entire fauna) and Chanda in 1989 (amphibia only). Apart from these, some scattered records by Ahl (1931), Boulenger (1890 & 1920), Chanda (1992), Frost (1985) Inger and Dutta (1986) and Mansukhani *et al.* (1976) are also available. In addition these, Chanda (1998) made a comprehensive account on amphibian fauna of north-east India where representation from Arunachal Pradesh has been included.

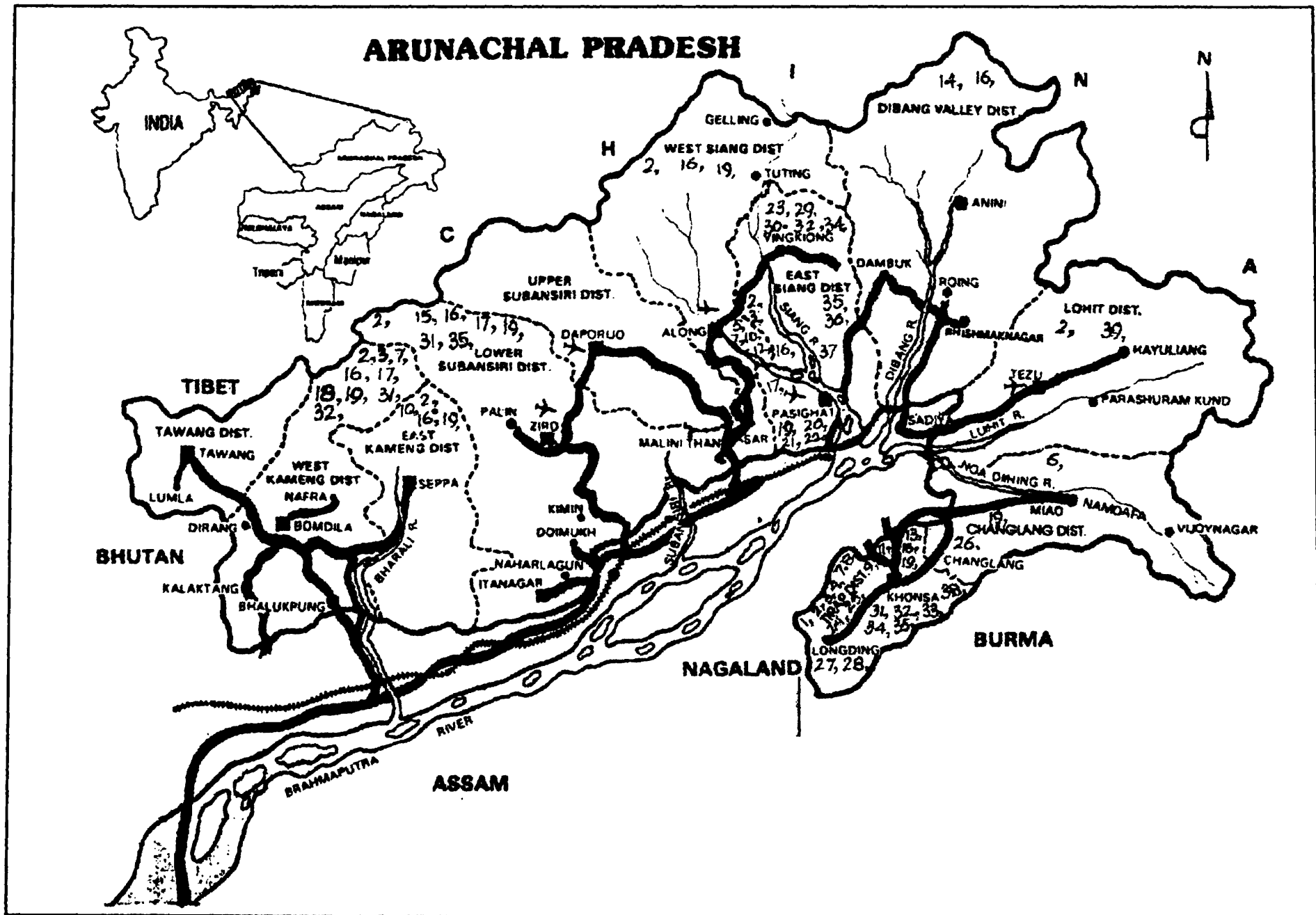
However, this paper would provide the first detailed account on the amphibians of Arunachal Pradesh. The present paper is based upon the amphibian collections made from Arunachal Pradesh by the scientists of Zoological Survey of India during 1965-1993. Apart from these some earlier collections representing in the named collections of Zoological Survey of India and species recorded prior to these studies have also been utilized to give a complete account of the faunal strength of amphibians from Arunachal Pradesh. The present paper is comprising of 39 species belonging to 11 genera, 6 families and 2 orders, of which *Philautus sahai* is new to science and *Megophrys lateralis*, *Rana erythraea*, *R. nicobariensis*, *R. keralensis* and *R. andersonii* are recorded for the first time from Arunachal Pradesh and the latter for the first time from India too.

Unfortunately there is no representation of amphibian species from Twang and Upper Subansiri districts of Arunachal Pradesh. Amphibians found in adjoining West Kameng district may be available in Tawang district and adjoining West Siang and Lower Subansiri districts may be available in Upper Subansiri district.

The Order Apoda is not represented in this account.

MATERIAL AND METHOD

Amphibians are either aquatic, terrestrial or arboreal. Aquatic form has been collected by the help of water-net, a net fitted with a metal ring fixed at the end of a long bamboo pole, cast-net and fishing hook. Both terrestrial and arboreal forms have been collected by hand or long forceps. The amphibians reported in this paper have been collected by survey parties of Zoological Survey of India from several ecological niches of Arunachal Pradesh. For collection, aquatic vegetations, bush grown on moist soil, heap of rotten leaves, burrows made on elevated banks of ponds, canals, rivers, dark corner of village huts, undersurface of barks and holes on trees, soil understones etc. are explored. Nocturnal fauna has been explored by the help of lamps. The collected material are first chloroformed and then put into 5% formalin solution at least for 24 hours for fixation. Before putting in the formalin, an incision on the abdomen for the smaller specimens and injection of 10% formalin solution inside the abdomen for larger specimens are given for the fixation of viscera. The fixed material alongwith labels containing the data of locality, altitude, habitat, date of collection and name of collector are packed properly and kept in 5% formalin again.



Map showing species wise collection localities (Ref. Table at next page)

Map (Showing district-wise distribution of species)

Species	Symbol of species
<i>Bufo macrotis</i>	1
<i>Bufo melanostictus</i>	2
<i>Bufo himalayana</i>	3
<i>Microhyla berdmorei</i>	4
<i>Megophrys boettgeri</i>	5
<i>Megophrys lateralis</i>	6
<i>Amolops afghanus</i>	7
<i>Rana andersonii</i>	8
<i>Rana mawphlongensis</i>	9
<i>Rana gerbillus</i>	10
<i>Rana danieli</i>	11
<i>Rana liegibii</i>	12
<i>Rana kuhlii</i>	13
<i>Rana erythraea</i>	14
<i>Rana nicobariensis</i>	15
<i>Rana cyanophlyctis</i>	16
<i>Rana tigerina</i>	17
<i>Rana keralensis</i>	18
<i>Rana limnocharis</i>	19
<i>Micrixalus borealis</i>	20
<i>Theloderma asperum</i>	21
<i>Theloderma moloch</i>	22
<i>Philautus argus</i>	23
<i>Philautus shyamrupus</i>	24
<i>Philautus namdaphaensis</i>	25
<i>Philautus sahai</i>	26
<i>Philautus anandalii</i>	27
<i>Philautus cherrapuniae</i>	28
<i>Philautus andersoni</i>	29
<i>Philautus doriae</i>	30
<i>Polypedates leucomystax</i>	31
<i>Polypedates maculatus</i>	32
<i>Rhacophorus nigropalmatus</i>	33
<i>Rhacophorus reinwardtii</i>	34
<i>Rhacophorus maximus</i>	35
<i>Rhacophorus jerdonii</i>	36
<i>Rhacophorus naso</i>	37
<i>Rhacophorus namdaphaensis</i>	38
<i>Tylototriton verrucosus</i>	39

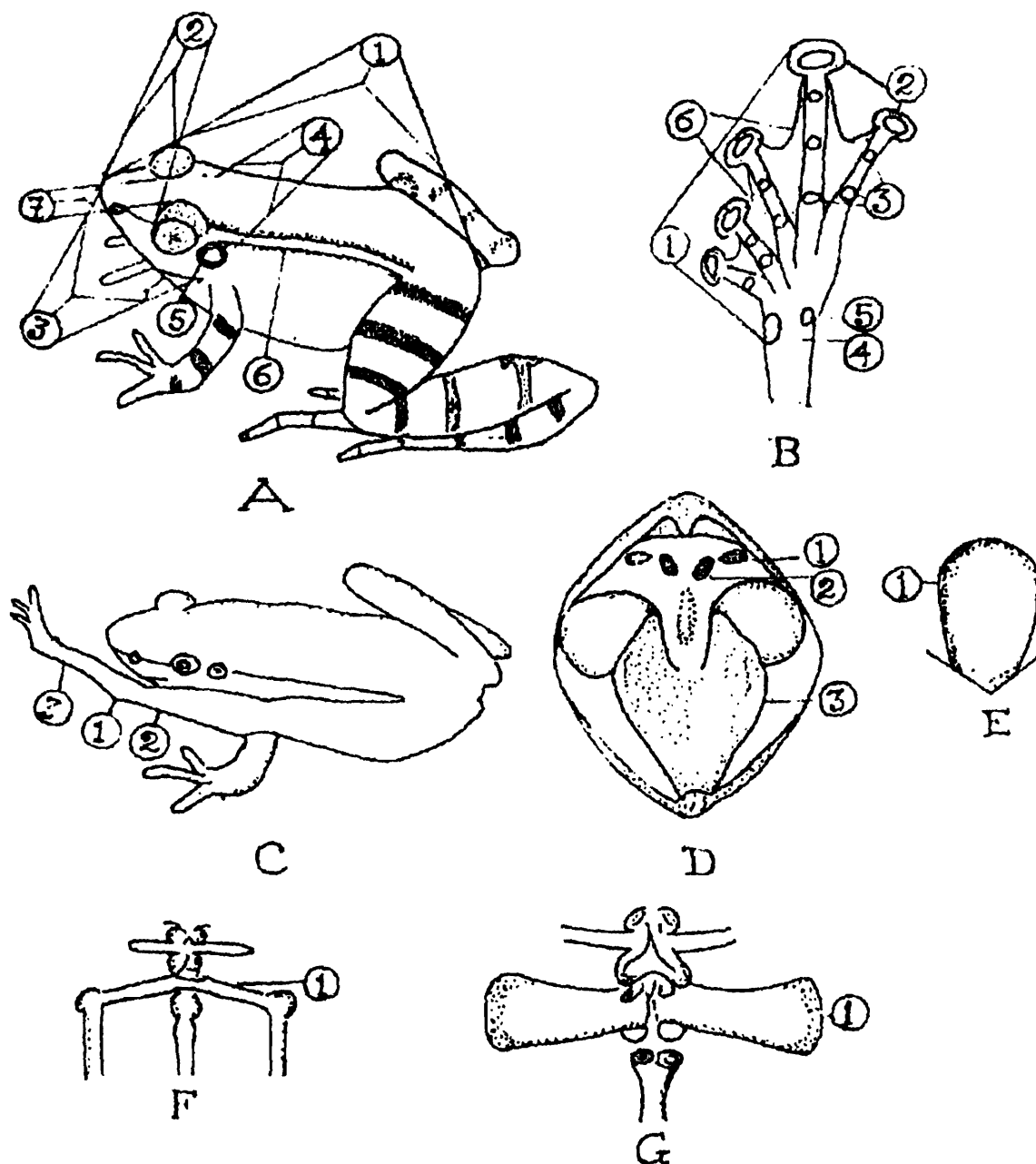


Fig. 1. Illustrations of measurements and essential morphological characters.

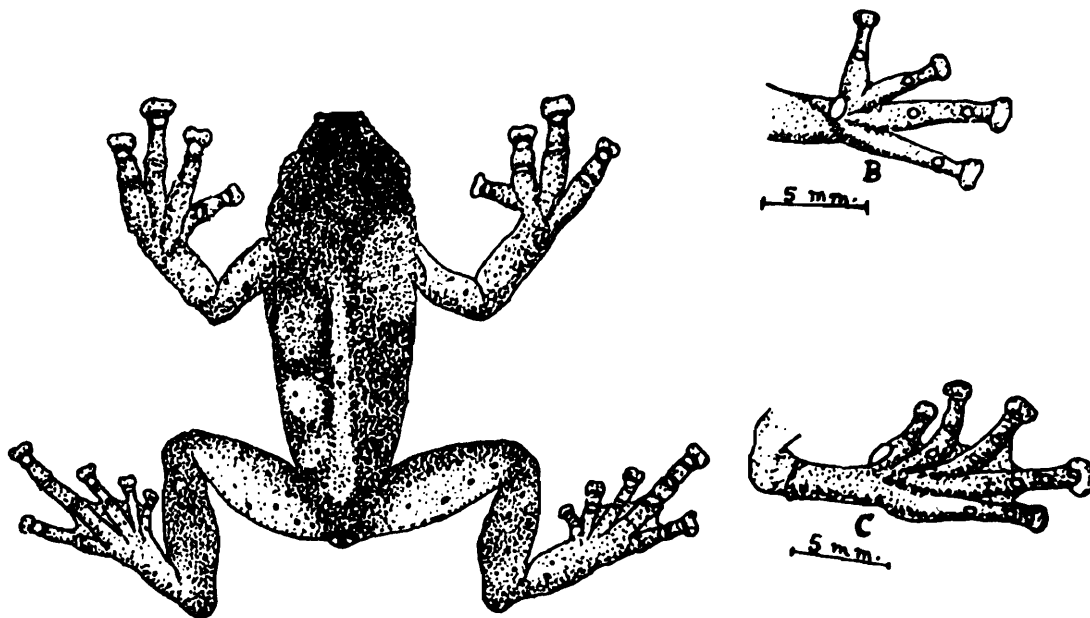


Fig. 2. *Philautus sahai* sp. Nov. A. Dorsal view of the body; B. Ventral view of the hand; C. Ventral view of the foot.

Then the material have been studied and identified with the help of literature in the laboratory.

Text-fig. 1. Illustrations of measurements and essential morphological characters used in the paper.

A 1 : Snout to vent length, A 2 : Snout length, A 3 : Head length, A 4 : Head width, A 5 : Tympanum, A 6 : Glandular dorso-lateral fold, A 7 : Width of interorbital space. B 1 : Foot length, B 2 : Suctorial disc, B 3 : Subarticular tubercles, B 4 : Inner metatarsal tubercle, B 5 : Outer metatarsal tubercle, B 6 : Webs of toes. C. 1 : Position of tibiotarsal articulation when hind limb is kept parallel to body, C 2 : Tibia, C 3 : Tarsus. D 1 : Position of Choanae, D 2 : Position of vomerine teeth, D 3 : Tongue (bifid). E 1 : Tongue (entire). F 1 : Cylindrical sacral vertebra. G 1 : Dilated sacral vertebra.

SYSTEMATIC ACCOUNT

Class AMPHIBIA

Order ANURA

Key to the families

1. Jaws toothless 2
- Upper jaw toothed 3

2. Skin rough with well developed warts, parotoids present BUFONIDAE
- Skin more or less smooth, parotoids absent. MICROHYLIDAE
3. Diapophyses of sacral vertebra cylindrical of very slightly dilated. 4
- Diapophyses of sacral vertebra strongly dilated PELOBATIDAE
4. No intercalary ossification (extra cartilaginous bone) between the distal and penultimate phalanges RANIDAE
- An intercalary ossification between the distal and penultimate phalanges RHACOPHORIDAE

Family I. BUFONIDAE

Genus I. *Bufo* Laurenti

1768. *Bufo* Laurenti. *Synops. Rept.* : 25.

Family Bufonidae is represented in Arunachal Pradesh by three species of the genus *Bufo*.

Key to the species of the genus *Bufo*

1. Head with bony ridges 2
- Head without bony ridges *macrotis*

2. Tympanum large, 2/3 diameter of the eye
 *melanostictus*
 – Tympanum small, 1/3 diameter of the eye ...
 *himalayana*

1. *Bufo macrotis* Boulenger

1887. *Bufo macrotis* Boulenger, *Ann. Mus. Genova*, (2) 5 : 422.
 1985. *Bufo macrotis* : Sarkar and Sanyal, *Rec. zool. Surv. India*, 82 (1-4) : 294.
 1987. *Bufo macrotis* : Ghosh, *Final Tech. Report on faunal resources of Namdapha Biosphere Reserve, Arunachal Pradesh* : 102.

Material examined : Nil; record from published literature.

Diagnostic characters : Head without bony ridges; snout short, truncated; interorbital space flat, a little broader than the upper eyelid; tympanum distinct, vertically oval, more than half the diameter of the eye and close to it. Toes barely half webbed with irregular spiny tubercles beneath; two small but distinct metatarsal tubercles present. Body rough and covered with spiny warts, parotoids elongated; dorsal surface dark brown and ventral surface brownish with darker spots.

Distribution : India : Arunachal Pradesh : Sarkar and Sanyal (1985) recorded from Miao, tirap district.

Elsewhere : Upper Burma (now Myanmar).

Remarks : No further collection record after Sarkar and Sanyal, 1985.

Status : Rare.

2. *Bufo melanostictus* Schneider Common India toad

1799. *Bufo melanostictus* Schneider, *Hist. Amph.* 1 : 216.
 1890. *Bufo melanostictus* : Boulenger, *Fauna Br. India, Rept. & Batr.* : 505-507.
 1985. *Bufo melanostictus* : Sarkar & Sanyal *Rec. zool. Surv. India*, 82 (1-4) : 294.

Material examined : West Kameng dist. : 1

ex., Amatulla, 18.v.1961, K. C. Jayramakrishnan. 1 ex., Jamiri, 24.x.1987; 1 ex., Rupa, 26.x.1987. All coll. D. P. Sanyal. 2 ex., Tipi, Bhalukpong, 3.xii.1990, S. Sur. 1 ex., Bhalukpong, 14.x.1993; 1 ex., Foot hills, 17.x.1993. All coll. P. T. Bhutia. East Kameng dist. : 3 ex., Khuppi village, Seppa, 18.x.1987; 2 ex., Mebua village, Seppa, 19.x.1987; 1 ex., Bana, 21.x.1987. All coll. D. P. Sanyal. 1 ex., Sejosa, 9.xi.1990, S. Sur. Lower Subansiri dist. : 1 ex., P-Sector, Itanagar, 20.iv.1990; 1 ex., Itanagar, 10.viii.1992. All coll. P. T. Bhutia. West Siang dist. : 4 ex., Along, 2.xii.1988; 15 ex., Basar, 6.xii.1988. All coll. D. P. Sanyal. East Siang dist. : 3 ex., Passighat, 18.xi.1988; 1 ex., Moreng vill., Pangin, 26.xi.1988; 4 ex., Yumbing, Pangin, 28.xi.1988. All coll. D. P. Sanyal. Lohit dist. : 2 ex., Kamlang, 1.iii.1987, D. P. Sanyal. Tirap dist. : 3 ex., Bordumsa I. B., 16.ii.1987, D. P. Sanyal.

Measurements : Snout to vent length 5 to 108 mm.

Diagnostic character : Head broader than long, with cornified bony ridges; snout rounded, nearly equal the diameter of the eye; nostril a little nearer to the tip of snout than to eye; interorbital width broader than that of upper eyelid; tympanum very distinct, two third diameter of the eye. Fingers free, first little longer than second, tips of fingers and toes swollen. Toes nearly half webbed, more than three phalanges of fourth toe free; two oval (inner and outer) metatarsal tubercles present. Tarsometatarsal articulation reaches in between tympanum and eye. Dorsum dark brownish, rough with several spiny warts, parotoid large, kidney-shaped. Venter dull whitish with numerous small spiny warts.

Distribution : India : Arunachal Pradesh : West Kameng, East Kameng, Lower Subansiri, West Siang, East Siang, Lohit and Tirap districts. Sarkar and Sanyal (1985) reported it from Tirap district. Common throughout the plains of India.

Elsewhere : Bangladesh, Nepal, Sri Lanka, Myanmar, South China, Malaya Peninsula and Archipelago.

Remarks : Boulenger (1890) records its distribution range upto 10,000 feet in the Sikkim Himalayas. Terrestrial and nocturnal in habit, found in and near water during breeding season.

Status : Common.

3. *Bufo himalayana* Gunther The Himalayan Toad

1864. *Bufo melanostictus* var. *himalayanus* Gunther, *Rept. Br. India* : 422.

1890. *Bufo himalayanus* : Boulenger, *Fauna Br. India, Rept. & Batr.* : 505.

1985. *Bufo himalayanas* : Sarkar & Sanyal, *Rec. zool. Surv. India*, 82 (1-4) : 293.

Material examined : West Kameng dist. : 2 ex., river bank of Porbangchu, 22.iv.1961; 1 ex., river bank of Porbangchu, 24.iv.1961. All coll. K. C. Jayramakrishnan.

Measurements : Snout to vent length 107-115 mm.

Diagnostic character : Head broader than long, with blunt supraorbital ridges; snout short, blunt, nearly once the diameter of the eye; nostril a little nearer the tip of the snout than the eye; interorbital width broader than upper eyelid; tympanum very small, rather indistinct, one third diameter of the eye. Fingers free, first equals the second, tips of fingers and toes blunt. Toes half webbed, three phalanges of the fourth toe free; two oval (inner and outer) metatarsal tubercles present. Subarticular tubercles on toes single. Tarsometatarsal articulation reaches in between anterior broader of eye and tip of snout. Dorsum brownish, rough with porous warts. Parotoids large, elliptical. Venter dull whitish with numerous small warts.

Distribution : India : Arunachal Pradesh : West Kameng district. Annandale (1912) reported it from Kobo (East Siang district). Sarkar and Sanyal (1985) reported it from Namdapha, Tirap district.

Elsewhere : Sikkim, Meghalaya, West Bengal and Nepal.

Remarks : Specimens in our disposal possess more or less smooth skin on head. Numerous porous and flat warts on the upper parts of limbs, sides of body and posterior end of back; tympanum of the specimens are small but distinct. Venter dull whitish with numerous non-spiny warts. One

example measuring 115 mm. from snout to vent possesses a little spiny warts on dorsum and darker spots throughout the ventrum.

Status : Rare in Arunachal Pradesh.

Family II. MICROHYLIDAE

Genus 2. *Microhyla* Tschudi

1838. *Microhyla* Tschudi, *classif. Batr.* : 71.

4. *Microhyla berdmorei* (Blyth) Berdmore's Microhylid Frog

1856. *Engystoma berdmorei*, Blyth, *J. Asiat. Soc. Bengal*, 24 : 720.

1934. *Microhyla berdmorei* : Parker, *Monogr. Microhylidae* : 127-128.

1992. *Microhyla berdmorei* : Chanda, *J. Bengal nat. Hist. Soc.* 11 (1) : 29.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; snout obtusely pointed, as long as or a little longer than the diameter of the eye; nostril nearer to the tip of the snout than the eye; interorbital width generally a little broader than that of upper eyelid; tympanum hidden. Fingers free, first shorter than second, tips flattened with a median groove on the upper surface of the tip separating two swellings. Toes webbed to the tips with distinct discs; two distinct metatarsal tubercles present. Tibiotarsal articulation reaches beyond the snout. Dorsum with some small tubercles, brownish with darker shades. Venter smooth, dull whitish and granular on hinder parts of thighs and anal region.

Distribution : India : Arunachal Pradesh : Tirap district; Meghalaya; Mizoram; Tripura and Assam.

Elsewhere : Myanmar, Thailand, Malaysia and Sumatra.

Remarks : Chanda (1992) reports it from Arunachal Pradesh.

Status : Rare in Arunachal Pradesh.

Family III. PELOBATIDAE

Genus 3. *Megophrys* Kuhl and Van Hasselt1822. *Megophrys* Kuhl and Van Hasselt, *Algemeene Konst-en-Letter-Bode.*, 7 : 102.**Key to the species of the genus *Megophrys***

1. Tips of fingers and that of toes with very small but distinct discs. *boettgeri*
- Tips of fingers and that of toes blunt (not bearing discs). *lateralis*

5. *Megophrys boettgeri* (Boulenger)1899. *Leptobrachium boettgeri* Boulenger, *Proc. Zool. Soc.* London : 171.1908. *Megalophrys boettgeri* : Boulenger, *Proc. Zool. Soc.*, London : 420.1992. *Megophrys boettgeri* : Chanda, *J. Bengal nat. Hist. Soc.* (new ser.) 11 (1) : 28.**Material examined** : Nil; record from published literature.

Diagnostic character : Head little depressed; snout rounded, truncate vertically, longer than the eye; nostril much nearer the tip of the snout than the eye; interorbital width much greater than that of upper eyelid; tympanum distinct, nearly as long as the diameter of the eye. Fingers free, tips bearing (except the first, which is merely blunt) very small but distinct discs, first finger shorter than second; subarticular tubercles of fingers and toes poorly developed. Toes with a rudiment of web, tips with small discs; inner and outer metatarsal tubercles absent. Tibiometatarsal articulation reaches the tip of the snout. Dorsum dark olive with greyish-green markings, smooth. Venter yellowish, granular.

Distribution : India : Arunachal Pradesh : Annandale (1912) recorded it from Upper Rotung (East Siang district); Assam. Also China.

Remarks : Garham (1974) considered *Megalophrys kempii* Annandale, 1912 as a synonym of *Megophrys boettgeri* (Boulenger, 1899).

Status : Rare.

6. *Megophrys lateralis* (Anderson)1871. *Ixalus lateralis* Anderson, *Proc. Asiat. Soc. Bengal*, 40 : 29.1908. *Megalophrys major* Boulenger (n. n.), *Proc. Zool. Soc.*, London : 416-418.1962. *Megophrys major* : Daniel, *J. Bombay nat. Hist. Soc.*, 59 (2) : 667.1974. *Megophrys lateralis* : Graham, *Checklist of World Amphibians* : 43.1985. *Megophrys lateralis* : Frost, *Amphibian species of the World* : 415.

Material examined : Changlang dist. : 1 ex., Gandhigram, Namdapha, 29.ii.1988, S. S. Saha.

Measurement : Snout to vent length 67 mm.

Diagnostic character : Head broader than long, snout obliquely truncate, projecting beyond lower jaw, as long as eye; nostril more or less equidistant from the tip of the snout and the eye; interorbital width little broader than that of the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers free, first finger a little longer than second, tips blunt; subarticular tubercles of fingers and toes absent. Toes more or less one-fourth webbed, tips blunt; metatarsal tubercles indistinct. Tibiotarsal articulation reaching beyond the eye. Dorsum brown with light-edged dark triangular marking in between the eyes and V-shaped marking on the back, smooth with scattered tubercles and lateral glandular long fold, one on each side present. Venter darty white with darker spots on belly and undersurface of thighs and smooth with a few long glandular warts on the throat.

Distribution : India : Arunachal Pradesh : Changlang district; West Bengal; Meghalaya. First record from Arunachal Pradesh.

Elsewhere : Bangladesh, Myanmar, Yunnan, Northern Vietnam.

Remarks : Specimen in our disposal possesses, first finger a little longer than second finger,

tibiotarsal articulation reaches beyond the tip of snout when the hind limb is kept parallel to the body, darker light-edged, large triangular spot between the eyes, upper two corners of which partly cover the upper eyelids and light-darker spots on belly.

Status : Uncommon.

Family IV. RANIDAE

Family Ranidae possesses three genera in Arunachal Pradesh of which genus *Amolops* Cope, 1865 is distinguished by their tadpoles possessing "large adhesive belly disc" just below the mouth (Inger, 1966).

Key for the other two genera are as follows

Vomerine teeth present. ***Rana***

Vomerine teeth absent. ***Micrixalus***

Genus 4. *Amolops* Cope

1865. *Amolops* Cope, *Nat. Hist. Rev., N. S.*, 5 : 117.

7. *Amolops afghanus* (Gunther)

1858. *Polypedates afghana* Gunther, *Cat. Batr. Sal. Coll. Br. Mus.* : 81.

1974. *Amolops afghanus* : Dubois, *Bull. Mus. Natl. Hist. Nat.*, 143 (213) : 356-357.

1985. *Amolops afghanus* : Sarkar & Sanyal, *Rec. zool. Surv. India*, 82 (1-4) : 285.

Material examined : West Kameng dist. : 1 ex. (under stone), bank of tributary of Nargum river, 13.iii.1961, K. C. Jayaramkrishnan. 1 ex., Phuldang vill., 27.ix.1961, S. Biswas, 1 ex., Jamiri, Alt. 925 m., 24.x.1987, D. P. Sanyal.

Measurements : Snout to vent length 24-87 mm.

Diagnostic character : Head as long as broad or a little broader than long; snout rounded, equals the diameter of the eye; nostril equidistant from the tip of the snout and the eye; interorbital width nearly equal to that of the upper eyelid; tympanum almost indistinct, covered by granules, less than half diameter of the eye. fingers free, first generally

a little shorter than second, tips with well developed large discs; subarticular tubercles of fingers and toes distinct. Toes fully webbed, web feebly notched, web reaches middle of the disc of the fourth toe, tips with distinct and large discs; inner metatarsal tubercle elliptical, outer metatarsal tubercle absent. Tibiotarsal articulation reaching beyond the tip of the snout. Dorsum olive green and granular, a distinct glandular fold above the tympanum, glandular dorsolateral fold absent. Venter light yellowish, granular on belly and posterior part of thighs.

Distribution : India : Arunachal Pradesh : West Kameng; East Siang (Annandale, 1912) and Tirap (Sarkar & Sanyal, 1985) districts; Meghalaya; West Bengal; Sikkim; Punjab.

Elsewhere : Nepal, Tibet, Yunnan, Myanmar and Thailand.

Remarks : One example collected from Jamiri on 24.x.1987 is juvenile and a little damaged one.

Status : Not very common.

Genus 5. *Rana* Linnaeus

1758. *Rana* Linnaeus, *Syst. Nat. Ed. 10*, 1 : 210.

Key to the species of the genus *Rana*

1. Tips of toes with discs. 2
 - Tips of toes without discs. 9
2. Toes entirely webbed. 3
 - Toes not entirely webbed. 8
3. Tips of fingers with discs. 4
 - Tips of fingers without discs. 6
4. Toes completely webbed, web reaching the distal phalange. ***andersonii***
 - Toes not completely webbed, distal phalange free. 5
5. First finger longer than second finger, glandular dorsolateral fold absent
 - ***mawphlongensis***
 - First finger shorter than second finger, glandular dorsolateral fold present

- *gerbillus*
6. Outer metatarsal tubercle present.... *danieli*
- Outer metatarsal tubercle absent 7
7. First finger shorter than the second finger; tibiotarsal articulation reaching beyond the tip of the snout *liebigii*
- First finger equal or a little longer than the second finger; tibiotarsal articulation reaching the eye *kuhlii*
8. Fingers with rudimentary web; toes three fourth webbed, two phalanges of fourth toe free *erythraea*
- Fingers free; toes half webbed, three phalanges of fourth toe free.
..... *nicobariensis*
9. Toes entirely webbed..... 10
- Toes not entirely webbed. 11
10. Inner metatarsal tubercle digitiform (toe-like) *cyanophlyctis*
- Inner metatarsal tubercle blunt, not digitiform *tigerina*
11. Two phalanges of fourth toe free from webbing; male with internal vocal sacs
..... *keralensis*
- Three phalanges of fourth toe free from webbing; male with external vocal sacs
..... *limnocharis*

8. *Rana andersonii* Boulenger

1882. *Rana andersonii* Boulenger, *Cat. Batr. Salientia* : 55.

1920. *Rana andersonii* : Boulenger, *Rec. Indian Mus.*, 20 : 174-176.

Material examined : Tirap dist. : 2 ex., Miao, 26.i.1962; 3 ex., Nampong (Rima river), 2.ii.1962. All coll. C. B. Srivastava.

Measurement : Snout to vent length 48-57 mm.

Diagnostic character : head little broader than long; snout rounded, as long as the diameter of the eye; nostril a little nearer to the tip of the

snout than the eye; interorbital width broader than that of upper eyelid; tympanum distinct, half the diameter of the eye. Fingers free, tips with small discs which are a little longer than broad, first finger a little longer than the second; subarticular tubercles of fingers and toes distinct. Toes entirely webbed, tips with small discs; a distinct inner metatarsal tubercle and an outer metatarsal tubercle (at the base of fourth toe) present. Tibiotarsal articulation reaches beyond the tip of the snout. Dorsum dark brownish (in spirit), sides darker and finely granular, without dorsolateral glandular fold. Venter smooth, very fine light darker markings on the belly.

Distribution : India : Arunachal Pradesh : Tirap district. First record from India.

Elsewhere : Yunnan, Vietnam and Upper Myanmar.

Remarks : The specimens were not fixed properly, as a result it is very difficult to stretch the different parts of the body, especially the fingers and toes and the webbing. All the specimens tally properly with the descriptions of *Rana andersonii* Boulenger excepting the presence of an outer metatarsal tubercle at the base of fourth toe, the only differentiating character, basing on which we do not like to describe the examples as new ones to science. The species has so far been recorded from Yunnan (China), Vietnam and Upper Burma (the adjoining area of Arunachal Pradesh).

Status : Rare.

9. *Rana mawphlongensis* Pillai & Chanda

1977. *Rana mawphlongensis* Pillai and Chanda, *J. Bombay nat. Hist. Soc.*, 74 : 138.

1987. *Rana mawphlongensis* : Ghosh, *Final Tech. Report on faunal resources of Namdapha Biosphere Reserve, Arunachal Pradesh* : 102.

1992. *Rana mawphlongensis* : Sarkar et al. *Fauna of West Bengal, State Fauna Series, 3 (part 2) : Amphibia* : 81.

Material examined : Nil; record from published literature.

Diagnostic character : Head as long as broad; snout pointed, a little longer than eye; nostril equidistant from the tip of snout and the eye; tympanum distinct, more than half diameter of the eye. Fingers free, first slightly longer than second, tips with small discs; subarticular tubercles of fingers and toes well developed. Toes nearly completely webbed, tips with distinct discs, inner metatarsal tubercle moderately prominent, outer metatarsal tubercle absent. Tibiotarsal articulation reaching tip of snout. Dorsum bluish black, smooth upto sacral region, rest glandular. Venter white, smooth. Dorsolateral glandular fold absent.

Distribution : India : Arunachal Pradesh : Namdapha, Tirap district (Ghosh, 1987); Meghalaya; West Bengal.

Remarks : No further record after Ghosh, 1987 from Arunachal Pradesh.

Status : Rare.

10. *Rana gerbillus* Annandale

1912. *Rana gerbillus* Annandale, *Rec. Indian Mus.*, 8 : 10.

1920. *Rana gerbillus* : Boulenger, *Rec. Indian Mus.*, 20 : 207-208.

1992. *Rana gerbillus* : Sarkar et al., *Fauna of West Bengal, State Fauna Series*, 3 (Part 2) (*Zool. Surv. India*) : 80.

Material examined : East Kameng dist. : 6 ex., Dupla Ko river, Shergaon 6.v.1961, K. C. Jayaramkrishnan, 2 ex., Seppa, 19.x.1987, D. P. Sanyal.

Measurements : Snout to vent length 47-65 mm.

Diagnostic character : Head as long as broad; snout rounded, as long as or a little longer than the eye; nostril a little nearer the tip of the snout than the eye; interorbital width equals to that of the upper eyelid; tympanum distinct, about half diameter of the eye. Fingers free, first shorter than second, tips with large discs; subarticular tubercles of fingers and toes not so distinct. Toes nearly completely webbed, tips with distinct discs; a flat oval inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation

reaching beyond the tip of snout. Dorsum dark-gray, smooth, with a distinct glandular dorsolateral fold. Venter greenish yellow with brown spots on throat and breast.

Distribution : India : Arunachal Pradesh : East Kameng district. Annandale (1912) reported it from Yembung (East Siang district); Meghalaya; West Bengal.

Remarks : Two examples collected from Seppa on 19.x.1987 possess faint dorsolateral glandular fold and one with small darker spots on dorsum. Six examples collected from Shergaon on 6.v.1961 possess fine granular skin on back, hinder side of thighs and around the vent with thick tubercles, throat and breast dirty white with dark brown spots and subarticular tubercles of fingers and toes distinct. This is the second lot of specimens of the species, which has been collected from Arunachal Pradesh about 50 years after the description of the species by Annandale in 1912.

Status : Rare.

11. *Rana danieli* Pillai and Chanda

1977. *Rana danieli* Pillai and Chanda, *J. Bombay nat. Hist. Soc.*, 74 (1) : 136-137.

1992. *Rana danieli* : Chanda, *J. Bengal nat. Hist. Soc.*, 11 (1) : 30.

Material examined : Nil; record from published literature.

Diagnostic character : Head as long as broad; snout rounded, projecting a little beyond lower jaw, longer than the eye; nostril a little nearer to the tip of the snout than to the eye; tympanum distinct, about half diameter of the eye. Fingers free, first longer than second, tips a little swollen; subarticular tubercles of fingers and toes distinct. Toes fully webbed, tips with small discs; inner metatarsal tubercle oval, projecting, outer metatarsal tubercle a little smaller than inner one. Tibiotarsal articulation reaching tip of snout or a little beyond. Dorsum varying from light brown to dark brown, faintly granular, a glandular dorsolateral fold from behind the eye to near the vent on both the sides. Venter white, smooth.

Distribution : India : Arunachal Pradesh : Tirap district; Meghalaya; Assam.

Remarks : Chanda (1992) reports it from Arunachal Pradesh.

Status : Rare in Arunachal Pradesh.

12. *Rana liebigii* Gunther

Current Name : *Paa liebigii* (Gunther)

1860. *Rana liebigii* Gunther, *Proc. Zool. Soc.*, London : 157.

1912. *Rana liebigii* : Annandale, *Rec. Indian Mus.*, 8 : 8.

1992. *Rana liebigii* : Sarkar et al., *Fauna of West Bengal, State Fauna Series*, 3(part-2) : (*Zool. Surv. India*) : 79.

Material examined : Nil; record from published literature.

Diagnostic character : Head much broader than long; snout rounded, as long as or a little shorter than the eye; nostril a little nearer to the eye than the tip of the snout; interorbital width almost equal to that of the upper eyelid; tympanum indistinct. Fingers free, first shorter than second, tips blunt; subarticular tubercles of fingers and toes large, prominent. Toes entirely webbed, tips with small discs; inner metatarsal tubercle long, outer metatarsal tubercle absent. Tibiotarsal articulation reaching beyond the tip of the snout. Dorsum brown, smooth with round warts and dorsolateral folds. Venter light brownish, smooth. Males develop black spines on breast, inner side of the arm and on upper side of three inner fingers.

Distribution : India : Arunachal Pradesh : Yembung, East Siang district (Annandale, 1912); Jammu and Kashmir; Himachal Pradesh; Uttar Pradesh; Sikkim; West Bengal. Also Nepal.

Remarks : Two examples of tadpoles were collected from a small stream near Yembung on the east side of the Dihang River (Annandale, 1912).

Status : Rare in Arunachal Pradesh.

13. *Rana kuhlii* Tschudi

Current Name : *Limnonectes kuhlii* (Tschudi)

1838. *Rana kuhlii* Tschudi, *Classif. Batr.* : 40.

1920. *Rana kuhlii* : Boulenger, *Rec. Indian Mus.*, 20 : 62-66.

1985. *Rana kuhlii* : Sarkar and Sanyal, *Rec. zool. Surv. India*, 82(1-4) : 285-286.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; snout rounded, feebly projecting beyond the mouth, more or less as long as the eye; nostril a little nearer to the tip of the snout than the eye; interorbital width equal/a little greater than that of upper eyelid; tympanum usually indistinct. Fingers free, first equal/or a little longer than the second, tips swollen at the end; subarticular tubercles of fingers and toes large, moderately prominent. Toes fully webbed, tips with small but very distinct discs; inner metatarsal tubercle narrow, moderately prominent, outer metatarsal tubercle absent. Tibiotarsal articulation reaching the eye. Dorsum brown, smooth with warts on the posterior part of the upper eyelids. Venter white, smooth, throat and breast often mottled with brown.

Distribution : India : Arunachal Pradesh : Sarkar and Sanyal (1985) reported it from Tirap district; Assam.

Elsewhere : Myanmar, South China, Taiwan to Malaysia, Sumatra, Borneo, Java and Celebes.

Status : Uncommon in Arunachal Pradesh.

14. *Rana erythraea* (Schlegel)

1837. *Hyla erythraea* Schlegel, *Abbild.* : 27.

1920. *Rana erythraea* : Boulenger, *Rec. Indian Mus.*, 20 : 152-155.

1992. *Rana erythraea* : Sarkar et al., *Fauna of West Bengal, State Fauna Series*, 3(Part-2) : (*Zool. Surv. India*) : 81.

Material examined : Dibang Valley dist. : 1 ex., Shantipur, Roing, 6.iv.1993, P. T. Bhutia.

Measurements : Snout to vent length 61 mm.

Diagnostic character : Head longer than broad; snout more or less pointed, projecting beyond the mouth, longer than the diameter of the eye; nostril nearer the tip of the snout than

the eye; interorbital width equal/little broader than that of upper eyelid; tympanum very distinct, nearly once the diameter of the eye. Fingers slender with rudimentary web, first a little longer than second, tips with distinct discs; subarticular tubercles of fingers and toes well developed. Toes three-fourth webbed, two phalanges of fourth toe free, tips with distinct discs; an oval inner metatarsal tubercle present, outer metatarsal tubercle mostly absent. Tibiotarsal articulation reaching in between posterior end of eye to tip of snout. Dorsum smooth with a distinct dorso-lateral glandular folds running from above the tympanum to the hip on both the sides of the back. Venter smooth.

Distribution : India : Arunachal Pradesh : Dibang Valley district. first record from Arunachal Pradesh.

Elsewhere : Assam, West Bengal and Orissa in India; Southwest Asia.

Remarks : Specimen in our disposal possess first finger a little longer than second finger; distance between the nostril broader than the interorbital width; two penultimate phalanges of fourth toe free from webbing; presence of a few faintly distinct warts on the dorsum and absence of outer metatarsal tubercle.

Status : Rare in Arunachal Pradesh.

15. *Rana nicobariensis* (Stoliczka)

Current Name : *Fejervarya nicobariensis* (Stoliczka).

1870. *Hylorana nicobariensis* Stoliczka, *J. Asiat. Soc. Bengal*, 39 : 150.

1920. *Rana nicobariensis* : Boulenger, *Rec. Indian Mus.*, 20 : 162-165.

1992. *Rana nicobariensis* : Sarkar et al. *Fauna of West Bengal State Fauna Series*, 3(Part-2) : (Zool. Surv. India) : 82.

Material examination : Lower Subansiri dist. : 1 ex., Karsinghsa river, near Bunderdewa, Itanagar, 22.iv.1988, P. T. Bhutia.

Measurements : Snout to vent length 57 mm.

Diagnostic character : Head longer than broad; snout more or less pointed, longer than the eye; nostril nearer the tip of the snout than the eye; interorbital width equal to that of the upper eyelid; tympanum very distinct, three-fourth the diameter of the eye. Fingers free, first longer than second, tips with small discs; subarticular tubercles of finger and toes distinct. Toes half webbed, three phalanges of fourth toe free, tips with small discs; inner metatarsal tubercle oval, outer metatarsal tubercle small, round, situated at the base of fourth toe. Tibiotarsal articulation reaching in between nostril and tip of snout. Dorsum dark reddish brown with darker spots, granular, with glandular dorsolateral fold running from above the tympanum to the hip. Venter dull white, spotted with chocolate, smooth.

Distribution : India : Arunachal Pradesh : Itanagar, Lower Subansiri district. First record from Arunachal Pradesh; West Bengal and Nicobar Islands.

Elsewhere : Sumatra, Malayasia, Borneo and Java.

Remarks : Medium sized frog with dorsum dark reddish, granular; venter spotted with darker. Dorsolateral fold brownish.

Status : Rare in Arunachal Pradesh.

16. *Rana cyanophlyctis* Schneider Skipping Frog

Current Name : *Euphlyctis cyanophlyctis* (Schneider).

1799. *Rana cyanophlyctis* Schneider, *Hist. Amph.*, 1 : 137.

1920. *Rana cyanophlyctis* : Boulenger, *Rec. Indian Mus.*, 20 : 12.

1992. *Rana cyanophlyctis* : Chanda, *J. Bengal nat. Hist. Soc.*, 11 (1) : 30.

Material examined : East Kameng dist., : 4 ex., Namuri, Seijusa, 11.x.1987; 2 ex., Dibru, Sejusa, 12.x.1987; 1 ex., Seppa, 19.x.1987. All coll. D. P. Sanyal. 21. ex., Seppa, 29.xi.1990, S. Sur. West Kameng dist. : 1 ex., Goloso, Seijosa, 9.x.1993, P. T. Bhutia. 2 ex., Bhalukpong, 6.xii.1990, S. Sur. Lower Subansiri dist. : 1 ex., Karsinghsa river, near Bunderdewa, Itanagar, 22.iv.1988; 1 ex., Gospur road (near Zoological

Park), Itanagar, 1.viii.1992; 1 ex., Nirjuly, Itanagar, 20.viii.1992; 2 ex., Itanagar, 0.viii.1992; 1 ex., Gohpur road, Itanagar, 10.x.1993. All coll. P. T. Bhutia. West Siang dist. : 11 ex., Along, 2.xii.1985; 5 ex., Gagra village, Likabari, 12.xii.1988. All coll. D. P. Sanyal. East Siang dist. : 2 ex., J. N. College, Pasighat, 18.xi.1988; 9 ex., Pilumukh river, Pasighat, 20.xi.1988; 2 ex., Moreng vilage, Pangin, 26.xi.1988; 9 ex., Boleng, Pangin, 27.xi.1988; 1 ex., Yembung, Pangin, 28.xi.1988. All coll. D. P. Sanyal. Tirap dist. : 54 ex., Miao, 26-27.i.1962, C. B. Srivastava, Dibang Valley dist. : 1 ex., Shantipur, 6.iv.1993, P. T. Bhutia.

Measurements : Snout to vent length 17-69 mm.

Diagnostic character : Head broader than long, shout generally rounded, equal or a little longer than the diameter of the eye; nostril equidistant from the tip of the snout and the eye; interorbital width much smaller than that of the upper eyelid; tympanum distinct, nearly once the diameter of the eye. Fingers free, first equals second, tips pointed; subarticular tubercles of fingers and toes feebly prominent. Toes fully webbed, tips swollen; a pointed digit-like inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches in between posterior end of tympanum and nostril. Dorsum darker with small warts. Venter whitish and smooth.

Distribution : India : Arunachal Pradesh : West Kameng, East Kameng, Lower Subansiri, West Siang, East Siang, Tirap and Diban Valley districts; throughout the plains of India and upto 1846 m. in the Himalayas.

Elsewhere : Pakistan, Afghanistan, Baluchistan, Iran, South Arabia, Nepal, Bangladesh, Thailand and Sri Lanka.

Remarks : 1 ex., of frog collected from Seppa, East Kameng dist. and another ex. of frog from Yembung, East Siang dist. possess darker, thickly warty skin on dorsum and smooth and spotted skin on ventrum. Adults used in college laboratories for disceting purpose.

Status : Common.

17. *Rana tigerina* Daudin

Indian Bull Frog

Current Name : *Hoplobatrachus tigerinus* (Daudin).

1803. *Rana tigerina* Daudin, *Hist. Rain. Gren. Crap.* : 64.

1920. *Rana tigerina* : Boulenger, *Rec. Indian Mus.* 20 : 17-20.

1992. *Rana tigerina* : Sarkar *et al.* (*Zool. Surv. India*) : *Fauna of West Bengal, State Fauna Series, 3* (Part-2) : 85-86.

Material examined : West Kameng dist. : 1 ex., Goloso, Seijosa, 9.x.1993; 1 ex., Foot hills, 17.x.1993. All coll. P. T. Bhutia. Lower Subansiri dist; 1 ex., Nirjuly, Itanagar, 28.viii.1991; 1 ex., Nirjuly, Itanagar, 15.x.1993. All coll. P. T. Bhutia. East Siang dist. : 1 ex., J. N. College, Pasighat, 18.xi.1988, D. P. Sanyal.

Measurements : Snout to vent length 72-143 mm.

Diagnostic character : Head as long broad or a little broader than long; snout rounded or pointed, projecting beyond the mouth, longer than the diameter of the eye; nostril generally equidistant from the tip of snout and the eye; interorbital width much smaller than that of the upper eyelid; tympanum distinct, nearly equal to the diameter of the eye. Fingers free, first longer than second, tips not sharply pointed; subarticular tubercles of fingers and toes not very distinct. Toes entirely webbed, tips not pointed; a blunt, not shovel-shaped inner metartarsal tubercle present, outer metataicsal tubercle absent. Tibiotarsal articulation reaches in between posterior end of eye to nostril. Dorsum olive green with darker spots, distinct warts and long glandular folds. Venter whitish and smooth.

Distribution : Aruanchal Pradesh : West Kameng, East Siang and Lower Subansiri districts; Annandale (1912) reports two examples from Sadiya, near Dikrag river. The species is common throughout India from the base of the Himalaya to southern part of the Country.

Elsewhere : Nepal, Bangladesh, Sri Lanka, Myanmar, Thailand, South China and Taiwan.

Remarks : Commonest species of edible frogs found throughout the plains of India. The example collected from Pasighat in November, 1988 possesses darker dorsum, lips dotted with black and dull whitish venter.

Status : Common.

**18. *Rana keralensis* Dubois
Gunther's Warty-Frog**

Current Name : *Fejervarya keralensis*
(Dubois).

1875. *Rana verrucosa* Gunther, *Proc. Zool. Soc. London*, : 567.
1920. *Rana verrucosa*, Boulenger, *Rec. Indian Mus.*, 20 : 26-27.
1980. *Rana keralensis* Dubois, *Bull. Mus., Nat. Hist. Nat. Paris* (94) 2, Sec. A : 928 (replacement name).
1992. *Rana keralensis* : Sarkar et al, *Fauna of West Bengal, State Fauna Series*, 3(Part-2) : (Zool. Surv. India) : 87.

Material examined : West Kameng dist. : 1 ex., Foot Hills, Belsiri river, 18.x.1993, P. T. Bhutia.

Measurements : Snout to vent length 70 mm.

Diagnositic character : Head a little broader than long; snout bluntly pointed, equals the diameter of the eye; nostril equidistant from the tip of the snout and the eye; interorbital width shorter than that of upper eyelid; tympanum distinct, about two-third the diameter of the eye. Fingers free, first longer than second, tips more or less pointed; subarticular tubercles of fingers and toes large and distinct. Toes three-fourth webbed, two phalanges of fourth toe free; inner metatarsal tubercle elliptical, outer metatarsal tubercle small, oval. Tibiotarsal articulation reaching in between nostril and tip of snout. Dorsum greyish and warty. Venter whitish, smooth.

Distribution : India : Arunachal Pradesh : West Kameng district. First record from Arunachal Pradesh. the species was previously recorded from Kerala and Tamil Nadu. Recently Sarkar (1993) extends its range to Orissa, Sarkar et al (1992) to West Bengal and Pillai (1991) to Andaman. So, the distributional range of the species is, herewith, being extended from southern India to northeast India.

Remarks : The specimen at our disposal is a stout one. Tibiotarsal articulation reaches a little beyond the tip of snout. Only the two penultimate phalanges of the fourth toe free; subarticular tubercles of fingers and toes very distinct, head broader than long, snout bluntly pointed, a little longer than the diameter of the eye. Dorsum dark-brownish with very distinct, scattered both elongated and round warts, thighs with darker reticulum, granular around the vent. Venter and undersurface of limbs light brownish, gular region with light darker margin.

Status : Rare in Arunachal Pradesh.

**19. *Rana limnocharis* Boie
Cricket Frog**

Current Name : *Fejervarya limnocharis*
(Gravenhorst).

1835. *Rana limnocharis* (Boie) Wiegmann, *N. Acta. Ac. Leop. Carol.* 17(1) : 255.
1920. *Rana limnocharis* : Boulenger : *Rec. Indian Mus.*, 20 : 28.
1985. *Rana limnocharis* : Sarkar and Sanyal, *Rec. Zool. Surv. India*, 82(1-4) : 286.

Material examined : West Kameng dist. : 1 ex., Charduar forest, Bhalukpong, 27.xii.1965, S. K. Bhattacharya. 1 ex. (tadpole), Shergaon, 30.x.1987, D. P. Sanyal. 1 ex., Belsiri river, Foot hills, 18.x.1993; 1 ex., Goloso, Seijosa, 9.x.1993. All coll. P. T. Bhutia. East Kameng dist. : 1 ex., Seijosa, 8.xi.1990, S. Sur. Lower Subansiri dist. : 2 ex., Karsingsa river, Bunderdewa, 22.iv.1988 and 22.viii.1988; 1 ex., Itanagar, 0.viii.1992; 2 ex., Kankan nala, Itanagar, 8.iv.1993. All coll. P. T. Bhutia. West Siang dist. : 1 ex., Bam village, Basar, 4.xii.1988; 1 ex., Rimi village, Basar, 5.xii.1988; 2 ex., Takso village, Garu, 9.xii.1988; 43 ex., Gagra village, Likabari, 12.xii.1988; 10 ex., Magi village, Likabari, 13.xii.1988. All coll. D. P. Sanyal. East Siang dist. : 1 ex., Pangin, 26.xi.1988, D. P. Sanyal. Tirap dist. : 4 ex., Miao, 26.i.1962, C. B. Srivastava, 6 ex., Bordumsa I. B., 16.ii.1987, D. P. Sanyal. Changlang dist. : 1 ex., Gandhigram, 28.ii.1988, S. S. Saha.

Measurements : Snout to vent length 18-44 mm.

Diagnostic character : Head generally as long as broad; snout generally pointed, projecting beyond the mouth, as long as or a little longer than the diameter of the eye, nostril nearer to the tip of snout than the eye; interorbital width much smaller than that of the upper eyelid; tympanum distinct, nearly two-third the diameter of the eye. Fingers free, first longer than second, tips swollen; subarticular tubercles of fingers and toes distinct. Toes half-webbed, normally three phalanges of fourth toe free; a distinct oval inner metatarsal tubercle and a feebly distinct outer metatarsal tubercle present. Tibiotarsal articulation reaches in between tympanum and nostril. Dorsum greyish and warty. Venter whitish and smooth.

Distribution : India : Arunachal Pradesh : West Kameng, East Kameng, Lower Subansiri, West Siang, East Siang, Tirap and Changlang districts. Annandale (1912) reports it from Arunachal Pradesh. It is a broadly distributed species in India and found in almost all the biotopes of the country.

Elsewhere : Also Eastern Asia from Pakistan, Nepal, Bangladesh, Sri Lanka, Burma and China to Japan.

Remarks : Frogs are generally found inside the bush grown by the sides of cultivated land and streams.

Status : Common.

Genus 6. *Micrixalus* Boulenger

1888. *Micrixalus* Boulenger, *Proc. Zool. Soc. London* : 205.

20. *Micrixalus borealis* Annandale

1912. *Micrixalus borealis* Annandale, *Rec. Indian Mus.*, 8 : 10-12.

1986. *Micrixalus borealis* : Inger and Dutta, *J. Bombay nat. Hist. Soc.*, 83 (supplement) : 137.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader, triangular; snout bluntly pointed, a little shorter than the diameter of the eye; interorbital width a little broader than the upper eyelid; tympanum concealed. Vomerine teeth absent, papilla on the

tongue absent. Fingers short with rudimentary webs, first a little shorter than the second, tips with small and distinct discs; subarticular tubercles of fingers and toes not clearly visible. Toes entirely webbed, web not quite reaching the discs of toes; a less prominent elongate inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaching the eye. Dorsum dark brown, minutely warty, a dark interorbital cross-bar usually present. Venter yellowish, smooth, throat and chin purple-brown, belly sometimes spotted.

Distribution : India : Arunachal Pradesh : Rotung, near Yumbung (East Siang district).

Status : Rare.

Family V. RHACOPHORIDAE

Key to the Genera of Family RHACOPHORIDAE

1. Skin on dorsum rough with numerous (sometimes calcified) warts *Theloderma*
- Skin on dorsum more or less smooth or with scattered, non-calcified warts 2
2. Vomerine teeth present 3
- Vomerine teeth absent *Philautus*
3. Toes not completely webbed, interspace between vomerine processes narrow *Polypedates*
- Toes completely webbed, interspace between vomerine processes wide *Rhacophorus*

Genus 7. *Theloderma* Tschudi

1838. *Theloderma* Tschudi, *classif. Batr.* : 32.

Key to the species of the genus *Theloderma*

1. Toes half-webbed, tibiotarsal articulation reaching nearly to nostril, outer metatarsal tubercle present *asperum*
- Toes three-fourths webbed, tibiotarsal articulation reaching the tympanum, outer metatarsal tubercle absent *moloch*

21. *Theloderma asperum* (Boulenger)

1886. *Ixalus asper* Boulenger, *Proc. Zool. Soc. London* : 415.

1985. *Theloderma asperum* : Forst, *Amphibian Species of the World* : 549.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long. Fingers free, tips flattened into smaller discs; subarticular tubercles of fingers indistinct. Toe half-webbed, tips with distinct discs. Tibiotarsal articulation reaching nearly to nostril. Both inner and outer metatarsal tubercles present. Dorsum dark gray to brown, thickly tuberculated. Venter smooth.

Distribution : India : Arunachal Pradesh : Egar Stream between Renging and Rotung, East Siang district; Assam.

Elsewhere : Myanmar, China to Vietnam and Malaya.

Remarks : Annandale (1912) recorded it as *Ixalus asper* from Abor, East Siang dist., Arunachal Pradesh.

Status : Rare.

22. *Theloderma moloch* (Annandale)

1912. *Phrynoderma moloch* Annandale, *Rec. Indian Mus.*, 8 : 18-19.

1985. *Theloderma moloch* : Frost, *Amphibian Species of the World* : 550.

1992. *Theloderma moloch* : Chanda, *J. Bengal nat. Hist. Soc. (New Ser.)*, 11 (1) : 32.

Material examined : Nil; record from published literature.

Diagnostic character : Head triangular, depressed, broader than long; snout truncate, about as long as the diameter of the eye; nostril nearer the tip of the snout than the eye; interorbital width broader than that of upper eyelid; tympanum fairly distinct, about two-third the diameter of the eye. fingers free, tips with large discs; subarticular tubercles of fingers and toes small and indistinct. Toes three-fourth webbed, tips with distinct discs.

Tibiotarsal articulation reaching the tympanum. Inner metatarsal tubercles small and indistinct, outer metatarsal tubercle absent. Dorsum greyish with black spots, bearing very prominent ridge-like, more or less serrated, warts. Venter black with a faint vermicular reticulation running up to the ventral surface of the thighs and smooth on throat and belly.

Distribution : India : Arunachal Pradesh : Annandale (1912) recorded it from Upper Renging (East Siang district).

Remarks : There is no report of the species after Annandale (1912). The frogs were collected among some lumps of earth under a fallen log.

Status : Rare.

Genus 8. *Philautus* Gistel

1848. *Philautus* Gistel, *Naturgesch. Thierr.* : 10.

Key to the species of the genus *Philautus*

1. Snout (from anterior end of the eye to the tip of the snout) longer than the horizontal diameter of the eye. 2
 - Snout not longer than the horizontal diameter of the eye 6
2. Toes fully webbed *urgus*
 - Toes not fully webbed 3
3. Metatarsal tubercles absent *shyamrupus*
 - Inner metatarsal tubercle present 4
4. Tympanum distinct 5
 - Tympanum indistinct *namdaphuensis*
5. Tibiotarsal articulation reaching mid-eye; snout rounded, not projecting beyond the mouth
 - *sahai*
 - Tibiotarsal articulation reaching beyond the eye; snout pointed, strongly projecting beyond the mouth *annandali*
6. Tympanum hidden *cherrapunjue*
 - Tympanum not hidden (distinct) 7

7. Fingers free*andersoni*
 – Fingers webbed at the base*doriae*

23. *Philautus argus* (Annandale)

1912. *Ixalus argus* Annandale, *Rec. Indian Mus.*, 8 : 16-17.
 1931. *Philautus argus* : Ahl, *Das Tierreich Anura* III : 74-75.
 1985. *Philautus argus* : Frost, *Amphibian Species of the World* : 527.

Material examined : Nil; record from published literature.

Diagnostic character : Head short, broad and triangular, tongue without conical papilla in the middle; snout blunt, somewhat depressed at tip, a little longer than the diameter of the eye; nostril nearer the tip of the snout than the eye; interorbital width broader than that of the upper eyelid; tympanum distinct, about one-third the diameter of the eye. Fingers free, tips with large discs which are larger than those of toes; subarticular tubercles of fingers and toes large, round and distinct. Toes fully webbed, tips with distinct discs. Tibiotarsal articulation reaches the nostril. Dorsum dark slate-gray with small scattered tubercles. Venter dirty white, spotted on throat and chest smooth.

Distribution : India : Arunachal Pradesh : East Siang dist. Annandale (1912) recorded it from Upper Renging.

Remarks : There is no report of the species after Annandale (1912). Snout to vent length of Type is 27 mm.

Status : Rare.

24. *Philautus shyamrupus* Chanda and Ghosh

Current Name : *Chirixalus shyamrupus*
 (Chanda and Ghosh).

Current Name : *Chirixalus shyamrupus*
 (chanda and Ghosh)

1989. *Philautus shyamrupus* Chanda and Ghosh, *J. Bombay nat. Hist. Soc.* 86 (2) : 215-217.
 1992. *Philautus shyamrupus* : Chanda, *J. Bengal nat. Hist. Soc.*, new series. 11 (1) : 33.

Material examined : Nil; record from published literature.

Diagnostic character : Head as long as broad; tongue free, without conical papilla in the middle; snout obtusely pointed, longer than the diameter of the eye; nostril closer to the tip of snout than the eye; interorbital width much broader than that of the upper eyelid; tympanum distinct, two-third the diameter of the eye. Fingers free with prominent rounded tips, first shorter than second; subarticular tubercles on fingers and toes not distinct. Toes more or less two-third webbed, two distal phalanges of fourth toe free, tips with distinct broader discs; both inner and outer metatarsal tubercles absent. Tibiotarsal articulation reaching nostrils. Dorsum grey to brown, smooth. Venter dirty white, smooth.

Distribution : India : Arunachal Pradesh : Namdapha Biosphere Reserve, Tirap district (Chanda and Ghosh, 1989).

Remarks : The species has so far been recorded from its type-locality only.

Status : Rare.

25. *Philautus namdaphaensis* Sarkar and Sanyal

1985. *Philautus namdaphaensis* Sarkar and Sanyal, *Rec. zool. Surv. India*, 82 (1-4) : 287-289.

Material examined : Nil; record from published literature.

Diagnostic character : Snout subacuminate, a little longer than the maximum diameter of the eye; nostril equidistant from the eye and the tip of the snout; interorbital width broader than that of the upper eyelid; tympanum indistinct. Fingers free, tips with distinct discs which are more or less equal to those of toes; subarticular tubercles of fingers very distinct, on toes not very distinct. Toes half-webbed, tips with distinct discs; a small feebly distinct inner metatarsal tubercle present, outer metatarsal tubercle absent; tibiotarsal articulation reaches in between anterior part of the eye and the nostril. Dorsum dark brown and smooth. Venter dirty white, granular on the belly and undersurface of thighs, throat and upper surface of limbs smooth.

Distribution : India : Arunachal Pradesh : Tirap district. Sarkar and Sanyal (1985) described the species from Namdapha Biosphere Reserve of Arunachal Pradesh.

Remarks : The species has so far been known from type-locality only.

Status : Rare.

26. *Philautus sahai* n. sp.

Material examined : 2 adult frogs, 10 km. north of Gandhigram, Changlang district, Arunachal Pradesh, India, 29.ii.1988 (tree hole, 3 m. high from the ground). Coll. S. S. Saha.

Description : Colour : (In spirit) : Dorsum dark brown with faint light reddish-brown blotches on the lateral aspects as well as on the hinder portion of back. Both upper and lower jaw with a few dark cross-bars. Upper surface of limbs light dark-brownish. a few reddish-white spots on the upper surface of left tibia of the holotype present. Venter dull white with light-darker blotches on the belly of both the specimens present, a few darker spots on the throat of holotype (absent in paratype). Ventral surface of limbs with light-darker spots. Margin of the lower jaw white on both the specimens.

Body more or less elongated. Holotype a little stouter than the paratype.

Head : Head a little broader than long; snout rounded, longer than the horizontal diameter of the eye; canthus rostralis not very distinct; loreal region a little concave; nostril equidistant from the eye and the tip of the snout; interorbital width more or less equal to the maximum breadth of the upper eyelid; tympanum distinct, half the diameter of the eye; tongue fairly large, forked, free and bifid behind and without a papilla; vomerine teeth absent.

Forelimbs : Fairly stout, with moderate fingers possessing intercalary ossicle, fingers free with distinct round discs, larger than those of toes; subarticular tubercles distinct; a feebly prominent more or less long palmer wart placed laterally at the base of the first finger.

Hindlimbs : Fairly stout, with moderate toes possessing intercalary ossicle; toes nearly half-webbed, web reaches at the base of second penultimate phalange of the fourth toe and at the first penultimate phalange of third and fifth toes; a small, long and distinct inner metatarsal tubercle present, outer metatarsal tubercle absent; tibiotarsal articulation reaches mid-eye; subarticular tubercles distinct.

Skin : Skin in head, back and upper surface of limbs smooth with scattered small tubercles, granular on belly and undersurface of thighs, throat and breast more or less smooth; a fold from posterior end of eye to shoulder present. Both the specimens do not possess external vocal sacs. A little flaps around the vent present. Sex could not be determined from external characters.

Type specimens : *Holotype* : An adult frog measuring 26 mm. from snout to vent (in spirit), vide "material" above, Z. S. I. Reg. No. A 8500 deposited in National Zoological Collections, Zoological Survey of India, Calcutta.

Paratype : An adult frog measuring 25 mm. from snout to vent (in spirit) vide "material" above, Z. S. I. Reg. No. A 8501 also in Z. S. I. Collection, Calcutta.

Type-locality : Gandhigram, Changlang district, Arunachal Pradesh, India.

Distribution : Known from Type-locality only.

Comparison : *Philautus sahai* n. sp. differs to a greater extent from all other species of the genus *Philautus* from India and adjoining Countries.

From the above mentioned details it is clear that *Philautus sahai* n. sp. is coming closer to *Philautus annandalii* from which the new species differs by possessing (i) rounded snout, not projecting beyond the mouth (vs. pointed snout, strongly projecting beyond the mouth) and (ii) Tibiotarsal articulation reaching mid-eye. (vs. Tibiotarsal articulation reaching beyond the eye.)

The species has been named after Collector : S.S. Saha.

Remarks : The frogs, as per the information of the collector, have been collected from a hollow of a tree formed due to breaking of a stout branch near stalk. The height of the hollow is about 3 m. from the ground and it is covered with rotten leaves in rain-water. The tree was found inside dense forest on the north bank of Noa Dihing River, C. 10 km. north of Gandhigram. Several frogs escaped from the hollow and take shelter inside the thick undergrowth, when the habitat has been disturbed for searching the animals. The collector has, anyhow, managed to get two frogs only.

MEASUREMENT (in mm)

	Holotype	Paratype
Regd. No.	A8500	A8501
From snout to vent	26	25
Head length	7	7
Width of head	8	8
Snout	4	4
Snout to nostril	2	2
Eye	3.5	3
Interorbital width	2.5	2.5
U. Eyelid	2.5	2.5
Tympanum	1.5	1.5
Fore limb	15	13
First finger	3.5	3
Second finger	4.5	4
Third finger	6	6
Fourth finger	5	5
Hind limb	37	34
Tibia	10	9
Foot	10	9
First toe	3.5	2
Third toe	7	6
Fourth toe	8.5	8
Fifth toe	7	6
In. metatarsal tub.	1	1
Out. metatarsal tub.	absent	absent
Tibiotarsal art.	Mid-eye	Mid-eye
Breadth of disc on fourth finger	1.5	1.5
Breadth of disc on fifth toe	1	1

Differences between *Philautus sahai* n. sp. and other species of this genus found in north-east India and adjoining Countries are as follows :

<i>Philautus sahai</i> n. sp.	<i>Philautus andersoni</i> (Ahl)
Nostril equidistant from the tip of the snout and the eye.	Nostril much nearer the tip of snout.
Tympanum 1/2 the diameter of the eye.	Tympanum 1/4 the diameter of the eye.
Toes 1/2 webbed.	Toes slightly webbed.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching tip of the snout.

<i>Philautus sahai</i> n. sp.	<i>Philautus annandalii</i> (Boulenger)
Snout rounded, not projecting beyond the mouth.	Snout pointed, strongly projecting beyond the mouth.
Tibiotarsal articulation reaches mid-eye.	Tibiotarsal articulation reaches beyond the eye.
<i>Philautus sahai</i> n. sp.	<i>Philautus argus</i> (Annandale)
Nostril equidistant from the eye and the tip of the snout.	Nostril nearer the tip of the snout.
Tympanum 1/2 the diameter of the eye.	Tympanum 1/3 the diameter of the eye.
Toes 1/2 webbed.	Toes full-webbed.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching nostril.
<i>Philautus sahai</i> n. sp.	<i>Philautus carinensis</i> (Boulenger)
Snout a little longer than the diameter of the eye.	Snout a little shorter than the diameter of the eye.
Nostril equidistant from the tip of the snout and the eye.	Nostril nearer the tip of the snout.
Interorbital width equal to that of upper eyelid.	Interorbital width broader than that of upper eyelid
Toes 1/2 webbed.	Toes 3/4 webbed.
Tibiotarsal articulation reaches mid-eye.	Tibiotarsal articulation reaches upto nostril.
<i>Philautus sahai</i> n. sp.	<i>Philautus cherrapunjiae</i> (Roonwal & Kripalani)
Snout rounded, little longer than the diameter of the eye.	Snout truncate, shorter than the diameter of the eye.
Tympanum distinct.	Tympanum hidden.
Fingers with rudiment of web.	Fingers half-webbed.
Toes 1/2 webbed.	Toes 2/3 webbed.
Tibiotarsal articulation reaching mid-eye	Tibiotarsal articulation reaching in between anterior corner of the eye to tip of snout.
<i>Philautus sahai</i> n. sp.	<i>Philautus doriae</i> (Boulenger)
Snout a little longer than the diameter of the eye	Snout shorter than the diameter of the eye.
Nostril equidistant from the tip of the snout and the eye.	Nostril nearer the tip of the snout than the eye.
Toes 1/2 webbed.	Toes 2/3 webbed.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching eye to nostril.

<i>Philautus sahai</i> n. sp.	<i>Philautus garo</i> (Boulenger)
Snout rounded.	Snout pointed.
Toes 1/2 webbed.	Toes webbed at the base.
Tympanum 1/2 the diameter of the eye.	Tympanum 1/3 the diameter of the eye.
Inner metatarsal tubercle present.	Both the metatarsal tubercles absent.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching eye.
<i>Philautus sahai</i> n. sp.	<i>Philautus namdaphaensis</i> Sarkar & Sanyal
Snout rounded.	Snout subacuminate.
Interorbital width equal to that of upper eyelid.	Interorbital width broader than that of upper eyelid
Tympanum distinct.	Tympanum indistinct.
Discs on fingers larger than those on toes.	Discs on fingers equal to those on toes.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching eye to nostril.
<i>Philautus sahai</i> n. sp.	<i>Philautus parvulus</i> (Boulenger)
Snout a little longer than the diameter of the eye.	Snout a little shorter than the diameter of the eye.
Fingers webbed at the base.	Fingers free.
Toes half-webbed.	Toes webbed at the base.
Interorbital width equal to that of upper eyelid.	Interorbital width broader than that of upper eyelid.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching posterior border of the eye.
<i>Philautus sahai</i> n. sp.	<i>Philautus shilongensis</i> Pillai & Chanda
Snout rounded.	Snout rather pointed.
Nostril equidistant from the tip of the snout and the eye.	Nostril closer to the tip of the snout than to the eye.
Subarticular tubercles distinct.	Subarticular tubercles faintly developed.
Toes 1/2 webbed.	Toes free.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching posterior corner of eye.
Belly finely granular without warts.	Belly with numerous warts.

<i>Philautus sahai</i> n. sp.	<i>Philautus shyamrupus</i> Chanda & Ghosh
Head broader than long.	Head as long as broad.
Snout rounded.	Snout obtusely pointed.
Nostril equidistant from the tip of the snout and the eye.	Nostril nearer to the tip of the snout.
Tympanum 1/2 the diameter of the eye.	Tympanum 2/3 the diameter of the eye.
Subarticular tubercles distinct.	Subarticular tubercles indistinct.
Toes 1/2 webbed.	Toes 2/3 webbed.
Inner metatarsal tubercle present.	Inner metatarsal tubercle absent.
Tibiotarsal articulation reaching mid-eye.	Tibiotarsal articulation reaching nostril.

**27. *Philautus annandalii* (Boulenger)
Annandale's Bush Frog**

1906. *Ixalus annandalii* Boulenger, *J. Asiat. Soc. Bengal*, 2 : 385.
1931. *Philautus annandalii* : Ahl, *Das Tierreich*, Anura III : 71.
1962. *Philautus annandalii* : Daniel, *J. Bombay nat. Hist. Soc.*, 59(2) : 668.
1992. *Philautus annandalii* : Sarkar et. al. *Fauna of West Bengal, State Fauna Series 3(Part-2) : (Zool. Surv. India)*, : 90.
1994. *Philautus annandalii* : Chanda, *Anuran (Amphibia) Fauna of northeast India, Mem. zool. Surv. India*.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; tongue without conical papilla in the middle; snout pointed, strongly projecting, longer than the diameter of the eye; nostril in between the eye and the tip of the snout; interorbital width much broader than that of upper eyelid; tympanum not very distinct, smaller than eye. Fingers free, first shorter than second, tips with distinct discs; subarticular tubercles of fingers and toes not distinct. Toes half-webbed, tips with distinct discs; inner metatarsal tubercles feebly distinct, outer metatarsal tubercle absent. Tibiotarsal articulation reaching between eye and tip of snout. Dorsum dark-brown, smooth with few tubercles and darker bands. Venter dull white, granular.

Distribution : India : Arunachal Pradesh : Tirap dist. Chanda (1992 and 1994) records the species from Namdapha, Arunachal Pradesh. Assam, Meghalaya and West Bengal.

Remarks : The specimens have so far been collected from Namdapha Biosphere Reserve only, though the frogs are very common in Darjeeling Himalaya (West Bengal).

Status : Rare in Arunachal Pradesh.

28. *Philautus cherrapunjae* Roonwal & Kripalani

Current Name : *Chirixalus cherrapunjae* (Roonwal & Kripalani).

1961. *Philautus cherrapunjae* Roonwal & Kripalani. *Rec. Indian Mus.*, 59(1 & 2) : 325-334.
1985. *Philautus cherrapunjae* : Sarkar & Sanyal, *Rec. zool. Surv. India*, 82(1-4) : 286-287.

Material examined : Nil; record from published literature.

Diagnostic character : Head depressed, broader than long; tongue without conical papilla in the middle; snout short and truncate, a little shorter than the diameter of the eye; nostril nearer the tip of the snout than to the eye; interorbital width broader than that of upper eyelid; tympanum hidden. Fingers half-webbed, tips of fingers and toes with subround discs; subarticular tubercles of fingers and toes prominent, moderately developed. Toes three-fourths webbed, flattened,

tips with distinct discs. Tibiotarsal articulation reaches between the eye and the tip of the snout. Dorsum grey to dark brownish, rather uniform and with no markings, smooth with few folds. Venter slightly greyish, granular on abdomen.

Distribution : India : Arunachal Pradesh : Tirap district. Sarkar & Sanyal (1985) reported it from Namdapha Biosphere Reserve in Tirap district of Arunachal Pradesh; Meghalaya.

Remarks : Sarkar and Sanyal (1985) report the species first from Arunachal Pradesh. They have got 14 ex. of adult frogs in their disposal, the snout to vent length of which are from 21-24 mm. and those are the largest specimens so far recorded for the species.

Status : Rare in Arunachal Pradesh.

29. *Philautus andersoni* (Ahl)

1927. *Rhacophorus andersoni* Ahl, *SB. Ges. F.r.* Berlin : 36.

1912. *Ixalus tuberculatus* : Annandale, *Rec. Indian Mus.*, 8 : 17-18.

1931. *Philautus andersoni* : Ahl, *Das Tierreich*, Anura III : 67.

Material examined : Nil; record from published literature.

Diagnostic character : Snout rounded; not larger than the diameter of the eye; nostril much nearer the tip of the snout than the eye; tympanum distinct, about one-fourth the diameter of the eye. Fingers free, tips with distinct discs which are larger than those of toes; toes slightly webbed, tips with distinct discs; inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches the tip of the snout. Dorsum uniform dark-olive with scattered whitish tubercles. A large black irregular spot on the groin and two yellow spots on the sides. Venter yellowish.

Distribution : India : Arunachal Pradesh : East Siang district. Annandale (1912) reported it from Rotung; Meghalaya.

Elsewhere : Myanmar, Tibet and Yunnan (China).

Remarks : It is a rare frog which has so far been recorded from Arunachal Pradesh and Meghalaya in India.

Status : Rare.

30. *Philatus doriae* (Boulenger)

Current Name : *Chirixalus doriae* Boulenger.

1893. *Chirixalus doriae* Boulenger, *Ann. Mus. Genova* (2nd. ser.) 13 : 341.

1912. *Chirixalus doriae* : Annandale, *Rec. Indian Mus.*, 8 : 18.

1974. *Philautus doriae* : Gorham, *Checklist of the World Amphibians* : 166.

Material examined : Nil; record from published literature.

Diagnostic character : Snout rounded or obtusely pointed, shorter than the diameter of the eye; nostril nearer the tip of the snout than the eye; tympanum distinct, half the diameter of the eye. Fingers webbed at the base, tips with distinct discs which are larger than those of toes; subarticular tubercles well developed. Toes two-third webbed, tips with distinct discs, a small inner metatarsal tubercle present. Tibiotarsal articulation reaches in between the eye and the nostril. dorsum yellowish or purplish-gray, smooth. Venter white, finely granular on the throat, coarsely granular on the belly and undersurface of thighs.

Distribution : India : Arunachal Pradesh : East Siang district. Annandale (1912) recorded it from Kobo (East Siang district).

Elsewhere : Myanmar.

Remarks : There is no report of collection of the species after Annandale (1912). all the generic characters mentioned by Boulenger (1893) for establishing new genus *Chirixalus* do not differ from those of genus *Philautus* (the allied genus *Chirixalus*); moreover Boulenger mentioned therein, - this genus stands in the same relation to *Ixalus* (now *Philautus*). As *Philautus* has been described prior to *Chirixalus* and Gorham (1974) kept *Chirixalus* under the synonym of *Philautus*, we like to describe the species here as *Philautus doriae*.

Status : Rare.

Genus 9. *Polypedates* Tschudi1838. *Polypedates* Tschudi, *Classif. Batr.* : 34.**Key to the species of the genus *Polypedates***Parieto-esquamosal arch absent; skin on head ossified *leucomystax*A more or less distinct parietosquamosal arch present; Skin on head mostly free *maculatus***31. *Polypedates leucomystax* (Gravenhorst)
Tree Frog**1829. *Hyla leucomystax* Gravenhorst, *Delic. Mus., Vralislay.*, 1 : 26.1931. *Rhacophorus leucomystax* : Ahl, *Das Tierreich Anura* III : 134-137.1985. *Rhacophorus leucomystax himalayensis* : Sarkar and Sanyal, *Rec. zool. Surv. India*, 87 (1-4) : 289.1986. *Polypedates leucomystax* : Inger and Dutta, *J. Bombay nat. Hist. Soc.*, 83 : 139.*Material examined* : West Kameng dist. : 1 ex., Bhalukpong, 14.x.1993, P. T. Bhutia. Lower Subansiri dist. : 1 ex., P-Sector, near A.P.F.S., Office, Itanagar, 10.i.1992, P. T. Bhutia.*Measurements* : Snout to vent length 53-74 mm.*Diagnostic character* : Head broader than long, skin on head rugose; snout not pointed, projecting a little beyond the mouth, greater than the diameter of the eye; nostril nearer to the tip of the snout than the eye; interorbital width much broader than that of the upper eyelid; tympanum distinct, about three-fourths diameter of the eye. Fingers free, first equals the second, tips of fingers and toes bears horse-shoe shaped distinct discs; subarticular tubercles of fingers and toes distinct. Toes three fourth webbed, one phalange of fourth toe free; a distinct oval inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches in between eye and tip of snout. Dorsum light chocolate and smooth. Venter dull whitish and granular.*Distribution* : India : Arunachal Pradesh : West Kameng dist.; Lower Subansiri district; Tirap dist.; Eastern Himalaya and Andaman and Nicobar Islands in India.*Elsewhere* : South China to Malaysia.*Remarks* : Specimen from Itanagar possesses long darker spots on dorsum, gular region smooth and white.*Status* : Uncommon.**32. *Polypedates maculatus* Gray
Maculated Tree Frog**1832. *Hyla maculata* Gray, *Ill. Indian Zool.* 1, pl. 82, fig. 1.1890. *Rhacophorus maculatus* : Boulenger, *Fauna Br. India. Rept. & Batr.* : 475-476.1985. *Rhacophorus maculatus* : Sarkar and Sanyal, *Rec. zool. Surv. India*, 82 (1-4) : 290.1986. *Polypedates maculatus* : Inger and Dutta, *J. Bombay nat. Hist. Soc.* 83 : 139.*Material examined* : West Kameng dist. : 1 ex. (under stone), Dugun Chuor Chug Chu, 14.iv.1961; 1 ex. (under stone), Dugun Chu, 17.iv.1961. All coll. K. C. Jayaram.*Measurements* : Snout to vent length 38-43 mm.*Diagnostic character* : Head broader than long, skin on head free; snout pointed, projecting a little beyond the mouth, generally longer than the diameter of the eye; nostril nearer the tip of the snout than the eye; interorbital width broader than that of the upper eyelid; tympanum distinct, about three fourths diameter of the eye. Fingers with rudimentary web, first equals the second, tips of fingers and toes bear horse-shoe shaped distinct discs; subarticular tubercles of fingers and toes distinct. Toes nearly three fourths webbed, two phalanges of fourth toe free; a distinct oval inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches in between posterior end of eye and tip of snout. Dorsum brownish with light darker spots and smooth. Venter dull whitish and granular.*Distribution* : India : Arunachal Pradesh :

West Kameng dist., East Siang dist; Tirap dist. Plains of India in general.

Elsewhere : Sri Lanka.

Remarks : One frog measuring 38 mm. from West Kameng possesses black dots on dorsum.

Status : Uncommon.

Genus 10. *Rhacophorus* Kuhl and van Hasselt

1822. *Rhacophorus* Kuhl and van Hasselt, *Algemeene Konst-en-Letter-Bode*, 7 : 104.

Key to the species of the genus *Rhacophorus*

1. Fingers entirely webbed (web reaches the discs) 2
- Fingers not entirely webbed (web does not reach the discs) 4
2. Nostril nearer the tip of the snout than the eye; tibiotarsal articulation reaching nostril to beyond the tip of the snout *nigropalmatus*
- Nostrils equidistant from the tip of the snout and the eye; tibiotarsal articulation reaching in between the eye and nostril 3
3. Heel with a triangular dermal appendage; one or two black spots behind the arm present ..
..... *reinwardtii*
- Heel without triangular dermal appendage; black spots behind the arm absent
..... *maximus*
4. Toes entirely webbed 5
- Toes not entirely webbed (2/3 webbed)
..... *jerdonii*
5. Nostril much nearer the tip of the snout than the eye; fingers with rudiment of web.
..... *naso*
- Nostril equidistant from the tip of the snout and the eye; fingers not entirely webbed (web does not reach the disc of fourth-finger)
..... *namdaphaensis*

33. *Rhacophorus nigropalmatus* Boulenger

1895. *Rhacophorus nigropalmatus* Boulenger, *Ann. Mag. Nat. Hist.*, (6) 16 : 170.

1992. *Rhacophorus nigropalmatus* : Chanda, *J. Bengal nat. Hist. Soc.*, 11 (1) : 32.

Material examined : Nil; record from published literature.

Diagnostic character : Head a little broader than long; snout rounded, as long as the diameter of the eye; nostril nearer the tip of the snout than the eye; interorbital width broader than that of upper eyelid; tympanum distinct, half to two-third the diameter of the eye. Fingers fully webbed to the discs; first finger shorter than second, tips with distinct discs; subarticular tubercles of fingers and toes distinct. Toes fully webbed to the discs; a small pointed inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaching nostril to beyond the tip of the snout. Dorsum dirty white, smooth or finely granular. Venter cream colour, coarsely granular.

Distribution : India : Arunachal Pradesh : Tirap district; Meghalaya; Nagaland; Manipur; Mizoram; Assam.

Elsewhere : Sumatra, Borneo, Thailand and Malaysia.

Remarks : Chanda (1992) reports it from Arunachal Pradesh.

Status : Rare.

34. *Rhacophorus reinwardtii* (Schelegel)

Current Name : *Rhacophorus bipunctatus* Ahl, 1927.

1840. *Hyla reinwardtii* Schelegel, *Abbid. Amph.*, : 105.

1841. *Rhacophorus reinwardtii* : Dumeril and Bibron. *Erpet.*, 9 : 403.

1931. *Rhacophorus reinwardtii* : Ahl, *Das Tierreich Anura* III, 55 : 170-172.

1985. *Rhacophorus reinwardtii* : Sarkar and Sanyal. *Rec. zool. Surv. India*, 82 (1-4) : 293.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; snout pointed or rounded, as long as the diameter of the eye; nostril equidistant from the tip of snout and the eye; interorbital width much

broad than upper eyelid; tympanum more than half diameter of the eye. Fingers entirely webbed, first shorter than second, tips with large discs; subarticular tubercles of fingers and toes well developed. Toes fully webbed to the discs; an oval, more or less distinct inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaching in between the eye and the nostril. Dorsum darker, smooth, heel with a triangular dermal appendage, one or two black spot on each side behind the arm. Venter dull white, granular.

Distribution : India : Arunachal Pradesh. Annandale (1912) reported it from Rotung (East Siang dist.); Sarkar and Sanyal (1985) from Tirap district; Meghalaya; Assam; West Bengal.

Elsewhere : Sumatra, Java and Borneo.

Remarks : *Rhacophorus bipunctatus* Ahl, 1927 is a replacement name for *Rhacophorus bimaculatus* Boulenger, 1882. Annandale (1912) reported one example of frog as *Rhacophorus bimaculatus* Boulenger from Rotung (Arunachal Pradesh).

Status : Uncommon.

35. *Rhacophorus maximus* Gunther

1858. *Rhacophorus maximus* Gunther, *Cat. Batr. Sal. Br. Mus.* : 83.

1985. *Rhacophorus maximus* : Sarkar and Sanyal, *Rec. zool. Surv. India*, **82** (1-4) : 290.

1992. *Rhacophorus maximus* : Sarkar et al., *Fauna of West Bengal, State Fauna Series*, **3**(Part 2) (*Zool. Surv. India*) : 93-94.

Material examined : Lower Subansiri dist. : 1 ex., Tamen Road, Raga 15.x.1989, P. T. Bhutia. Papum Pare dist. : 2 ex., Kimin (near P.W.D. I.B.), 21.iii.1994, P. T. Bhutia.

Measurements : Snout to vent length 70-89 mm.

Diagnostic character : Head a little broader than long; snout rounded, as long as the diameter of the eye; nostril equidistant from the tip of snout and the eye; interorbital width much broader than that of upper eyelid; tympanum distinct, more than half diameter of the eye. Fingers entirely webbed, web reaches the base of discs at the tips of fingers, first shorter than second; subarticular tubercles of fingers and toes well-developed. Toes fully

webbed to the discs; an oval, distinct inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaching in between the eye and the nostril. Dorsum greenish and smooth; heel without triangular dermal appendage; black spots behind the arm absent. Venter white, granular.

Distribution : India : Arunachal Pradesh : Tirap, Papum Pare, Lower Subansiri and East Siang districts; Assam; Meghalaya; West Bengal.

Elsewhere : Nepal, Southern China and Thailand.

Remarks : The specimen collected from Raga on 15.x.1989 possesses snout a little longer than the diameter of the eye and fingers more or less entirely webbed.

36. *Rhacophorus jerdonii* (Gunther)

1875. *Polypedates jerdonii* Gunther, *Proc. Zool. Surv. London* : 571.

1882. *Rhacophorus jerdonii* : Boulenger, *Cat. Batr. Sal.* **80**.

1912. *Rhacophorus microdiscus* Annandale, *Rec. Indian Mus.*, **8** : 13-14.

1974. *Rhacophorus jerdonii* : Gorham, *Checklist of World Amphibians upto January 1, 1970* : 169.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; snout rounded, a little shorter than the diameter of the eye; nostril equidistant from the tip of the snout and the eye; interorbital width broader than the upper eyelid; tympanum distinct, one third the diameter of the eye. Fingers with distinct web at the base. Tips with distinct discs; subarticular tubercles of fingers and toes moderate. Toes two-third webbed, tips with distinct discs; an elongate, feebly prominent inner metatarsal tubercle present. Tibiotarsal articulation reaching the eye. Dorsum greyish, smooth. Venter dull white, spotted brown on throat, granular on the belly.

Distribution : India : Arunachal Pradesh : East Siang district. Annandale, 1912 recorded it from Kobo, at the base of Abor foot-hills; Assam; West Bengal.

Remarks : *Rhacophorus microdiscus* reported by Annandale (1912) from Arunachal Pradesh

has been synonymised by Gorham (1974) and kept under *Rhacophorus jerdonii* (Gunther, 1875).

Status : Rare.

37. *Rhacophorus naso* Annandale

1912. *Rhacophorus naso* Annandale, *Rec. Indian Mus.*, 8 : 12-13.

1985. *Rhacophorus naso* : Frost, *Amphibian Species of the World*, 546.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader, triangular; snout pointed, longer than the diameter of the eye. Nostril much nearer the tip of the snout than the eye; tympanum distinct, 2/3 the diameter of the eye. Fingers with rudimentary web, tips with well-developed discs. Subarticular tubercles of fingers and toes well developed. Toes almost completely webbed; an elongate, but not very prominent inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches the eye. Dorsum rugose with many prominent and irregular tubercles, Purplish-brown. Venter coarsely granular, dirty white.

Distribution : India : Arunachal Pradesh: East Siang district. Annandale(1912) recorded it from Egar stream between Renging and Rotung (9.1.1912), East Siang district.

Remarks : No further Collection record after Annandale, 1912.

Status : Rare.

38. *Rhacophorus namdaphaensis* Sarkar and Sanyal

1985. *Rhacophorus namdaphaensis* Sarkar & Sanyal, *Rec. Zool. Surv. India*, 82 (1-4) : 290-293.

Material examined : Nil; record from published literature.

Diagnostic character : Head triangular, slightly broader than long; snout subacuminate, little longer than the diameter of the eye; nostril equidistant from the tip of the snout and the eye; interorbital width much broader than that of upper eyelid; tympanum not very distinct, about half the diameter of the eye. Fingers not entirely webbed, first shorter than second, tips with distinct discs

which are smaller than the diameter of the tympanum and larger than those on toes; subarticular tubercles of finger and toes well developed. Toes entirely webbed, web reaches the discs of toes except in fourth toe where it reaches at the middle of penultimate phalange; a small feebly distinct inner metatarsal tubercle present, outer metatarsal tubercle absent. Tibiotarsal articulation reaches mid-eye. Dorsum reddish-brown, with scattered microscopic darker warts. Venter brownish, granular on belly and undersurface of thighs, chest and throat smooth.

Distribution : India : Arunachal Pradesh : Tirap district. Sarkar and Sanyal (1985) described the species from Namdapha, Arunachal Pradesh.

Remarks : The species has so far been known Type-locality (Namdapha, ca. 58 km. from Miao, Tirap district) only.

Status : Rare.

Order : CAUDATA

Family : SALAMANDRIDAE

Genus 11. *Tylototriton* Anderson

1871. *Tylototriton* Anderson, *Proc. Zool. Soc. London* : 423.

39. *Tylototriton verrucosus* Anderson The Himalayan Newt

1871. *Tylototriton verrucosus* Anderson, *Proc. Zool. Soc. London* : 423.

1890. *Tylototriton verrucosus* : Boulenger, *Fauna Br. India, Rept. & Batr.* : 514.

1976. *Tylototriton verrucosus* : Mansukhani, Julka and Sarkar, *Newsl. Zool. Surv. India*, 2 (6) : 244-245.

1983. *Tylototriton verrucosus* : Tikader, *Threatened Animals of India* : 252.

1992. *Tylototriton verrucosus* : Sarkar, Biswas and Ray, *Fauna of West Bengal, State Fauna Series*, 3(Part-2) (*Zool. Surv. India*) : 79.

Material examined : Nil; record from published literature.

Diagnostic character : Head broader than long; surrounded by hard porous ridge; snout short, blunt tipped, larger than the diameter of the eye;

nostril nearer the tip of the snout than the eye; tympanum indistinct. Fingers and toes moderate and free, tips blunt. Body 3 to 3 1/2 times the length of the head. Tail flat, as long as or a little longer than the head and body. A broad and distinct porous vertebral ridge; a series of 15 to 16 knob-loke porous glands along each side of dorsum, the last three behind the leg. Anal opening a longitudinal slit. Dorsum tubercular, dark brown, parotoids large and distinct; wrinkled on belly, glandular on throat and under surface of limbs, a distinct gular fold.

Distribution : India : Arunachal Pradesh : Tihun, Lohit district (Mansukhani et al, 1976); Manipur; West Bengal.

Elsewhere : Nepal, Myanmar, Thailand, Western China.

Remarks : The newts are found in the pools in eastern Himalayas during monsoon. Dr. J. M. Julka collected one example of newt from Lohit district (Alt. 1248 m.), Arunachal Pradesh from hibernating condition during December, 1969.

Status : Rare in Arunachal Pradesh.

SUMMARY

The paper deals with 39 species under 11 genera, 6 families and 2 orders representing the Amphibian fauna of Arunachal Pradesh based on the collections mainly made by the surveys

undertaken by the scientists of the Zoological Survey of India during December, 1965 to October, 1993. A few examples collected prior to that and available with the registered National Zoological Collections have also been utilized. The paper based on 295 examples of amphibians belonging to thirty nine species of which *Philqutus sahai* is new to science; *Megophrys lateralis*, *Rana erythraea*, *Rana nicobariensis*, *Rana keralensis* and *Rana andersonii* are recorded for first time from Arunachal Pradesh and the latter (*Rana andersonii*) for the first time from India. Many other species are recorded for the first yime from different districts of the state. Keys, illustrations of essential morphological characters to follow the key and short diagnostic characters of the species have been added in the paper for determination of the species. Map showing distribution of species and a list containing district-wise distribution of species at a glance have also been provided.

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REFERENCES

- AHL, E. 1931. *Das Tierreich*, 55, Amphibia, Anura III : 1-477.
- ANNANDALE, N. 1912. Zoological Results of the Abor Expedition, 1911-1912, Batrachia. *Rec. Indian Mus.*, 8 : 7-36.
- BOULENGER, G. A. 1890. The fauna of British India, including Ceylon and Burma. Reptilia and Batrachia. London (Taylor & Francis), pp. xviii + 541.
- BOULENGER, G. A. 1893. Reptiles and Batrachians from Burma. *Ann. Mus. Civ. Genova*, 13(2) : 304-347.
- BOULENGER, G. A. 1920. A monograph of the South Asian, Papuan, Melanesian and Australian Frogs of the Genus *Rana*. *Rec. Indian Mus.*, 20 : 1-226.

- CHANDA, S. K. 1992. Further note on the distribution pattern of Amphibia in North-east India. *J. Bengal Nat. Hist. Soc.*, New series **11** No. 1 : 25-33.
- CHANDA, S. K. 1994. Anuran (amphibia) Fauna of Northeast India, *Mem. zool. Surv. India*, Vol. **18** (No. 2) : 1.
- CHANDA, S. K. and GHOSH, A. K. 1989. A new frog of the genus *Philautus* Gistel, from the proposed Namdapha Biosphere Reserve, Arunachal Pradesh, Northeast India. *J. Bombay nat. Hist. Soc.*, **86**(2) : 215-217.
- FROST, D. R. 1985. Amphibian species of the World, 1-732.
- GHOSH, A. K. 1987. Final Tech. Report on Faunal Resources of Proposed Namdapha Biosphere Reserve, Arunachal Pradesh : 1-129.
- GORHOM, S. W. 1974. Checklist of World Amphibians upto January 1, 1970 : 1-172.
- INGER, R. F. and DUTTA S. K. 1986. An overview of the amphibian fauna of India, *J. Bombay nat. Hist. Soc.*, **83**(Supplement) : 135-146.
- MANSUKHANI, M. R., JULKA, J. M. and SARKAR, A. K. 1976. On the occurrence of the Himalayan Newt, *Tylototriton verrucosus* Anderson, from Arunachal Pradesh, India. *Newl. zool. Surv. India*. **2**(6) : 243-245.
- PARKAR, H. W. 1934. A monograph of the Frogs of family Microhylidae; London (Trustees of British Museum), pp. viii + 208, 67 figs.
- PILLAI, R. S. and CHANDA S. K. 1977. Two new species of frogs (Ranidae) from Khasi hills, India. *J. Bombay nat. Hist. Soc.*, **74**(1) : 136-140.
- SARKAR, A. K. and SANYAL, D. P. 1985. Namdapha Biosphere Reserve : An overview : Amphibia. *Rec. zool. Surv. India*, **82**(1-4) : 185-295.
- SARKAR, A. K., BISWAS, M. L. and RAY, S. 1992. Amphibia. In : *Fauna of West Bengal, State Fauna Series*, **3**(Part 2) : 67-100.
- SARKAR, A. K. 1993. Amphibia. In : *Fauna of Orissa, State Fauna Series*, **1**(Part-4) : 39-49. (*Zool. Surv. India*).

DISTRIBUTION OF AMPHIBIAN SPECIES IN ARUNACHAL PRADESH AT A GLANCE

Found +
Not found -

Name of species	Name of Districts										
	Tirap Dt.	Changlang Dt.	Lohit Dt.	Dibang Valley Dt.	East Siang Dt.	West Siang Dt.	Upper Subansiri Dt.	Lower Subansiri Dt.	East Kameng	West Kameng	Tawang Dt.
	1	2	3	4	5	6	7	8	9	10	11
1. <i>B. macrotis</i>	+	-	-	-	-	-	-	-	-	-	-
2. <i>B. melanostictus</i>	+	-	+	-	+	+	-	+	+	+	-
3. <i>B. himalayana</i>	+	-	-	-	+	-	-	-	-	+	-
4. <i>M. berdmorei</i>	+	-	-	-	-	-	-	-	-	-	-
5. <i>M. boettgeri</i>	-	-	-	-	+	-	-	-	-	-	-
6. <i>M. lateralis</i>	-	+	-	-	-	-	-	-	-	-	-
7. <i>A. afghanus</i>	+	-	-	-	+	-	-	-		+	-
8. <i>R. andersonii</i>	+	-	-	-	-	-	-	-	-	-	-
9. <i>R. mawphlongensis</i>	+	-	-	-	-	-	-		-	-	-
10. <i>R. gerbillus</i>	-	-	-	-	+		-		+	-	-
11. <i>R. danieli</i>	+	-	-	-	-	-	-	-		-	-
12. <i>R. liegibii</i>	-	-	-	-	+	-				-	
13. <i>R. kuhlii</i>	+	-	-	-	-	-	-	-	-	-	-
14. <i>R. erythraea</i>		-	-	+		-	-	-	-	-	-
15. <i>R. nicobariensis</i>	-		-		-	-		+			
16. <i>R. cyanophlyctis</i>	+		-	+	+	+		+	+	+	
17. <i>R. tigerina</i>					+			+		+	

Name of species	1	2	3	4	5	6	7	8	9	10	11
18. <i>R. keralensis</i>										+	
19. <i>R. linnocharis</i>	+	+			+	+		+	+	+	
20. <i>M. borealis</i>					+						
21. <i>T. asperum</i>					+						
22. <i>T. moloch</i>					+						
23. <i>Ph. argus</i>					+						
24. <i>Ph. shyamrupus</i>	+										
25. <i>Ph. namdaphaensis</i>	+				-						
26. <i>Ph. sahai</i>		+							-		
27. <i>Ph. annandalii</i>	+										
28. <i>Ph. cherrapunjae</i>	+			-							
29. <i>Ph. andersoni</i>	-				+			-			
30. <i>Ph. doriae</i>	-	-	-	-	+						
31. <i>Poly. leucomystax</i>	+		-	-				+	-	+	
32. <i>Poly. maculatus</i>	+	-			+		-			+	-
33. <i>Rh. nigropalmatus</i>	+	-	-				-	-			
34. <i>Rh. reinwardtii</i>	+	-		-	+			-			
35. <i>Rh. maximus</i>	+			-	+			+	-		
36. <i>Rh. jerdonii</i>			-		+						
37. <i>Rh. naso</i>					+						
38. <i>Rh. namdaphaensis</i>	+										-
39. <i>Tyloto. verrucosus</i>	-		+	-	-				-	-	-

PISCES

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INTRODUCTION

The fish fauna of the vast territory of the Arunachal Pradesh remained more or less unknown until the publications of the Zoological Results of the abor expedition in 1911-1912 by B.L. Chowdhury; Dapham Scientific Surveys Expedition, N.E.F.A. in Nov. 1969 to Jan. 1970, jointly by G.S.I., Z.S.I., B.S.I., Ar. S.I., An. S.I. under the leadership of Sri D.R. Nandy of G.S.I.; 1971 census Reports on fish fauna of Arunachal Pradesh (districtwise) by Sri K. Barthakur of the Indian Frontier Administrative Service, Deptt. of Census Operations, Arunachal Pradesh, based upon the information furnished by the then Director, Zoological Survey of India, Dr. A.P. Kapur and subsequently later publications.

A perusal of literature shows that several faunistic surveys to Arunachal Pradesh were made by Z.S.I. scientists earlier (K.C. Jayaram, 1961; C.B. Srivastava, 1962; R.S. Pillai, 1973; J.M. Julka, 1975; K.R. Rao, 1975; J.R. Dhanze, 1985; A.K. Ghosh, S. Biswas, S.S. Saha, A.K. Hazra and other party members, Nadapha Biosphere Reserve surveys, 1981 to 1987) and their associated published results on fishes (B.L. Chowdhury, 1913; K.C. Jayaram, 1963; C.V. Srivastava, 1966; S. Chowdhury and N. Sen, 1977; T.K. Sen and A.K. Datta; K.C. Jayaram and N. Mazumdar, 1964; A.K. Datta and R.P. Barman, 1985; A.K. Ghosh, 1987; special issue on fauna of Namdapha : Arunachal Pradesh - 'A proposed Biosphere reserve', 1985; reveal important but fragmental picture of fish fauna of Arunachal Pradesh not exhaustive and comprehensive in nature.

Therefore, with a view to reveal a complete and comprehensive picture of the fish fauna of

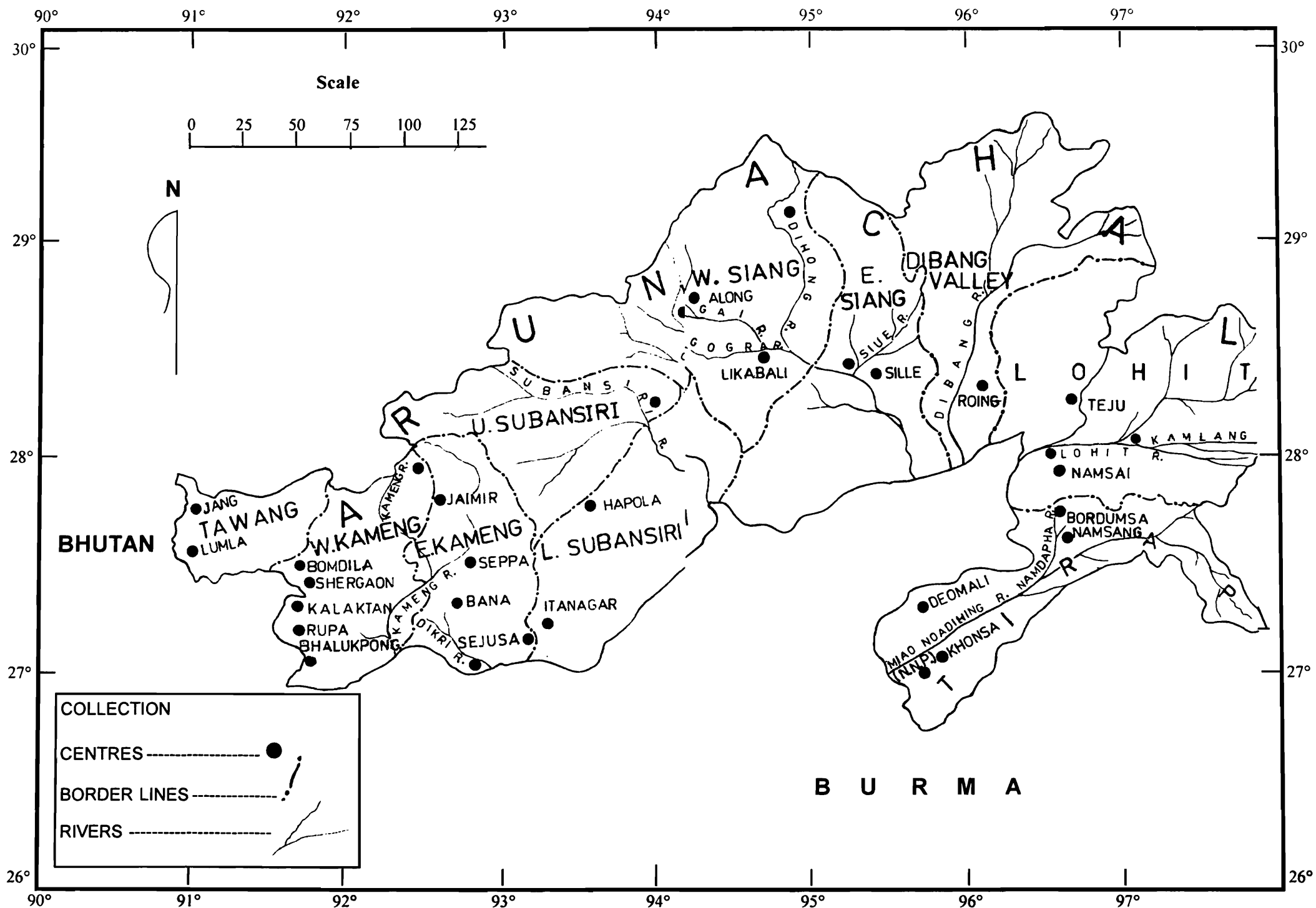
Arunachal Pradesh, Zoological Survey of India, assigned a separate research project to the author in 1986 along with other experts on different groups.

The present paper (systematic list of fishes of Arunachal Pradesh) is based upon recent comprehensive fish collections made districtwise (Tirap, Lohit, Upper and Lower Subansiri, Dibang valley, East and West Kameng, East and West Siang and Tawang districts) from Arunachal Pradesh by several group experts including the author during 1987, 1988 and 1989 field surveys together with large number of both unidentified and identified fish collections made by Z. S. I. survey parties earlier from Arunachal Pradesh including Namdapha and all relevant information and records on fishes from Arunachal Pradesh for the purpose.

The total fish collections so far made from Arunachal Pradesh both earlier and by author reveal a wide range of both riverine and torrential forms belonging to 8 orders, 21 families, 61 genera and 143 species out of which 23 genera comprising 55 species are hill-stream-cum-torrential forms and 50 new records.

All the 143 species in this paper have been described in detail with their keys, references, diagnostic characters, size, distribution, remarks, material examined together with 16 figures of rare and interesting species. It also includes one map depicting state of Arunachal Pradesh, collection centres, border lines and rivers of Arunachal Pradesh.

The classification of fishes adopted in this paper is after Greenwood *et al.* (1966).



Map : Showing collection localities of Arunachal Pradesh

RIVER SYSTEM

The western end of Arunachal Pradesh, the Kameng district is drained by rather insignificant mountain streams, the Kameng, the Bhoirelli, the Bichom and Tengapani rivers. The long and narrow valley at the foot of the Bomdila range is intersected by many streams all of which are not perennial. They come to life and flow vigorously during monsoon months. The important river Daphlakho flows into the basin of Bhoirelli, the largest of the rivers in Kameng district.

As we cross over to the east, we enter the stretch of wild precipitous region comprising the present low and upper Subansiri districts of Arunachal Pradesh, which derives its name from chief river system of the region marking approximately the boundary of the district. The Subansiri makes its way across the entire length of the territory flowing from north-west to south-east. Other important rivers draining the whole area are Kamla, Foma, Popkum, Khru, Sipi, Palin, Panior and Par. All these wild and turbulent rivers ultimately course down to and augment, the Subansiri, which ultimately joins the mighty Brahmaputra far below in the district of Lakhimpore in Assam. Ranga is the most important tributary of Subansiri, which runs to meet the Kerkutia Suti which is said to be a northern branch of the Brahmaputra, below Goramur.

The Tsangpo coming from the north (Tibet) and skirting a great mountain-barrier, Namcha Barwa, 7756 metres high, enters the Indian territory at Karbo near Gelling and flows through the Siang district of the present Arunachal Pradesh under the changed name of Dihang in its course down to the valley of Assam until it joins the confluence of two other great rivers, the Dibang and the Lohit, coming from the east.

As we proceed further eastward, we enter the watershed of the Dihang river marking roughly the eastern boundary of the Siang district and the western limit of the Lohit district. The Dibang courses down to join the Brahmaputra near Sadiya. The main tributaries of the Dibang are the Dri and Ithum. The Dibang joins the Dihang at Sissiri about 5 km north of its confluence with the Brahmaputra. The most important river of the

Lohit district flowing almost parallel to Dibang, is the Lohit. The important tributaries of the eastern sides of the Lohit river are the Disu, Thumthaya, the Lung, the Tiding, the Digaru etc. Tributaries from west to meet Lohit, are Dikrang (called by the Khamties as Gamura), the Diphu, the Dibang etc.

Proceeding across the Lohit into the Tirap district coming round the easternmost tip of the Brahmaputra valley from south-east to south, we enter the narrow strip of mountainous country lying along the northern slopes of the Patkoi on the Indian side of the border with Burma. A number of mountain streams and torrents dissect the undulating coursing down either to augment the Tirap river which gives its name of the district, or falling directly into the Brahmaputra. The other notable river flowing over the area is Namchik with a separate and independent course.

SYSTEMATIC LIST OF FISHES

Class PISCES

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

1. *Notopterus notopterus* (Pallas)

Order CYPRINIFORMES

Family CYPRINIDAE

Sub family CULTRINAE

2. *Chela laubuca* (Ham.)

3. *Salmostoma boopis* (Day)

4. *Salmostoma bacailu* (Ham.)

*5. *Salmostoma phulo phulo* (Ham.)

Sub family RASBORINAE

6. *Barilius barna* (Ham.)

7. *Barilius bendelisis bendelisis* (Ham.)

8. *Barilius vagra vagra* (Ham.)

9. *Barilius barila* (Ham.)

*10. *Barilius dogarsinghi* Hora

11. *Barilius tileo* (Ham.)

*12. *Barilius shacra* (Ham.)

13. *Barilius bola* (Ham.)

14. *Barilius jayaramai* Barman

15. *Danio (Danio) aequipinnatus* (McCII.)

16. *Danio (Danio) dangila* (Ham.)
17. *Danio (Danio) devario* (Ham.)
18. *Danio (Brachydanio) horai* Barman
19. *Danio (Brachydanio) rerio* (Ham.)
- *20. *Esomus danricus* (Ham.)
- *21. *Rasbora elanga* (Ham.)
22. *Rasbora daniconius* (Ham.)
- Sub family CYPRININAE
23. *Accrossocheilus hexagonolepis* (McCII.)
- *24. *Aspidoparia java* (Ham.)
- *25. *Aspidoparia morar* (Ham.)
- *26. *Amblypharyngodon mola* (Ham.)
27. *Chagunius chagunio* (Ham.)
28. *Cirrhinus reba* (Ham.)
- +29. *Cirrhinus mrigala* (Ham.)
30. *Crossocheilus latius latius* (Ham.)
- +31. *Catla catla* (Ham.)
32. *Garra gotyla gotyla* (Gray)
- *33. *Garra annandalei* Hora
34. *Garra gravelyi* Annandale
- *35. *Garra lissorhynchus* (McCII.)
- *36. *Garra naganensis* Hora
37. *Garra tirapensis* Datta & Barman
- *38. *Garra lamta* (Ham.)
39. *Garra nasuta* (McCII.)
40. *Garra rupecula* (McCII.)
41. *Garra kempfi* Hora
42. *Labeo dero* (Ham.)
43. *Labeo pangusia* (Ham.)
44. *Labeo bata* (Ham.)
45. *Labeo boga* (Ham.)
- +46. *Labeo rohita* (Ham.)
47. *Labeo gonius* (Ham.)
48. *Labeo calbasu* (Ham.)
- *49. *Osteobrama cotio cotio* (Ham.)
- *50. *Puntius chola* (Ham.)
- *51. *Puntius tetrapagus* (McCII.)
- *52. *Puntius guganio* (Ham.)
53. *Puntius conchoni* (Ham.)
54. *Puntius sarana sarana* (Ham.)
55. *Puntius sophore* (Ham.)
56. *Puntius ticto* (Ham.)
- *57. *Puntius dukai* (Day)
58. *Puntius stevensonii* (Day)
59. *Semiplotus modestus* Day
60. *Semiplotus semiplotus* (McCII.)
- *61. *Tor tor* (Ham.)
62. *Tor putitora* (Ham.)
- *63. *Tor progenius* (McCII.)
- Sub family SCHIZOTHORACINAE
64. *Schizopygopsis stoliczkae* Steind
65. *Schizothorax richardsonii* (Gray)
- *66. *Schizothoracichthys progasuts* (McCII.)
- Family PSILORHYNCHIDAE
- *67. *Psilorhynchus homaloptera* Hora & Mukerjee
- *68. *Psilorhynchus sucatio* (Ham.)
69. *Psilorhynchus balitora* (Ham.)
- Family HOMALOPTERIDAE
- Sub family NOEMACHEILINAE
- Genus *Noemacheilus*
- *70. *Noemacheilus prashadi* Hora
71. *Noemacheilus manipurensis* Chaudhuri
72. *Noemacheilus savona* (Ham.)
- *73. *Noemacheilus corica* (Ham.)
- *74. *Noemacheilus kangjuphulensis* Hora
75. *Noemacheilus multifasciatus* Day
76. *Noemacheilus pavonaceus* (McCII.)
77. *Noemacheilus botia* (Ham.)
78. *Noemacheilus arunachalensis* Datta & Barman
- *79. *Noemacheilus sikmaiensis* Hora
80. *Noemacheilus rupecola* (McCII.)
- *81. *Noemacheilus scaturigina* (McCII.)
- Sub genus *Aborichthys*
- *82. *Noemacheilus garoensis* (Hora) ++
- *83. *Noemacheilus elongatus* (Hora) ++
84. *Noemacheilus tikadari* (Barman) ++
- *85. *Noemacheilus kempfi* (Chaudhuri) ++

* Recorded new from Arunachal Pradesh.

- Sub family HOMALOPTERINAE
Genus *Balitora*
*86. *Balitora brucei* Gray
Family COBITIDAE
Sub family COBITINAE
Genus *Lepidocephalus*
87. *Lepidocephalus (L) guntea* (Ham.)
Genus *Somileptes*
88. *Somileptes gongota* (Ham.)
Genus *Acanthopsis*
89. *Acanthopsis choirorhynchus* (Blk.)
*90. *Acanthopthalmus pangia* (Ham.)
Sub family BOTIINAE
Genus *Botia*
*91. *Botia berdomorei* (Blyth)
*92. *Botia (B) rostrata* Günther
Order SILURIFORMES
Family BAGRIDAE
*93. *Aorichthys seenghala* (Sykes)
94. *Batasio tengana* (Ham.)
95. *Mystus montanus* (Jerdon)
96. *Mystus cavaus* (Ham.)
97. *Mystus vittatus* (Bloch)
*98. *Mystus menoda menoda* (Ham.)
*99. *Mystus bleekeri* (Day)
Family SILURIDAE
100. *Kryptopterus indicus* Datta, Barman & Jayaram
101. *Ompok pabda* (Ham.)
102. *Ompok bimaculatus* (Bloch)
103. *Ompok pabo* (Ham.)
104. *Wallago attu* (Schn.)
Family SCILBEIDAE
105. *Ailia coila* (Ham.)
106. *Pseudeutropius atherinoides* (Bloch)
Family AMBLYCIPITIDAE
107. *Amblyceps mangois* (Ham.)
Family Sisoridae
108. *Erethistoides montana* Hora
*109. *Euchiloglanis hodgarti* (Hora)
110. *Euchiloglanis kamengensis* Jayaram
*111. *Exostoma berdmorei* Blyth
*112. *Exostoma stuarti* (Hora)
*113. *Glyptothorax annandalei* Hora
*114. *Glyptothorax striatus* (McCII.)
*115. *Glyptothorax trilineatus* Blyth
116. *Gagata cenia* (Ham.)
*117. *Nangra viridescens* (Ham.)
118. *Pseudecheneis sulcatus* (McCII.)
*119. *Sisor rhabdophorus* (Ham.)
Family CLARIIDAE
120. *Clarias batrachus* (L.)
Family HETEROPNEUSTIDAE
121. *Heteropneustes fossilis* (Bloch)
Family OLYRIDAE
122. *Olyra horai* (Prashad & Mukerjee)
*123. *Olyra longicaudata* McCII.
*124. *Olyra kenpi* Chaudhuri
Order ATHERINIFORMES
Family BELONIDAE
125. *Xenentodon cancila* (Ham.)
Order CHANNIFORMES
Family CHANNIDAE
126. *Channa orientalis* (Schn.)
127. *Channa striatus* (Bloch)
128. *Channa stewartii* (Playfair)
129. *Channa punctata* (Bloch)
*130. *Channa barca* (Ham.)
131. *Channa marulius* (Ham.)
Order SYMBRANCHIFORMES
Family SYMBRANCHIDAE
*132. *Monopterus albus* (Ham.)
Order PERCIFORMES
Family CHANDIDAE
133. *Chanda nama* (Ham.)
134. *Chanda rugosa* (Ham.)
Family NANDIDAE
135. *Badis badis* (Ham.)
136. *Nandus nandus* (Ham.)

* Recorded new from Arunachal Pradesh.

+ + Genus *Aporichthys* Chaudhuri, 1913, has been treated as sub-genus under genus *Noemacheilus* by A.G.K. Menon, 1987, p. 183, 184.

Family GOBIIDAE

137. *Glossogobius giuris* (Ham.)

Family ANABANTIDAE

138. *Anabas testudineus* Bloch

*139. *Colisa sota* (Ham.)

*140. *Colisa fasciata* (Schn.)

Order MASTACEMBELIFORMES

Family MASTACEMBELIDAE

141. *Mastacembelus armatus armatus* Lac.

142. *Mastacembelus pancalus* (Ham.)

143. *Macrognathus aculeatus* (Bloch)

SYSTEMATIC ACCOUNT

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

Head scaly, anal united with caudal, oblong body, no barbels, rudimentary ventrals, tail prolonged and tapering, lateral line present, abdominal edge serrated; anterior to ventral fin, single fin. One genus and one species.

Genus *Notopterus* Lacepede, 1800

1800. *Notopterus* Lacepede, *Hist. Nat. Poiss.*, 2 p. 183 (type *Gymnotus notopterus* Pallas).

1. *Notopterus notopterus* (Pallas)

1769. *Gymnotus notopterus* Pallas, *Specil. Zool.*, 7 p. 40, pl. 6., fig. 2 (type locality : Ponds and rivers of Bengal).

1985. *Notopterus notopterus* Sen, *Fish fauna of Assam and the neighbouring N-E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 20.

D.7-8(1-2/6-7); P.17; V.5-6; A.100-110; C.19; L.1.225.

Material examined : 1 ex. 12.0 cm, Jhentu R. Bogamur vill. 10 km from Namsai Camp, Lohit Dt. 18.2.87, T. K. Sen; 2 exs, 9.5-12.4 cm, Nongkong R., 12 km from Bordumsa, Tirap Dt., 16.2.87, T. K. Sen.

Diagnostic characters : Length of head 4.1 to 5.5 in total length, dorsal profile not much convex

* Recorded new from Arunachal Pradesh.

as that of ventral, maxilla reaches to mid orbit, preorbital serrated, dorsal small, situated midway between snout end and caudal fin end, far behind the pelvic origin; anal; and caudal united, rudimentary pelvic fins, scales on the opercle larger than those on body, lateral line straight, an external row of strong teeth in either jaw.

Colour : Silvery sides with bluish gray back, golden yellow tinge on head, fine grayish spots all over the body, golden eyes.

Size : Grows to 60.9 cm in length.

Distribution : India : ponds, rivers and brackish waters of Assam, West Bengal, Punjab, U.P., Chilka Lake, Orissa, Madras, Deccan, Malabar, Poona, Arunachal Pradesh (Lohit Dt.)

Elsewhere : Pakistan, Bangladesh, Myanmar, Malaya Peninsula, Malaya Archipelago, Thailand.

Remarks : Found to live in ponds, tanks, canals and rivers; a good eating fish especially when alive, though with awful thin bones.

Order CYPRINIFORMES

Family CYPRINIDAE

Body oblong or elongated, branchiostegals three, abdomen usually rounded, margin upper jaw formed of by three premaxillaries, opercles in four plates, mouth toothless, a single rayed dorsal fin, head scaleless (except *Leptobotia* Blkr. from China), body scaled or scaleless, never covered by osseous plates air vessel constricted to two anterior and posterior chambers, two to four barbels. Twenty two genera and sixtyfive species dealt with.

Key to the genera of family CYPRINIDAE

1. Abdomen or part of abdomen sharp edged, dorsal fin in the posterior half of body 2
 - Abdomen not sharp edged, rounded or flat; dorsal fin not in the posterior half of body.. 3
2. Pelvic origin nearer to pectoral base than to anal base; outer pelvic rays produced *Chela* Ham.

- Pelvic origin nearer to pectoral base, outer pelvic rays not produced, well developed lower lip 3
- 3. An anal sheath of enlarged tile like scales; L. l. scales more than 98 4
- Anal sheath absent, L. l. scales 30 to 39 5
- 4. Lower lip suctorial *Schizothorax* Heck.
- Lower lip without suctorial disc, upper lip separated from skin of the snout by a deep groove 6
- 5. Upper and lower lips continuous, upper lip continuous with skin of snout and not separated by a groove, lower lip with suctorial disc *Garra* Ham.
- Upper and lower lips not continuous; lower lip without suctorial disc *Crossocheilus* V. Hass.
- 6. Maxillary barbels very long, reaching beyond pelvic base; no symphysial knob in the lower jaw *Esomus* Swa.
- Maxillary barbels short or absent; symphysial knob present in lower jaw 7
- 7. Suborbital ring of bones distinctly broad and prominent, cleft of mouth often extending beyond anterior margin of eye *Barilius* Ham.
- Suborbital ring of bones not broad and prominent, cleft of mouth not extending beyond anterior margin of eye 8
- 8. Dorsal with 12-16 rays; anal with 13-20 rays. *Danio* Ham.
- Dorsal with 9 rays; anal with 7-8 rays 9
- 9. Caudal fin emarginate or forked, lateral, line with 26-44 scales *Rasbora* Blkr.
- 10. Anal with 14-22 rays, dorsal with 9 or 10 rays; a symphysial knob rudimentarily present *Salmostoma* Swa.
- Anal with 8 rays, dorsal with 13 rays; rows of horny tubercles on sides and below the eyes 11
- 11. Lateral line complete with 22-32 scales; a scaly appendage present before each pelvic fin *Acrossocheilus* Osh.
- Lateral line complete with 35-45 scales; no scaly appendage before pelvic fin 12
- 12. Dorsal short with 8-15 rays, mouth prominent and moderately sharp with symmetrical head, eyes placed on the middle, barbels 2, only the short rostrals *Cirrhinus* Oken
- Dorsal long with 11-26 rays, lateral line scales 36-85, anals with 7-8 rays 13
- 13. Snout truncated or rounded without tubercles on snout and cheeks *Labeo* C.
- Snout not truncated, narrow; snout and cheeks profusely tuberculated 14
- 14. Last anal rays elongated in males, normal in females; lateral line scales 44-48, dorsal with 11 rays, lateral line scales complete, big scales *Chagunius* Smith
- Last anal rays normal in males and females; lateral line with 20-47 scales 15
- 15. Scales small, moderate or large; lower lip without a continuous transverse fold, lateral line complete or incomplete *Puntius* Ham.
- Large scales, lower lip with a continuous transverse fold, complete lateral line with 23-28 scales 16
- 16. Dorsal with a strong, smooth and stout spine with 12-13 rays; 4 barbels *Tor* Gray
- Dorsal without spine with 9 rays, no barbels 17
- 17. Lateral line incomplete with 55-75 scales; upper lip absent. *Amblypharyngodon* Blkr.
- Lateral line complete with 40-43 large scales. 18

18. Head broad and large, mouth wide, eyes large, dorsal with 17-19 rays *Catla* V.
– Head and mouth small 19
19. Lateral line greatly curved with 38-60 scales, lower jaw without any lip or knob, snout without pores, dorsal with 9 or 10 rays
..... *Aspidoparia* Heck.
– Lateral line complete with 27-34 scales, lower jaw with a knob at the symphysis with a thin cartilaginous covering 20
20. A row of about six open pores passing across the snout towards orbit, dorsal fin long with 24-28 rays, smooth *Semiplotus* Blkr.
– No pores, dorsal fin short with 8-9 rays, serrated 21
21. Anal long with 29-36 rays, lateral line with 55-70 scales *Osteobrama* Heck.
– Anal short with 5-7 rays 22
22. Lateral line straight with 150-160 scales, fleshy thick lip, lower lip with a central lobe.
..... *Schizothoraichthys* Heck.
– Lateral line curved ventrally, lower lip without central lobe, no lateral line scales (Small scales present only at scapular region)
..... *Schizopygopsis* Heck.
2. Lateral line scales 60-70; 10-12 vertical bars *B. sharca* (Ham.)
– Lateral line scales 40-43 3
3. Anal short with 9-10 rays; short descending bars (distinct in juvenile forms); each scale with a black spot *B. bendelisis* (Ham.)
– Anal long with 13-15 rays; no black spot on scale 4
4. Silvery with 10-14 bluish bars
..... *B. vagra* (Ham.)
– Silvery with 8 or 9 transverse dark bluish bands 5
5. Lateral line scales 42-43
..... *B. jayarami* Barman
– Lateral line scales 43-46 6
6. Body with 14-15 vertical blue bars
..... *B. barila* (Ham.)
– Body with 9 vertical blue bars 7
7. 38-39 lateral line scales
..... *B. dogarsinghi* Hora
– 36-42 lateral line scales 8
8. Body with 9-11 vertical bars
..... *B. barna* (Ham.)
– Body with two or more rows of spots or blotches; lateral line scales 70-94 9
9. Lateral line scales 88-94
..... *B. bola* (Ham.)

Key to the species of genus *Salmostoma*

1. L. tr. scales 17-19/6, uniform silvery
..... *S. bacaila* (Ham.)
– L. tr. scales 12-15/6. 2
2. A bright silvery lateral band
..... *S. phulo phulo* (Ham.)
– Silvery, with a burnished lateral band; L. tr. scales 6-6.5/3 *S. boopis* (Day)

Key to the species of genus *Barilius*

1. Barbel present 2
– Barbel absent 8

Key to the subgenera of genus *Danio*

1. Dorsal fin with 12-16 branched rays, lateral line complete. *Danio*
– Dorsal fin with 7 branched rays, lateral line incomplete or absent *Brachydanio*

Key to the species of genus *Danio*

1. Barbels absent
..... *D. (D.) devario* (Ham.)

- Barbels present 2
- 2. Lateral line scales 38, anal rays 16-18, barbels well developed, both rostral and maxillary pairs much longer than eye diameter
..... *D. (D.) dangila* (Ham.)
- Lateral line scales 32-34, anal 14-16, barbels not well developed 3
- 3. Caudal not deeply forked, silvery white with blue and orange iridescent horizontal bands
..... *D. (D.) aequipinnatus* (McCl.)
- Caudal deeply forked, 4 metallic blue lines along the sides and forming 3 bands on the caudal fin 4
- 4. Anal fin with 15-16 rays, lateral line scales 26-28 *D. (B.) rerio* Ham.
- Anal fin with 12-13 rays, 28-30 scales in a longitudinal row (L. line absent), caudal truncate or slightly emerginate
..... *D. (B.) horai* Barman

Key to the species of genus *Rasbora*

- 1. Barbels present, L. line scales 40-44, 2 barbels *R. elanga* (Ham.)
- Barbels absent, L. line scales 31-34, a black lateral stripe present
..... *R. daniconius* (Ham.)

Key to the species of genus *Aspidoparia*

- 1. L. line scales 38-42, upper jaw longer and overlapping the lower, cheek covered a broad suborbital ring of bones
..... *A. morar* (Ham.)
- L. line scales 52-60, mouth considerably overhung by the snout, only about half of the cheek covered by suborbital ring of bones
..... *A. jaya* (Ham.)

Key to the species of genus *Cirrhinus*

- 1. L. line scales 40-45, thin lips, a pair of small rostral barbels, dorsal rays 15-16
..... *C. mrigala* (Ham.)
- L. line scales 35-45, dorsal rays 10
..... *C. reba* (Ham.)

Key to the species of genus *Garra*

- 1. L. line scales 39 2
- L. line scales 32-36 3
- 2. Vent situated almost midway between anterior origin of anal and pelvic fins
..... *G. kempfi* Hora
- Vent not situated midway between anterior origin of anal and pelvic fins
..... *G. naganensis* Hora
- 3. Proboscis on snout present, L. line scales 34 4
- Proboscis on snout absent, L. line scales 30-36 5
- 4. Proboscis trilobed *G. nasuta* (McCl.)
- Proboscis a single projection without lateral lobes *G. gotyla gotyla* (Gray)
- 5. Tip of snout marked off by a transverse groove, a dark lateral band bordered above and below by light pale stripes especially in the posteriorly region, L. line scales 30-36
..... *G. lamta* (Ham.)
- Tip of snout not marked off by a deep transverse groove; a pale lateral band without any lateral stripes, L. line scales 32-35 ... 6
- 6. Back and post-pelvic regions scaled
..... *G. lissorhynchus* (McCl.)
- Back and post pelvic regions naked 7
- 7. L. line scales 32-34
..... *G. rupecula* (McCl.)
- L. line scales 34-35 8
- 8. Chest and belly prominently scaled, origin of dorsal fin nearer to tip of snout than to base of caudal fin
..... *G. tirapensis* Datta & Barman
- Chest and belly poorly scaled, origin of dorsal fin in between tip of snout and caudal fin base 9

9. Dorsal fin banded, caudal fin minutely spotted with dark margins, proboscis weakly developed without lateral tubular area
..... *G. gravelyi* Annandale
- Dorsal and caudal fins without any such markings, proboscis well developed
..... *G. annandlei* Hora

Key to the species of genus *Labeo*

1. Lower lip separated from isthmus by a post labial groove, branched dorsal rays 12-18 2
- Lower lip not separated from isthmus by a post labial groove, branched dorsal rays 8-10 5
2. Lateral line scales 71-84 *L. gonius* (Ham.)
- Lateral line scales 40-44 3
3. Branched dorsal rays 12-15, no cartilaginous layer on the inner side of both jaws 4
- Branched dorsal rays 12-13, lateral line scales 40-42, bluish or brownish above and silvery below *L. rohita* (Ham.)
4. Deep blackish becoming lighter below *L. calbasu* (Ham.)
- Dull silvery grey, lateral line scales 37-44, a tubercle inside lower jaw above symphysis 5
5. No horny covering inside lower jaw *L. bata* (Ham.)
- A thin horny covering inside lower jaw 6
6. Snout grooved, lateral line scales 41-44 *L. dero* (Ham.)
- Snout not grooved, lateral line scales 37-39 7
7. A thin horny layer of cartilage to inner surface of lower lip *L. boga* (Ham.)
- No horny layer of cartilage to inner surface of lower lip, mouth narrow, lateral line scales 40-42 *L. pangusia* (Ham.)

Key to the species of genus *Puntius*

1. Barbels present 2
- Barbels absent 3
2. Lateral line scales 28-34, strong dorsal spine, serrated; 2 pairs of barbels *P. sarana sarana* (Ham.)
- Lateral line scales 24-28, moderately strong and serrated dorsal ray 3
3. A large round black spot on the middle above anal fin *P. conchonijs* (Ham.)
- A black spot on the side of tail before the base of caudal fin 4
4. Lateral line scales 23-26, osseous dorsal ray, strongly serrated; no barbels *P. ticto* (Ham.)
- Lateral line scales 26-28, dorsal ray osseous smooth 5
5. A lateral blotch, dorsal ray osseous, smooth *P. chola* (Ham.)
- A band on the middle of body, dorsal ray osseous, strong 6
6. Lateral line scales 29-31 *P. guganio* (Ham.)
- Lateral line scales 23-26, a black blotch on the base of dorsal fin 7
7. Dorsal spine weak, no barbels *P. sophore* (Ham.)
- Dorsal ray spine strong, osseous; 2 pairs of barbels 8
8. Lateral line scales 28-29 *P. dukai* (Day)
- Lateral line scales 24-26, osseous dorsal ray moderately strong 9
9. A round black spot on the lateral line, one pair of barbel *P. tetrapagus* (McCl.)
- A black spot at the base of the caudal fin, 2 pairs of barbels, lateral line scales 27, dorsal with weak, smooth osseous ray *P. stevensonii* (Day)

Key to the species of genus *Semiplotus*

1. Lateral line scales 27-33, dorsal spine smooth
.....*S. semiplotus*
- Lateral line scales 32-34, dorsal spine serrated
.....*S. modestus* (day)

Key to the species of genus *Tor*

1. Length of head greater than depth of body
..... 2
- Length of head shorter than depth of body,
lateral line scales 22-27 *T. tor* (Ham.)
2. Lateral line scales 25-28
..... *T. putitora* (Ham.)
- Lateral line scales 26, length of head equal
to depth of body; tip of snout fleshy and
produced into a semicircular flap, a black
streak behind gill opening
..... *T. progeneius* (McCl.)

Sub family CULTRINAE

Abdomen partly keeled. gill rakers free. Scales
extent to the interorbital space.

Genus *Chela* Hamilton, 1822

1822. *Chela* Hamilton, *Fish Ganges*. : 383 (Type-Cyprinus
cachius Ham., designated by Bleeker in 1862).

2. *Chela laubuca* (Ham.)

1822. *Cyprinus laubuca* Hamilton, *Fish Ganges*, : 260. 380
(type-locality : ponds of northern parts of Bengal).
1985. *Chela laubuca*, Sen, *Fish fauna of Assam and the
neighbouring N-E states of India*, *Rec. zool. Surv.
India. Occ. Paper No. 64* : 28.

D.10-11(2/8-9), P.13, V.7, A.19-23(2/17-21),
C.19.

Material examined : 5 exs. 4.5 to 5.5 cm,
Namsang R. 5 km from Namsang IB, Tirap Dt.,
10.2.87, T. K. Sen.

Diagnostic characters : Length of head 5 to
6 in total length, upturned mouth with dorsal head
profile curved upwards, cleft of mouth very much

oblique, lateral line curved downwards, pectoral
reaching anal fin, abdominal cutting from pectoral
to anal fin.

Colour : Silvery with golden vertical stripes
when alive, two black marks one at the base of
caudal and the other at the base of pectoral

Size : Grows to 8.9 cm in length.

Distribution : India : Assam, West Bengal,
Orissa, M.P., Arunachal Pradesh (Tirap dt.).

Elsewhere : Bangladesh, Myanmar, Pakistan,
Sri Lanka, Sumatra, Thailand.

Remarks : A larvivorous fish found in ditches,
ponds, canals, beels etc.

Genus *Salmostoma* Swainson, 1839

1839. *Salmostoma* Swainson, *Nat. Hist.* 2 : 184 (type
Cyprinus bacalla Hamilton).

3. *Salmostoma boopis* (Day)

1873. *Chela boopis* Day, *Proc. Zool. Soc.* : 708.

1987. *Salmostoma boopis*, Ghosh, *Qualitative analysis of
faunal resources of proposed Namdapha Biosphere
Reserve, Arunachal Pradesh: Final Tech. Report.* :
20.

D.9(2/7), P. 15, V. 9, A. 14-15(2/12-13), C.21,
L.1.38-40.

Material examined : 3 exs., 6.4 to 10.5 cm
Namdapha Wildlife Sanctuary, Tirap Dt., Noa
Dihing R., 22.12.83, S. Biswas and Party.

Diagnostic characters : Length of head 5.2
to 5.5 in total length, eye diameter 2.5 to 3.0 in
head length, suborbital ring of bones almost covers
the cheek, cleft of mouth extends to beneath the
front edge of the orbit.

Colour : Silvery, with a burnished lateral band;
dorsal, caudal and anal fins with dark margins.

Size : Grows to 12.5 cm in length.

Distribution : India : Western ghats, S. Canara,
Mutha-Mula river, Poona; Arunachal Pradesh
(Tirap Dt.).

Remarks : It has extended its known range of distribution from Western Ghats to N-E region of India.

4. *Salmostoma bacaila* (Ham.)

1822. *Cyprinus bacaila* Hamilton, *Fish Ganges*, : 265, 384, pl. 8, fig. 76 (type locality - rivers of all the Gangetic provinces).

1985. *Salmostoma bacaila*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 31.

D.9(2/7), P.13, V.9, A.13-15(2/11-13), C.19, L.1.86-110.

Material examined : 2 exs., 8.5 to 9.5 cm, Nongkong R., 12 km from Bordumsa Camp. Tirap Dt., 16.2.87; T. K. Sen; 11 exs., 7.0 to 10.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 22.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 5.2 to 6.0 in total, suborbital ring of bones broad, nearly covering cheeks; pectoral nearly reaching ventral, keeled portion of ventral profile commences opposite to pectoral fin, small sized scales.

Colour : Uniform silvery.

Size : Grows to atleast 17.7 cm in length.

Distribution : Northern India (Ganges, Brahmaputra and Indus), Orissa (Mahanadi), Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Maynmar.

5. *Salmostoma phulo phulo* (Ham.)

1822. *Cyprinus phulo* Hamilton, *Fish Ganges*, : 262 (type locality : rivers and ponds of N-E parts of Bengal).

1985. *Salmostoma phulo phulo*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 32.

D.9(2/7), P.13, V.9, A.18-19(2-3/16-18); C.19, L.1.87.

Material examined : 15 exs., 7.5 to 8.0 cm Lohit R., Lohit Dt., 24.2.87, T. K. Sen; 10 exs., 11.5 to 16.0 cm, Namdapha Wildlife Sanctuary, Noha Dihing R., Tirap Dt., 20.1.85, S. Biswas and Party.

Diagnostic characters : Length of head 5.5 in total length, lateral line curves gently downwards, third suborbital bone nearly as deep as the uncovered portion of the cheek below it, abdominal profile cutting behind the base of the pectoral fin, third suborbital bone nearly as deep as the uncovered portion of the cheek below it.

Colour : Silvery with a bright silvery lateral band.

Size : Attains to atleast 12.5 cm in length.

Distribution : Assam, West Bengal, Orissa, M.P., Deccan, Arunachal Pradesh (Tirap Dt.).

Remarks : Found to live in clear gravelly hill-stream rivers among pebbles and rock boulders.

Sub family RASBORINAE

A knob at symphysis or junction of two arms of lower jaw (exception *Aspidoparia*) fitting into an emargination or incision of upper jaw. Dorsal fin with 6-16 branched rays without any osseous simple ray. Lateral line when complete with an abrupt downward curvature anteriorly, running in lower half of caudal peduncle.

Genus *Barilius* Hamilton, 1822

1822. *Barilius* Hamilton, *Fish Ganges*, : 384 (type *Cyprinus barila* Hamilton).

6. *Barilius barna* (Ham.)

1822. *Cyprinus barna* Hamilton, *Fish Ganges*, : 268, 384 (type locality : Yamuna and Brahmaputra).

1985. *Barilius barna*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 38.

D.9(2/7), P.15, V.9, A.13-14(3/10), C.19, L.1.39-42.

Material examined : 23 exs., 5.5 to 13.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 17.12.83, S. Biswas and Party; 2 exs. 8.5 to 10.0 cm, Nongkong R., 12 km from Bordumsa Camp, Tirap Dt. 16.2.87, T. K. Sen; 3 exs., 3.0 to 7.0 cm, Palazi vill., 15 km W. of Bana Camp, Phuchung R., E. Kameng Dt., 22.10.87, T. K. Sen; 1 exe., 9.5 cm, Dikrai R., Sejusa, E. Kameng Dt., 10.10.87, T. K. Sen.

Diagnostic characters : Length of head 4.0 to 5.0 in total length, no barbels pores on jaws and snout in adult forms, axillary process reaches to the base of the pectoral, dorsal fin in between the eye and base of caudal, predorsal scales 16.

Colour : Dull green with 9 to 11 vertical dark bands on the body, back grayish in young ones with silvery sides shot with gold and 7-9 deep blue anarrow vertical bands.

Size : Largest recorded length being 13.4 cm.

Distribution : India : Assam, the Ganges and its tributaries, West Bengal, Orissa, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Myanmar, Bangladesh.

7. *Barilius bendelisis bendelisis* Ham.

1807. *Cyprinus bendelisis* Hamilton, *Journey in Mysore*, 3, : 345. pl. 32 (type loc. Rivers of Mysore).

1981. *Barilius Bendelisis bendelisis*, Jayaram, *F. W. Fishes of India*, Handbook No. 2, Calcutta, Z.S.I., : 88.

D.9(2/7), P.15; V.9; A.9-10(2-3/7-8); C.18, L.I.38-43.

Material examined : 7 exs., 3.78 cm; Noa Dihing R., Tirap Dt., 21.4.81; 6 exs., 3.2-6.8 cm; phuching R., E. Kameng Dt., 22.10.87, T.K. Sen.

Diagnostic characters : Length of held 4.6 to 5.2 in TL., eye diameter 4.2 to 4.6 in head lenght, maxilla reaches to anterior third of eye, 4 short barbels, adult male with strong and large pectoral fin, pores on the snout and lower jaw, dorsal origin nearer to caudal base than the snout.

Colour : Silvery shot with purple, slaty descending bars from back to lateral line, each scale with a distinct black spot fins tinged with orange.

Size : Attainsn 15.3 cm, in length.

Distribution : West Bengal, Arunachal Pradesh, Assam, Punjab, U.P., Bihar, M. P. S. India.

Elsewhere : Bangladesh, Pakisthan, Nepal, Sri Lanka.

8. *Barillius vagra vagra* (Ham.)

1822. *Cyprinus vagra* Hamilton, *Fish. Ganges*, : 269. 385 (type locality : Ganges at patna).

1985. *Barillius vagra vagra*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv India, Occ. Paper No. 64* : 37.

D.9(2/7), V.9, A.13-15(2-3/11-12), C.19, L.I.42-44.

Material examined : 13 exs., 2.8-7.5 cm; Namdapha Wildlife Sanctuary, at the confluence between Noa Dihing and Namdapha R. Tirap Dt., 21.4.81, S. Biswas and Party; 14 exs, 6.5 to 11.5 cm at the confluence between Lohit R. and Digaru R., Lohit Dt., 24.2.87; T. K. Sen; 4 exs, 10.0 to 11.0 cm, Siue R., E. Siang Dt., 22.11.88, D. P. Sanyal.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, lower jaw slightly longer, 2 pairs of barbels, lower jaw covered with large pores in the adult forms, axillary process very short, upper jaw sometimes a little notched.

Colour : Silvery with 10 to 14 bluish bars descending from back, fins yellowish, caudal edges grayish.

Size : Largest recorded length being 12.7 cm.

Distribution : India : Northern India (Indus, Ganga, Yamuna and Brahmaputra), Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal, Bangladesh, Sri Lanka, Pakistan.

Remarks : Live in small hill-stream rivers with beds beset with pebbles, rock-boulders and sands.

9. *Barillius barila* (Ham.)

1822. *Cyprinus barila* Hamilton, *Fish Ganges*, : 267. 394 (type locality : N. Bengal).

1985. *Barillius barila*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv India, Occ. Paper No. 64* : 37.

D.9(2/7), P.13, V.9, A.13-14(3/10-12), C.19, L.I.45-56.

Material examined : 2 exs. 8.5 to 9.0 cm, Noa Dihing R., Namdapha Wildlife Sanctuary, Tirap Dt., S. Biswas and Party, 10.12.83; 3 exs. 5.5 to 8.5 cm, Sallylake, Roing, Dibong Valley Dt., 27.2.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 to 5.5 in total length 14 to 16 vertical blue bars on the sides, a pair of short rostral barbels, third suborbital bone wide and nearly touching the preopercular ridge, lower caudal lobe longer.

Colour : Silvery with 14 to 16 vertical blue bands on the sides.

Size : Grows to 10.2 cm in length.

Distribution : India : N. India, Orissa, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal.

Remarks : Commonly found to live in hill-stream rivers and its tributaries.

10. *Barilius dogarsinghi* Hora

1921. *Barilius dogarsinghi* Hora, *Rec. Ind. Mus.*, **22** : 191, fig. 3 (type locality : Etok stream near Chanderkhong and Sikmai stream near Palei, Manipur).

1985. *Barilius dogarsinghi*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 39.

D.9, P.12, V.9, A.10, L.138-39.

Material examined : 3 exs. 7.5 to 8.5 cm, streams (Nong Kong R.) around Kheramkochari vill., 9 km from Bordumsa Camp; Tirap Dt., 10.2.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 to 5.3 in total length, mandibular knob absent, dorsal and pectoral fins rounded, lower lobe of caudal longer, predorsal scales 20, ventral profile deeply arched and convex throughout.

Colour : Dorsal side of head and body blackish with 9 blue bands, sides undersurface of head, the anals and ventrals white, dorsal with a deep black band across the middle.

Size : Grows to 8.5 cm in length.

Distribution : Manipur, Arunachal Pradesh (Tirap Dt.).

11. *Barilus tileo* (Ham.)

1822. *Cyprinus tileo* Hamilton, *Fish Ganges*, : 276 (type locality : Kosi river).

1985. *Barilius tileo*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 33.

D.9(2/7), P.14, V.9, A.13(3/10), C.20, L.1.70-75.

Material examined : 4 exs, 5.5 to 9.8 cm, Kamlang R, near Alubari, Lohit Dt, Daphabum Scientific Surveys Expdt., January, 1969, J. M. Julka.

Diagnostic characters : Length of head 4.7 to 5.2 in total length, abdominal profile more convex than the dorsal, snout pointed and head compressed, suborbital ring of bones broad, axillary process well developed with a soft scaled prolongation, rudimentary barbels, caudal deeply forked.

Colour : Bluish black on the back and silvery at sides, 2 rows (sometimes more) of blue blotches or spots arranged vertically on the sides, dorsal and caudal fins dark grey tinged with light pinkish edge, other fins slightly yellowish.

Size : Attains to 12.5 in length.

Distribution : Assam, Arunachal Pradesh (Lohit Dt.), Eastern Himalayas.

Elsewhere : Myanmar.

12. *Barilius shacra* (Ham.)

1822. *Cyprinus shacra* Hamilton, *Fish Ganges*, : 371 (type locality : R. Koshi).

1985. *Barilius shacra*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. Zool. Surv. India, Occ. Paper No. 64* : 36.

D.9(2/7), P.15, V.8, A.10(2/8), C.19, L.1.60-70.

Material examined : 2 exs., 5.0 to 7.0 cm, Jamurei, Tengapani R., 65 km N. of Bhalukpong,

W. Kameng Dt., 10.10.87, T. K. Sen; 1 ex., 7.5 cm, Dibru vill., 15 km from Sejusa Camp, E. Kameng Dt., 12.10.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 to 5.2 in total length, six outer pectoral rays strong more specially in the adult forms, predorsal scales 25, 2 pairs of barbels, axillary process extends behind the origin of pectoral fin caudal deeply forked.

Colour : Back side olive, pinkish silvery on the rest part of body, 10 to 12 colour bars descend from back to lateral line, a dark bar on dorsal fin.

Size : Attains to 12.5 in length.

Distribution : Assam, Eastern Himalayas, Arunachal Pradesh (W. Kameng Dt.).

Remarks : Somewhat looks like *B. vagra* but can be easily distinguished by its much smaller scales; live in clear gravely streams.

13. *Barilius bola* (Ham.)

1822. *Cyprinus bola* Hamilton, *Fish Ganges*. : 274, 385 (type locality : R. Brahmaputra).

1985. *Barilius bola*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 34.

D.10-11(3/7-8), P.13, V.9, A.13(3/10), C.19, L.1.88-94.

Material examined : 6 exs, 6.5 to 12.0 cm, Lohit R., Lohit Dt., 24.2.87, T. K. Sen.

Diagnostic characters : Length of head 4.5 to 4.6 in total length, predorsal scales 40, a knob above symphysis of the lower jaw, deep mouth cleft, head compressed and snout pointed, suborbita, ring of bones broad, no barbels.

Colour : Silvery with two or more vertical rows of bluish blotches along the sides, caudal orange with grayish black tinge, pectoral, pelvic and anal orange more or less similar to those of trout.

Size : Grows to 36.4 cm in length.

Distribution : Assam., West Bengal, Punjab, U.P., Bihar, Orissa, Arunachal Pradesh (Lohit Dt.).

Remarks : It is a game fish and popularly known in Assam. Sometimes mistaken for trout by foreign tourists due to its somewhat similar colour; live in torrential hill-stream rivers.

14. *Barilius jayarami* Barman

1985. *Barilius jayarami* Barman, *J. Bombay nat. Hist. Soc.* 82(1) : 170-174 (type locality : Namdapha Wildlife Sanctuary, Tirap Dist., Arunachal Pradesh).

D.2-3/8, A.3/11, P.1/12-13, V.1/8, C.19, L.1.42-43.

Material examined : 3 exs. (types), 7.1-7.7 cm, Namdapha Wildlife Sanctuary Dihing R., Tirap Dt., Arunachal Pradesh, 17.12.1983, (Reg. No. Z. S. I. FF2150), S. Biswas and Party.

Diagnostic characters : Length of head 3.7 to 3.9 in standard length, 2-pairs of barbels, dorsal fin commences opposite interspace between pelvic and anal fin and extending entirely over the latter, eye diameter 3.0 to 3.2, height of caudal peduncle 2.0 to 2.4 in its length, predorsal scales 19-20.

Colour : Dorsal surface dark, 8 to 9 lateral transverse bands, ventral surface silvery.

Size : Grows to 8.5 cm in length.

Distribution : Arunachal Pradesh (Tirap Dt.).

Remarks : This species has been synonymised with *Inlecypis auropurpurensis* (Annandale).

Genus *Danio* Hamilton, 1822

1822. *Danio* Hamilton, *Fish Ganges*. : 321, 390 (type *Cyprinus dangila* Ham.).

15. *Danio (Danio) aequipinnatus* (McCil.)

1839. *Perilampus aequipinnatus* McCilland, *Asiat. Res.* 19(2) : 393, pl. 60, fig. 1.

1985. *Danio (Danio) aequipinnatus*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 42.

D.12-14(2/10-12), P.17, V.8, A.14-16,(2/12-14), C.19, L.1.32-34.

Material examined : 64 exs, 3.0 to 7.5 cm.

Noa Dihing R., Gandhigrant, 2 km N.W. of Miao, Tirap Dt., Namdapha Survey, 1985, S. Biswas and Party; 157 exs, 5.0 to 9.5 cm, Noa Dihing R., Namdapha Wildlife Sanctuary (Hornbill), 11.12.83, S. Biswas & Party; 4 exs, 5.0 to 6.5 cm, Namdapha Wildlife Sanctuary, Gibbon's land, 16 km E. of Miao, Noa Dihing R., Tirap Dt, 20.12.82, S. Biswas and Party

Diagnostic characters : Length of head 5.0 in total length, 2 pairs of barbels cleft of mouth oblique, a blunt knob at the symphysis of lower jaw, dorsal origin midway between centre of eyes and base of caudal fin.

Colour : Silvery white with blue and orange iridescent horizontal bands, yellowish fins, a wide bluish lateral band extending from centre of eye to caudal fin base, bluish bands on dorsal and anal fins.

Size : Grows to 15.2 cm in length.

Distribution : Throughout India.

Elsewhere : Sri Lanka, Bangladesh, Myanmar, Thailand.

Remarks : An ideal aquarium fish of attractive colour.

16. *Danio (Danio) dangila* (Ham.)

1822. *Cyprinus dangila* Hamilton, *Fish Ganges*. : 321, 390 (type locality Mountain streams of Monghyr).

1985. *Danio (Danio) dangila*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 41.

D.11-13, P.13, V.7-8, A.16-18, C.20, L.I.38.

Material examined : 51 exs, 2.8. to 8.4 cm, Noha Dihing R., Namdapha Wildlife Sanctuary, Tirap Dt, 18.12.83, S. Biswas & Party; 9 exs, 3.5 to 6.5.0 cm, stream near Khonsa, 53 km from Namsung, Tirap Dt, 12.2.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 in total length, 2 pairs of barbels, rostral pair a bit shorter than the head; maxillary pair slightly longer, height of body 3.5 to 4.0.

Colour : Silvery with 3 parallel longitudinal blue

lines running through the mid body to half way along the tail, a black spot behind the gills, fins sometimes with fine black spots.

Size : Attains to 15.0 cm in length.

Distribution : Assam, West Bengal, Bihar, U.P., Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Myanmar.

Remarks : Lives in clear streams. 'Lives longer in stale water than any fish except *Ophicephalus*' (Shaw & Shebbeare, 1937).

17. *Danio (Danio) devario* (Ham.)

1822. *Cyprinus devario* Hamilton, *Fish Ganges*. : 341, 393, pl. 6, fig. 94 (type locality : rivers and ponds of Bengal).

1985. *Danio (Danio) devario*, Sen, *Fish fauna Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 40.

D.18-19(3/15-16), P.13, V.8, A.18-19, C.19, L.I.41-48.

Material examined : 4 exs. 7.5 to 111.7 cm from a beel in front of Namsai Forest Rest House, Lohit Dt. 20.2.87, T. K. Sen; 3 exs, 7.5 to 8.5 cm, Sive R., Ruksin, 12 km SW of Sille, E. Siang Dt, 24.11.88, D. P. Sanyal.

Diagnostic characters : Length of head 5.0 to 5.2 in total length, no barbels, lower jaw longer, third suborbital bone broad, dorsal commences midway between the anterior margin of orbit and the base of the caudal which is slightly in advance of the anal, lunated caudal, predorsal scales 16.

Colour : Greenish above and silvery at sides, three horizontal bluish lines divided by yellow bands extending backwards to caudal, sometimes a bluish iridescent band roughly along the lateral line, front part reticulated at its centre by steel blue lines.

Size : Grows to 10.2 in length.

Distribution : Assam, West Bengal, E. Himalayas, Punjab, U.P., Orissa, M.P., Deccan, Arunachal Pradesh (Lohit Dt.).

Elsewhere : Bangladesh, Pakistan.

Remarks : An aquarium fish of attractive colour pattern.

18. *Danio (Brachydanio) horai* Barman

1983. *Danio (Brachydanio) horai* Barman, *Curr. Sci.*, 52(4) : 177-178.

1985. *Danio (Brachydanio) horai*, Sen. *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 43.

D.2/7, A.2/12-13, P.12, V.7, C.20.

Material examined : 10 exs, 2.1 to 2.8 cm (SL), Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt, 12.4.81, S. Biswas & Party.

Diagnostic characters : Length of head 3.6 in standard length, depth of body 3.5 in standard length, eye diameter 3.8 in head length, mouth obliquely directed upward, lower jaw longer than upper jaw, no barbels, lateral line absent, predorsal scales 14, caudal truncate or slightly emarginate, shorter than head, least caudal peduncle height 1.4 in its length.

Colour : A light dark line extending from mid-region of body to base of caudal fin, fins are devoid of any colour markings.

Size : Attains to 28 cm in length (ST).

Distribution : Arunachal Pradesh (Tirap Dt.).

Remarks : Recently described new species from Arunachal Pradesh.

19. *Danio (Brachydanio) rerio* (Ham.)

1822. *Cyprinus rerio* Hamilton, *Fish Ganges*, : 323 (type locality : Kosi River).

1985. *Danio (Brachydanio) rerio*, Sen. *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 43.

D.9(2/7), P.13, V.8, A.15-16, C.19, L.I.26-28.

Material examined : 1 ex, 6.0 cm, Nongpong R., Tirap Dt, C. B. Srivastava, 2.2.62.

Diagnostic characters : Length of head 5.0 to 5.2 in total length, 2 pairs of barbels, dorsal commences opposite to the anal fin, caudal fin deeply forked.

Colour : Four metallic blue horizontal lines on the sides separated by 3 silvery narrow stripes,

dorsal with blue edging and anal with 3 longitudinal blue bands.

Size : Grows to 5.0 cm in length.

Distribution : Throughout India. Recorded in the Tirapi Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Burma (Myanmar).

Genus *Esomus* Swainson, 1839

1839. *Esomus* Swainson, *Nat. Hist. Fish.*, 2. : 285 (type *Esomus vittatus* Swainson *Cyprinus danrica* Hamilton).

20. *Esomus danricus* (Ham.)

1822. *Cyprinus danricus* Hamilton, *Fish Ganges*, : 325. 390, pl. 16, fig. 88 (type locality : ponds and ditches of Bengal).

1985. *Esomus danricus*, Sen. *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 44.

D.8(2/6), P.15, V.9, A.8(3/5), L.I.30-34.

Material examined : 9 exs., 7.5 to 9.5 cm, streams around Kheram-Kochari vill., 9 km from Bordumsa Camp, Nong Kong R., Tirap Dt., 16.2.87, T. K. Sen.

Diagnostic characters : Length of head 5.2 to 5.5 in total length, two pairs of barbels, maxillary pair reaches to the base of pelvics or sometimes up to caudal fin base; mouth obliquely upwards, suborbital bones broad, dorsal origin nearer to caudal fin base than to pectoral base; predorsal scales 18.

Colour : Silvery, a broad black lateral band, sometimes absent; pale olive above.

Size : Attains to 12.7 in length.

Distribution : Assam, West Bengal, Punjab, U.P., Bihar, Orissa, Madras, Maharashtra, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Pakistan, Myanmar, Sri Lanka, Malaya.

Genus *Rasbora* Bleeker, 1859

1859. *Rasbora* Bleeker. *Nat. Tijdschr. Ned. Ind.* 20 : 435 (type *Cyprinus rasbora* Ham.).

21. *Rasbora elanga* (Ham.)

1822. *Cyprinus elanga* Hamilton, *Fish Ganges*, : 281, 386 (type locality : rivers and ponds of Bengal).
1985. *Rasbora elanga*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 6* : 47.

D.9(2/7), P.15, V.9, A.7(2/5), C.19, L.1.40-44.

Material examined : 1 ex., 8.5 cm, Namsang R., Tirap Dt, 12.2.87, T. K. Sen; 172 exs., 4.5 to 15.5 cm, Tengna R, 1 km from Bomdila, W Kameng Dt, 1.11.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 to 5.7 in total length, 1 pair of short rostral barbel, lower jaw with one central and two lateral prominences with corresponding fitting emarginating in the upper jaw, abdomen rounded, caudal forked.

Colour : Silvery with leaden tinge along the upper portion of the side.

Size : Grows to 20.3 in length.

Distribution : Assam, West Bengal, Bihar, Arunachal Pradesh (W. Kameng Dt.).

Elsewhere : Western Myanmar, Bangladesh.

22. *Rasbora daniconius* (Ham.)

1822. *Cyprinus daniconius* Hamilton, *Fish Ganges*, : 327, pl. 15, fig. 89 (type locality : rivers of S. Bengal).
1985. *Rasbora daniconius*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 45.

D.9(2/7), P.15, V.9, A.7(2/5), C.19, L.1.30-34.

Material examined : 17 exs., 6.5 to 8.5 cm, Kameng R., E. Kameng Dt., 24.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, no barbels, dorsal profile more convex than ventral profile, predorsal scale 14, origin of dorsal fin nearer to caudal fin base.

Colour : Greenish yellow back silvery sides a bluish lateral stripe edged with golden yellow, fins pale orange, caudal lobes tinged with black.

Size : Grows to 20.3 cm in length.

Distribution : Throughout India. Recorded in the district of E. Kameng Dt. Arunachal Pradesh.

Elsewhere : Pakistan, Bangladesh, Myanmar, Sri Lanka, Malaya.

Remarks : Lives in streams, pools, ponds and canals, also found to live in paddy-fields during monsoon.

Sub family CYPRININAE

No knob at symphysis or junction of two arms of lower jaw. Dorsal fin with 7-30 branched rays with or without an osseous simple ray. Lateral line may be complete or incomplete running along middle of caudal peduncle.

Genus *Acrossocheilus* Oshima, 1919

1919. *Acrossocheilus* Oshima, *Ann. Carnegii, Mus.* 12, : 206 (type *Gymnostomus formosanus* Regan. Orthotypic).
1985. *Acrossocheilus hexagonolepis*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 48, fig. 15.

D.12(3/9), P.17, V.9, A.7(2/5), C.19, L.1.28-31.

Material examined : 6 exs., 8.5 to 20.5 cm, Dikrai R. E. Kameng Dt., 10.10.87, T. K. Sen & Party; 9 exs., 8.8 to 25.5 cm, N.W.L. Sanctuary, Namdapha R., Tirap Dt., 18.12.83, S. Biswas and Party.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, interrupted groove behind the lower lip, dorsal spine strong, as long as head excluding the snout; upper jaw longer, 2 pairs of barbels, dorsal opposite to the pelvic fin, predorsal scales 10-11.

Colour : Olive green superiorly, silvery white below, a golden yellow lateral band above lateral line.

Size : Attains to 60.9 cm in length.

Distribution : Assam, Eastern Himalayas, West Bengal (Darjeeling Dt.), Arunachal Pradesh (E. Kameng Dt.).

Elsewhere : Nepal, Bangladesh, Pakistan, Myanmar, Malaya, Thailand, Malay Archipelago.

Remarks : A commercially important fish round to live in streams and rivers.

Genus *Aspidoparia* Heckel, 1943

1843. *Aspidoparia* Heckel, in *Busseger's Reisen*. 3(2), : 288. (type *A. sardina* = *A. morar* Ham.).

24. *Aspidoparia jaya* (Ham.)

1842. *Cyprinus jaya* Hamilton, *Fish Ganges*, : 333, 392 (type locality : N. Bihar).
1985. *Aspidoparia jaya*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, *Occ. Paper No.* 64 : 49.

D.9(2/7), P.15, V.8, A.9(2/7), C.21, L.1.52-60.

Material examined : 9 exs. 4.5 to 8.5 cm, Subansiri R. Subansiri Dt., 20.11.75, K. R. Rao.

Diagnostic characters : Length of head 5.2 to 5.5 in total length, no barbels, prominently overhung mouth, only about half of the cheek covered by the suborbital ring of bones.

Colour : Dark back with silvery sides.

Size : Rows to 10.2 cm in length.

Distribution : Assam, Gangetic provinces, West Bengal, Arunachal Pradesh (Subansiri Dt.).

Remarks : Live in clear rivers and streams. *A. jaya* can be distinguished from *A. morar* by the increased number of lateral line scales.

25. *Aspidoparia morar* (Ham.)

1822. *Cyprinus morar* Hamilton, *Fish Ganges*, : 264, 384, pl. 3¹, fig. 75 (type locality : Yemuna and Tista rivers).
1985. *Aspidoparia morar*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, *Occ. Paper No.* 64 : 49.

D.9-10(2/7-8), P.15, V.8, A.10-12(2/8-10), C.19, L.1.38-42.

Material examined : 3 exs., 7.2 to 8.3 cm, Dibru R., E. Kameng Dt., 12.10.87. T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 to 5.7 in total length, cheeks covered by a broad suborbital ring of bones, upper jaw overhanging the lower jaw, obtuse snout, dorsal fin origin in between the hind margin of eye and caudal fin base, predorsal scales 20, no barbels, deeply forked caudal.

Colour : Brownish back with silvery sides divided by a burnished streak.

Size : Grows to 17.7 in length.

Distribution : Throughout N. India, Arunachal Pradesh (E. Kameng Dt.).

Remarks : Found in plenty in the streams of Upper regions of Arunachal Pradesh.

Genus *Amblypharyngodon* Bleeker, 1860

1860. *Amblypharyngodon* Bleeker, *Ichth. Arch. Ind. Prodr.*, 2 : 409 (type locality : *Cyprinus mola* Ham.).

26. *Amblypharyngodon mola* (Ham.)

1822. *Cyprinus mola* Hamilton, *Fish Ganges*, : 334, 392, pl.38, fig. 92 (type locality : ponds and freshwaters of Gangetic provinces).
1985. *Amblypharyngodon mola*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, *Occ. Paper No.* 64 : 51, fig. 17.

D.2/7, v.9, A.2/5, C.19, L.1.65-75.

Diagnostic characters : Length of head 5.0 in total length, incomplete lateral line ceases after 15 scales, no barbels, 9 to 10 rows of scales between lateral line and pelvic base.

Colour : Silvery body with a deep greyish silvery longitudinal band in the middle of the body, dorsal, caudal and the whole of the body covered with minute black dots.

Size : Attains to 7.5 cm in length.

Distribution : All over India except the Malabar coast. First time recorded new from Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Pakistan, Myanmar.

Remarks : Found everywhere in almost every water pockets like ponds, beels, road-side nullahs, canals, road-side nullaha all over Arunachal Pradesh.

Genus *Chagunius* Smith, 1838

1838. *Chagunius*, Smith, *Proc. Biol. Sci.* Washington, 51, p.157 (type *Cyprinus chagunio* Hamilton).

27. *Chagunius chagunio* (Ham.)

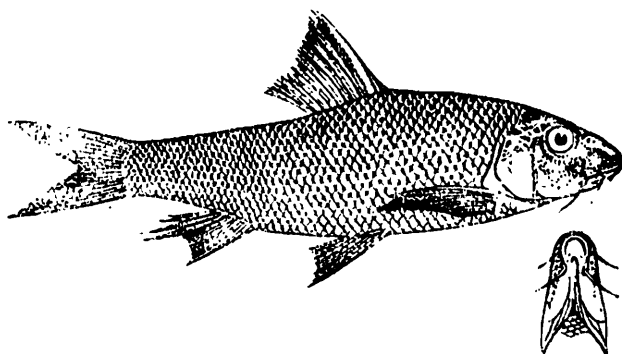


Fig. 1. *Chagunius chagunio* (Ham.)

1822. *Cyprinus chagunio* Hamilton, *Fish Ganges*, : 295, 385, (type locality : Yamuna and the northern rivers of Bihar and Bengal).

1985. *Chagunius chagunio*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 53, fig. 19.

D.11(3/8), P.15, V.9, A.8(3/5), C.19, L.1.44-47.

Material examined : 13.5 cm, Lohit R., at the confluence with Digaru R., Lohit Dt, 26.2.87, t. K. Sen & Party; 2 exs. 9.5 to 10.5 cm. N. W. L. Sanctuary, Noa Dihing R., Tirap Dt; 1.4.85, S. Biswas & Party; 1 exe., 17.7 cm, Kamlang R., near Alubari, Lohit Dt. (Daphabhum Exptd., N. E. F. A. Survey) 13.1.70, J. M. Julka & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, suborbital region, cheeks and anterior superior margin of orbit covered with numerous pores, 2 pairs of barbels, dorsal with spine and situated in between tip of snout and caudal fin base, predorsal scales 15.

Colour : Silvery with pinkish tinge, yellowish fins, dorsal and caudal fins with reddish black tinge.

Size : Grows to 45.7 cm in length.

Distribution : Assam, all along the Himalayas, Arunachal Pradesh (Lohit Dt.).

Elsewhere : Myanmar, Thailand.

Remarks : Sunken pores on the snout and long dorsal rays are strongly marked in males are regarded as secondary sexual characters according to S. L. Hora (1933). Upper profile in front of dorsal distinctly arched; lives in clear streams and rivers along the foot-hills.

Genus *Cirrhinus* Oken, 1817

1817. *Cirrhinus* (Oken), Cuvier, *Regne Animal*, 2, ed. 1, : 139 (type *Cyprinus cirrhinus* Bleeker).

28. *Cirrhinus reba* (Ham.)

1822. *Cyprinus reba* Hamilton, *Fish Ganges*, : 280, 386, (type locality : rivers and ponds of Bengal and Bihar).

1985. *Cirrhinus reba*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 54, fig.20.

D.2-3/8-9, P.16, V.9, A.3/5, C.19, L.1.35-38.

Material examined : 2 exs. 8.5 to 11.8 cm, Namuri, 50 km NW of Sejusa, Kameng R., E. Kameng Dt., 11.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.0, 6.5 in total length, upper lip fringed in the young, often entire in the adult; a thin cartilaginous layer covering lower jaw, a pair of short rostral barbels only, origin of dorsal fin nearer to snout, hexagonal scales.

Colour : Silvery, scales with dark edges forming longitudinal bands above lateral line, pelvic and anal fins tipped with orange.

Size : Grows to 30.5 cm in length.

Distribution : All over India. First time recorded new from Arunachal Pradesh (E. Kameng Dt.).

Elsewhere : Bangladesh, Pakistan, Myanmar, Thailand.

Remarks : Live in clear rivers and tanks; a good eating fish inspite of its thin bones.

29. *Cirrhinus mrigala* (Ham.)

1822. *Cyprinus mrigala* Hamilton, *Fish Ganges*, : 279, 389, pl. 6, fig. 79 (type locality : ponds and freshwater rivers of the Gangetic provinces).
1985. *Cirrhinus mrigala*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 55, fig.21.

D.2/12-13, P.15, V.9, A.3/5, L.1.40-45.

Material examined : 3 exs. 10.5 to 17.0 cm, Sally Lake, Roing, Dibong Valley Dt., 27.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 to 5.2 in total length; upper lip entire, one pair of barbel, small rostral barbels in fold of lip, width of body less than the length of body, dorsal profile more convex than the ventral, large scales, caudal deeply forked.

Colour : Dark grey with coppery tinge along the back with big and bright golden scales on the sides and silvery white on the belly, fins orange stained with black, golden eyes.

Size : Grows to 91.4 cm in length.

Distribution : India. Recorded in the Dibong valley Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan and Myanmar.

Remarks : This indigenous species mostly introduced and cultured by Arunachal Pradesh State fisheries Department in most of the districts and in most cases growth rate was found quite satisfactory by the author.

Genus *Crossocheilus* van Hasselt, 1823

1823. *Crossocheilus* van Hasselt, *Algem. Konst. Letterbode*, 2 : 132 (type *Crossocheilus oblongus* V.).

30. *Crossocheilus latius latius* (Ham.)

1822. *Cyprius latius* Hamilton, *Fish Ganges*, : 345, 393 (type locality : Tista R.).
1985. *Crossocheilus latius latius*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 56, fig.21.

D.3/7-8, P.15, V.9, A.2/5, C.19, L.1.38-40.

Material examined : 27 exs. 9.0 to 15.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 18.12.83, S. Biswas & Party; 12.5 to 13.0 cm, Nongkong R. Tirap Dt. 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.5 to 6.5 in total length, lower lip with a sharp horny covering, two pairs of barbels, dorsal fin slightly nearer to snout in adult forms and in the middle between snout end and caudal fin base in young ones, rostral pair half the length of the maxillary.

Colour : Brownish olive or greyish above, lighter shades on sides, silvery beneath with irregular black spots.

Size : Attains to 15.2 cm in length.

Distribution : All along the Eastern Himalayas and the northern portion of Assam, West Bengal, U.P., Bihar, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Myanmar.

Genus *Catla* Valenciennes, 1844

1844. *Catla* Valenciennes. *Hist. Nat. Poiss.* 17 : 411 (type *Catla buechanani* Val.).

31. *Catla Catla* (Ham.)

1822. *Cyprinus catla* Hamilton. *Fish. Ganges*, : 287, 318, pl.13, fig.8 (type locality : rivers and tanks of Bengal).
1985. *Catla catla*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 52, fig.18.

D.3-4/14-16, P.21, V.9, a.3/5, C.19, L.1.38-43.

Material examined : 1 ex, 50.0 cm, Lathao fish farm, 15 km from Namsai forest I. B., Lohit Dt., 18.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.2 to 4.7 in total length, no barbels, big head, wide mouth, big eyes, lower jaw prominent with lip doubled outwards below depth of body remarkably high, eye-diameter 6-7 in head length, dorsal profile more convex than ventral side, caudal deeply forked, prominent big scales.

Colour : Silvery body with dark grey above and whitish on the belly or greyish dull.

Size : Grows to 1.15m in length.

Distribution : Throughout India. In recent years this fish has been introduced in S. India mainly in the river Cauvery for stocking tanks. Recorded in the Lathao fish farm tank in Lohit Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Myanmar, Sri Lanka.

Remarks : This indigenous species is mostly introduced and cultured by Arunachal Pradesh State fisheries Department in most of the districts and in most cases growth rate was found quite satisfactory by the author. A popular carp of India with high economic importance. It is extensively used in pond culture by the State fisheries departments all over India, particularly, in West Bengal.

Genus *Garra* Hamilton, 1822

1822. *Garra* Hamilton, *Fish. Ganges.* : 343, 393 (type *Cyprinus lamta* Hamilton).

32. *Garra gotyla gotyla* (Gray)

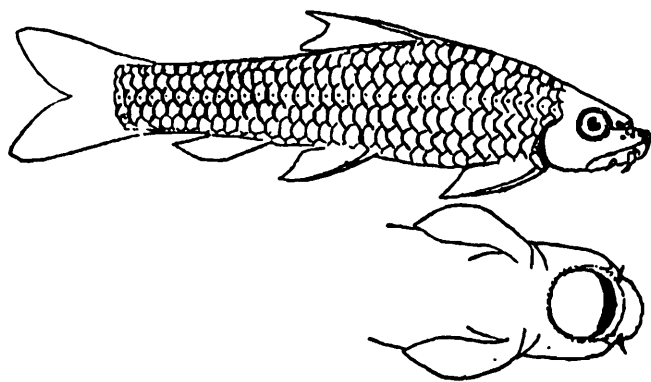


Fig 2. *Garra gotyla gotyla* (Gray)

1632. *Cyprinus gotyla* Gray, *Ill. Ind. Zool.* Hardwicke, 2, pl.88. figs.3,3a (type locality : N. India).

1985. *Garra gotyla gotyla*, Sen, *Fish Fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, Occ. Paper No. 64 : 64, fig.26.

D.2-3/8-9, P.15, V.9, A.2/5, C.17, L.1.34.

Material examined : 4 exs. 7.5 to 9.0 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 18.12.83, S. Biswas & Party; 5 exs. 9.3 to

16.5 cm, tenga R. 1 km from Bomdila, W. Kameng Dt., 1.11.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.7 in total length, elongated, 2 pairs of barbels, semicircular mouth, snout covered with pores or with conical tubercles with a deep groove across it forming a proboscis; smaller eyes, mental disc broader than long, caudal deeply forked.

Colour : Bluish gray above and pale yellow below.

Size : Grows to 15.2 cm in length.

Distribution : All along the Himalayas, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Pakistan.

Remarks : Live in hill streams, waters at the base of water falls beset with pebbles, rock-boulders etc.

33. *Garra annandalei* Hora

1921. *Garra annandalei* Hora. *Rec. Indian Mus.* 22 : 657 (type locality : Mahanadi river below Darjeeling).

1974. *Garra annandalei*, Menon, *A checklist of the Himalayan and Indo-Gangetic plains fishes*, Spl. Pub. (1) : *J. Indl. fish. Soc. India*, : 27.

D.2/9, P.14, V.9, A.2/6, C.21, L.1.34-38.

Material examined : 12 exs., 4.7 to 10.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 20.1.85, S. Biswas & Party.

Diagnostic characters : Length of head 6.2 in total length, 2 pairs of barbels, no groove across the snout nor tubercles upon it, semicircular mouth, a suctorial disc on the chin, upper lip fringed.

Colour : Yellowish to coppery green, fins darker and may be tinged with yellow or red.

Size : Attains to 15.0 cm in length.

Distribution : West Bengal (Darjeeling Dt.).

Elsewhere : E. Nepal, Arunachal Pradesh (Tirap Dt.).

Remarks : Found commonly with *Garra gotyla* but in less number in the same stream.

34. *Garra gravelyi* Annandale

1981. *Garra gravelyi*. Jayaram, F. W. *Fishes of India, Handbook No. 2*. Calcutta, Z.S.I. : 136.

D.9-12, P.13-14, A.6-8, L.1.32-36.

Material examined : 2 exs., 6.5 to 10.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 18.12.83, S. Biswas & Party.

Diagnostic characters : Mouth inferior, transverse and semi-circular; small eyes, weakly developed probosis without lateral lobes.

Colour : Greenish brown.

Size : Grows to 10.5 cm in length.

Distribution : Arunachal Pradesh (Tirap Dt.).

Elsewhere : Myanmar.

Remarks : It is a Burmese species entered into Arunachal Pradesh being nearest vicinity thereby extending its known range of distribution.

35. *Garra lissorhynchus* (McCl.)

1842. *Platycaura lissorhynchus* McClelland, *Calcuta Journ. Nat. Hist.* 11, : 587, pl.18.

1985. *Garra lissorhynchus*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No.64*, : 65, fig.27.

D.10(2/3), P.15, V.9, A.6(1/5), C.19, L.1.35.

Material examined : 2 exs, 5.6 to 8.5 cm, Noa Dihing R., Namdapha Wildlife Sanctuary, Gibbon's land, 16 km E. of Miao, Tirap Dt., 19.12. S. Biswas & Party.

Diagnostic characters : Length of head 5.2 in total length, head and body depressed in this species (resembling the Homalopterid genus *Balitora*), chest and middle of abdomen naked, while big scales are present on the post pelvic region; broad and depressed head with interorbital space, lower surface of head and chest flat, snout overhanging, semicircular mouth with adhesive sucker, 4 barbels, greatly expanded pectoral fin.

Colour : Greenish brown, no colour markings except a dark blotch under the dorsal fin and a mark at the base of the caudal.

Size : Grows to 9.0 cm in length.

Distribution : Khasi-hills, Meghalaya; Naga-hills, Nagaland; Manipore, Assam, Arunachal Pradesh (Tirap Dt.).

Remarks : Found to live in Hill-stream with beds beset with pebbles and rock-boulders.

36. *Garra naganensis* Hora

1921. *Garra naganensis* Hora, *Rec. Indian Mus.*, 22 : 667, pl.xxv, figs.2,2a.

1985. *Garra naganensis*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : fig.29.

D.2/7, A.1/5, P.14, V.8, L.1.39.

Material examined : 4 exs., 4.5 to 9.0 cm, Siue R., Kyak Village, Siang Dt. 10.2.73, R. S. Pillai & Party.

Diagnostic characters : Length of head 4.9 in standard length, ventral profile more convex, head flattened; eyes situated upwards and outwards, 2 pairs of short barbels, mouth provided with upper and lower labial folds, mental disc oval.

Colour : Upper surface and sides black and whitish below.

Size : Attains to 9.8 cm in length.

Distribution : Assam, Nagaland, Arunachal Pradesh (Siang Dt.).

Remarks : It is a high altitude hill stream fish.

37. *Garra tirapensis* Datta & Barman

1984. *Garra tirapensis* Datta & Barman, *Bull. Zool. Surv. India*, 6(1-3) : 283-287 (type locality : Namdapha Wildlife Sanctuary, Tirap district, Arunachal Pradesh).

D.10, P.13, V.8, A.7, L.1.34-35.

Material examined : 11 exs., 5.5 to 13.5 cm in S.L., Noa Dihing R., Namdapha river, tirap district, 18.4.81, S. Biswas & Party.

Diagnostic characters : Length of head 4.24 in standard length, snout paraboloid without tubercles, interorbital space convex, barbels 2 pairs, rostral and maxillary pairs are shorter than eye diameter.

Colour : Dorsal surface gray and ventral surface creamy.

Size : Grows to 13.5 cm in S.L.

Distribution : Namdapha river, Tirap district, Arunachal Pradesh (Tirap Dt.).

Remarks : This species has been recently described new from tirap district of Arunachal Pradesh.

38. *Garra lamta* (Hamilton)

1822. *Cyprinus (Garra) lamta* Hamilton. (in part). *Fish. Ganges*, : 343, 393 (type Locality : Tinau river, Nepal).

1985. *Garra lamta*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 62, fig. 24.

D.11, P.15, V.9, A.7, C.17, L.1.30-36.

Materials examined : 1 ex., 10.5 cm, Nongkong river, Bordumsa, Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.7 in total length, fusiform body, laterally placed eyes, short knob like median probosis in front of nostrils in the males but smooth snout without probosis in females, tubercles on the sides of snout, 2 pairs of barbels longer in males, a scaly appendage present near the base of pelvic fin in the females, mental disc distinct.

Colour : Dorsal surface greenish with yellowish white belly, a prominent black spot near the upper margin of the gill opening and a black blotch near the base of the caudal fin.

Size : Attains to 20.3 cm in length.

Distribution : Kumaon Himalayas, Darjeeling, Assam, Sikkim, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal.

Remarks : Tubercles and median probosis in males are marked distinguishing characters in this species.

39. *Garra nasuta* (McCII.)

1938. *Platycaura nasuta* McClland, *J. Asiat. Soc. Beng.*, 7(2), : 947, pl. 55, figs. 2, 2a, 2b (type locality : Khasi Hills, Assam).

1985. *Garra nasuta*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Re. zool. Surv. India, Occ. Paper No. 64* : 63, fig. 25.

D2/8-9, A.2/5, P.14, V.8, L.1.34.

Material examined : 2 exs., 6.5 to 8.0 cm, Nampong river, tirap Dt., 3.2.62, C. B. Srivastava.

Diagnostic characters : Length of head 5.7 in total length, dorsolaterally placed eyes invisible from below, a short broad and indistinct probosis on the snout; almost circular mental disc and coextensive with the width of the head, dorsal origin nearer to snout than to the caudal fin base, 2 pairs of barbels shorter than eye-diameter, head is fairly long and bluntly pointed.

Colour : Dark brown all over the body and head, dirty white ventrally.

Size : Grows to 13.6 cm in length.

Distribution : Abor hills, Assam; Khasi hills, Meghalaya; Mishmi hills, Manipur valley; Arunachal Pradesh (Tirap Dt.).

Elsewhere : Myanmar.

40. *Garra rupecula* (McCII.)

1839. *Gonorhynchus rupeculus* McClelland, *Asiat. Res.*, 19, : 281, 343, pl. 53, figs.4,5 (type locality : Mishmi hills, Assam).

1985. *Garra rupecula*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 64.

D.2-3/7-8, P.10, V.8, A.7(2/5), C.18, L.1.32-34.

Materials examined : 11 exs., 5.5 to 13.5 cm, Noa Dihing R., Namdapha Wildlife Sanctuary, Tirap Dt., 18.4.81, S. Biswas & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, very small sized, depressed body and head with almost straight profile; 2 pairs of minute barbels, well developed labial folds and mental disc, open spores on the snout, pectorals horizontal and rounded, ventral surface naked.

Colour : Dark dorsally and sides, white below; wavy band on the middle of the caudal fin, a deep black bar across the base of the caudal.

Size : Attains to 3.4 cm in length.

Distribution : Assam, Manipur, Mishmi hills, Arunachal Pradesh (Tirap Dt.).

Remarks : Smallest known species of the genus. Maximum length recorded from Manipur valley being 3.4 cm.

41. *Garra kempfi* Hora

1921. *Garra kempfi*, Hora, *Rec. Indian Mus.*, 22 : 656, pl. 26, figs. 31 & 3a (type locality : Abor hills, Meghalaya).

1985. *Garra kempfi*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, Occ. Paper No. 64 : 66, fig. 28.

D.2/8, A.2/5, P.13, V.8, C.26, L.1.39.

Material examined : 3 exs., 10.5 to 12.5 cm, Tenga R., W. Kameng Dt., 1.11.87, T. K. Sen & Party; 2 exs., 5.5 to 7.2 cm, Dikrai R., Sejusa, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 in total length, head and body greatly depressed and flattened, opening of mouth as wide as the width of head, mental disc well developed, minute tubercles on the labial fold, dorsal fin origin nearer to the snout than to the base of caudal fin, pectoral as long as that of head and provided with thick pads on the ventral surface of some of the outer rays.

Colour : Upper surface of body and head blackish, dirty white below, fins tinged with black.

Size : Grows to 80.5 mm in length.

Distribution : Abor hills, Assam and Nagaland, Arunachal Pradesh (E. Kameng & W. Kameng Dt.).

Genus *Labeo* Cuvier, 1817

1817. *Labeo* Cuvier, *Regne Animal*. 2 ed. 1 : 194 (type *Cyprinus niloticus* Forskal).

42. *Labeo dero* (Ham.)

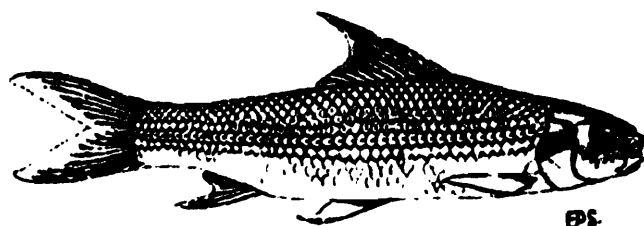


Fig 3. *Labeo dero* (Ham.)

1822. *Cyprinus dero* Hamilton, *Fish Ganges*. : 277, 331, 385, pl. 22, fig. 78 (type locality : Brahmaputra river).

1985. *Labeo dero*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, Occ. Paper No. 64 : 74, fig. 35.

D.2-3/9-10, P.17, V.9, A.2/5, C.19, L.1.41-44.

Materials examined : 2 exs., 10.0 to 10.5 cm, Namsang R., tirap Dt., 10.2.87, T. K. Sen and Party.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, comparatively a slender form with dorsal profile more convex than the ventral, snout deeply grooved and covered with pores, no lateral lobe, a horny covering inside lower jaw, a pair of short maxillary barbels.

Colour : Dark grey dorsally and silvery on sides with fins grey with reddish tinge.

Size : Attains to 25.4 cm in length.

Distribution : All along the Himalayas and Kashmir, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Myanmar, Pakistan.

Remarks : Always found in torrential waters.

43. *Labeo pangusia* (Ham.)

1822. *Cyprinus pangusia* Hamilton, *Fish. Ganges*. : 285, 386 (type locality : Koshi).

1985. *Labeo pangusia*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, Occ. Paper No. 64 : 75.

D.2/11, P.15, V.9, A.2/5, C.19, L.1.40-42.

Material examined : 1 ex., 18.5 cm., Noa

Dihing R., Namdapha Wildlife Sanctuary, Tirap Dt., 17.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 5.5 to 6.0 in total length, no groove across the narrow mouth, distinct lateral lobes, a pair of short maxillary barbels concealed inside the labial fold, snout very much obtuse with pores above, caudal fin deeply forked.

Colour : Greyish green on the back, lighter on the sides and beneath, fins sometimes tinted red.

Size : Grows to 25.4 cm in length.

Distribution : Assam, West Bengal, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bangladesh, Myanmar.

Remarks : Mostly found in the Ganges and Brahmaputra drainage system.

44. *Labeo bata* (Ham.)

1822. *Cyprinus bata* Hamilton, *Fish. Ganges*, : 283, 386 (type locality : rivers and ponds of Bengal).

1985. *Labeo bata*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 69, fig. 31.

D.2-3/9-10, P.18, V.9, A.2/5, C.19, L.1.37-40.

Material examined : 2 exs., 9.0 to 17.5 cm, Subansiri R., Subansiri Dt., 2.12.86, R. N. Bhargava.

Diagnostic characters : Length of head 5.5 in total length, a pair of very short maxillary barbels, dorsal profile more convex than ventral, continuous thin lips, a tubercle inside lower jaws above symphysis, dorsal origin nearer to snout end than to caudal base.

Colour : Varies with age, generally silvery, darkest along the back, lower fins stained with orange; fine black spots or dots on all the fins, young ones sometimes with 3 to 4 lateral black spots.

Size : Grows to 60.9 cm in length.

Distribution : Assam, West Bengal, Orissa, M.P., Krishna and Godavari rivers in south, Arunachal Pradesh (Subansiri Dt.).

Elsewhere : Bangladesh.

Remarks : Extensively cultured for stocking tanks specially in West Bengal.

45. *Labeo boga* (Ham.)

1822. *Cyprinus boga* Hamilton, *Fish. Ganges*, : 286, 386, pl. 28, fig. 80 (type locality : Brahmaputra river).

1985. *Labeo boga*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 71.

D.2-3/9-10, P.16, V.9, A.2/5, C.19, L.1.37-39.

Material examined : 2 exs., 7.5 to 9.5 cm, from a beel in Mobua village, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.2 to 5.5 in total length, thick lips, thin horny layer lining inside the lower jaw, snout with tubercles and without lateral lobes, two minute maxillary barbels, caudal fins deeply forked.

Colour : Dark dorsally with sides silvery, coppery opercle, fins covered with black dots, caudal red.

Size : Grows to 30.4 cm in length.

Distribution : Throughout Northern India, Arunachal Pradesh (E. Kameng Dt.).

Elsewhere : Bangladesh, Pakistan, Myanmar and Nepal.

Remarks : A robust fish mostly found in torrential waters.

46. *Labeo rohita* (Ham.)

1822. *Cyprinus rohita* Hamilton, *Fish. Ganges*, : 301, pl. 36, fig. 85 (type locality : Gangetic provinces).

1985. *Labeo rohita*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 71, fig. 32.

D.3/12-13, P.17, V.9, A.2/5, C.19, L.1.40-42.

Material examined : 2 exs., 44.8 to 55.7 cm, Lathao fish farm, 15 km from Namsai Forest I. B., Lohit Dt., 19.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, dorsal profile more convex than the ventral, snout without labial fold (lobe), obtuse and depressed, a thin very short maxillary pair of barbels, caudal deeply forked, dorsal fin situated between caudal base and snout.

Colour : Brownish blue or reddish blue along the back with silvery sides and below, scales with dark borders with red or orange centres inside.

Size : Attains to a meter in length.

Distribution : India, Recorded in Lohit Dt. of Arunachal Pradesh, Myanmar.

Elsewhere : Bangladesh, Pakistan

Remarks : This species, being a commercially important Carp of India, is mostly introduced and cultured in the State Fisheries rearing tanks of Arunachal Pradesh.

47. *Labeo gonius* (Ham.)

1822. *Cyprinus gonius* Hamilton, *Fish. Ganges*, : 292, 387 (type locality : Bengal).

1985. *Labeo gonius*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, *Occ. Paper No. 64* : 73, fig. 34.

D.2-3/13-14, P.17, V.9, A.2/5, C.19, L.1.71-84.

Material examined : 1 ex., 49.5 cm, Ruksin, 12 km SW of Sille, Sille R., E. Kameng Dt., 24.11.88, D. P. Sanyal & Party; 1 ex., 6.5 cm, Jamurie, 65 km N of Bhalukpong, W. Kameng Dt., 14.10.87, T. K. Sen.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, snout without lateral lobe, prominent with pores; mouth narrow with thick fringed lips, horny covering inside the jaws, 2 pairs of short barbels, caudal deeply forked, small scales.

Colour : Greenish black along the back and lighter dull white on the side and below, scales with dark margin giving impressions of dark longitudinal lines.

Size : Attains to 15.4 cm in length. Maximum length recorded by me being 49.5 cm from Arunachal Pradesh.

Distribution : All over Assam, West Bengal,

Arunachal Pradesh (E. Kameng Dt.), Northern India as far as Krishna river.

Elsewhere : Bangladesh, Pakistan and Myanmar.

48. *Labeo calbasu* (Ham.)

1822. *Cyprinus calbasu* Hamilton, *Fish, Ganges*, : 297, 389, pl. 2, fig. 33 (type

1985. *Labeo calbasu*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India*, *Occ. Paper No. 64* : 72, fig. 33.

D.3/13-15, P.19, V.9, A.2/5, C.19, L.1.40-44.

Material examined : 1 ex., 34.7 cm, Jening village, Gai r., W. Siang Dt., 1.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.0 to 6.0 in total length, a deep robust fish with ventral and dorsal profiles equally convex, mouth narrow, snout without lateral lobe, obtuse and depressed, pores on the upper lip and snout.

Colour : Blackish or metallic gray all over the body, fins black, lighter black below.

Size : grows to 91.4 in length.

Distribution : India. Recorded in the W. Siang Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Myanmar, Pakistan, Thailand and S. China.

Remarks : Peculiar black colour all over the body including fins, a conspicuous identity of this species.

Genus *Osteobrama* Heckel, 1842

1842. *Osteobrama* Heckel. *Ichth. Russegger's Reisen in Europe, Asian Und Africa*, 1 : 1033, type *Cyprinus cotio* Ham.

49. *Osteobrama cotio cotio* (Ham.)

1822. *Cyprinus cotio* Hamilton, *Fish, Ganges*, : 339, pl. 39, fig. 93 (type locality : Bengal).

1985. *Osteobrama cotio cotio*, Sen, *Fish fauna of Assam and the neighbouring N-E States of India*, *Rec. zool. Surv. India*, *Occ. Paper No. 64* : 76, fig. 36.

D.11-12, P.13, V.10, A.29-36, C.19, L.1.55-70.

Material examined : 2 exs., 5.5 to 8.7 cm, Dibru R., 15 km from Sejusa, E. Kameng Dt., 12.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.5 to 106.0 in total length, profile over nape concave, no barbels, upper jaw slightly longer, dorsal spine weak and serrated predorsal scales 24.

Colour : Silvery black on the back, sometimes with a silvery lateral band, sometimes a black blotch before the base of the dorsal fin and another on the nape.

Size : Grows to 15.5 cm in length.

Distribution : Found all over India (first time recorded from Arunachal Pradesh (E. Kameng Dt.), except Malabar and South of the Krishna river.

Elsewhere : Bangladesh, Pakistan and Myanmar.

Remarks : Besides clear freshwater it can thrive well in dried up tanks, beels river beds etc.

Genus *Puntius* Hamilton, 1822

1822. *Puntius* Hamilton, *Fish. Ganges*, : 310, 388 (type *Cyprinus sophore* Hamilton).

50. *Puntius chola* (Ham.)

1822. *Cyprinus chola* Hamilton, *Fish. Ganges*, : 312, 389 (type locality : N. E. of Bengal).

1985. *Puntius chola*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 84.

D.3/8, P.15, V.9, A.2/5, C.19, L.1.26-28.

Material examined : 4 exs., 4.5 to 6.5 cm, Lohit R, Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 to 4.7 in total length, dorsal profile more convex than the ventral profile, a single pair of maxillary barbels, complete lateral line, dorsal fin origin midway between tip of snout and caudal fin base with osseous and smooth undivided rays, 10 to 12 predorsal scales.

Colour : Silvery, Opercles shot with purple and gold, a dark blotch on the space between 23rd to 25th scales, a dark mark at the base of the dorsal fin.

Size : Attains to 12.5 cm in length.

Distribution : Throughout India including Arunachal Pradesh (Lohit Dt.).

Elsewhere : Sri Lanka, Pakistan and Myanmar.

Remarks : Generally found in ditches, paddy fields (during monsoons).

51. *Puntius tetrapagus* (McCII.)

1839. *Systomus tetrapagus* McClelland, *Asiat. Res.*, 19, : 285, 381, pl. 44, fig. 3.

1974. *Barbus tetrapagus*, Menon, *A check-list of the Himalayan and Indo-Gangetic plains fishes, Spl. Pub. (1), J. Indl. Fish. Soc. India*, : 37-38.

D.10-11, P.17, V.9, A.7, C.19, L.1.24-26.

Material examined : 2 exs., 7.5 to 9.7 cm, Nongkong R. 12 km from Bordumsa Camp, Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.0 to 4.25 in total length, body compressed, lower labial fold interrupted, dorsal profile considerably elevated, a maxillary pair of barbels, lateral line complete.

Colour : Silvery, two black spots, one on the lateral line near gill openings and the other on the lateral line between the end of anal fin and base of caudal fin.

Size : Grows to 12.5 cm in length.

Distribution : Orissa, West Bengal, Assam, Arunachal Pradesh (Tirap Dt.), S. India, Punjab.

Elsewhere : Pakistan, Bangladesh.

Remarks : Bleeker (1853), Gunther (1868) and Menon (1974) found great similarities with *Copeta chola*, *Barbus titius* and *Puntius chola* respectively, with this species.

52. *Puntius guganio* (Ham.)

1822. *Cyprinus guganio* Hamilton, *Fish. Ganges*, : 338, 339, 392 (type locality : Brahmaputra and Yamuna).

1985. *Puntius guganio*, Sen, *Fish fauna of Assam and the neighbouring N-E States of India*, Rec. zool. Surv. India, Occ. Paper No. 64 : 79.

D.2/8, R.12, V.9, A.7, L.1.29-31.

Material examined : 3 exs., 2.7 to 3.5 cm, Kameng R., Jamurei, E. Kameng Dt., 14.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 in total length, eye diameter 3.0 in head length, dorsal surface more convex than ventral surface, mouth small, dorsal fin origin between tip of snout and caudal fin base, eyes and scales large, no barbels, incomplete lateral line, dorsal ray osseous and strong.

Colour : Light greenish on the back, head and back dotted, silvery sides with a band on the middle of the body (not complete), fins without colour.

Size : Attains to 3.8 cm in length.

Distribution : Arunachal Pradesh (E. Kameng Dt.), Gangetic Provinces and Assam.

53. *Puntius conchoni* (Ham.)

1822. *Cyprinus conchoni* Hamilton, *Fish. Ganges*, : 317, 389 (type locality : Ponds of N-E Bengal and in the rivers of Kosi and Ami).

1985. *Puntius conchoni*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, Rec. zool. Surv. India, Occ. Paper No. 64 : 81.

D.3/8, P.11, V.9, A.2/5, C.19, L.1.24-26.

Material examined : 4.5 to 6.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 17.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 5.0 in total length, both the dorsal and ventral profiles a convex, mild notch over the nape, no barbels, incomplete lateral line, dorsal fin with moderately strong and serrated spine opposite to the pelvic fin, predorsal scales 9.

Colour : Greenish grey on the back, silvery towards the sides, a large round black blotch on the middle of the caudal peduncle (on 19-20 scales), orange coloured fins, dorsal fin tips tinged with black.

Size : Grows to 12.7 cm in length.

Distribution : Assam, West Bengal, Orissa, Bihar, U.P., Punjab, Deccan, Arunachal Pradesh (Noa Dihing R.).

Elsewhere : Bangladesh, Pakistan.

Remarks : Commonly found in small streams all over Arunachal Pradesh.

54. *Puntius sarana sarana* (Ham.)

1822. *Cyprinus sarana* Hamilton, *Fish. Ganges*, : 307, 388 (type Locality : ponds and rivers of Bengal).

1985. *Puntius sarana sarana*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, Rec. zool. Surv. India, Occ. Paper No. 64 : 79, fig. 37.

D.3/8, P.15, V.9, A.3/5, C.19, L.1.32-34.

Material examined : 2 exs., 4.7 to 9.3 cm, a small beel in front of Namsai F. R. House, Tirap Dt., 11.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 in total length, dorsal profile more convex than ventral profile, 2 pairs of barbels, dorsal origin nearer to snout than to caudal fin base, complete lateral line.

Colour : Dark grey above and silvery below, often a golden blotch on the opercle, fins greyish white.

Size : Attains to 30.4 cm in length.

Distribution : Freshwaters throughout India. Recorded in the Tirap Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Myanmar, Sri Lanka, Thailand, Pakistan, S. China.

55. *Puntius sophore* (Ham.)

1822. *Cyprinus sophore* Hamilton, *Fish. Ganges*, : 310, 389, fig. 86 (type locality : ponds and rivers in the Gangetic provinces).

1985. *Puntius sophore*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, Rec. zool. Surv. India, Occ. Paper No. 64 : 78.

D.3/8-9, P.17, V.9, A.3/5, C.19, L.1.23-26.

Material examined : 11 exs., 7.5 to 9.5 cm, Siue R., Ruksin, 12 SW of Sille, E. Siang Dt. 24.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.0 in total length, dorsal profile more convex than the ventral profile, barbels absent, complete lateral line, dorsal spine weak, predorsal scales 8-9, caudal distinctly forked.

Colour : Silvery, a diffused black spot at the base of the dorsal fin, tips of fins reddish or orange tinged.

Size : Grows to 12.7 cm in length.

Distribution : Throughout India. Recorded in the E. Siang Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Myanmar, Nepal and S. China.

Remarks : The black diffused spot at the base of the dorsal fin is a significant identification character of this species.

56. *Puntius ticto* (Ham.)

1822. *Cyprinus ticto* Hamilton, *Fish. Ganges*, : 314, 389, pl. 8. fig. 87 (type SE of Bengal).

1985. *Puntius ticto*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 82.

D.3/8, P.15, V.9, A.2/5, C.19, L.1.22-26.

Material examined : 7 exs., 5.0 to 8.5 cm, Sally lake, Dibong Valley, Dt. 27.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.0 to 4.0 in total length, dorsal profile more convex than ventral profile, dorsal fin origin in between tip of snout and caudal fin base and with a moderately strong and serrated spine; complete or often incomplete lateral line, predorsal scales 8-11, a black spot on 18th or 19th scales.

Colour : Silvery with two black lateral spots.

Size : Attains to 20.1 cm in length.

Distribution : Throughout India. Recorded in the Dibong Valley Dt. of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Myanmar, Thailand, Sri Lanka.

Remarks : Develops often bright red colour on the opercle and olive green on the back (S. L. Hora, 1921). During seasonal changes, I have observed more particularly during monsoon months.

57. *Puntius dukai* (Day)

1878. *Barbus dukai* Day, *Fish. India*, : 564, pl. 143, fig. 3, (type locality : Tista river, N. Bengal).

1981. *Puntius dukai*, Jayaram, *F. W. Fishes of India*, Handbook No. 2, Calcutta, Z. S. I. : 100.

D.13(4/9), P.15, V.9, A.7(2/5), C.19, L.1.28-29.

Material examined : 2 exs. Seppa, Kameng river, E. Kameng Dt., 17.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.7 to 5.0 in total length, body elongated and compressed, interorbital space convex, upper jaw the longer, sides of snout and below the eyes with tubercles, lower labial fold interrupted, barbels slightly longer (rostral pair), dorsal fin commences nearer to snout than to the base of caudal fin, lateral line complete.

Colour : Leaden tinge along the back, sides dull white shot with gold, edges of scales darkest.

Size : Grows to 12.7 cm in length.

Distribution : N. Bengal (Tista river system), Arunachal Pradesh (E. Kameng Dt.).

Remarks : Popularly known as 'Katli' in N. Bengal (Nepalese) with much likeness with that of *Tor* (Mahseer).

58. *Puntius stevensonii* (Day)

1878. *Barbus stevensonii* Day, *Fish. India*, : 569, pl. 135, fig. 6 (type locality : Akyyab, Burma).

1981. *Puntius stevensonii*, Jayaram, *F. W. Fishes of India*, Handbook No. 2, Calcutta, Z. S. I. : 102.

D.12(3/9), P.17, V.9, A.8(3/5), C.19, L.1.27.

Material examined : 24 exs., 3.6 to 4.3 cm, Noa Dihing R., Namdapha Wildlife Sanctuary, Tirap Dt., 12.4.81, S. Biswas & Party.

Diagnostic characters : Length of head 4.5 in total length, body elongated and compressed, dorsal profile slightly arched, upper jaw the longer, lower labial fold interrupted, 2 pairs of barbels-maxillary pair extend below the posterior extremity of the orbit, the rostral pair the shorter; dorsal fin with a smooth, weak osseous ray as long as the head, excluding the snout; lateral line complete.

Colour : Silvery, upper portion of the body darker; numerous black specks along the side; a black spot at the base of the caudal, a dark band along the dorsal fin.

Size : Attains to 10.4 cm in length.

Distribution : Arunachal Pradesh (Tirap Dt.).

Elsewhere : Myanmar.

Remarks : Migrated to Arunachal Pradesh being the nearest zoogeographical vicinity.

Genus *Semiplotus* Bleeker, 1859

1859. *Semiplotus* Bleeker, Nat. Tijdschr. Neder-Indie, 20 : 424, (type *Cyprinus semiplotus* McClelland).

59. *Semiplotus modestus* (Day)

1870. *Semiplotus modestus* Day, Proc. Zool. Soc. : 101 (type locality : Hill ranges near Akyab, Burma).

1981. *Semiplotus modestus*, Jayaram, F. W. *Fishes of India*, Handbook No. 2 Calcutta, Z. S. I. : 96.

D.4/20, P.15, V.9, A.9-10, C.19, L.1.32-34.

Materials examined : 1 ex., 10.5 cm, Teng river, W. Kameng Dt., 1.4.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.2 to 5.0 in total length, snout broad and obtuse, overhanging the mouth; several open pores on either side of the mouth, a thin cartilaginous covering to the lower jaw, a small knob at the symphysis, barbels absent, dorsal fin with osseous serrated ray, caudal forked, pectoral reaches the ventral fin.

Colour : Silvery, Darkest in the upper half of the body, ventral and anal fins tipped with orange.

Size : Grows to 14.0 cm in length.

Distribution : Arunachal Pradesh (W. Kameng Dt.).

Elsewhere : Myanmar.

Remarks : Zoogeographically a significant species. It has extended its known range of extension from Burma to Arunachal Pradesh being the nearest zoogeographical vicinity.

60. *Semiplotus semiplotus* (McClelland)

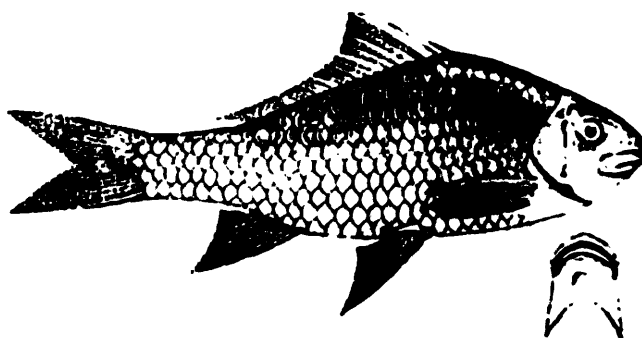


Fig 4. *Semiplotus semiplotus* (McCl.)

1839. *Cyprinus semiplotus* McClelland, *Asiat. Res.* : 274, 346, pl. 37, fig. 2. (type locality : Brahmaputra river, Upper Assam).

1985. *Semiplotus semiplotus*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv. India, Occ. Paper No. 64* : 89, fig. 41.

D.3/24-25, P.16, V.10, A.2/7, C.19, L.1.27-33.

Material examined : 2 exs., 9.5 to 11.9 cm, Subansiri river, Subansiri Dt., 2.12.86, R. N. Bhargava.

Diagnostic characters : Length of head 5.5 to 6.0 in total length, dorsal profile more convex than the ventral profile, thickened snout with tubercles, obtuse; lower jaw with an internal horny layer, barbels absent, dorsal fin with bony and entire spine, caudal deeply forked.

Colour : Dull silvery, deepest dark on the back, fins yellowish, anal tinged with orange.

Size : Attains to 64.8 cm in length.

Distribution : Assam, Meghalaya, Arunachal Pradesh (Subansiri Dt.), West Bengal (N. Bengal).

Elsewhere : Myanmar.

Remarks : An endemic North-Eastern form mostly found in torrential waters. It has extended its known range of extension from Assam (Brahmaputra river) to Burma via Meghalaya.

Genus *Tor* Gray, 1834

1833. *Tor* Gray. *Ill. Ind. Zool. Hardwicke*, 2 : 96 (type *Cyprinus tor* Hamilton = *Tor hamiltoni* Gray).

61. *Tor tor* (Hamilton)

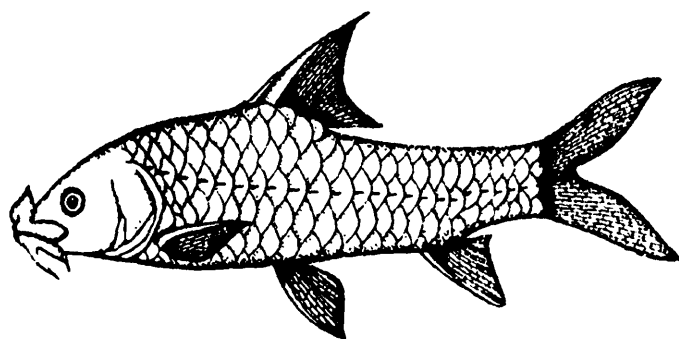


Fig 5. *Tor tor* (Ham.)

1822. *Cyprinus tor* Hamilton, *Fish Ganges*, : 305, 388 (type locality : Mahananda river).
1985. *Tor tor*. Sen, *Fish fauna of India and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 39, fig. 42.

D.12(3/9), P.19, V.9, A.7-8, L.1.22-27.

Material examined : 7 exs., 6.5 to 12.5 cm, Lohit river, Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.7 to 5.0 in total length, fleshy thick lips with uninterrupted labial fold, dorsal profile more arched than ventral side, 2 pairs of barbels, maxillary slightly larger than rostral but shorter than eye; bigger scales, dorsal fin almost opposite to pelvic origin with smooth bony dorsal spine 2 1/2 rows between lateral line and pelvic base.

Colour : Bright yellow or brown all over the body, fins reddish.

Size : Grows to 120 to 150 cm in length.

Distribution : Widely distributed all along the foot-hills of the Himalayas and Assam and Arunachal Pradesh (Lohit Dt.).

Remarks : A popular game fish (Mahseer) of

India; lives in torrential snow-fed rivers along the foot-hills of the Himalayas. Also known for its migratory habits. A fine food fish.

62. *Tor putitora* (Ham.)

1822. *Cyprinus tor* Hamilton, *Fish. Ganges*, : 303, 388 (type locality : Eastern parts of Bengal).
1985. *Tor putitora*. Sen, *Fish fauna of Assam and the neighbouring N-E States of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 44.

D.3/9, P.19, V.9, A.2-3/5, C.19, L.1.25-28.

Material examined : 5 exs, 7.5 to 18.7 cm, Kamlang river, Lohit Dt., Jan. 1969, J. M. Julka.

Diagnostic characters : Length of head 4.0 to 4.5 in total length, thick lips, uninterrupted labial groove, 2 pairs of barbels of equal length and as long as eye, both the dorsal and ventral profiles equally arched, dorsal fin origin midway between tip of snout and caudal fin base with strong but smooth spine, pre-dorsal scales 9, length of head considerably greater than depth of body.

Colour : Olive green back and top of head, golden scales, yellowish fins often tinged with red (lower ones).

Size : Grows to 120 cm in length.

Distribution : All along the foot-hills of the Himalayas including Assam, Arunachal Pradesh (Lohit Dt.).

Remarks : A popular game fish of India lives in torrential snow-fed rivers of U.P., Kashmir valleys, Darjeeling Dt. of West Bengal. Breeds three times a year January-February, May-June (when snow melts) and July-August.

63. *Tor progeneius* (McCll.)

1839. *Barbus progeneius* McClelland, *Assist. Res.* 19, : 270, 334, pl. 56, fig. 3 (Great rivers in the plains of India).
1982. *Tor progeneius*. Sen & Jayaram. *The Mahseer Fishes of India A Review*. *Rec. zool. surv. India, Occ. Paper No. 39* : 11.

D.12, P.16, V.9, A.7, C.19, L.1.26.

Material examined : 2 exs, 6.5 to 23.5 cm,

Dikrai river, Sejusa, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.3 in total length, the head is long and much compressed, short fins, large scales, mouth narrow and small, from the lower lip a fleshy appendix is extended, by which, this species is distinguished from the neighbouring species, dorsal spine less developed, length of head almost equal to depth of body, tip of snout fleshy and produced into a semicircular flap, upper lip fleshy but not projected, continuous labial fold, a black streak behind the gill opening.

Colour : Silvery green or greyish dorsally with sides slightly pinkish and white below; a black streak behind the gill-openings in the younger forms.

Size : Grows to 11.3 to 71.5 cm in length.

Distribution : North-eastern Himalayas in Assam, Naga hills, Arunachal Pradesh and Manipur. New record from Arunachal Pradesh (E. Kameng Dt.).

Remarks : This species has been very recently elevated to the status of a separate species by Sen and Jayaram (1982). Popularly known as 'Jungha', Junga-peatia in N.E. regions more particularly in Assam.

Sub family SCHIZOTHORACINAE (Snow Trouts)

Mouth inferior or slightly anterior, a suctorial disc on chin may be present, dorsal fin with or without a spine, pharyngeal teeth in two or three rows, a tile like row of scales enclosing vent and anal fin base.

Genus *Schizopygopsis* Steindachner, 1866

1866. *Schizopygopsis* Steindachner, Verh. Zool. Bot. Ges. Wien., 16 : 786, pl. 16, fig. 2, (type *Schizopygopsis stoliczkae* Steindachner).

64. *Schizopygopsis stoliczkae* Steind.

1976. *Schizopygopsis stoliczkae*, Sen & Datta, Newsl. zool. Surv. India, 3(4), : 143 (type locality : E. Himalays, Brahmaputra (Ysang-po) river.

1985. *Schizopygopsis stoliczkae*, Sen. Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv. India, Occ. Paper No. 64 : 87, Fig. 40

D.3-4/7-8, P.13, V.11, A.2/5, C.19.

Material examined : 1 ex., 7.5 cm, Teng river, W. Kameng Dt., 1.4.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.5 in total length, inferior mouth slightly overhung by the snout, round abdomen, maxilla reaches below the front border of the orbit, sharp horny edge to the mandible, dorsal fin midway between the snout and the caudal fin base, with osseous and finely serrated ray; small scales at scapular region, lateral line curves below (ventrally) and then continued straight through the caudal peduncle region to reach the centre of the base of the caudal fin.

Colour : Greenish olive on the back becoming silvery on the sides, entire body covered with minute irregular black spots.

Size : Attains to 9.0 cm in length.

Distribution : Arunachal Pradesh (W. Kameng Dt.), N. Sikkim.

Elsewhere : China, Pakistan, Central and West Asia.

Remarks : Enters to Arunachal Pradesh via Brahmaputra (Psang Po in Tibet) and Howang-Ho river in China extending its known range of distribution.

Genus *Schizothorax* Heckel, 1838

1838. *Schizothorax* Heckel, Fish. Kashmir. : 11 (type *Schizothorax plagiostomus* Heckel).

65. *Schizothorax richardsonii* (Gray)

1830. *Cyprinus richardsonii* Gray, Ill. Indian Zool., 1, pl. 94, fig. 2 (Illustration only).

1985. *Schizothorax richardsonii*, Sen, Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv. India, Occ. Paper No. 64 : 86, fig. 39.

D.3/8, P.17, V.10, A.2/5, C.19, L.198-100.

Material examined : 4 exs., 9.5 to 14.7 cm, Kyak village stream, Siue R., Dt. Siang, 10.2.73, R. S. Pillai & Party.

Diagnostic characters : Length of head 4.0 to 6.0 in total length, obtuse snout, inferior mouth with a well developed lower lip with posterior free edge straight or somewhat convex, sometimes large pores on the snout, dorsal spine with serrations becoming smooth in larger forms.

Colour : Bluish on the back becoming silvery with golden tinge on sides.

Size : Grows to 50 cm in length.

Distribution : Assam, Arunachal Pradesh, E. Himalayas.

Elsewhere : Pakistan.

Remarks : Lives in the snow-fed waters.

Genus *Schizothoraichthys* Misra, 1959

1959. *Schizothoraichthys* Misra, *Rec. Indian Mus.*, 57 : 164, (type *Schizothorax esocinus* Heckel).

1981. *Schizopyge*. Jayaram, F. W. *Fishes of India*, Handbook No. 2, Calcutta, Z. S. I. : 63.

66. *Schizothoraichthys progastus* (McClelland)

1839. *Oreinus progastus* McClelland. *Asiat. Res.* 19 : 274, 343. pl. 40. fig. 4 (type locality : Assam).

1905. *Schizothoraichthys progastus*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India. Rec. zool. Surv. India. Occ. Paper No. 64* : 87.

D.11-12(3/8-9), P.19, V.11, A.2/5, C.19, L.1.150-160.

Material examined : 3 exs., 10.5 to 12.5 cm, Teng river, W. Kameng Dt., 1.4.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.2 to 5.5 in total, interorbital space nearly flat, pointed snout. upper jaw projecting, width of head half of its length, fleshy thick lip having a free posterior edge in its whole circumference, upper lip elevated in the centre, lower with a central lobe and a lateral one on either side, 4 barbels, dorsal with a strong osseous ray coarsely serrated and as long as head behind the angle of the mouth, minute scales, caudal deeply forked.

Colour : Uniformly silvery.

Size : Grows to 50 cm in length.

Distribution : Himalayas, free head waters of the Ganges to Sadiya in upper Assam, Arunachal Pradesh (W. Kameng Dt.).

Remarks : Generally live in the clear snow-fed water of the Ganges (U.P.), Upper Assam and Darjeeling Dt., hill-stream of West Bengal, Arunachal Pradesh; Mountain streams of Nepal.

Family PSILORHYNCHIDAE

Body flattened on ventral surface, covered with small scales, head and ventral surface without scales, gill openings narrow, gill membranes united with isthmus, barbels absent, paired fins placed horizontally with simple outer rays, complete lateral line, greatly reduced air-bladder.

Key to the species of the genus *Psilorhynchus*

1. Body spindle shaped, eyes large, lateral in position; ventral surface behind pectoral fin base with scales, pectoral fin with 4 simple rays, caudal fin deeply forked with upper lobe slightly longer *P. sucatio* (Ham.)
- Body not spindle shaped, ventral surface behind pectoral fin base without scales, with 7 simple rays 2
2. Small eyes, dorso-laterally placed, caudal fin lunate with equal lobes, lateral line.
..... *P. homaloptera* Hora & Mukerji
- Eyes moderately large, laterally placed; caudal fin emarginate, lateral line scales 35.
..... *P. balitora* (Ham.)

Genus *Psilorhynchus* McClelland, 1839

1839. *Psilorhynchus* McClelland. *Asiat. Res.* 19 : 300. 428 (type *Cyprinus balitora* Ham.).

67. *Psilorhynchus homaloptera* Hora and Mukerji

1935. *Psilorhynchus homaloptera* Hora & Mukerji, *Rec. Indian, Mus.* 37 : 391, pl. 7, figs. 1-6 (type locality : Emiloni, Naga hills, Assam).

1985. *Psilorhynchus homaloptera*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 97, fig. 47.

D.2/7, P.7/8-9, V.2/7, C.18, L.1.40-44.

Material examined : 15 exs., 11.0 to 16.0
Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap
Dt., 20.1.85, S. Biswas & Party.

Diagnostic characters : Length of head 5.1 to 5.6 in standard length, dorsal profile evenly arched, ventral surface and chest flattened and horizontal, caudal peduncle short and fairly compressed, head greatly depressed, small obtusely pointed and has trenchant margins; small eyes, globular and dorso laterally placed; both the upper and lower jaws provided with sharp grasping horny edges bordered by thick and fleshy lips, lunate caudal fin, pectoral fins broad and fan shaped with round margin.

Colour : Olivaceous green becoming lighter on the ventral side, fine black dots over head and body, a fairly broad dusky lateral band along the lateral.

Size : Grows to 10.0 cm in length.

Distribution : Nagaland, Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal.

Remarks : Live in fast streams and rivers with shallow beds beset with pebbles and rock boulders.

68. *Psilorhynchus sucatio* (Ham.)

1822. *Cyprinus sucatio* Hamilton, *Fish. Ganges*, pp. 347, 393 (type locality : rivers of N. Bengal).

1985. *Psilorhynchus sucatio*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64*, P.95, fig. 46.

D.2/7-8, P.4/9-10, V.2/7-8, A.2/5, L.1.35-38.

Material examined : 7 exs., 5.5 to 8.0, Namsang river, Tirap Dt, 10.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.0 in total length, head depressed and spatulate, dorsal fin commences in advance of the ventrals and its origin much nearer to the tip of the snout than to the base of the caudal fin, caudal deeply forked with upper lobe slightly longer.

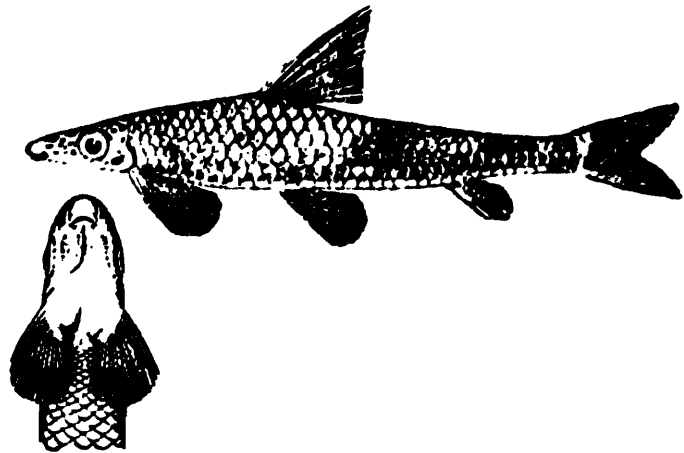


Fig 6. *Psilorhynchus sucatio* (Ham.)

Colour : Light brown with irregular black blotches above and below the later line, greenish with scattered dots on the sides in the forms of defused cloud like appearance, whitish below.

Size : Attains to 8.1 cm in length.

Distribution : Assam, Arunachal Pradesh (Tirap Dt.), West Bengal (Darjeeling Dt.), Himalayas.

Elsewhere : Bangladesh.

Remarks : Live in rapids and torrential streams.

69. *Psilorhynchus balitora* (Ham.)

1822. *Cyprinus balitora* Hamilton, *Fish. Ganges*, : 38, 394 (type locality : N-E Bengal).

1995. *Psilorhynchus balitora*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec Zool Surv. India, Occ. Paper No. 64* : 94.

D.9-10(2/7-8), P.17, V.9, A.7(2/5), L.1.35, C.35.

Material examined : 2 exs., 3.5 to 5.5 cm, Siue river, E. Siang Dt., 22.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 3.2 to 5.5 in total length, round head, slightly depressed; back very much arched, a deep cleft extending from the snout to the angle of mouth, jaws with sharp edges without any horny covering, thick lips, reflected and edged with round hard pores; some fine pores on cheeks and snout, pectorals and ventrals nearly horizontal, no barbels.

Colour : Reddish brown with irregular black

blotches forming complex bands, 3 bars on caudal fin.

Size : Grows to 6.5 cm in length.

Distribution : Jamuna in Delhi, Gomti river at Lucknow, U.P., Assam (hill streams and rapids), West Bengal (Darjeeling Dt.), Arunachal Pradesh (E. Siang Dt.).

Elsewhere : Bangladesh.

Remarks : A typical hill stream fish prominently found to live in the hill streams and rapids in the N-E regions particularly in Assam and Arunachal Pradesh.

Family HOMALOPTERIDAE

Head and body depressed, flattened below; spatulate snout, head and part or whole of the ventral surface without scales, small inferior mouth, paired fins horizontally placed with at least two simple or unbranched rays, outer rays of paired fins provided with adhesive pads on ventral surface.

Key to the genera of the Family HOMALOPTERIDAE

1. Body almost cylindrical and somewhat depressed, head cylindrical, pointed anteriorly; snout obtusely rounded, mouth small, inferior, transverse; eyes minute to small, not visible from below ventral surface, lips thick, fleshy, papillated, continuous at angle of mouth, barbels 4.6 or 8, scales minute, dorsal and anal fins short. *Noemacheilus* Van Hasselt
- Anterior part of body and abdomen greatly depressed, ventral surface flattened, head flat, depressed; snout broad, rounded, covered with small sharp tubercles; mouth crescentic with tubercular lips; 5 short barbels, lower jaw sharp, strong, with a horny substance. *Balitara* Gray

Key to the species of the genus *Noemacheilus*

1. Body irregularly blotched, caudal fin entire or slightly emmarginate. *N. botia* (Ham.)

- Body not irregularly blotched, caudal fin forked. 2
2. About 13 blotches or bands along the side. *N. corica* (Ham.)
- 7 to 17 numerous vertical brown bands, caudal fin may be forked, square or truncate. 3
3. Small eyes, snout compressed, caudal fin slightly forked. *N. multifasciatus* (Day)
- Moderately large eyes. 4
4. Square caudal fin, 9 to 12 transverse brown bands, yellowish ground colour. *N. scaturigina* (McCII.)
- Semiimmarginate type caudal fin. 5
5. 7 to 11 broad black bands on the body, blunt head, flat undersurface. *N. kangjupkhulensis* Hora
- 13 brown bands, caudal fin deeply forked. 6
6. 6 barbels fairly long, a red-black bar at the base of caudal fin. *N. prashadi* Hora
- 6 barbels not very long. 7
7. 12 black rings around the body, a black bar across the caudal fin. *N. sikmaiensis* Hora
- 11 to 17 vertical rings. 8
8. Caudal fin emmarginate type, dorsal and caudal fin banded or spotted. *N. rupecola* (McCII.)
- Caudal fin truncate, as long as head. 9
9. Small eyes, 14-20 brown vertical stripes on body. *N. manipurensis* Chaudhury
- Moderately large eye, dorsal fin long, body crossed by about 20 half bars of a darkish grey, a dark ocellus on the upper portion of base of caudal fin. 10
10. Elongated form, males (sexual dimorphism) with suborbital flap. *N. pavonaceous* (McCII.)

- Not elongated, sexual dimorphism none, eyes large, barbels well developed. 11
- 11. 10 to 12 broad black rings separated by an equal number of narrow yellow ones.
..... *N. arunachalensis* Datta & Barman
- 9 to 10 narrow, yellowish bands, a small, slender form; caudal deeply emarginate with rounded lobes; snout pointed with well developed barbels. *N. savona* (Ham.)

Sub genus *Aborichthys* Chaudhuri, 1913

Nomacheiline loach greatly elongated, tail compressed, round caudal, vent situated far forwards, all fins greatly removed from one another, body marked with oblique, narrow stripes; a black spot at upper end of base of caudal fin, caudal fin usually marked with concentric rings of black colour. Genus *Aborichthys* Chaudhuri, 1913 has been treated as subgenus under genus *Noemacheilus* van Hasselt, 1823 by A. G. K. Menon (1987, p. 183, 184) as both *Aborichthys* and *Noemacheilus* have probably descended from a common ancestor during recent geological time.

Key to the species of sub genus *Aborichthys*

1. Vent almost equidistant between tip of snout and base of caudal fin.
..... *N. garoensis* (Hora)
- Vent distinctly nearer to caudal fin base than to tip of snout. 2
2. Barbels much longer than eye diameter, black bands narrower than yellow interspaces.
..... *N. kempi* (Chaudhuri)
- Barbels as long as or slightly longer than eye diameter. 3
3. Body marked with a number of broad black rings alternating with narrow yellowish bands (Darjeeling). *N. elongatus* (Hora)
- Body marked with 15-20 lateral black bands, a black spot at superior margin of caudal fin, body greatly elongated, barbels 3 pairs.
..... *N. tikaderi* (Barman)

Sub family NOEMACHEILINAE

Ventral and pectoral fins not inserted horizontally; only outermost ray of pectoral fin simple; air bladder reduced to two connected lateral parts and a small posterior part. Body usually cylindrical, compressed. No spine under or before eye. Upper part of caudal peduncle may be with an adipose keel.

Genus *Noemacheilus* van Hasselt, 1823

1823. *Noemacheilus* van Hasselt, *Alg. Konst. Letterbode*. 2(35) : 133 (type *Noemacheilus fasciatus* van Hasselt).

70. *Noemacheilus prashadi* Hora

1921. *Noemacheilus prashadi* Hora, *Rec. Indian Mus.* 22 : 203, pl. 10, figs. 2, 2a, (type locality : Thonagpal tank, Thoubal and Sikmai Streams, Manipur).
1985. *Noemacheilus prashadi*. Sen, *Fish fauna of Assam and neighbouring N-E states of India*, *Rec. zool. Surv. India. Occ. Paper No. 64* : 120, figs. 64.

D.4/8, V.8, A.6, P.11, C.19.

Material examined : 2 exs., 5.5 to 7.4 cm, Jhentu river (hill stream), Bogamur village, 10 km from Namsai, Lohit Dt., dt. 18.12.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, lateral line well marked anteriorly but gradually fades away downward and ultimately disappears behind the anal fin, dorsal fin in advance of the pelvic fin and nearer to the snout, caudal fin deeply forked, open spines all over the head and continued along the lateral line, six fairly long barbels.

Colour : Dorsal portion above the lateral line reticulated by numerous black vertical bands, wider surfaces of head and body pale olivaceous, a red black bar at the base of caudal fin and two dotted bands across it, dorsal fin also marked by two bands.

Size : Largest specimen recorded 10.2 cm in length.

Distribution : Manipur, Arunachal Pradesh (Lohit Dt.).

Remarks : Males are with suborbital flaps. The deeply forked caudal fin, incomplete lateral line and colour pattern indicate this species to be a member of the sikmaiensis complex (Menon, 1987).

71. *Noemacheilus manipurensis* Chaudhuri

1912. *Noemacheilus manipurensis* Chaudhuri, *Rec. Indian Mus.*, 7 : 449 (type locality : Manipur).

1985. *Noemacheilus manipurensis*, Sen, *Fish fauna of Assam and the neighbouring N-E states of India*, *Rec. Zool. Surv. India, Occ. Paper No. 64* : 118, fig. 62.

D.2/8, P.11, V.9, A.2/5, C.18.

Material examined : 1 ex., Digaru R., Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.6 in total length, incomplete lateral line, 3 pairs of barbels, anterior side of dorsal more convex, caudal truncate or slightly lobed, ventral surface moderately flattened, dorsal origin opposite to pelvic origin (Annandale and Hora, 1921).

Colour : When banded, vertical bands throughout the body; sometimes without bands or mottled or plain forms only.

Size : Largest specimen recorded 8.0 cm from Manipur (Hora and Mukerji, 1935).

Distribution : Assam, Arunachal Pradesh (Lohit Dt.), Manipur and Naga hills.

Remarks : It is interesting to note that specimens when collected from sluggish streams of Manipur valley were found to be of the mottled or plain type, whereas specimens collected from torrential streams of Naga hills were found to be of the banded type (Hora & Mukerji, 1935).

72. *Noemacheilus savona* (Ham.)

1822. *Cobitis savona* Hamilton, *Fish Ganges*, : 357 (type locality : Kosi River at Nagpur).

1987. *Noemacheilus savona*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)* : *Zool. Surv. India*, Vol. 4 : 91, fig. 10, pl. 13.

D.3/9, P.9, V.7, A.2/5, C.20.

Material examined : 1 ex., 7.5 cm, Miao, Noa Dihing R., Tirap Dt., 19.12.82, S. Biswas & Party.

Diagnostic characters : Length of head 5.5 in total length, a slender little fish pointed at both ends, 3 pairs of barbels, the paired fins are fin shaped, horizontal and pointed in the middle, lips fleshy, mouth semicircular, caudal peduncle short and stout.

Colour : Body marked with 9 to 10 narrow yellowish bands, a vertical black band at base of caudal fin, fins usually devoid of markings, in some specimens 'V' shaped bands can be seen on caudal fin.

Size : Grows to 4.0 cm in length.

Distribution : Eastern Himalayas. Tista drainage at Darjeeling, West Bengal, U.P., Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal.

Remarks : A distinct species without any close affinity to any other species but it is close to *Schistura* group though there are many dissimilarities in colour, body and head shapes (Menon, 1987).

73. *Noemacheilus corica* (Ham.)

1822. *Cobitis corica* Hamilton. *Fish Ganges*. : 359. (type locality : R. Koshi).

1987. *Noemacheilus corica*, Menon, *Fauna of India (Pisces, Cobitoidea - Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 89, fig.3, pl.12.

D.3/8, P.11, V.1/7, A.2/5, C.17.

Material examined : 2 exs, 4, 3 to 5. 5 cm. Kamlang R. Lohit Dt., 23.12.69, J. M. Julka and party.

Diagnostic characters : Length of head 5.5 in total length, 3rd and 4th pectoral rays produced reaching the base of the pelvic fin, small eyes situated almost in middle of the head, not visible from the ventral surface; mouth semicircular, nostril close to each other; lips fleshy furrowed, upper not interrupted, lower interrupted in the middle; rostral barbels longer than the orbit, caudal forked.

Colour : Bluish with about 13 black blotches along the middle of the sides with further smaller ones above and descending between these bigger

blotches; usually a silvery band along the middle of the body.

Size : Grows to 9.8cm iv length.

Distribution : Eastern Himalayas, West Bengal, Himachal Pradesh, Punjab, Arunachal Pradesh (New record) (Lohit Dt.).

Elsewhere : Nepal.

Remarks : Stands close to *N. scaturigina* but can be separated by its prominent colouration and by the much elongated second branched ray of the pectoral fin.

74. *Noemacheilus kangjupkhulensis* Hora

1921. *Noemacheilus kangjupkhulensis* Hora, *Rec. Indian Mus.*, 22 : 202, pl. 10, figs.4, 4a (type locality-Manipur valley).

1987. *Noemacheilus kangjupkhulensis*, Menon, *Fauna of India (Pisces. Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 115, figs.2 and 3, pl.

D.2/7, P.9, V.1/6, A.2/5, C.16.

Material examined : 1 ex, 4.5 cm, Siue R, E.Siang Dt., 22.11.88, D. P. Sanyal and party.

Diagnostic characters : Length of head 5.2 to 5.6 in total length, head bluntly pointed and slightly depressed, open pores scattered all over the head and a row of these pores below the eye continued along the lateral line, mouth ventrally situated, surrounded by thick lips; incomplete lateral line, vent situated on a raised papilla with lips.

Colour : 7-11 broad black bands on the body separated by an equal number of white ones which are only half as broad, a black band at the caudal fin base.

Size : Largest recorded length being 4.3 cm from Manipur valley (Hora, 1921).

Distribution : Assam, Manipur and Arunachal Pradesh (New record, E. Siang Dt.) fimbriated. Its closest relative of this species is *N. manipurensis* inhabiting the Manipur Valley and adjacent Naga Hills (Menon, 1987).

75. *Noemacheilus multifasciatus* Day

1878. *Nemachilus multifasciatus* Day, *Fish India*. : 617. pl.153. fig.7 (type locality : Assam and Darjeeling).

1987. *Noemacheilus multifasciatus*, Menon, *Fauna of India (Pisces. Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 5. figs. 3 & 4. pl.1.

D.2/7, P.12, V.8, A.1/5, C.16.

Material examined : 1 ex, 6.0 cm, Gai R., W. Siang Dt., 24.11.88. D. P. Sanyal and Party.

Diagnostic characters : Length of head 5.5 in total length, a medium-sized robust, elongated fish with dorsal profile slightly arched, compressed snout with narrow mouth, 3-pairs of barbels, complete lateral line, small dorsal fin.

Colour : Body marked with 14-16 vertical bands, a dark band at the base of caudal fin.

Size : Grows to 8.3cm in length.

Distribution : Assam, Darjeeling, and Arunachal Pradesh (W. Siang Dt.), U.P., Eastern Himalayas.

Remarks : Scales small indistinct, embeded in skin, absent in ventral side.

76. *Noemacheilus pavonaceus* (McC11.)

1839. *Cobitis pavonaceus* McClelland. *Asiat Res.*, 19 305, 437. pl. 52. fig.1 (type locality : Assam).

1987. *Noemacheilus pavonaceus*, Menon, *Fauna of India (Pisces. Cobitoidea-Homalopteridae Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 150. fig. 1, pl. 6.

D.3/15-18, P.1/11, V.1/9, A.2/5, C.20.

Material examined : 3 exs, 3.7-4.6cm, Kamlang R., Lohit Dt., January, 1969, J. M. Julka and party.

Diagnostic characters : Length of head 5.7 in total length, elongated form, mouth semicircular, lips modeately fleshy, lips uninterrupted with few rows of papillae, barbels well developed, 3-pairs, long dorsal fin, caudal peduncle short and stout, anal not reaching base of caudal, caudal fin with rounded lobes.

Colour : Body crossed by about 20 half bars

of darkish grey tinge, a dark ocellus surrounded by light margin at upper portion of base of caudal fin.

Size : Attains to 8.5cm in length.

Distribution : Assam, Arunachal Pradesh, Lohit-Dt., Eastern Himalayas.

Remarks : Sexual dimorphism present, males with suborbital flap.

77. *Noemacheilus botia* (Ham.)

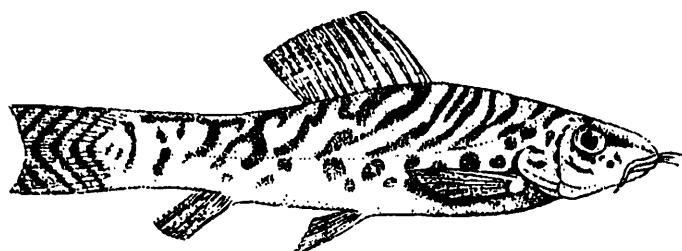


Fig 7. *Noemacheilus botia* (Ham.)

1822. *Cobitis botia* Hamilton, *Fish Ganges*. : 350, 394 (type locality : Rivers of north eastern parts of Bengal).

1987. *Noemacheilinae* : *Zool. Surv. India*, Vol. 4 : 141, fig. 5, pl.5.

Material examined : 7 exs., 4.5 to 5.7 cm; Noa Dihing R., Gandhigram, 2 km N. W. of Miao, Tirap Dt., Namdapha Survey, 1985, S. Biswas & Party.

D.3/9-1, P.1/11, V.1/7, A.3/5, C.18.

Diagnostic characters : Length of head 4.8 in total length, a strongly built fish, mouth semicircular, lips moderately fleshy, upper lip uninterrupted; lower lip interrupted in the middle with a broad papillose disc on each side, barbels 3 pairs, cartilagenous processes in the males of this species below the eyes. Caudal fin slightly shorter than head, slightly emarginate posteriorly.

Colour : Pale olivaceous to yellowish orange with 12-16 blackish crossbands of various turns and twists, descending below the level of lateral line.

Size : Attains to 7.5 cm in length.

Distribution : Tripura, West Bengal, Nagaland,

U.P., Bihar, Himachal Pradesh, Punjab, Jammu and Kashmir, Arunachal Pradesh (Tirap Dt.).

Remarks : Amongst the members of the subgenus *Acanthocobitis*, this species is close to *N. moreh* (Sykes) (Menon, 1987).

78. *Noemacheilus arunachalensis* Datta & Barman

1984. *Noemacheilus arunachalensis* Datta & Barman, *Bull. Zool. Surv. India*, 6(1-3) : 275-277 (type locality : Namdapha Wildlife Sanctuary, Tirap Dt., Arunachal Pradesh).

1987. *Noemacheilus arunachalensis*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 129, fig. 10 & pl. 16.

D.2/8, P.11, V.1/7, A.2/5, C.18.

Material examined : 3 exs., 4.0-6.5 cm, Riwa R., Nampong, Tirap Dt., 11.4.81, S. Biswas & Party.

Diagnostic characters : Length of head 5.3 in total length, uniform body, dorsal profile slightly arched, incomplete lateral line, fleshy lips, well-developed barbels, thread like; dorsal fin small, caudal peduncle short and stout.

Colour : Body marked with 10 to 12 broad black rings separated by an equal number of narrower yellow ones, a black bar across the base of caudal.

Size : Attains to 7.4 cm in length (TL).

Distribution : Arunachal Pradesh (Tirap Dt.)

Remarks : It has close affinity with *N. sikmaiensis* but can be separated by its shorter lateral line (Menon 1987).

79. *Noemacheilus sikmaiensis* Hora

1921. *Noemacheilus sikmaiensis* Hora, *Rec. Indian Mus.*, 22 : 201 (type locality : Sikmai stream near Palel on the Burma road, Manipur).

1987. *Noemacheilus sikmaiensis*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 125, fig. 4 & 5, pl. 3).

D.2/8, P.11-12, V.8, A.2/5, C.19.

Material examined : 2 exs., 3.5 to 4.0 cm, Lohit R., Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.5 in total length, minute eyes, head slightly depressed and the ventral profile almost horizontal, dorsal profile rises gradually from the end of snout to the base of dorsal fin, pores all over the head, mouth inferior and semicircular surrounded by thick lips, six barbels, well developed ventrals provided with scally appendages at their bases, caudal deeply forked.

Colour : 12-13 black rings around the body separated by an equal number of slightly narrow white ones, a black bar at the base of the caudal fin.

Size : Grows to 4.5 cm in length.

Distribution : Manipur, Assam, Arunachal Pradesh (Lohit Dt.).

Remarks : Males with suborbital flap, forked tail, incomplete lateral line, general body shape and markings being the typical characters of the Sikmaiensis complex, are present in this species.

80. *Noemacheilus rupecola* (McClelland)

1838. *Schistura rupecola* McClelland, *J. Asiat. Soc. Beng.*, 7 : 948, pl. 55, fig. 3 (type locality : Simla).

1987. *Noemacheilus rupecola*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 49, fig. 6, pl. 13.

D.2/8, P.12, V.8, A.1/5, C.16.

Material examined : 1 ex., 7.5 cm., Jening village, 10 km E. of Along, Gai R., W. Siang Dt., 25.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.5 in total length, transverse mouth, snout obtuse in the adult, incomplete lateral line, scales absent or minute in the posterior half of the body, caudal emarginate type.

Colour : Yellowish with 12 to 17 ventral brown bars, a wide dark band at the caudal fin base.

Size : Attains to 10.2 cm in length.

Distribution : Naga hills, Assam, Darjeeling Dt., West Bengal, along the foot hills of the Himalayas, Arunachal Pradesh (W. Siang Dt.).

Remarks : It is an Assamese race of the Himalayan species.

81. *Noemacheilus scaturigina* (McCII.)

1839. *Cobitis (Schistura) scaturigina* McClelland, *Asiat. Res.*, 19 : 308, 443, pl. 53, fig. 6 (type locality : Assam).

1987. *Noemacheilus scaturigina*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)*; *Zool. Surv. India*, Vol. 4 : 86, fig. 273, pl. 3.

D.3/8, P.10, V.8, A.1/5, C.19.

Material examined : 4 exs., 3.7 to 4.6 cm, Nongkong R., 12 km from Bordumsa camp, Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.2 to 4.5 in total length, small elongated body with both profiles straight and horizontal, long and narrow head, small mouth, semicircular, bordered by fleshy lips; sharp lower jaw, shovel-like, incomplete lateral line, dorsal begins in advance of the ventrals, caudal square or slightly lobed.

Colour : Head and body grayish above and pale olivaceous below, 9 to 12 saddle shaped, narrow dark bands descending down on the sides from dorsal surface, a black basal band on the caudal fin base, V-shaped stripes on the caudal fin.

Size : Grows to 5.5 cm in length.

Distribution : Assam, Himalayas, Darjeeling Dt. (West Bengal), U.P., Arunachal Pradesh (Tirap Dt.).

Elsewhere : Nepal.

Sub genus *Aborichthys*

82. *Noemacheilus garoensis* (Hora) ++ (= *Aborichthys garoensis*)

1925. *Aborichthys garoensis* Hora, *Rec. India Mus.*, 72 : 233, figs. 1, 1a, 1b (type locality : Tura, Garo Hills).

1987. *Noemacheilus garoensis*, Menon, *Fauna of India* (Pisces, Cobitoidea Homalopteridae : Noemacheilinae); *Zool. Surv. India*, Vol. 4 : 186, fig. 6, pl. 6.

Material examined : 1 ex., 8.5 cm, Kameng R., Palazi, E. Kameng Dt., 22.10.87, T. K. Sen & Party.

D.3/7, P.1/10, V.1/6, A.2/5, C.18.

Diagnostic characters : Length of head 6.5 to 9.9 in standard length, greatly elongate form with body and tail compressed, broadly rounded snout anteriorly, gill-opening small, mouth on the undersurface bordered by thick, papillated lips which hang loosely and continuous at the angles of the mouth, lower lip interrupted in the middle, six barbels, rays of both the paired fins are provided with thick cutaneous pads, incomplete lateral line.

Colour : Body marked with 30 to 35 black bands, pale olivaceous general colour, upper surface of the head marked with short black lines.

Size : Attains to 10.5 cm in length.

Distribution : The Garo hills, Meghalaya, Arunachal Pradesh (E. Kameng Dt.).

Remarks : Dr. S. W. Kemp first collected from Garo hills in 1917 on Meghalaya.

83. *Noemacheilus elongatus* (Hora) ++

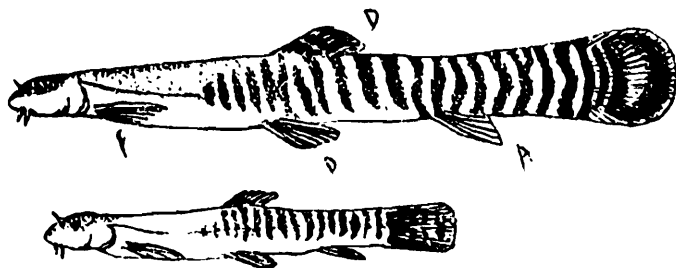


Fig 8. *Noemacheilus elongatus* (Hora.)

1921. *Aborichthys elongatus* Hora, *Rec. Indian Mus.*, 22 : 735. (type locality : Darjeeling Himalayas).
1987. *Noemacheilus elongatus*, Menon, *Fauna of India* (Pisces, Cobitoidea Homalopteridae : Noemacheilinae); *Zool. Surv. India*, Vol. 4 : 184, fig. 6, pl. 7.

D.3/7, P.10, V.1/7, A.1/50.18.

Material examined : 4 exs., 5.6 to 7.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt, 18.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 6.0 to 6.7 in total length, both the dorsal and ventral profiles straight and horizontal behind the pectoral fins and run almost parallel to each other to the base of the caudal fin, mouth situated on the undersurface and bordered with thick lips, lower lip interrupted, body very much elongated, cylindrical and laterally compressed.

Colour : Upper sides and sides dusky, under surface either white or dull; pale olivaceous body marked by alternating broad and narrow bands of yellowish orange colour, a black ocellus on the caudal fin base.

Size : Grows to 10.0 in length.

Distribution : Assam, Darjeeling-Himalayas, Arunachal Pradesh (Tirap Dt.).

Remarks : Greatly elongated form with round caudal fin.

84. *Noemacheilus tikadari* (Barman) ++

1984. *Aborichthys tikadari* Barman, *Bombay Nat. Hist. Soc.*, 81(3) : 680-683, fig. 1. (type locality : Namdapha Wildlife Sanctuary, Arunachal Pradesh).

D.2/7, A.6, P.11, V.8, C.18.

Material examined : 3 exs., 10.0 to 11.0 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt, Arunachal Pradesh, 12.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 5.8 in standard length, small eyes mouth slightly behind tip of snout and bordered by thick, papillated lips, which hang loosely and distinctly at angles of mouth; 3 pairs of barbels, vent placed far forward being distinctly nearer to tip of snout than to base of caudal fin, incomplete lateral line, reaching before base of pelvic fin.

Colour : Pale olivaceous body, dorsal surface of head marked with short black lines mingles with one another; body marked with 15 to 20

black vertical bands which encircle the body almost completely except a very short space on ventral surface.

Size : Attains to 10.0 cm in length (ST).

Distribution : Arunachal Pradesh (Tirap Dt.).

Remarks : This recently described new species is closely near to *N. garoensis* (= *A. garoensis*) but can be separated from it by the possession of deeper body depth, shorter eye diameter and less number of lateral coloured bands.

85. *Noemacheilus kempai* (Chaudhuri) ++

1913. *Aborichthys kempai* Chaudhuri, *Rec. Indian Mus.*, 8 : 245, pl. 7, fig. 1, 1a, 1b (type locality : Renging, Eotung and Yenbung, Abor Hills).

1987. *Noemacheilus kempai*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)* ; *Zool. Surv. India*, Vol. 4 : 188, fig. 5, pl. 7.

D.3/7, P.1/10, V.1/6, A.2/5, C.16.

Material examined : 4 exs., 9.0 to 14.5 cm, Kamlang R. Lohit Dt., 242 m altd., January, 1969, J. M. Julka.

Diagnostic characters : Length of head 5.0 in total length, small eyes, inferior mouth surrounded by a circular suctorial lip, 3 pairs of barbels, covering flaps of the gill openings continuous with the isthmus skin, incomplete lateral line, deciduous and extremely minute scales, caudal fin entire.

Colour : 18 to 21 dark brown transverse stripes gradually disappearing at the ventral surface, round grey blotches and loops on the head.

Size : Largest recorded specimen 19.6 cm in length.

Distribution : Garo and Abor hills, Meghalaya, Arunachal Pradesh (Lohit Dt.).

Elsewhere : U. Myanmar.

Remarks : This species is close to *N. garoensis* and *N. elongatus* but can be separated by the position of vent (nearer to the caudal base than tip of snout).

Sub family HOMALOPTERINAE

Small hill stream fishes, body greatly depressed and ventral surface flattened paired fins placed horizontally, outer rays of paired fins with adhesive pads on ventral surface, dorso-laterally placed small eyes, mouth subterminal dorsal and anal fins short, well developed lateral line, scales on body, absent on head and ventral surface.

Genus *Balitora* Gray, 1832

1832. *Balitora brucei* Gray, *Ill. Ind. Zool.*, pl. 88, fig. 1. (Type species : *Balitora brucei* Gray).

86. *Balitora brucei* Gray

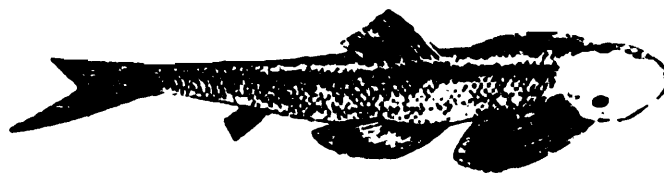


Fig 9. *Balitora brucei* Gray

1832. *Balitora brucei* Gray, *Ill. Ind. Zool.* 1. pl. 88, fig. 1. (type locality : Mountain streams, India).

1987. *Balitora brucei*, Menon, *Fauna of India (Pisces, Cobitoidea Homalopteridae : Noemacheilinae)* ; *Zool. Surv. India*, Vol. 4 : 228, figs. 3 & 4, pl. 9.

D.3/8, P.10/11-12, V.2/9, A.2/5, C.17, L.1.70.

Material examined : 2 exs., 6.5 to 8.5 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 18.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 6.5 in total length, snout broad and depressed with sharp margins, 3 pairs of barbels, pectoral nearly reaches the ventral, lower caudal lobe much longer, scales from chest to the posterior margin of the base of the ventrals, anterior 9 rays of the pectoral unbranched.

Size : Largest recorded specimen 10.2 in length.

Colour : Brownish with dark blotches, caudal banded.

Distribution : Khashi hills, Assam, North Bengal (Darjeeling Dt.), Arunachal Pradesh (Tirap Dt.).

Elsewhere : Bhutan.

Remarks : A typical torrential fish.

Family COBITIDAE

A single suborbital or preorbital spine; mouth inferior; barbels 6 or 8; pharyngeal teeth in a single row; air bladder enclosed in bone, its posterior part small or vestigial, scales very small.

Sub family COBITINAE

Body oblong to cylindrical, a spine under or before the eye, anterior nostril tubular or simple, no ridge on upper part of caudal peduncle, dorsal fin long with 8 to 30 rays.

Genus *Lepidocephalus* Bleeker, 1858

1858. *Lepidocephalus* Bleeker, *Nat. Tijdschr. Ned. Inde.*, 16 : 303 (type species *Cobitis macrochir* Bleeker).

87. *Lepidocephalus (L) guntea* (Ham.)

1822. *Cobitis guntea* Hamilton, *Fish. Ganges*, : 353, 395 (type locality : ponds and freshwaters of Bengal).

1985. *Lepidocephalus (L) guntea*, Sen, *Fish fauna of Assam and the neighbouring N.E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 112, fig. 55.

D.2/6, P.8, V.7-8, A.2/5, C.16.

Materials examined : 3 exs, 4.5 to 6.0 cm, Teju, Lohit R., Lohit Dt, 23.2.87. T. K. Sen & Party.

Diagnostic characters : Length of head 6.0 in total length, upper and ventral profiles of body parallel but body profile in front of dorsal fin depressed, a large erectile bifid spine countersunk below the eye, head partly scaled, 3 pairs of barbels.

Colour : Dark brown on the dorsal side and the rest of the body being yellowish white with mixed blackish specks to form pattern of darker and lighter longitudinal bands, a dark wide line or band composed of black dots along the middle of the body stretching from gill to caudal fin base.

Size : Grows to 10.5 cm in length.

Distribution : India (except Karnataka, Kerala and S. of Krishna).

Elsewhere : Nepal, Bangladesh. It was recorded in the Lohit Dt. of Arunachal Pradesh.

Remarks : Commercially not important, most commonly found loaches.

Genus *Somileptis* Bleeker, 1863

1863. *Somileptes* Bleeker, *Atlas. Ich. Cypr.*, 3 : 3 (type *Cobitis gongota* Hamilton).

88. *Somileptes gongota* (Hamilton)



Fig 10. *Somileptes gongota* (Ham.)

1822. *Cobitis gongota* Hamilton, *Fish Ganges*, : 351, 394 (type locality : North Bengal rivers towards the Himalayas).

1985. *Somileptes gongota*, Sen, *Fish fauna of Assam and the neighbouring N.E. Rec. zool. Surv. India, Occ. Paper No. 64* : 129, fig. 71, states of India.

D.3/8, P.1/10, V.2/6, A.2/5, C.16.

Material examined : 3 exs, 7.5 to 10.8 cm, Dikrai River, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.2 in total length, upper profile slightly concave and rising abruptly to above the eyes which are close together near the top of the head from this point the body gradually narrows down to the peduncle; a small bifid sub-orbital spine reaching below the middle of the orbit, dorsal fin opposite to the pelvic fin root, entire caudal fin, minute scales.

Colour : Light brown with darker specks above, yellowish or whitish beneath, a variable pattern with about 5 large brown blotches with light edge joining with the oblique dark stripes, 2 dark patches on cheeks.

Size : Grows to 9.5 cm in length (from Khowang, Dibrugarh).

Distribution : Assam and North of W. Bengal, Arunachal Pradesh (E. Kameng Dt.).

Remarks : Live in hill stream waters and mostly confined in N. E. Indian regions.

Genus *Acanthopsis* Bleeker, 1858

1858. *Acanthopsis* Bleeker, *Nat. Tijdschr. Ned. Indie*, XVI : 303.

89. *Acanthopsis choirorhynchus* (Bleeker)

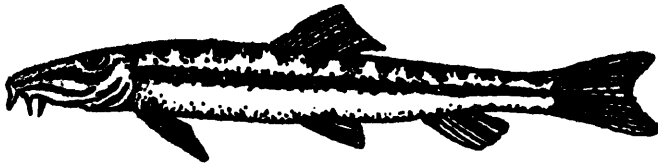


Fig 11. *Acanthopsis choirorhynchus* (Bleeker)

1823. *Acanthopsis dialyzona* van Hasselt, *Alg. Konst. Letterbode*, II : 133 (No description).

1985. *Acanthopsis choirorhynchus*, Sen, *Fish fauna of Assam and the neighbouring N.E. states of India*, *Rec. zool. Surv. India*, Occ. Papr No. 64 : 107, fig. 52.

D.2/10-11, A.2/5-7, P.1/9, V.1/6.

Material examined : 1 ex., 17.5 cm, Kamlang R. near Alubari, Lohit Dt, January, 1969, J. M. Julka (Daphabum Scientific surveys expedition, N. E. F. A.).

Diagnostic characters : Length of head 5.7 in total length, snout much elongated, minute scales, eyes covered by skins with an erectile bifid sub-orbital spine, 3 pairs of barbels, origin of dorsal fin midway between snout and caudal fin.

Colour : Yellowish brown with 12 to 14 dark cross bars, a dark lateral line with a series of 8 to 12 round spots, a black spot at the upper base of caudal.

Size : Grows to 18.5 cm in length.

Distribution : Assam, Manipur, Arunachal Pradesh (Lohit Dt.).

Elsewhere : Sumatra, Java, Borneo and Malaya.

Remarks : Migrated from Myanmar to India. It was first recorded new in Indian waters from Dibrugarh in Assam by the author (Sen, 1985). It has close similarities with *Somileptes gongota*

(Ham.) but can be easily distinguished by the following characters viz, (1) elongated snout (2) eye diameter in head length and (3) position of bifid suborbital spine.

Genus *Acanthopthalmus*, v. Hasselt, 1823

1823. *Acanthopthalmus* van Hasselt, *Alg. Konst. Letterbode*, 2 : 132 (type *Acanthopthalmus fasciatus* van Hasselt).

90. *Acanthopthalmus pangla* (Ham.)

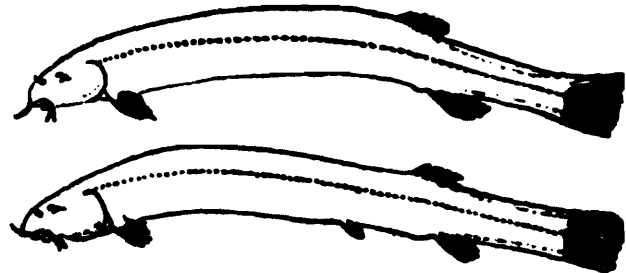


Fig 12. *Acanthopsis pangla* (Ham.)

1822. *Cobitis pangla* Hamilton, *Fish. Ganges* : 355, 394 (type locality : N. E. parts of Bengal).

1985. *Acanthopthalmus pangla*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India*, Occ. Paper No. 64 : 103, fig. 49.

D.2/6, P.10, V.6-7, A.2/5, C.17.

Material examined : 2 exs., 4.5 to 5.0 cm, Dibru R., Sejusa, E. Kameng Dt, 12.10.87. T. K. Sen & Party.

Diagnostic characters : Length of head 7.5 to 8 in total length, minute eyes, six barbels, laterally compressed body elongated, an erectile bifid suborbital spine present, dorsal arises just in front of anal, distinct scales, round caudal.

Colour : Brownish yellow without any markings.

Size : Largest recorded specimen 5.3 cm in length.

Distribution : N. Bengal (W. Bengal), Manipur, Arunachal Pradesh.

Elsewhere : Myanmar, Indonesia. First time recorded new from Arunachal Pradesh (E. Kameng Dt.).

Remarks : A typically hill stream fish with or without pelvic fins, may be due to different ecological conditions or habitats. According to S. L. Hora (1930) it is due to corelative aspects of different habitats.

Sub family BOTINAE

Body oblong, short, compressed. An erectile spine arising from the ethmoid bone and concealed in a groove under or before each eye. Two pairs of rostral barbels very closed to each other. Caudal fin well forked. Dorsal fin with 10-15 rays.

Key to the species of genus *Botia*

1. 3 pairs of barbels, dorsal fin commences midway between the post orbit and base of caudal fin. *B. berdmorei*
- 4 pairs of barbels, dorsal fin arises between the anterior of margin of the orbit and the base of the caudal. *B. rostrata*

Genus *Botia* Gray, 1831

1831. *Botia* Gray, *Zool. Misc.* : 8 (type *Botia almorhae* (Gray)).

91. *Botia berdmorei* (Blyth)

1860. *Syncrossus berdmorei* Blyth, *J. Asiat. Soc. Beng.*, 29 : 166 (type locality : Tenasserim provinces, Burma).
1985. *Botia berdmorei*, Sen, *Fish fauna of Assam and the neighbouring N. E. States of India*, *Rec. Zool. Surv. India, Occ. Paper No. 64* : 109, fig. 53.

D.13-15, P.13, V.8, A.7, C.17.

Materials examined : 4 exs., 3.5 to 8.0 cm, Shergaon, Kameng R., W. Kameng Dt., 30.1087. T. K. Sen & Party.

Diagnostic characters : Length of head 4.6 to 5.0 in total length, compressed body, eye diameter 7 in head length, suborbital spine reaches to below the middle of eye, six barbels, dorsal fin commences midway between the post orbit and base of caudal fin, minute scales.

Colour : Colour varies greatly; usually buff coloured with 10-18 oblique transverse bands on the body and 5 longitudinal rows of black dots.

Upper surface of head black, 2 black streaks run from the eye to the snout.

Size : Grows to 14.5 cm in length.

Distribution : Manipur, Arunachal Pradesh (New record) (W. Kameng Dt.).

Elsewhere : Myanmar.

Remarks : Vinciguerra's (1889) confusion regarding the number of barbels as found in Day's (1878) description of the species has been verified to be 6 barbels (Hora, 1921).

92. *Botia (B) rostrata* Gunther

1868. *Botia rostrata* Gunther, *Cat. Brit. Mus.* 7 : 367 (type locality : Bengal).
1985. *Botia (B) rostrata*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 110, fig. 54.

D.3/9, P.14, V.8, A.2/5, C.19.

Material examined : 4 exs, 6.4 to 8.5 cm, Ruksin, 12 km SW of Sille, Sille R., E. Siang Dt., 24.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.5 in total length, body and head compressed, snout pointed, 4 pairs of barbels, dorsal arises between the anterior margin of the orbit and the base of the caudal, minute scales.

Colour : Irregular and partly confluent with brown cross bands enclosing differently sized round blotches of yellowish blue colours, fins with cross bands.

Size : Grows to 12.5 cm in length.

Distribution : Arunachal Pradesh (New record) E. Siang Dt., Assam-Himalayas and Darjeeling Dt., of West Bengal.

Remarks : *B. geto* Day and *B. dayi* Hora are synonymous with *B. rostrata* (Menon, 1974).

Order SILURIFORMES

Family BAGRIDAE

Head and body not ventrally flattened, paired fins not horizontal, anal fin short with less than 20

rays (8-16) excepting *Horabagrus* Jayaram from Kerala with 23 to 28 rays; nostrils widely separated, barbels 8 or 6, generally well developed; rayed dorsal with a strong or feeble spine, gill-openings wide, extending to above base of pectoral fin; large air bladder, thick-walled.

Key to the genera of the family BAGRIDAE

1. Maxillary barbels reach beyond dorsal fin, no pores on ventral surface and on sides of head; interneural shield in between basal bone of dorsal fin and occipital process absent
..... *Mystus* Scopoli
- Maxillary barbels not extending beyond head, pores present on ventral side and on sides ...
..... 2
2. Snout rounded or slightly pointed, body short, eyes moderate, dorso-laterally placed in middle part of head *Batasio* Blyth
- Snout spatulate or rounded, eyes large, supralaterally placed in middle of head, distinct interneural shield in between basal bone of dorsal fin and occipital process present
..... *Aorichthys* Wu

Genus *Aorichthys* Wu, 1939

1939. *Aorichthys* Wu, *Sinensia*, 10 : 134 (proposed originally as substitute name for *Aoria* Jordan, 1919 preoccupied in *Insecta Macrones* Dumeril, 1856 preoccupied in *Insects*, type species *Pimelodus aor* Hamilton by subsequent designation-Jayaram, 1971. *Proc. Zool. Soc. Calcutta*, 24 : 149 (replaces *Osteobagrus* Jayaram elevated to a generic rank).

93. *Aorichthys seenghald* (Hamilton)

1839. *Platystoma seenghald* Sykes, *Trans. Zool. Soc. Lond.* 2 : 371, pl. 63, fig. 2 (type locality : Mota Mulariver, Poona).
1985. *Aorichthys seenghald*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 133, fig. 72.

D.1/7, P.1/9, A.11-12, V.6, C.19-21.

Material examined : 1 ex, 18.5 cm, from a hill-stream river, Kameng R., Seppa, E. Kameng Dt, 17.10.89, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 in total length, palatine teeth in a continuous crescentic band, spatulate snout, 4 pairs of barbels, maxillary barbels reach middle or end of rayed dorsal fin, upper jaw longer with shallow cleft of mouth, median longitudinal groove on head extends up to base of occipital process, pectoral spine strong, serrated ; base of adipose dorsal fin equals or slightly exceeds that of dorsal fin.

Colour : A round black spot on the posterior end of adipose fin, brownish along back, silvery on sides and below.

Size : Grows to 1.5 mt. in length.

Distribution : Arunachal Pradesh (New record) (E. Kameng Dt.), large rivers of India up to Krishna river system in the south, Punjab, W. Bengal (Darjeeling Dt.), Assam, Poona, Ahmedabad.

Elsewhere : Pakistan, Bangladesh and China.

Remarks : Barbels reach to the end of the pelvics.

Genus *Batasio* Blyth, 1860

1860. *Batasio* Blyth, *J. Asiat. Soc. Bengal*, 29 : 149 (type *Pimelodus batasio* Hamilton by original designation).
1977. *Batasio*, Jayaram, *Rec. zool. Surv. India, Occ. Paper No. 8* : 16.

94. *Batasio tengana* (Hamilton)

1822. *Pimelodus tengana* Hamilton, *Fish Ganges*, : 176, 377, pl. 39, fig. 58 (type locality : Brahmaputra river).
1985. *Batasio tengana*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 134, fig. 73.

D.1/7, P.1/7-9, V.6, A.11-15, C.16-18.

Material examined : 2 exs, 4.5 to 6.3 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt. 20.1.85, S. Biswas & Party.

Diagnostic characters : Length of head 4.5 in total length, eye diameter 6.5 in head length, base of adipose dorsal fin shorter or equal to anal fin base, occipital process reaching basal bone of dorsal fin.

Colour : Body with oblique vertical bands or spot, grey olivaceous (deeper above, lighter beneath), big black spot on the nape.

Size : Largest recorded specimen 7.3 cm in length.

Distribution : Assam, Arunachal Pradesh, West Bengal (Darjeeling Dt.).

Elsewhere : Bangladesh, N. Myanmar, Thailand, Malaysia.

Remarks : K. C. Jayram (1977) placed this genus (*Batasio*) under family BAGRIDAE instead of family SISORIDAE by Menon (1974).

Key to the species of the genus *Mystus*

1. Eye diameter 4.5 in head length, pectoral fin with 9-10 rays, body with a dark shoulder spot, maxillary barbels reach anal fin, head length more than 5 times *M. bleekeri* (Day)
- Eye diameter 3.5 to 4.0 in head length, pectoral fin with 6 rays 2.
2. 1 or 2 longitudinal light bands above lateral line, body with a bluish shoulder spot and a silvery line, body with a bluish shoulder spot and a silvery line along the side ending in a dark caudal spot *M. montanus* (Jerdon)
- 3 or 4 longitudinal bluish bands on sides, body with a dark shoulder spot, no spot at the caudal 3
3. Maxillary barbels extended to pelvics, short adipose dorsal fin, (base of adipose dorsal fin generally same as the distance between the dorsal and adipose dorsal fins.) *M. vittatus* (Bloch)
- Maxillary barbels reach caudal fin base or beyond, adipose dorsal fin long 4
4. A single dark spot at base of the dorsal fin (it may be mere a darkening in front of this fin,) depth of body 5.5 in total length *M. cavasius* (Ham.)
- No single dark spot at the base of dorsal fin, several dark spots or clusters along the anterior half of the lateral line (but in many specimens

studied it may be seen concentratedly on the posterior half of the lateral line), depth of body 4.4 to 5.0 in standard length, maxillary barbels reach to nearly or quite of the anal.
..... *M. menoda menoda* (Ham.)

Genus *Mystus* Scopoli, 1777

1777. *Mystus* Scopoli. *Introductio ad historium naturalem*. : 451 (type species, *Bagrus halepensis* Valenciennes = *Mystus pelusius* (Solander) by subsequent selection).
1977. *Mystus*. Jayaram. *Rec. zool. Surv. India, Occ. Paper No. 8* : 20.

95. *Mystus montanus* (Jerdon)

1849. *Bagrus montanus* Jerdon. *Madras F. Lit. Sci.*, **15**(2) : 337 (type locality : Manantoddy, Wynad).

1985. *Mystus montanus*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 139.

D.1/7, P.1/6, V.6, A.12, C.19.

Material examined : 4 exs, Namdapha Wildlife Sanctuary, Tirap District, 17.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 5.0 in total length, eye diameter 3.5 to 4.0 in head length, upper jaw longer, maxillary barbels reaching posterior end of anal base, outer mandibulars to pelvic base, inner to pectoral base and nasals to hind border of eye; dorsal with a weak spine, serrated internally, its origin nearer to adipose dorsal than to tip of snout; pectoral not reaching pelvics, with strong spine; caudal forked.

Colour : Silvery above yellowish white below, often a dark blotch at the base of the caudal fin in continuation of a dark line along the lateral line.

Size : Grows to 11.5 in length.

Distribution : Assam, M.P., Kerala, Arunachal Pradesh (Tirap Dt.).

Remarks : In smaller forms a bluish shoulder spot and one or two light bands along the sides of body above the lateral line are usually present.

96. *Mystus cavasius* (Ham.)

1822. *Pimelodus cavasius* Hamilton. *Fish Ganges*. : 203. 279. pl. 11. fig. 67 (type locality : Gangetic provinces).
 1985. *Mystus cavasius*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 136, fig. 74.

D.1/7, P.1/8, V.6, A.11-13, C.16.

Material examined : 6 exs., 4.7 to 19.5 cm, Nongkong river, Bordumsa, Tirap Dt, 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.0 to 6.2 in total length, upper jaw longer with gape of mouth less than half of head length, median longitudinal groove wide, extending to base of occipital process; 8 barbels maxillary pair extending beyond caudal base, pectoral spine serrated, adipose dorsal fin long.

Colour : Leaden back with yellowish abdomen and cheeks, a black shoulder spot and a dark spot at the base of dorsal fin (casually seen), a bluish band along the lateral line.

Size : grows to 45.0 cm in length.

Distribution : All over India.

Elsewhere : Pakistan, Bangladesh, Myanmar, Thailand, Malayasia. It was recorded in the Tirap Dt. of Arunahcal Pradesh.

Remarks : Maxillary barbels do not extend beyond the anal fin.

97. *Mystus vittatus* (Bloch)

1797. *Silurus vittatus* Bloch, *Ichthyol. Hist. Nat.* 11 : 40. pl. 371. fig. 2 (type locality : Tranquebar).
 1985. *Mystus vittatus*, Sen, *Fish fauna of Assam and the neighbouring N. E. States of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 139, fig. 76.

D.1/7, P.1/9, V.6, A.9-12, C.17.

Materials examined : 7 exs., 4.5 to 11.7 cm, Lohit R., Lohit Dt., T. K. Sen & Party.

Diagnostic characters : Length of head 4.7 to 5.0 in total length, median longitudinal groove extends to mid way behind post orbit, occipital

proces rough, 8 barbels, maxillary extending to pelvics; teeth in a semilunar band across the palate. dorsal spine finely serrated, half as long as head, adipose dorsal base usually of the same length as the interspace between the two fins, pectoral serrated.

Colour : Silvery with bright golden tinge when alive, 5 narrow black bands on the body above and below the lateral line, a black shoulder spot present.

Size : Attains to 20.0 cm in length.

Distribution : Throughout India; Bangladesh, Pakistan, Malaya, Thailand and Sri Lanka. It was recorded in the Lohit district of Arunachal Pradesh.

Remarks : Most commonly found (also commercially important specially in West Bengal) cat fish in ponds, tanks, beels, rivers etc.

98. *Mystus menoda menoda* (Ham.)

1822. *Pimelodus menoda* Hamilton, *Fish. Ganges*. : 203. 379. pl. 1. fig. 72 (type locality : Kosi, Mahanadi. N. Bihar and Bengal).
 1985. *Mystus menoda menoda*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 137, fig. 74.

D.1/7, P.1/9, V.6, A.11-13, C.17.

Material examined : 4 exs., 6.5 to 8.7 cm, Lohit River, Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4 to 4.6 in total length, maxillary barbels reaching to end of pelvic, median longitudinal groove reaching occipital process in young but not in adult, small eyes, snout slightly flat, villiform teeth in band in jaws, vomerine crescentic, continuous; dorsal fin as high as body with a spine serrated internally in its upper half, its origin being nearer to adipose dorsal than to tip of snout; pectoral with a strong spine as long as head and serrated (20-23) internally, rugose externally.

Colours : Greyish brown above, dull white beneath, fins greyish stained with black, several vertical black spots along anterior portion of lateral line, but without any punctuated marks.

Size : Grows to 30.0 cm in length (TL).

Distribution : Orissa, Assam, West Bengal, N. Eastern India, Arunachal Pradesh (New record) (Lohit Dt.).

Remarks : The occipital process is long, thin and lies deep under the skin but does not reach the basal bone of the dorsal fin.

99. *Mystus bleekeri* (Day)

1846. *Bagrus keletius* (nec Valenciennes) Bleeker. *Nat. Geeneesk Arch. Ned. Ind.*, (2) : 135 (type locality : Bengal).

1985. *Mystus menoda menoda*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 136.

D.1/7, P.1/9,-10, V.6, A.9-10, C.17.

Material examined : 1 ex., 9.5 cm, Ruksin, Sille, Sille R., E. Siang Dt., 24.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.2 to 5.5 in total length, eye diameter 4.5 in head length, snout obtuse, gape of mouth equals to half of the head length median longitudinal groove shallow and reaching to base of occipital process; barbels 8, maxillary reach anal fin; pectoral spine serrated, stronger than dorsal; origin of adipose dorsal just behind the rayed dorsal.

Colour : Brownish grey in colour, two light longitudinal bands below the lateral line.

Size : Grows to 15.0 cm in length (TL).

Distribution : North Indian Gangetic waters, Naga hills, Assam, Manipur, West Bengal, Arunachal Pradesh (New record) (E. Sian Dt.).

Elsewhere : Bangladesh, Pakistan, Myanmar & Sumatra.

Remarks : Inhabits lakes, tanks and rivers being caught in traps and drag nets.

Family SILURIDAE

Large sized, elongated with a compressed body; four or six barbels, gill-openings very wide, teeth on premaxillaries, mandible and prevomer,

depressible; adipose dorsal fin absent, paired fins laterally inserted, pectoral fin with a strong spine occasionally serrated; anal fin very long, caudal fin rounded to poorly forked, lateral line straight and complete.

Key to the genera of the family SILURIDAE

1. Cleft of mouth very deep extending beyond eye posteriorly, maxillary barbels longer, reaching beyond ventral fin, caudal fin poorly forked with upper lobe longer. *Wallago* Bleeker
- Cleft of mouth not deep reaching only anterior part (margin) of eye, maxillary barbels shorter not reaching anal fin. 2
2. Caudal fin bilobed, dorsal outline more or less straight only slightly humped. *Ompok* Lac.
- Caudal rounded, dorsal out line bending-anterior part of back convex and posterior part concave, dorsal fin rudimentary, eye nearer to cleft of mouth, gape of mouth extending to anterior margin of eye. *Kryptopterus* Bleeker

Key to the species of the genus *Ompok*

1. Maxillary barbels longer than head, extending up to or beyond anal fin. *O. bimaculatus* (Bloch)
- Maxillary barbels shorter than head, not extending up to anal fin. 2
2. Anal fin with 22 to 56 rays. *O. pabda* (Ham.)
- Anal fin with 66 to 71 rays. *O. pabo* (Ham.)

Genus *Kryptopterus* Bleeker, 1858

1858. *Kryptopterus* Bleeker (189). *Acta. Soc. Indo-Neerl. (Siluri)*, vol. 4 : 21, 255, 283 (Type *Kryptopterus micropus* (Bleeker) = *Silurus kryptopterus* Bleeker).

100. *Kryptopterus indicus* Datta, Barman and Jayaram

1987. *Kryptopterus indicus* Datta, Barman and Jayaram, *Bull. Zool. Surv. India*, 8(1-3) : 29-31, fig. 1.

D.0/1, P.1/11, V.8, A.3/85, C.17.

Material examined : 1 ex., 21.8 cm, Horn bill point, Namdapha Wildlife Sanctuary, Namdapha R., Arunachal Pradesh, 18.4.81, S. Biswas & S. Saha.

Diagnostic characters : Length of head 5.8 in SL, depressed head, abdomen rounded, body laterally compressed, rudimentary dorsal, anterior part of body concave eye nearer to cleft of mouth, subequal jaws, maxilla over hanging, gape of mouth extending near to the anterior border of eye, maxillary barbel tip filamentous, mandibular barbel half the length of head, pelvic shorter than pectoral, vent with a papilliform appendage, anal fin continuous with caudal fin.

Colour : Blackish dorsally and whitish laterally and below with minute spots (black) all over the body.

Size : Reported maximum standard length being 21.8 cm.

Distribution : Arunachal Pradesh (Namdapha river, Namdapha Wildlife Sanctuary) Tirap Dt.

Remarks : It is considered to be an off-shoot of Indo-chinese element in the Indian fauna.

Genus *Ompok* Lacepede, 1803

1803. *Ompok* Lacepede, *Hist. Nat. Poiss*, Part 2 : 17, pl. 364 (type locality : Malabar).

101. *Ompok pabda* (Ham.)

1822. *Silurus pabda* Hamilton, *Fish, Ganges* : 950, pl. 25, fig. 47 (type locality : Bengal).

1985. *Ompok pabda*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 142.

D.4, P.1/11-13, .7-8, A.52-57(2-3/50-54), C.17-19.

Material examined : 3 exs., 12.5 to 18.4 cm, Dibru river, E. Kameng Dt., 12.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 to 5.6 in total length, eye diameter 5.5 in head length, maxillary barbels shorter than head, not

extending up to base of anal fin, 2 pairs of barbels, anal long, continuous; caudal forked with rounded lobes.

Colour : Usually silvery glossed with gold with a black shoulder spot above middle of pectoral fin and another generally colsed to base of caudal fin, silvery green with yellowish tinge, dark back fading to silver on abdomen, anal and caudal fins golden yellow, when alive.

Size : Grows to 17.2 cm in length.

Distribution : India.

Elsewhere : Pakistan, Bangladesh, Myanmar. It was recorded in the E. Kameng Dt. of Arunachal Pradesh.

102. *Ompok bimaculatus* (Bloch)

1797. *Silurus bimaculatus* Bloch, *Ichthyol. Hist. Nat. Poiss*. Part 2 : 17, pl. 364.

1985. *Ompok bimaculatus*, Sen, *Fish fauna of Assam & neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 141, fig. 77.

D.4, P.1/12-14, V.8-9, A.61-76(2-3/59-73), C17-18.

Material examined : 4 exs., 9.5 to 17.7 cm, Gagra & Gai rivers, Likabali, W. Siang Dt., 14.12.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.0 to 7.0 in total length, eye diameter 4.0 to 4.5 in head length, maxillary barbels longer than head, extending up to anal fin; mandibular barbels rudimentary, short dorsal without spine, much nearer to snout; long anal fin continuous, caudal fin forked with upper lobe longer.

Colour : Silvery shot with purple, a black shoulder spot, dorsal side greenish dark with a wash of golden yellow when alive.

Size : Grows to 45.7 cm in length.

Distribution : India.

Elsewhere : Pakistan, Bangladesh, Sri Lanka, Thailand, Melaya, Yunan. It was recorded in the W. Siang Dt. of Arunachal Pradesh.

Remarks : Found to live in rivers, canals, lakes, ponds etc. An esteemed food fish popularly known as 'Butter fish'

103. *Ompok pabo* (Ham.)

1822. *Silurus pabo* Hamilton, *Fish Ganges*, : 153, pl. 17, fig. 48 (type locality : Brahmaputra R., Assam).

1985. *Ompok pabo*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 143.

D.5, P.1/14, V.9-10, A.66-71(3/63-68), C.17.

Material examined : 5 exs., 9.5 to 15.5 cm, Dikrai river, Sejusa, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 to 5.2 in total length, eye diameter 4.0 to 4.5 in head length, dorsal fin short, spineless; 4 barbels, maxillary barbels shorter than head, not extending up to anal fin; pectoral spine serrated or rarely smooth.

Size : Grows to 24.5 cm in length.

Colour : Silvery with a faint shoulder spot.

Distribution : India, Assam, West Bengal.

Elsewhere : Bangladesh. It was recorded in the E. Kameng dt. of Arunachal Pradesh.

Remarks : *O. pabo* can be easily distinguished from *O. bimaculatus* & *O. pabda* by its large number of anal fin rays.

Genus *Wallago* Bleeker, 1851

1851. *Wallago* Bleeker, *Nat. Tijdschr. Nederl. Inde.* 2 : 202 (type *Wallagodinema* Bleeker).

104. *Wallago attu* (Sch.)

1801. *Wallago attu* Schneider, *Syst. Ichthyol.*, : 378, pl. 75 (type locality : Malabar).

1985. *Wallago attu*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 145, fig. 79.

D.5, P.1/13-15, V.8-10, A.86-93(4/82-89), C.17.

Material examined : 2 exs., 18.5 to 22.8 cm,

Ruksin, 12 km SW of Sille, Sille R., E. Siang Dt., 24.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, eye diameter 7.0 to 8.0 in head length, small eyes above level of corner of mouth, not visible from under side of head; 2 pairs of barbels, dorsal fin without spine, adipose dorsal absent, anal fin very long, free from caudal fin.

Colour : Uniform silvery above becoming dull white below; a light greenish wash on the back and cream colour on the sides with a faint orange-yellow band along the lateral line.

Size : Grows to 2 meters in length (recorded).

Distribution : India.

Elsewhere : Bangladesh, Pakistan, Sri Lanka, Myanmar, Thailand, Malaya, China. It was recorded in the E. Siang district of Arunachal Pradesh.

Remarks : An esteemed rich oil containing fish liked by many. It is also liked by many because of its spineless flesh. Fried pieces of this fish were offered to the author in a local festival by the tribal people (Captain) along with customary drink called 'apang'. This fish is particularly popular in Assam and Bihar.

Family SCHILBEIDAE

Medium to large sized fishes with a compressed body, nostrils widely separated, barbels two, four or eight, fairly well developed; wide gill opening extending to lateral line, rayed dorsal and adipose dorsal fins may be present or absent, pectoral with strong spine generally serrated; long anal fin confluent with caudal which is worked.

Key to the genera of the family SCHILBEIDAE

1. Rayed dorsal fin inserted above half of pectoral fin with 5 or 6 rays and a spine, long anal fin with 33 to 46 rays, part of the abdomen more or less keeled, eyes large. *Pseudotropius*
- Rayed dorsal fin absent, long anal fin with 58

to 90 rays, abdomen not keeled, eyes small.

.....*Ailia*

Genus *Ailia* Gray, 1831

1831. *Ailia* Gray, Zool. Miscellany. p. 8 (type species *Malapterus* (sic) (*Ailia*) *bengalensis* Gray = *Malapterurus coila* Hamilton). Hora, 1941. *Rec. Indian Mus.* 43 : 10 (review).

105. *Ailia coila* (Ham.)

1822. *Malapterurus coila* Hamilton, *Fish. Ganges*. : 158, 375. (type locality : Bengal).
1985. *Ailia coila*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 146, fig. 80.

D.O, P.1/14-16, V.6, A.58-71, C.19.

Material examined : 8 exs., 10.6 to 16.7 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 17.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 6.0 to 7.0 in total length, diameter of eye 3.5 to 3.7 in head length, upper jaw longer and overhung by the snout, anal fin with 58 to 78 rays, four pairs of barbels, dorsal fin absent, a small adipose dorsal.

Colour : Smooth skin, silvery, some of the fins edged with gray.

Size : Grows to 17.7 cm in length.

Distribution : India.

Elsewhere : Pakistan, Bangladesh. It is mainly confined to rivers Ganga, Brahmaputra, Jamuna, Mahanadi and Indus (Jayaram, 1977). It was recorded in the Tirap Dt. of Arunachal Pradesh.

Remarks : It is a surface and midwater fish living in shoals in large rivers (Jayaram, 1977). An excellent tasty fish but very difficult to preserve as this fish gets easily spoiled with slightest rise of temperature or rough handling. Sometimes preserved in saline water by the fisherman for extra hardening (West Bengal).

Genus *Pseudeutropius* Bleeker, 1862

1862. *Pseudeutropius* Bleeker, *Versl. Akad. Amsterdam*. 14 : 398 (type *Entropius brachypterus* Bleeker). Hora,

1941. *Rec. Indian Mus.*, 43 : 100 (systematic position clarified).

106. *Pseudeutropius atherinoides* (Bloch)

1794. *Silurus atherinoides* Bloch, *Ausland. Fische.* 8 : 48, pl. 371. fig. 1 (type locality : Tranquebar).
1985. *Pseudeutropius atherinoides*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper no. 64* : 150.

D.1/5-6/0, P.1/7, V.6, A.33-41, (3/30-38).

Material examined : 3 exs., 7.5 to 12.5 cm, Siue river, E. Siang dt., 22.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 5.0 to 5.5 in total length, eye diameter 2.5 to 3.0 in head length, no adipose lids with free orbital margins; median longitudinal groove on the head broad, shallow and reaches to the base of the occipital process; maxillary longer than the head, caudal deeply forked, pectoral spine larger and stronger than the dorsal, a small adipose dorsal present, teeth on palate in two narrow separate crescentic bands.

Colour : Silvery body, greenish along the back, with 3/4 longitudinal bands on sides formed by black dots, a round black spot at the caudal base.

Size : Attains to 15.0 cm in length.

Distribution : Throughout India.

Elsewhere : Myanmar, Pakistan, Bangladesh, 'Not so far recorded below the Cauvery system' (Jayaram, 1977). It was found in the E. Siang district of Arunachal Pradesh.

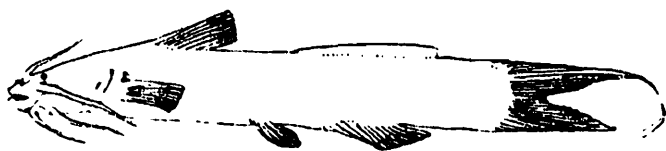
Remarks : Commonly found in rivers, lakes, canals. Usually a black spot at the nape and in front of the base of dorsal fin.

Family AMBLYCIPITIDAE

A pair of distinct nasal barbels present. 4 pairs of barbels, lateral line absent, gill membranes free from isthmus. Only one genus *Amblyceps* Bleeker with one species.

Genus *Amblyceps* Blyth, 1858

1858. *Amblyceps* Blyth, *Proc. Asiat. Beng.* 27 : 218 (type *Pimelodus mangois* Hamilton).

107. *Amblyceps mangois* (Hamilton)Fig 13. *Amblyceps mangois* (Ham.)

1822. *Pimelodus mangois* Hamilton, *Fish. Ganges*, : 199, 379 (type locality : N. Bihar).

1985. *Amblyceps mangois*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 152, fig. 81.

D.1/6/0, P.1/7, V.6, A.9-12(2-3/7-9), C.19.

Material examined : 2 exs, 9.5 to 11.0 cm, hill-stream nullah, Shergaon, W. Kameng Dt., 30.10.87., T. K. Sen & Party.

Diagnostic characters : Length of head 6.3 in total length, small eyes, wide mouth, lower jaw slightly longer, body tapers ununiformly from head to tail, caudal fin forked, no lateral line, adipose dorsal fin low with broad base.

Colour : Brownish gray, lighter beneath.

Size : The largest recorded specimen being 12.5 in length.

Distribution : All along the base of the Himalayas, West Bengal, Arunachal Pradesh (W. Kameng Dt.), Bihar, Assam.

Elsewhere : Nepal, U. Myanmar.

Remarks : In general aspects it looks like that of *Olyra* but can be easily distinguished by the number of anal rays. Body almost parallel-sided in the vertical plane. Some forms are with caudal fins deeply forked and some forms are with caudal fins slightly forked (Shaw and Shebbeare, 1937).

Family SISORIDAE

Generally small to median sized fishes with head and anterior part of body compressed, an adhesive apparatus on thorax may be present or absent, four pairs of barbels, rayed dorsal short with or without a spine, adipose dorsal smooth and free generally but sometimes may be confluent with caudal, rudimentary in the form of short spine

(Sisor); paired fins inserted horizontally, may or may not be plaited below; short anal fin, pectoral may be with or without spine. Caudal fin deeply forked, emarginate, truncate or rounded; complete lateral line.

Key to the genera of the family SISORIDAE

1. An adhesive apparatus on ventral surface of body present, distinct and well developed *Glyptothorax* Blyth
- An adhesive apparatus on ventral surface of body absent, if present, faintly developed and indistinct 2
2. Serrations along outer margin of pectoral spine divergent or a combination of retrose and antrore teeth *Erethistoides* Hora
- Serrations on pectoral spine either along inner edge only or along both edges 3
3. Mandibular pair of barbels inserted on a transverse line at different levels, gill-membranes confluent with each other and also with isthmus, rayed dorsal with 6 to 10 rays and a spine *Nangra* Day
- Mandibular pair of barbels inserted on a transverse line at the same level 4
4. Gill membranes free from each other postero-laterally but broadly united with isthmus, rayed dorsal fin with more than 6 rays *Gagata* Bleeker
- Gill membranes united with each other and also with isthmus; gill-openings as an aperture above pectoral base 5
5. Teeth small, pointed in bands on jaws; rayed dorsal fin with 7 rays and without any spine *Euchiloglanis* Regan
- Teeth large, movable, oar shaped, flattened distally and directed backwards in patches on jaws only 6
6. Rayed dorsal fin with 6 or 7 rays and without any spine; gill-openings restricted to dorsal surface above pectoral base, adipose dorsal long, may be confluent with caudal fin *Exostoma* Blyth

- Rayed dorsal fin with 6 rays and with a spine; gill-membranes united with each other and also with isthmus 7
- 7. Head short, anteriorly depressed, provided with a broad, oval, adhesive apparatus ventrally composed of a series of transverse plates, 4 pairs of barbels *Pseudecheneis* Blyth
- Head moderate, anteriorly depressed with numerous rough ridges, covered by very thin skin, 6-pairs of barbels, five plates on either side of dorsal fin present; 6 elevated scale-like plates along median line behind dorsal fin caudal fin truncate, upper caudal ray prolonged into a very long filament *Sisor* Ham.

Genus *Erethistoides* Hora, 1960

1950. *Erethistoides* Hora, *Rec. Indian Mus.* 47 : 190 (type *Erethistoides montana* Hora, by original designation).

108. *Erethistoides montana* Hora

1949. *Erethistoides montana* Hora, *Rec. Indian Mus.* 47 : 191, pl. 12, figs. 10-12 (type locality : Tangla, Darrang Dst., Assam).
1981. *Erethistoides montana montana* Jayaram, *F. W. Fishes of India*, Handbook No. 2, Calcutta, Z. S. I. : 244.
1985. *Erethistoides montana montana*. Sen. *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India, Occ. Paper no. 64* : 157.

D.1/5, A.9, P.1/6, V.6, C.13.

Material examined : 3 exs, 2.5-3.7 cm, from a small hill-stream, Seppa, E. Kameng Dt., 17.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.2 in total length, body elongated, greatly depressed; body covered with small backwardly directed spines (dorsal surface), abdomen flat and horizontal, snout projecting like a broad hood in front of mouth; small eyes, dorso-laterally situated in posterior half of head; pectoral spine strongly serrated along outer edge with teeth directed towards tip of spine in distal half.

Colour : Dusky in general, whitish below; body with three bands, dorsal and caudal fins are provided with bands.

Size : Grows to 4.0 cm in length.

Distribution : Assam, Arunachal Pradesh (E. Kameng Dt.), Darjeeling-Himalayas.

Remarks : Spine tips produced into a filiform process. Lower portion of the emarginate caudal fin greatly produced, but not filiform.

Key to the species of the genus *Euchiloglanis*

1. Pectoral fin extending 3/4 or more of distance from its base to base of pelvics; caudal peduncle 2.01 to 2.66 as long as deep; adipose dorsal fin 2.3 to 3.2 times of dorsal fin base.
..... *E. kamengensis* Jayaram
- Pectoral fin almost reaching pelvics, caudal peduncle 1.0 to 1.2 as long as deep, adipose dorsal fin 3.25 to 4.20 times of dorsal fin base.
..... *E. hodgarti* (Hora)

Genus *Euchiloglanis* Regan, 1907

1874. *Chimarrichthys* Sauvage, *Rev. et. Mag. Zool.* 25 : 332 (type species *C. davidi* Sauv.).
1907. *Euchiloglanis* Regan, *Rec. Indian Mus.*, 1 : 158 (substitute name for *Chimarrichthys*).

109. *Euchiloglanis hodgarti* (Hora)



Fig 14. *Euchiloglanis hodgarti* (Hora.)

1923. *Glyptosternum hodgarti* (Hora), *Rec. Indian Mus.*, 25 : 38, pl. 2, figs. 1, 2, 3 [type locality : Nepal (Pharping)].
1966. *Euchiloglanis hodgarti*, Menon & Sen., *Sci. & Cult.*, 32 : 211-212.
1985. *Euchiloglanis hodgarti*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India, Occ. Paper No. 64* : 160.

D.1/6/0, P.1/17, V.6, A.2/6, C.13.

Material examined : 1 exe, from a small hill-stream nullaha near Sela Pass (Jang), Tawang Dt., 20.10.89; E. L. Yeshi.

Diagnostic characters : Length of head 5.0 in total length, body tapering towards the tail, flat and wide; head with 4 pairs of barbels, flattened belly between the horizontal pectoral fins, labial folds broadly interrupted, not reflected round the mouth; chest appears to be a flat adhesive surface bounded by the striated rays of pectoral and pelvic fins, maxillary barbels wide and spreading.

Colour : Brown all over, dorsal surface and sides of body including ventral surface and fins pale.

Size : Grows to maximum 5.7 cm in length.

Distribution : India : Arunachal Pradesh (New record) (Tawang Dt.), U. P. (Kali river, Darchula), Meghalaya (Abor-hills), West Bengal (Darjeeling Dt.).

Elsewhere : Nepal.

Remarks : Shaw & Shebbeare (1938) reported a number of specimens of this species from North Bengal (Riyang and Rangbi rivers from 2000 to 5000 ft. elevation rapid mountain streams with stony beds).

110. *Euchiloglanis kamengensis* Jayaram

1963. *Euchiloglanis kamengensis* Jayaram, *J. Zool. Soc. India*, 15(1), p. 85 (type locality : Norgum river at Kalaktang, Kameng Frontier Division, NEFA).

D.2/5, P.1/11, 14-15, V.1/5, A.6-7, C.19.

Material examined : 1 ex., Norgum river, E. Kameng Dt., 9.7 cm in length, 12.10.87, T. K. Sen & Party.

Diagnostic characters : Body tapering towards the tail, flat and wide; head with 4 pairs of barbels, pectoral fin with 16 branched rays, adipose dorsal fin short, upper jaw teeth continuous.

Colour : Grey over dorsal surface of head and body, lighter beneath up to anal opening, caudal fin with a dull whitish band at about its middle region.

Size : Maximum length 16.5 cm in SL.

Distribution : Arunachal Pradesh (Kameng district Norgum and Dupla Ko rivers).

Remarks : dorsal and pectoral fins without spines, caudal fin obliquely truncate or somewhat rounded.

Key to the species of the genus *Exostoma*

1. Caudal fin truncate or slightly emarginate type, adipose dorsal fin free from caudal fin, a distinct black spot at the base of pectoral fin.
..... *E. stuarti* (Hora)
- Caudal fin forked or deeply emarginate type, pectoral fins with 10 branched rays, gill openings greatly restricted extending to above base of pectorals, no black spot at the base of pectoral fin. *E. berdmorei* Blyth

Genus *Exostoma* Blyth, 1860

1860. *Exostoma* Blyth, *J. Asiat. Soc. Beng.*, 29 : 154 (type species *E. berdmorei* by original designation).

1952. *Exostoma* Hora & Silas, *Rec. Indian Mus.*, 49 : 23 (revision).

111. *Exostoma berdmorei* Blyth

1960. *Exostoma berdmorei* Blyth, *J. Asiat. Soc. Beng.*, 29 : 155 (type locality : Tenasserim).

1979. *Exostoma berdmorei*, Jayaram, *Rec. zool. Surv. India. Misc. Pub. Occ. Paper no. 14* : 55.

D.1/6, P.1/10, V.1/5, A.6.

Material examined : 1 ex., 7.5 cm, from a small hill stream at Lumla, Tawang Dt., 20.10.89, E. L. Yeshi.

Diagnostic characters : Body elongated, flattened ventrally, head covered with so soft skin, depressed, as broad as long, 5.0; depth of body 9-10 in standard length; pointed snout, upper jaw the longer, maxillary barbels with broad bases reaching pectoral base, gill-openings narrow, extending above the first ray of the pectoral; pectorals broad, low, not reaching pelvics without a strong spine.

Colour : Olive brown with obscure dark bands; fins dark, abdomen pale.

Size : Attains 10.2 cm in length.

Distribution : Arunachal Pradesh (New record) (Tawang Dt.).

Elsewhere : Myanmar (Tenasserim).

Remarks : This is first time recorded from Arunachal Pradesh (India); it is a Burmese form (Tenasserim), migrated to A. P., thereby extending its known range of distribution from Burma to India (A. P.)

112. *Exostoma stuarti* (Hora)

1919. *Glyptsternon stuarti* Hora, *Rec. Indian Mus.*, 25 : 39, (type locality : Nam Yak river at Tanga in the northern frontier of Burma).

1952. *Exostoma stuarti*, Hora & Silas, *Rec. Indian Mus.*, 49 : 26 (synonymy, revision).

1985. *Exostoma stuarti*, Jayaram, *Rec. zool. Surv. India, Occ. Paper No. 14* : 56.

D.1/5, P.11, V.6, A.5.

Material examined : 2 exs, 3.5 to 4.0 cm, Roing, Dibang R., Dibang valley Dt., 26.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.5 in total length, head nearly as long as broad, snout depressed, broadly triangular; maxillary barbels with broad bases, reaching the base of the occipital process, rayed dorsal equal to the length of head, without a strong spine.

Colour : Uniformly grey on sides and above. A well marked black spot present at the base of pectoral fin.

Size : Attains maximum size 4.7 cm in SL.

Distribution : Arunachal Pradesh (New records) (Dibang Valley Dt.).

Elsewhere : Myanmar (Nam Yak river at Tanja on the northern frontier of Myanmar).

Remarks : This species has further extended its known range of distribution from Burma to India (Arunachal Pradesh) through the nearest N. E. migratory route.

Key to the species of the genus *Glyptothorax*

1. Adhesive apparatus on the thorax large as long as broad, maxillary barbels reach first third of the pectorals, under surface of head without

elevated spots, no bands on body, all barbels shorter than head length
..... *G. striatus* (McClelland.)

– Adhesive apparatus on thorax longer than broad without central pit, maxillary barbels reaching middle of pectorals 2

2. Body with three white pale yellow stripes, a well marked dirty white longitudinal streak along the back from occiput to caudal base, head broadly pointed *G. trilineatus* Blyth

– Body with two lighter longitudinal bands, one along the lateral line and the other above, head greatly depressed, longer than broad; maxillary barbels with broad bases, reaching 3rd of 4th pectoral ray *G. annandalei* Hora

Genus *Glyptothorax* Blyth, 1860

1860. *Glyptothorax* Blyth, *J. Asiat. Soc. Bengal*, 29 : 154 (type species *Glyptothorax trilineatus* Blyth. by original designation).

113. *Glyptothorax annandalei* Hora

1923. *Glyptothorax annandalei* Hora, *Rec. Indian Mus.*, 25 : 14, pl. 14, fig. 3 (type locality : Nicrolay stream, Bhavani R., Nilgiris).

1979. *Glyptothorax annandalei*, Jayaram, *Rec. zool. Surv. India, Occ. Paper no. 14* : 34, fig. 30A.

D.1/6, P.1/9, V.1/5, A.10.

Material examined : 1 ex., 6.7 cm, from a small hill-stream at Bomdila, W. Kameng Dt., 1.11.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.2 in total length, body elongated, head greatly depressed, under surface of head papillated, depressed snout, small eyes, maxillary barbels with broad bases, occipital process reaching the basal bone of dorsal, thoracic adhesive apparatus longer than broad, without any pit.

Colour : Dark grey above becoming lighter below with 2 lighter longitudinal bands, one along the lateral line and the other above; adhesive apparatus yellowish.

Size : Grows to 11.5 cm in length.

Distribution : Western Ghats, Peninsular India, the Vindhyas, the Rihand, Arunachal Pradesh (New record) (W. Kameng Dt.).

Elsewhere : Nepal-Himalayas.

Remarks : This species might have migrated to Arunachal Pradesh through Kosi drainage system of the Nepal-Himalayas.

114. *Glyptothorax striatus* (McCII.)

1842. *Glyptostern striatus* McClelland, *Calcutta J. nat. Hist.*, 2 : 587, pl. 6, figs. 1, 2, (type locality : Kosyah mountains).

1979. *Glyptothorax striatus*, Jayaram, *Rec. zool. Surv. India, Occ. Paper No. 14* : 46, fig. 28.

1985. *Glyptothorax striatus*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 163.

D.1/6/0, P.1/10, V.1/5, A.2/9, C.17.

Material examined : 3 exs., 9.5 to 15.0 cm, Bankum nullaha, Sille, E. Kameng Dt., 23.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 4.7 in total length, depressed head nearly as broad as long, snout depressed, broadly pointed, upper jaw longer, maxillary barbels with broad base reaching middle of pectorals, thoracic adhesive apparatus large, as long as broad; pectorals low horizontal, pelvics reaching anal origin.

Colour : Brown uniformly.

Size : Largest specimen recorded being 21.6 cm in length.

Distribution : Arunachal Pradesh (New record) (E. Kameng Dt.), Meghalaya, Assam and Eastern Himalayas.

Remarks : Occipital process 3 times as long as broad.

115. *Glyptothorax trilineatus* Blyth

1860. *Glyptothorax trilineatus* Blyth, *J. Asiat. Soc. Beng.*, 29 : 154 (type locality : Tenasserim, Burma).

1979. *Glyptothorax trilineatus*, Jayaram, *Rec. zool. Surv. India, Occ. Paper No. 14* : 48.

1985. *Glyptothorax trilineatus*, Sen, *Fauna of Assam and the neighbouring N. E. states of India, Occ. Paper No. 64* : 163.

D.1/6-7, P.1/10-11, V.1/5, A.1/9-10, C.16-18.

Material examined : 2 exs, 8.7 to 11.5 cm, Deban North, Noa Dehing R., Namdapha Wildlife Sanctuary, Tirap Dt., 29.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 6.0 in total length, small eyes, 7.5 to 9.7 in head length; inferior horizontal mouth, upper jaw longer, papillated lips, maxillary barbels reaching middle of pectorals, thoracic apparatus longer than broad without a central pit, dorsal with a weak spine finely serrated at its upper part or entire internally, low pectorals with broad spines serrated internally.

Colour : Chestnut brown above, pale yellow below with a well marked dirty white longitudinal streak along the back from occiput to caudal base, a second along the lateral line and the third one along the abdominal margin.

Size : Grows to 14.0 cm in length.

Distribution : Arunachal Pradesh (New record) (Tirap Dt.).

Elsewhere : Manipur; Myanmar, Thailand.

Remarks : This species is the second largest member of this genus.

Genus *Gagata* Bleeker, 1858

1858. *Gagata* Bleeker, *Ichth. Arch. Ind. Prod.*, 1 : 204 (type *Gagata typus* Blk. = *Pimelodus gagata* Ham.).

116. *Gagata cenia* (Ham.)

1822. *Pimelodus cenia* Hamilton, *Fish. Ganges*, : 174, 376, pl. 31, fig. 57 (type locality : North Bengal).

1979. *Gagata cenia*, Jayaram, *Rec. zool. Surv. India, Occ. Paper no. 14* : 10.

1985. *Gagata cenia*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper no. 64* : 161.

D.1/6/0, P.1/7-9, v.1/5, A.2-3/10-12, C.17-19.

Material examined : 5 exs., 7.5 to 9.7 cm, Namdapha Wildlife Sanctuary, Noa Dihing R., Tirap Dt., 22.12.83, S. Biswas & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, body flattened ventrally, head covered with soft skin, distinct snout with overhanging mouth, small mouth, horizontal, crescentic; thick lips. Fleshy and continuous at the angles, maxillary and nasal barbels shorter and minute respectively, median longitudinal groove on head extending to the occipital process, dorsal with a finely serrated spine, pectoral with a strong serrated spine, smooth skin.

Colour : Yellowish brown above becoming silvery below; 3 dark bands on head, 4 on back descending up to lateral line.

Size : Grows to 15.2 cm in length.

Distribution : Arunachal Pradesh (Tirap Dt.), Assam, West Bengal, Bihar, Orissa, Punjab, U.P.

Elsewhere : Myanmar, Bangladesh, Nepal, Pakistan.

Remarks : Seven dark bands over body descending up to lateral line. Pectoral fin plain. Fishery value nil.

Genus *Nangra* Day, 1877

1877. *Nangra* Day, *Fish India*, : 493 (type species *Pimelodus nangra* Hamilton, by original designation).

117. *Nangra viridescens* (Hamilton)

1822. *Pimelodus viridescens* Hamilton, *Fish Ganges*, : 173, 376, pl. 11, fig. 56 (type locality : North Bengal).

1979. *Nangra viridescens*, Jayaram, *Rec. zool. Surv. India*, *Occ. Paper No. 14* : 14.

D.1/6, P.1/8, V.1/5, A.3/8, C.18-21.

Material examined : 6 exs., 4.5 to 6.3 cm, Dikrai river, Sejusa, E. Kameng Dt., 10.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.5 to 5.0 in total length, median longitudinal groove on head as a single fontanelle and reaching base of occipital process, a black blotch on occiput, all barbels shorter than head, finger like processes between bases of inner mandibular barbels present.

Colour : Coppery glossed with gold on sides,

a black blotch on occiput, 3 or 4 black bands along back descending along sides up to lateral line.

Size : Maximum size 8.5 cm in length.

Distribution : Arunachal Pradesh (New record) (E. Kameng Dt.), Bihar, West Bengal, Assam.

Elsewhere : Bangladesh.

Remarks : A popular food fish among the poorer classes in Bihar (source being Sone river).

Genus *Pseudechensis* Blyth, 1860

1860. *Pseudechenris* Blyth, *J. Asiat. Soc. Beng.*, 29 : 154 (type *Glyptosternon sulcatus* McClland).

118. *Pseudechensis sulcatus* (McClland)

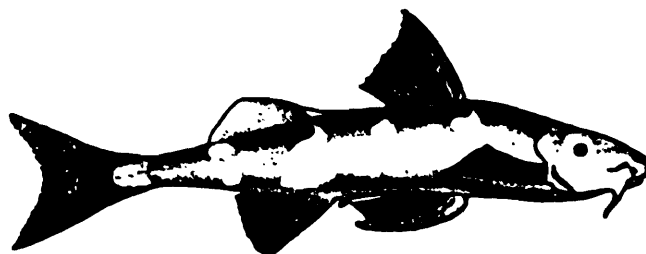


Fig 15. *Pseudechensis sulcatus* (McCl.)

1840. *Pseudechensis sulcatus* McClland, *Calcutta, J. nat. Hist.* 2 : 578, pl. 6 (type locality : Khasi hills, Assam).

1985. *Pseudechensis sulcatus*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India, Occ. Paper no. 64* : 167, fig. 86.

D.1/7/0, P.1/13, V.1/5, A.9-13(2-4/7-9), C.17.

Material examined : 3 exs., 7.5 to 10.4 cm, a hill-stream, Shergaon, W. Kameng Dt., 30.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.0 in total length, small eyes, 12.5 in head length; small mouth, inferior; upper jaw longer, lower lip papillated; median longitudinal groove on head broad, reaching midorbit; broad based maxillary reaching anterior margin of eyes; gill-membranes confluent with broad isthmus, a sucker like, oval, thoracic adhesive apparatus with about 14 lamellae; dorsal with a weak spine, smooth skin,

pectorals low with a flattened serrated spine, caudal emarginate.

Colour : Blackish with large irregular yellowish blotches, fins yellow with black bands.

Size : Attains to 20.0 cm in length.

Distribution : Arunachal Pradesh (W. Kameng Dt.), Assam, West Bengal (Darjeeling Dt.).

Elsewhere : Nepal-Himalayas.

Genus *Sisor* Hamilton, 1822

1822. *Sisor* Hamilton, *Fish. Ganges*, : 208, 379, (type locality : North Bengal and Bihar).

119. *Sisor rabdophorus* Hamilton

1822. *Sisor rabdophorus* Hamilton, *Fish. Ganges*, : 379, 208 (type locality : North Bengal and Bihar).

1979. *Sisor rabdophorus*, Jayaram, *Rec. zool. Surv. India*, *Occ. Paper No. 14* : 58, fig. 5a.

D.1/6, P.1/8, V.7, A.2/4, C.11.

Materials examined : 1 ex, 14.5 cm (TL), a small hill-stream nullah (locally called as Jhentu river), Bogamur village, 10 km from Namsai Camp, Lohit Dt., 18.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 in standard length, elongated and tapering away from a flat head, the most striking feature in this fish is a long filament from the upper edge of the caudal fin which may equal in length of the entire fish, body is protected by bony plates, those on the hinder part of the body are in the form of twelve osseous rings like those of the pipe-fish.

Colour : Blackish above, lighter below.

Size : Grows to 20.0 cm in TL.

Distribution : Arunachal Pradesh (New record) (Lohit Dt.), Assam, Ganga, Yamuna. Not reported from South India.

Elsewhere : Bangladesh, Pakistan (Indus river system).

Remarks : Noted for its long filament from the upper edge of the caudal fin.

Family CLARIIDAE

Head greatly depressed, covered with osseous plates dorsally and laterally forming a case covering a diverticulum of the gill cavity, snout broadly rounded, mouth terminal, fairly wide (transverse); small eyes, dorsolaterally placed; lips fleshy, papillated; upper jaw longer, 4 pairs of barbels, gill membranes deeply notched, partly united with each other, free from isthmus; an accessory respiratory branchial organ attached to second to fourth branchial arches present. Only one genus *Clarius* Scopli with a single species.

Genus *Clarias* Scopoli, 1777

1777. *Clarias* Scopoli, *Introd. Hist. Nat.*, p. 445 (type *Clarias orontis* Gunther).

120. *Clarias batrachus* (Lin.)

1758. *Silurus batrachus* Linnaeus, *Syst. Nat.*, 1, ed. 10 : 305 (type locality : Asia, Africa).

1985. *Clarias batrachus*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India*, *Occ. Paper no. 64* : 168, fig. 87.

D.62-76, P.1/8-11, V.6, A.45-58, C.15-17.

Material examined : 11 exs, 13.5 to 26.7 cm, Dibru river, Sejusa, E. Kameng Dt., 12.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.6 to 6.0 in total length, small eye, 8 in head length; greatest width of head equals its length, upper jaw longer, a long dorsal fin, terminal mouth, transverse; maxillary barbels reach middle or base of pectoral fin, with a finely serrated spine but covered with skin, round caudal, accessory respiratory organ present.

Colour : Reddish brown or greyish black, smooth skinned.

Size : It attains 45.7 cm in length.

Distribution : India.

Elsewhere : Pakistan, Bangladesh, Nepal, Sri Lanka, Burma, Thailand, Malaya, Philippines, Java and Malayasia. It was reported in the E. Kameng District of Arunachal Pradesh.

Remarks : Live on fresh, brackish as well as marshy or muddy waters (dried up tanks, beels, canals, bheries etc. in summer days). Commercially important fish with its known rejuvenating vigor. Special schemes have been introduced by the State Fisheries Directorate, Arunachal Pradesh, for more production.

Family HETEROPNEUSTIDAE

Body elongated, compressed, with greatly depressed head covered with osseous plates; 4 pairs of barbels, small terminal mouth with upper jaw longer, a median longitudinal groove on head with elongated occipital process, wide gill opening, a short, spineless rayed dorsal, no adipose dorsal, pectoral with strong spine, a long anal fin, caudal rounded.

Genus *Heteropneustes* Muller, 1840

1840. *Heteropneustes* Muller, *Arch. Anat. Physiol.* : 115 (type *Silurus fossilis* Bloch).

121. *Heteropneustes fossilis* (Bloch)

1797. *Silurus fossilis* Bloch, *Ichth. Hist. nat. ed. Poiss.*, 11 : 36, pl. 370, fig. 2 (type locality : Tranquebar).

1985. *Heteropneustes fossilis*. Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper no. 64* : 169, fig. 88.

D.6-7, P.1/7, V.6, A.60-79, C.17-23.

Materials examined : 57 exs., 12.6 to 27.3 cm, Tenga river, 4 km from Bomdila, W. Kameng, Dt., 1.11.87, T. K. Sen & Party.

Diagnostic characters : Length of head 5.5 to 7.0 in total length, width of head equals its length, maxillary barbels extending to middle of pectoral or to pelvic base, gill opening wide, gill membranes free from isthmus gill cavity with an accessory respiratory apparatus extending backward to tail region, dorsal much shorter, nearer to snout end than to caudal base; with spine; pectorals not reaching pelvics, with a strong serrated poisonous spine, round caudal.

Colour : Dark purplish brown or leaden brown often with two yellowish lateral bands in juveniles.

Size : Grows to 30.4 cm in length.

Distribution : Freshwaters of India. It was recorded in the W. Kameng District of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Nepal, Burma, Sri Lanka, China and Thailand.

Remarks : A fish of high economic importance. Known for its blood producing properties and rejuvenating vigor. The strong pectoral spine (sharply pointed) may cause poisonous painful wounds and bleeding if not held properly and tactfully.

Family OLYRIDAE

Loach like, small sized, elongated fish with body flattened in front of pelvics and compressed behind, 4 pairs of barbels, very wide gill opening, adipose dorsal fin long, not confluent with either dorsal or caudal; pectoral spine sharp, serrated; anal fin not confluent with caudal which is long, lanceolate or forked. Only one genus *Olyra* with 4 species only.

Key to the species of the genus *Olyra*

1. Upper lobe of caudal fin not very long lower lobe. *O. horai* (Prashad & Mukerji)
- Upper lobe of caudal fin almost twice as long as lower one. 2
2. Body depth 9 to 11 in standard length, anal fin rays 18 to 23. *O. longicaudata* (McCill.)
- Body depth 11 to 12 in standard length, anal fin rays 17 to 18. *O. kempfi* Chaudhuri

Genus *Olyra* McCilland, 1842

1842. *Olyra* McClelland, *J. Nat. Hist., Calcutta*. 2 : 588 (type *Olyra longicaudata* McClelland).

122. *Olyra horai* (Prashad & Mukerjee)

1929. *Amblyceps horai* Prashad & Mukerjee, *Rec. Indian Mus.*, 31 : 173, p. 7, fig. 1.

1985. *Olyra horai* Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper no. 64* : 175, fig. 91.

D.1/7/0, P.1/7, V.1/5, A.10/11, C.17.

Materials examined : 1 ex., 5.6 cm, Phuchung river, Bana, E. Kameng Dt., 21.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 7.0 to 8.0 in total length, subcylindrical, elongated and depressed body; head depressed, covered with skin; broadly rounded snout, small eyes, terminal, transverse mouth with fleshy lips; a row of openpores along the lower jaw margin and a few ones along the cheeks, dorsal without a spine, pectoral not reaching pelvics, with a strong serrated spine; caudal deeply forked.

Colour : Brownish above and paler beneath, minute black dots all over the body.

Size : Grows to 8.4 cm in length.

Distribution : Arunachal Pradesh (E. Kameng Dt.), Meghalaya.

Elsewhere : Myanmar.

Remarks : Live in small hill-stream rivers and rivulets, torrential in nature.

123. *Olyra longicaudata* McClelland

1842. *Olyra longicaudata* McClelland, *J. Nat. Hist. Calcutta*, 2 : 588, pl. 21, fig. 1 (type locality : Khasi hills, Assam).

1985. *Olyra longicaudata*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper no. 64* : 173.

D.8, P.1/6, V.5, A.18-23, C.14-16.

Material examined : 1 ex., 6.3 cm in length, from a hill stream near Khonsa, 5 km from Namsang camp, tirap Dt., 12.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 7.0 in total length, head depressed, cover with soft skin; small eyes, terminal mouth, transverse; sub-equal jaws, fleshy lips maxillary barbels reaching the pectoral base, wide gill openings, dorsal without spine, pectorals not reaching pelvics and with strong spine serated on both sides, lanceolate caudal fin entire, smooth skin, subcylindrical and elongated body.

Colour : Brownish above and pale below.

Size : Attains to 7.3 cm in length.

Distribution : Assam, Arunachal Pradesh (New record) (Tirap Dt.), West Bengal (Darjeeling and Kalimpong).

Elsewhere : Myanmar.

Remarks : Live in torential freshwaters with connection with hill stream rivers it has extended its known range of extension from Assam to Arunachal Pradesh, more or less stretching entire East Himalayas.

124. *Olyra kemp* Chaudhuri



Fig 16. *Olyra kemp* Chaudhuri

1912. *Olyra kemp* Chaudhuri, *Rec. Indian Mus.*, : 443, pl. 11, figs. 4, 4a, 4b (type locality : Mangaldoi, Assam).

1985. *Olyra kemp*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper no. 64* : 174, fig. 90.

D.7/0, P.1/4-6, V.6, A.17-19, C.15-16.

Material examined : 2 exs., 4.6 to 5.3 cm, Ruksin, 12 km Sille R., of Sille, E. Siang Dt., 24.11.88, H. P. Sanyal & Party.

Diagnostic characters : Length of head 7.5 in total length, head depressed, covered with skin; sub-cylindrical, elongated and compressed; spatulate snout, terminal mouth, transverse; upper jaw slightly longer; maxillary reaching to pectoral end, wide gill-opening; dorsal without spine, maxillary barbels longest, reaching at least to pectoral base and sometimes beyond the end of it, forked caudal with upper lobe longer.

Colour : Brown body with 3 longitudinal bands, abdomen and fins dull whitie.

Size : Grows to 7.5 cm in length (TL).

Distribution : Assam, Arunachal Pradesh (New record) (E. Siang Dt.), West Bengal (Darjeeling, Kalimpong), Terai Duars.

Remarks : It has extended its known range of extension from Assam to Arunachal Pradesh stretching entire E. Himalayas.

Order ATHERINIFORMES
Family BELONIDAE

Elongated body, slender with small scales; head with scales, both jaws elongated into a beak, wide gill-openings, teeth on jaws, dorsal fin placed far posteriorly and without spines. Only one genus *Xenentodon* Regan with a single species.

Genus *Xenentodon* Regan, 1911

1911. *Xenentodon* Regan, *Ann. Mag. nat. Hist.*, 87(8) : 382 (type *Belone cancila* Hamilton).

125. *Xenentodon cancila* (Hamilton)

1822. *Esox cancila* Hamilton, *Fish. Ganges.* : 213, 380, pl. 27, fig. 70 (type locality : Gangetic provinces).

1985. *Xenentodon cancila*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India. Occ. Paper No. 64* : 177. fig. 93.

D.15-18, P.11, V.6, A.16-18, C.15.

Material examined : 11 exs., 17.6 19.8 cm, Nongkong river, 12 km from Bordumsa camp, Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 2.6 in total length, elongated body, both jaws like long extended beaks, dorsal and anal fins similar and arranged symmetrically close to the tail, giving the fish a torpedo like appearance.

Colour : Greenish grey above and lighter below with whitish abdomen, a dark edged silvery band from eye to caudal fin base, often with 4 to 5 black lateral blotches between pectoral and anal bases.

Size : Grows to 30.5 cm on length (TL).

Distribution : India. It was recorded in the Tirap District of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Nepal, Sri Lanka, Myanmar, Thailand and Malaya Archipelago.

Remarks : Lives in rivers, canals, lakes and beels. Typically known for its long beak like upper and lower jaws. Commercially less important, generally taken by the poorer sections.

Order CHANNIFORMES
Family CHANNIDAE

Body with large scales, head with plate like scales, long spineless dorsal and anal fins, both free from caudal fin; lateral line interrupted.

Genus *Channa* Scopoli, 1777

1977. *Channa* Scopoli, *Introd. Hist.*, : 459 (type *Channa orientalis* Bloch & Sch.).

Key to the species of the genus *Channa*

1. Pelvic fin less than half length of pectoral fin, pectoral fins spotted in zones, darker and lighter patches, chin marbled. 2
- Pelvic fin more than half length of pectoral fin, pectoral fins plain *C. punctata* (Bloch)
2. Anal fin with 27 rays, circular black spot each occupying part of a scale present, base of dorsal iridescent blue in life, dorsal fin with 39 to 40 rays *C. stewartii* (Playfair)
- Anal fin with 22 rays, no black spots on scales, dorsal fin with 34 rays 3
3. Predorsal scales 12, pectoral with a black base transversely barred *C. orientalis* (Ham.)
- 18 to 20 predorsal scales, lateral sides with yellowish.cum-darker bands 4
4. Length of head 3.3 to 4 *C. striatus* (Bl.)
- Length of head 4 to 5, predorsal scales 16 5
5. A black white edged ocellus on basal part of caudal, 4 to 5 rings or blotches on latral line *C. marulius* (Ham.)
- No such ocellus or rings, back and sides covered with large black blotches, caudal and anal fins with red edges, dark violet superiorly becoming dull white shot with purple beneath; lateral line scales 60-65 *C. barca* (Ham.)

126. *Channa orientalis* (Sch.)

1801. *Channa orientalis* Schneider, *Syst. Ichth. Bloch.* : 496. pl. 90. fig. 2 (type locality : India).

1985. *Channa orientalis*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 179.

D.32-37, P.15, v.6, A.21-23, C.12, L.1.40-45.

Material examined : 6 exs., 14.5 to 17.8 cm, Dikrai river, Sejusa, E. Kameng Dt., 11.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.5 to 4.2 in total length, maxilla reaches to below the hind edge of the orbit, broad and irregular scales on the summit of the head, predorsal scales 12.

Colour : Greenish with some blackish spots on the body, pectoral fin base with transverse black bands, dull white or brownish white on the sides and beneath.

Size : Attains to 20.3 in length.

Distribution : Throughout India. It was recorded in the E. Kameng district of Arunachal Pradesh.

Elsewhere : Nepal, Pakistan, Bangladesh, Sri Lanka and Myanmar.

Remarks : Live in beels, tanks, canals, road-side ditches, marshy water bodies and paddy fields (during monsoon period). Economically less important, poorer section generally take it as food.

127. *Channa striatus* (Bloch)

1793. *Ophiocephalus striatus* Bloch. *Naturng. Ausland. Fische.*, 2 : 141, pl. 359 (type locality : Malabar).

1985. *Channa striatus*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 183, fig. 95.

D.37-45, P.17, V.6, A.23-26, C.13, L.1.50-57.

Material examined : 7 exs, 13.5 to 19.6 cm from a small tributary of Dikrai river in Sejusa, E. Kameng Dt., 11.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.3 to 4.0 in total length, lower jaw longer, maxillary

reaching to below hind border of eye or even one eye diameter, behind, predorsal scales 18 to 20.

Colour : Dark greyish black above, dirty white or yellowish white below, greyish bands on the abdominal sides.

Size : Grows to 90.0 cm in length (TL).

Distribution : All over India. It was recorded in the E. Kameng district of Arunachal Pradesh.

Elsewhere : Pakistan, Bangladesh, Sri Lanka, Myanmar, Malaya Archipelago, Thailand, South China and Philippine.

Remarks : Live in rivers, tanks, lakes, and beels. Most economically important food fish under the genus. It is popularly liked as food fish in West Bengal and Assam. Author has seen local tribal people taking this fish in burnt (baked) condition with salt and pickle on the bank of river Dikrai, Sejusa, E. Kameng district.

128. *Channa stewartii* (Playfair)

1867. *Ophiocephalus stewartii* Playfair, *Proc. Zool. Soc. Lond.*, : 14, pl. 3 (type locality : Cachar, Assam).

1985. *Channa stewartii*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64* : 183, fig. 96.

D.39-40, P.17, V.27, C.14, L.1.45-50.

Materials examined : 3 exs., 17.5 to 21.4 cm from a stagnant nullah, a closed tributary of river Phuchung, Bana, E. Kameng Dt., 17.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.0 in total length, eye diameter 6.5 in head length, maxilla reaches beyond the hind edge of eye, dorsal fin originates over the base of the pectoral fin, plate like scales on the upper surface of the head.

Colour : Purplish black superiorly, becoming lighter or greyish white on the sides and below many scales with black round marks, dark fins; pectoral fin yellow with a blue basal spot in young.

Size : Grows to 25.5 cm in length.

Distribution : Assam, Arunachal Pradesh (E. Kameng Dt.), Eastern Himalaya, Meghalaya, West Bengal, Andamans (Sen, 1975).

Elsewhere : Nepal, Bangladesh.

Remarks : Generally live in marshy or swampy water bodies, beels, estuarine beds, stagnant or confined water bodies. It can withstand to some extent, saline admixture; can well thrive even in estuaries. Author collected 4 examples of this species from Diglipore, N. Andamans in 1972.

129. *Channa punctata* (Bloch)

1793. *Ophiocephalus punctatus* Bloch. *Natürg. Ausland Fische.* 7 : 139. pl. 358 (type locality : Malabar coast).

1985. *Channa punctata* (Bloch), Sen, *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India. Occ. Paper No. 64* : 182.

D.29-32, P.17, V.6, A. 21-23, C.12, L.137-40.

Material examined : 11 exs., 11.6 to 18.4 cm, from a swampy water body near Bordumsa camp, Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.3 to 3.6 in total length, lower jaw longer, maxillary reaching to below or behind hind border of eye, 5 rows of scales between eye and angle of preopercle, predorsal scales 12.

Colour : Colour changes with the changed ecological environments. Generally greenish grey becoming yellow below, a dark stripe along the side of head and several short cross-bands from back to middle of body, fins spotted.

Size : Grows to 30.5 cm in length.

Distribution : All over India. It was recorded in the Tirap district of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Myanmar, China, Tahiti, Polynesia.

Remarks : Commonly found to live in beels, tanks, canals, paddy fields, ditches and nullahs; thrives well in muddy and swampy water bodies.

130. *Channa barca* (Ham.)

1822. *Ophiocephalus barca* Hamilton. *Fish. Ganges.* : 67. 367, pl. 35. fig. 20 (type locality : R. Brahmaputra near Goalpara. Assam).

1985. *Channa barca*. Sen. *Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India. Occ. Paper No. 64* : 180, fig. 94.

D.47-52, P.16, V.1/5, A.34-36. C.19, L.160-65.

Material examined : 2 exs., 10 to 19.5 cm, Jamuri, Kameng R., W. Kameng Dt., 14.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.0 to 4.2 in total length, diameter of eye 7.0 to 7.5 in head length, maxilla extended to below hind border of eye, predorsal scales 15, cephalic pits simple, lateral line bends downwards after proceeding 12 scales.

Colour : Dark violet superiorly, becoming dull white shot with purple below, sides and back covered with large black blotches, pectorals reddish with numerous spots.

Size : Grows to 40.0 cm in length.

Distribution : India : Asam, Arunachal Pradesh (New record) (W. Kameng Dt.), North Bengal.

Elsewhere : Bhutan.

Remarks : A rare species under this genus, very difficult to collect. According to Hamilton 'It inhabits perpendicular banks, in holes dug like those of the Martin (*Hirundo*). In this it lurks, watching for its prey with its head out'

131. *Channa marulius* (Ham.)

D.45-55, P.18, v.6, A.28-36, L.160-70.

Material examined : 4 exs., 19.5-22.7 cm, Lohit river, Lohit Dt., 14.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 4.0 to 5.0 in total length, maxilla extended to half eye diameter behind orbit, predorsal scales 16, no barbels, 10 rows of scales between orbit and angle of preopercle, cephalic pits multiple.

Colour : greatly vary with environment, generally brownish or greenish grey above, pale below; 4 to 5 large ocelli, dark brown with white dotted margin on lateral line towards the base of caudal region a well marked ocellus on the upper half of the base of caudal fin; in young a brilliant orange coloured lateral band can be seen.

Size : Grows to maximum length of 1.25 mt. General length of the fishes found in the fish markets or those caught on rod and line in our rivers do not exceed more than 50 cm.

Distribution : Throughout India. It was recorded in the Lohit district of Arunachal Pradesh.

Elsewhere : Sri Lanka, Bangladesh, Pakistan, Myanmar, Thailand and China.

Remarks : Live in rivers, tanks, canals, lakes and beels. A predatory fish known for its devouring nature of the small fingerlings of the commercially important species of major carps viz, Labeo, Catla and Cirrhinus, if remained together, accidentally, in the tank.

Order SYMBRANCHIFORMES
Family SYMBRANCHIDAE

Long elongated body, with pointed snout and minute scales; accessory respiratory sacs may be present or absent, strong socketted teeth in the mouth, low pectorals, dorsal rudimentary, paired fins absent.

Genus *Monopterus* Lacepede, 1800

1800. *Monopterus* Lacepede, *Hist. Nat. Poiss.* 2 : 138 (type *Monopterus javanensis* Lac).

132. *Monopterus cuchia* (Ham.)

1822. *Unibranchapertura cuchia* Hamilton. *Fish Ganges*, : 16. 363. pl. 16, fig. 14. (type locality : S. E. Bengal).

1985. *Monopterus cuchia*. Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 185. fig. 97.

Material examined : 1 ex., 43.0 cm from a small tributary near Kheram Kochari village 9km from Bordumsa camp, Nong Kong R., Tirap Dt., 16.2.87, T. K. Sen & Party.

Diagnostic characters : An eel shaped fish with a narrow pointed tail, length of head 6.0 to 8.0 in the distance between snout and anus, a single transverse ventral opening, upper jaw slightly longer, lips fleshy, accessory breathing apparatus present, rudimentary dorsal commences slightly before anus, paired fins absent, distinct scales longitudinally arranged.

Colour : Greenish to chestnut brown or dark reddish brown above becoming lighter below or often buff coloured, numerous black dots on the body.

Size : Grows to 60.8 cm in length.

Distribution : Assam, Arunachal Pradesh (New record), Punjab, Orissa, West Bengal (Darjeeling Dt.).

Elsewhere : Bangladesh, Pakistan, Nepal, Myanmar.

Remarks : This fish resembles like a snake and hence the reluctance to take it as food by the common people except the poorer section. Hamilton (1822) writes 'Native reject it as food and imagine that its bite is fatal to cattle, although less powerful on the human kind, a superstition highly improbable'. They are found in rivers, canals, beels and during drought period, in mud holes in the paddy fields in the Duars and Terai (Shaw and Shebbeare, 1937).

Order PERCIFORMES
Family CHANDIDAE

Body compressed, lower limb of preopercle with a double serrated edge, opercle with spine, slightly translucent, two dorsal fins, the first with 7 spines, the anal with 3 spines; a forwardly recumbent spine in front of dorsal fin base, cycloid scales, minute; lateral line complete, interrupted or absent.

Key to the species of the genus *Chanda*

1. Length of head 4 to 4.5 in total length, diameter of eye 3 in head length, preorbital slightly serrated, 2 or 3 large crooked canine teeth on either side of the lower jaw.
..... *C. nama* Ham.

- Length of head 3.2 to 4.0 in total length, diameter of eye 2.5 in head length, preorbital distinctly serrated, no crooked canine teeth, all the teeth are small. *C. ranga* Ham.

Genus *Chanda* Hamilton, 1822

1822. *Chanda* Hamilton, *Fish Ganges*, : 103 (type *Chanda nalua* Hamilton).
1971. *Chanda*, Talwar, *Bull. Zool. Nomencl.*, 28(3-4) : 104-105 (*Chanda nama* Hamilton proposed as type species).

133. *Chanda nama* Ham.

1822. *Chanda nama* Hamilton, *Fish Ganges*, : 109, 371, pl. 39, fig. 37 (type locality : Bengal).
1985. *Chanda nama*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India, Occ. Paper No. 64* : 187, fig. 98.

D.7/1/13-17, P.13, V.1/5, A.3/14-17, C.17.

Material examined : 11 exs., 3.5 to 5.8 cm, Noa Dihing R., Namdapha Wildlife Sanctuary (now declared as a Biosphere Reserve of the country), Tirap district (now under recently cut out new Changland Dt.), Namdapha Survey, 1985, 20.10.85, S. Biswas & Party.

Diagnostic characters : Length of head 4.0 to 4.5 in total length, deep and strongly compressed, laterally almost flat; eye diameter 3.0 in head length, dorsal and ventral profiles equally convex, lower jaw longer, maxilla reaching to below the first third of eye, two dorsals united at their base, a recumbent spine present.

Colour : Yellowish olive (translucent), fins orange, body covered with minute black dots.

Size : Grows to 7.6 cm in length.

Distribution : Throughout India. It was recorded in the Tirap district of Arunachal Pradesh.

Elsewhere : Nepal, Bangladesh and Myanmar.

Remarks : Live in tanks, rivers, beels, marshy or swampy water bodies. Economically less important as not liked by people for its strong spines and scanty flesh (bones are threatening).

134. *Chanda ranga* Ham.

1822. *Chanda ranga* Hamilton, *Fish Ganges*, : 113, 371, pl. 16, fig. 38 (type locality : Gangetic provinces).
1985. *Chanda ranga*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India, Occ. Paper No. 64* : 188, fig. 99.

D.7/1/13, P.11, V.1/5, A.3/14-16, C.17.

Material examined : 23 exs., 4.5 to 6.4 cm, Dibru river, Sejusa, E. Kameng Dt., 12.10.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.2 to 4.0 in total length, eyes 2.5 in head length, maxilla reaches to below midorbit, small teeth, 2 dorsals united at their base, a recumbent dorsal spine present, body more deeper, anal with 3 spines.

Colour : Olive with grey margins of ventral fins.

Size : Attains to 10.2 in length.

Distribution : Throughout India. It was recorded in the E. Kameng district of Arunachal Pradesh.

Elsewhere : Bangladesh, Nepal, Myanmar, Malaysia, Thailand.

Remarks : The genus *Chanda* is now restricted to its type species *Chanda nama*, according to the opinion 1121 of the International Commission on Zoological Nomenclature (Talwar, 1971). Live in tanks, rivers, beels, lakes and estuaries (can bear to some extent saline ecology).

Family NANDIDAE

Body oblong and compressed, maxilla extending beyond eyes, operculum with 1 spine, single dorsal fin, anal with 3 spines, ctenoid scales covering the body; lateral line absent or interrupted.

Genus *Badis* Bleeker, 1853

1853. *Badis* Bleeker, *Verb. Bat. Gen.*, 25, p. 106 (type *Labrus badis* Ham. = *Badis buchani* Blkr.).

135. *Badis badis* (Ham.)

1822. *Labrus badis* Hamilton, *Fish. Ganges*, : 70, 368, pl. 25, fig. 23 (type locality : Gangetic provinces).

1985. *Badis Badis*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 192.

D.1617/7-10, P.12, A.3/6-8, C.16, L.1.26-33.

Materials examined : 2 exs., 4.5 to 6.4 cm. from a road side nullaha, E. Siang Dt., 22.11.88, D. P. Sanyal & Party.

Diagnostic characters : Length of head 4.2 in total length, body elongated, ovalshaped; laterally compressed; eye diameter 3.2 in head length, head scaled, lateral line placed high on the body, interrupted on 8 or 9 scales from the caudal; anal with 3 spines.

Colour : Dark brown or dark green, a series of dark transverse bands on the body which often not visible due to deep base colour; sometimes bluish black spots on opercle, caudal fin base, shoulder and body.

Size : Grows to 9.0 cm in length.

Distribution : Throughout India. It was recorded in the E. Siang district of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Nepal, Myanmar.

Remarks : Not commonly found. Live in beels marshy or swampy wetlands, sewage waters.

Genus *Nandus* Valenciennes, 1831

1831. *Nandus* Valenciennes, *Hist. Nat. Poiss.*, 7 : 481 (type *Nandus marmoratus* Val.).

136. *Nandus nandus* (Ham.)

1822. *Coius nandus* Hamilton, *Fish. Ganges*, : 96, 370, pl. 30, fig. 32 (type locality Gangetic province).

1985. *Nandus nandus*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 193, fig. 101.

D.12-14/11-13, V.1/5, A.3/7-9, L.1.46-57.

Material examined : 14 exs., 9.5 to 11.5 cm, Lohit river near Teju I. B., Lohit Dt., 24.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.0 in total length, body laterally compressed, deeper

with a nearly straight belly and arched back; pointed snout, mouth very much protractile, deep cleft of mouth, eyes 5.0 to 6.0 in head length, caudal rounded.

Colour : Greenish brown with bronze to brassy reflections (when freshly caught), 3 vertical broad bands (patchy) over the body, a dark blotch on the free portion of tail, spots on fins.

Size : Attains to 17.7 cm in length.

Distribution : Throughout India.

Elsewhere : Nepal, Bangladesh, Myanmar, Thailand, Pakistan and Malaya.

Scientific remarks : Found to live in rivers, tributaries, canals, tanks as well as in beels. It is also found to live in paddy-fields during monsoons and generally preying upon small fishes like *Glossogobius giuris* (Beley), *Colisa fasciata* (Khalisha), *Chanda nama* (Chanda), *Danio* (Chebli, Nipati), *Channa* (Chang), *Puntius ticto*, *P. sophore* (Tita-puti, Puti), *Anblypharyngodon mola* (Maurala) etc. based upon results on the sample analysis of gut-contents of this species by the author in the field. (Teju, Lohit Dt.).

Family GOBIDAE

Elongated body, pelvic fins united at the base like a sucking disc in the form of oblong or elongated tube, head with (generally) mucous canals and open pores, two dorsal fins united with each other or separated narrowly by a notch, anal fin short or long or continuous with caudal fin, anal papilla present, lateral line absent.

Genus *Glossogobius* Gill, 1860

1860. *Glossogobius* Gill, *Procd. Acad. nat. Sci., Philad.* : 146 (type *Gobius ptycephalus* Richardson).

137. *Glossogobius giuris* (Hamilton)

1822. *Gobius gutum* Hamilton, *Fish. Ganges*, : 50, 366 (type locality : Lower parts of Padma river).

1985. *Glossogobius giuris*, Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 195, fig. 102.

D.6/1/8-9, P.20, V.1/5, A.1/8-9, C.17, L.1.30-34.

Material examined : 6 exs., 7.6 to 11.5 cm, Noa Dihing R., Namdapha Wildlife Sanctuary (now a Biosphere Reserve), Tirap Dt., 20.1.85, S. Biswas & Party.

Diagnostic characters : Length of head 3.7 to 4.2 in total length, lower jaw prominent and slightly longer, pointed snout, two dorsals, eyes placed on top of head, pelvics united to form a tube like disc.

Colour : Transparent, yellowish grey with 4 to 6 blotches on the body along the lateral line.

Size : Grows to 30.4 cm in length.

Distribution : India. It was recorded in the Tirap district of Arunachal Pradesh.

Elsewhere : East Africa, Sri Lanka, Bangladesh, Pakistan, Malaya Peninsula, China, Japan, Philippines, Australia, Indo-Australian Archipelago and South Pacific islands.

Remarks : Only one species under this genus *Glossogobius* Gill. Live in rivers, tanks, beels, lakes, paddy fields (during monsoon months), road side nullahs and ditches. Most commonly found species throughout India under this family. A food fish but not very tasty.

Family ANABANTIDAE

Compressed body, moderately elongated, head and body covered with ctenoid scales, branchial arches with toothed tubercles, a single long dorsal fin with spines lateral line interrupted.

Key to the genera of the family ANABANTIDAE

1. Body oblong, pelvic fin with 15 spines, caudal fin rounded, accessory respiratory apparatus present, opercle with strong spines or serrations *Anabas* Cuv.
- Body deeper, pelvic fin in the form of a single filiform ray, caudal fin semiemarginate or furcate type, no accessory respiratory apparatus, opercles with no serrations or spines except a few spinous serrations on the ventral side of the opercle *Colisa* Cuv.

Key to the species of the genus *Colisa*

1. A dark band along the lateral line.
..... *Colisa sota* (Ham.)
- 14 or more orange (mixed red) coloured vertical bands descend obliquely downwards from back to belly. *Colisa fasciata* (Sch.)

Genus *Anabas* Cuvier, 1817

1817. *Anabas* Cuvier. *Le Regue. Animal.* 2 : 339 (type *Perca scandens* Daldorf).

138. *Anabas testudineus* Bloch

1795. *Anabas testudineus* Bloch. *Naturges. Ausland Fish.* 7 : 121, pl. 322 (type locality : Japan ("East Indies").

1985. *Anabas testudineus*. Sen. *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool Surv. India. Occ. Paper No. 64* : 197, fig. 103.

D.17-18/8-10, P.15, V.1/5, A.9-10/9-11, L.1.28-32.

Material examined : 9 exs., 7.5 to 15.6 cm, from a submerged beel in front of Namsai Forest Rest House (Camp), Lohit Dt., 18.12.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.5 in total length, eyes 4.5 to 5.0 in headlength, lower slightly longer, opercle and preopercle serrated, a single longer dorsal fin, longer than the anal; lateral line interrupted.

Colour : Greyish green above, greenish yellow or reddish yellow below; 4 wide cross bands on body.

Size : Attains to 20.3 cm in length.

Distribution : India. It was recorded in the Lohit district of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Burma, Sri Lanka, Malaya Archipelago, Thailand, Indo-China, Philippines and Polynesia.

Remarks : A highly commercially important fish though strongly bony. It is more popular in West Bengal (popularly known as "KOI"). Live in rivers, tanks, beels, lakes etc. It can well thrive

in swampy or marshy lands. In rainy season this fish can be found (personally observed by the author) climbing up vertically along the surfaces of the banks of submerged tank through their opercles (working as small vertical legs). This rare phenomenon was observed during strong rains.

Genus *Colisa* Cuvier, 1831

1831. *Colisa* Cuvier, *Hist. Nat. Poiss.* 7 : 359 (type *Colisa vulgaris* Cuvier).

139. *Colisa sota* (Ham.)

1822. *Trichopodus sota* Hamilton, *Fish. Ganges.* : 120, 378 (type locality : not known).

1985. *Colisa sota*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India. Occ. Paper No. 64* : 198.

D.17-18/7-8, P.9, V.1, A.17-20/11-15, L.I.27-29.

Material examined : 7 exs., 3.5 to 4.0 cm, from a small nullaha originating from Sally lake, Roing, Dibong Valley Dt., 27.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 3.5 to 4.0 in total length, deep body, laterally compressed; cleft of mouth small, lateral line interrupted, each ventral fin (pelvic) modified into a single filiform ray, furcate type of caudal fin.

Colour : Greenish brown, lighter along the abdomen, a dark band along the lateral line.

Size : Attains to 4.5 cm in length.

Distribution : Assam, West Bengal and Arunachal Pradesh (new record) (Dibang Valley Dt.).

Remarks : Commercially less important because of small size and bones. Live in marshy and swampy lands, small nullahas, road-side ditches, tanks etc. Casually found with other popular species *C. fasciata*.

140. *Colisa fasciata* (Schn.)

1801. *Trichgaster fasciatus* Schn. *Syst. Ichth. Bloch.* : 164, pl. 36 (type locality : Tranquebar).

1985. *Colisa fasciata*. *Fish fauna of Assam and the neighbouring N. E. states of India. Rec. zool. Surv. India. Occ. Paper No. 64* : 199, fig. 104.

D.15-17/9-13, V.1, A.15-18/14-19, P.10, L.I.29-31.

Material examined : 11 exs., 6.5 to 9.4 cm, about 17 km from Chilerung along the upstream of Kamlang river, Lohit Dt., (Daphabum Expd.), 23.12.69, J. M. Julka & Party.

Diagnostic characters : Length of head 3.7 to 4.2 in total length, deep body, laterally compressed; cleft of mouth small, ventral fin consists of single, filiform ray, reaching atleast to the base of caudal fin; semimarginate type (slightly notched) caudal fin.

Colour : Greenish or bluish above, dirty white below; 14 or more orange coloured (with reddish tinge) vertical bands descending obliquely downwards from back to belly and bordered by blue bands, very bright and distinct when alive; red eyes, fins edged with red, dorsal and caudal fins spotted with orange.

Size : Grows to 12.7 cm in length.

Distribution : Assam, Arunachal Pradesh (New record), estuaries of Ganges, Punjab, West Bengal, North India. It was recorded in the Lohit district of Arunachal Pradesh.

Elsewhere : Nepal, Bangladesh, Pakistan, Burma.

Remarks : Most popular species noted for its taste (though bony) and brilliant coloured vertical bands for which it is loved by the aquarists (being a popular indigenous aquarium fish). Found to live in beels, marshy and swampy lands, tanks, rivers and lakes.

Order MASTACEMBELIFORMES
Family MASTACEMBELIDAE

Body eel shaped, compressed and elongated, covered with minute scales; snout elongated supported by soft bony rod, tubular nostrils; caudal fin short either confluent with dorsal and anal or narrowly separated.

Key to the species of the genus *Mastacembelus*

1. Caudal fin confluent with vertical fins
..... *M. a. armatus* (Lac.)
- Caudal fin non confluent with vertical fins ...
..... *M. pancalus* (Ham.)

Genus *Mastacembelus* Scopoli, 1744

1744. *Mastacembelus* Scopoli, *Introd. Hist. Nat.* : 458 (type *Mastacembelus unicolor*).

141. *Mastacembelus armatus armatus* Lac.

1800. *Macrognathus armatus* Lacepede, *Hist. Nat. Poiss.*, 2 : 286 (type locality : not given); Hamilton, *Fish Ganges*, 28, pl. 37, fig. 6, 1822; Bengal.

- 1985.** *Mastacembelus armatus armatus*, Sen. *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 202, fig. 105.

D.32-39/74-90, P.23, A.3/75-88.

Materials examined : 3 exs., 12.4 to 29.6 cm,
from a hill stream nullaha below Tezu fisheries
office, Lohit Dt., 23.2.87, T. K. Sen & Party.

Diagnostic characters : Length of head 6.5 to 7.5 in total length, an eel shaped elongated fish with a trilobed snout with a fleshy prolongation, cleft of mouth narrow, a preorbital spine present, single long dorsal fin with 32-39 spines, soft part of dorsal fin originates behind anal origin, no pelvic fins.

Colour : Deep brownish above and light grey below and sides, undulating dark brown patterns between back and lateral line, more distinct towards the posterior region.

***Size* : Grows to 60.0 cm in length.**

Distribution : Freshwaters throughout India. It was recorded in the Lohit district Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Sri Lanka, Myanmar, Nepal, Thailand, Cambodia, Tonkin, South China, Malaya, Sumatra, Java, Vietnam.

Remarks : Live in rivers, lakes, beels, marshy or swampy lands. This is a tough fish to combat extreme drought conditions by keeping itself buried inside the mud and silt for months together till the onset of monsoon rains. A tasty fish too (commercially important species under this genus), liked by the consumers specially when alive inspite of its threatening bones.

142. *Mastacembelus pancalus* (Ham.)

1822. *Macrogathus pancalus* Hamilton. *Fish Ganges*. :
30, 364. pl. 22, fig. 7 (type locality : Bengal).

1985. *Masiacembelus pancalus*. Sen, Fish fauna of Assam and the neighbouring N. E. states of India, Rec. zool. Surv. India, Occ. Paper No. 64 : 203, fig. 106.

D.24-26/30-42, P.19, A.3/31-46, C.12.

**Material examined : 4 exs., 9.5 to 11.0 cm,
Dikrai river, Sejusa, E. Kameng Dt., 10.10.87, T.
K. Sen & Party.**

Diagnostic characters : Length of head 5.0 to 5.5 in total length, an eel shaped fish with tapering head and tail, a trilobed long fleshy snout, narrow cleft of mouth, a preorbital spine present, a single dorsal with 24-26 free stumpy spines, dorsal and anal fins not united with caudal, minute scales, no pelvic fins.

Colour : Greenish olive above, yellowish below, yellowish white spots on scales.

Size : Attains to 18.0 cm in length.

Distribution : India. It was recorded in the E. Kameng district of Arunachal Pradesh.

***Elsewhere* : Bangladesh, Pakistan.**

Remarks : Yellowish-white spots can be seen generally when the fish is alive, but these yellowish-white spots will turn to just whitish spots when it is dead or in preserved state.

Genus *Macrogathus* Lacepede, 1800

1800. *Macrogathus* Lacepede, *Hist. Nat. Poiss.*, 2 : 283
(type *Ophidium aculeatum* Bloch.).

143. *Macrogathus aculeatus* (Bloch)

1887. *Ophidium aculeatum* Bloch, *Naturges. Ausland. Fische.*, 11 : 72. pl. 159, fig. 2 (type locality : East Indies).

1985. *Macrogathus aculeatus*, (Bloch) Sen, *Fish fauna of Assam and the neighbouring N. E. states of India*, *Rec. zool. Surv. India, Occ. Paper No. 64* : 203, fig. 107.

D.16-20/44-54. P.23, A.2-3/44-52, C.15.

Material examined : 7 exs., 7.5 to 22.0 cm from a small offshot nullaha of Tanga river, 4 km from Bomdila, West Kameng Dt., 1.11.87., T. K. Sen & Party.

Diagnostic characters : Length of head 5.0 to 6.0 in total length, an eel shaped elongated fish with tapering head and tail, lateral line prominent, narrow cleft of mouth, elongated fleshy snout, trilobed; no preorbital spine, lower jaw much shortened, a single dorsal with 13 to 20 stumpy free spines, caudal not united with dorsal and anal fins.

Colour : Greenish olive above, yellowish white below, fins light brown, some specimens, usually the smaller ones, have a series of 3 to 9 large black ocelli, having a white or buff edge, along the base of the dorsal.

Size : Grows to 38.0 cm in length.

Distribution : India. It was recorded in the West Kameng district of Arunachal Pradesh.

Elsewhere : Bangladesh, Pakistan, Nepal, Sri Lanka, Myanmar, Malaya Archipelago, Thailand, Vietnam, China.

Remarks : Live in marshy or swampy catchment areas, beels, rivers (specially tributaries with shallow water), can withstand estuarine waters. Mostly taken by the poorer section.

Special Remarks : In all there are altogether 8 species so far known belonging to the genus *Mastacembelus*, out of which only 3 species are

indigenous viz., *M. a. armatus*, *M. pancalus* and *M. guentheri* (S. Indian species, Malabar coast). Other 5 exotic species are (1) *M. alboguttatus*, (2) *M. caudiocellatus*, (3) *M. zebrinus*, (4) *M. oatesii* and (5) *M. unicolor* all from Burma.

SUMMARY

North Eastern Frontier Agency (N.E.F.A.) presently known as Arunachal Pradesh is situated in the extreme north-east of India, occupies an area of 83,578 sq. km. It forms one of the world's most difficult mountainous regions extensively precipitous and highly jagged, rises in mighty convolutions of ridges and spurs.

The present paper is based upon the comprehensive fish collections made from all the 11 districts of Arunachal Pradesh viz., Tirap, Lohit, U. Subansiri, L. Subansiri, Dibang Valley, E. Kameng, W. Kameng, E. Siang, W. Siang, Tawang and Changlang (latest divided from Tirap Dt., in Nov. 1987, under which jurisdiction falls the famous Namdapha Wildlife Sanctuary now declared as a National Biosphere Reserve) by the several experts including the author during 1987, 1988 and 1989 field-surveys together with large number of both unidentified and identified fish collections made earlier by various Z. S. I. survey parties from Arunachal Pradesh including Namdapha Wildlife Sanctuary (1981-1987) and all other relevant published records dealing with Arunachal Pradesh particularly its fishes.

The total fish collections thus made from Arunachal Pradesh reveal a wide range of both riverine and torrential fishes belonging to 8 orders, 21 families, 61 genera and 143 species; out of which 23 genera comprising 55 species are hill-stream-cum-torrential fishes and 50 new records revealing a new ichthyological dimension regarding extension of known ranges of distributions.

All the 143 species of this paper have been dealt with in detail regarding 'diagnostic characters of the families', 'keys of the relevant genera and species', 'diagnostic characters', 'colour', 'size-

range', 'distribution', 'scientific remarks' and 'material examined' of each of the species together with 5 plates comprising 16 interesting figures.

It also includes a map showing collection centres and distributions of various groups of fishes of Arunachal Pradesh.

The classification of fishes adopted in this paper is after Greenwood *et al.* (1966).

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REFERENCES

- ANNANDALE, N. and HORA, S. L. 1921. The fauna of Loktak lake in Manipur. *Proc. Indian Sci. Congr.*, Calcutta (N. S.), 17, p. 147.
- BLEEKER, P. 1854. Nalezingen op de ichthyologische fauna van Bengalen en Hindusten, *Verh. Batavia. Gen.*, 25 : 1-166.
- CHOWDHURY, S. and SEN, N. 1977. On a collection of fish from Arunachal Pradesh with some new records. *Newsletter, Z. S. I.*, 3(4) : 217-223.
- CHAJDHURI, B. L. 1913. Zoological results of the Abor Expedition, 1911-1912. *Rec. Indian Mus.*, 8 : 243-257. (pls. vii-ix).
- DATTA, A. K. and SEN, T. K. 1977. *Schizopygopsis stoliczkae* Steindachner, first record from Arunachal Pradesh, India, with observations on the extension of geographical range. *Newsletter, Z. S. I.*, 3(4) : 143-144.
- DATTA, A. K. and BARMAN, R. P. 1985. Fauna of Namdapha : Arunachal Pradesh, 'A proposed Biosphere Reserve', Special Issue. *Pisces. Rec. zool. Surv. India*, 82(1-4) : 275-284.
- DAY, F. 1878. The fishes of India; being a natural history of the fishes known to inhabit the seas and freshwaters of India, Burma and Ceylon. Text and plates. London, xx + 778pp., 195 pls.
- GHOSH, A. K. 1987. Qualitative analysis of faunal resources of proposed Namdapha Biosphere Reserve, Arunachal Pradesh. *Zool. Surv. India*. pp. 1-129 (*Final Technical Report*).
- GREENWOOD, P. H., ROSEN, D. E., WEITZMAN, S. H. and MYERS, G. S. 1966. Phyletic studies of Teleostean fishes with a provisional classification of living forms. *Bull. Amer. Mus., Nat. Hist.*, New York, 131 (Article 4); 341-455.
- GUNTHER, 1868. Catalogue of fishes. *Brit. Mus.*, 7, p. 154.
- HORA, S. L. 1933. Further notes on Hamilton-Buchanan's *Cyprinus chagunio* J. *Asiat. Soc.*, Calcutta, (N. S.), 27(1) : 137.
- HORA, S. L. 1921. Fish and fisheries of Manipur with some observations on those of the Naga hills. *Rec. Indian, Mus.*, Calcutta, 22(3) : 165-214.
- HORA, S. L. and MUKERJI, D. D. 1935. Fishes of the Naga Hills, Assam. *Rec. Indian, Mus.*, Calcutta, 37(3), pp. 381-404.

- HORA, S. L. 1930. Ecology, Bionomics and Evolution of torrential fauna with special reference to the organs of attachment. *Phil. Trans. Roy. Soc. Lond.*, London (B), **218** : 171-282, 4 pls.
- HAMILTON, F. 1822. An account of the fishes found in the river Ganges and its branches. I-VII, 1-405, pls. 1-39. Archibald, Constable & Co., Edinburgh Hurat, Robinson & Co. London.
- JAYARAM, K. C. 1963. A new species of Sisorid fish frmo the Kameng Frontier Division, N. E. F. A., India. *J. zool. Soc. India*, **15**(1) : 85-87.
- JAYARAM, K. C. and MAZUMDER, N. 1964. On a collection of fish from the Kameng Frontier Division, N. E. F. A., *J. Bombay Nat. Hist. Soc.*, **61**(2) : 264-280.
- JAYARAM, K. C. 1977. Aid to the identification of Siluroid fishes of India, Burma, Sri Lanka, Pakistan & Bangladesh. 2. Siluridae, Schilbeidae, Pangasidae, Amblycipitidae, Akysidae, *Rec. zool. Surv. India, Occ. Paper No. 10* : 1-33.
- MENON, A. G. K. 1974. A check-list of the Himalayan and Indo-Ganjetic plains fishes. Spl. Pub. (1), *J. Indl. Fish. Soc. India*, p. 37-38.
- MENON, A. G. K. 1987. The fauna of India (Pisces, Cobitoidea- Homalopteridae); *Zool. Surv. India*, **4** : 1-259, pls. 16, Pt. I.
- SRIVASTAVA, C. B. 1966. On a collection of fish from Tirap Frontier Division, N. E. F. A., India. *J. Zool. Soc. India*, **18**(162) : 122-128.
- SHAW, G. E. and SHEBBEARE, E. O. 1938. The fishes of Northern Bengal. *J. Roy. Asiat. Soc. Bengal* (Sc), pp. 1-137, pls. 6.
- SEN, T. K. and JAYARAM, K. C. 1982. The Mahseer fishes of India-A review. *Rec. zool. Surv. India, Occ. Paper No. 39* : 1-38.
- SEN, T. K. 1985. The fish fauna of Assam and the neighbouring N. E. states of India. *Rec. zool. Surv. India, Occ. Paper No. 64* : 1-215, figs. 109.
- SEN, T. K. 1975. Further light on the freshwater fish fauna of Andamans islands. *Seafd. Expt. J.*, **8**(2) : 31-33.
- SEN, T. K. 1976. On the disribution of genus *Labeo* in Assam. *Newsletter, Zool. Surv. India*, **2**(5) : 208-209.
- TREWAVAS, E. 1983. A review of the tilapiine fishes of the genus *Sarotherodon*, *Oreochromis* and *Danakilie*. *Bull. Brit. Mus.*, (N. H.), *Zool.*, p. 580.
- VINCIGUERRA, D. 1890. Viaggio di Leonarde Fea in Birmaniae Regioni Vicini. *Pesci. Ann. Mus. Civ. Stor. Nat. Genova* (2). **9** : 129-362, pls. 7-11.

DISTRIBUTION OF FISH SPECIES IN ARUNACHAL PRADESH AT A GLANCE

Found +
Not found -

Name of species	Name of districts										
	Tirap Dt.	Changlang Dt.	Lohit Dt.	Dibong Valley Dt.	East Siang Dt.	West Siang Dt.	Upper Subansiri Dt.	Lower Subansiri Dt.	East Kameng	West Kameng	Tawang Dt.
	1	2	3	4	5	6	7	8	9	10	11
1. <i>Notopterus notopterus</i>	+	+	+	-	-	-	-	-	-	-	-
2. <i>Chela laubuca</i>	+	+	-	-	-	-	-	-	-	-	-
3. <i>Salmostoma bacaila</i>	+	+	-	-	-	-	-	-	-	-	-
4. <i>S. boopis</i>	+	+	-	-	-	-	-	-	-	-	-
5. <i>S. phulo phulo</i>	+	+	+	-	-	-	-	-	-	-	-
6. <i>Barilius barna</i>	+	+	-	-	-	-	-	-	+	-	-
7. <i>B. vagra vagra</i>	+	+	+		+	-	-	-	-	-	-
8. <i>B. barila</i>	+	+	-	+	-	-	-	-	-	-	-
9. <i>B. dogarsinghi</i>	+	+	-	-	-	-	-	-	-	-	-
10. <i>B. tileo</i>	-	+	+	-	-	-	-	-	+	+	-
11. <i>B. shacra</i>	-	-	-	-	-	-	-	-	+	+	-
12. <i>B. bola</i>	-	-	+	-	-	-	-	-	-	-	-
13. <i>B. jayarami</i>	+	+	-	-	-	-	-	-	-	-	-
14. <i>B. bendelisis bendelisis</i>	+	+	-	-	-	-	+	+	-	-	-
15. <i>Danio (D.) acquirinnatus</i>	+	+	-	-	-	-	-	-	-	-	-
16. <i>D. (D.) dangila</i>	+	+	-	-	-	-	-	-	-	-	-
17. <i>D. (D.) devario</i>	-	+	-	-	+	-	-	-	-	-	-
18. <i>D. (B.) horai</i>	+		-	-	-	-	-	-	-	-	
19. <i>D. (B.) rerio</i>	+	+	-	-	-	-	-	-	-		

Name of species	1	2	3	4	5	6	7	8	9	10	11
44. <i>L. bata</i>	-	-	-	-	-	-	+	+	-	-	-
45. <i>L. boga</i>	-	-	-	-	-	-	-	-	+	-	-
46. <i>L. rohita</i>	+	+	+	-	-	-	+	+	-	-	-
47. <i>L. gonius</i>	+	+	-	-	-	-	-	-	+	+	-
48. <i>L. calbasu</i>	+	+	-	-	+	+	-	-	-	-	-
49. <i>Osteobrama cotio cotio</i>	+	-	-	-	-	-	-	-	+	+	-
50. <i>Puntius chola</i>	-	-	+	-	-	-	-	-	-	-	-
51. <i>P. tetrapagrus</i>	+	-	-	-	-	-	-	-	-	-	-
52. <i>P. guganio</i>	-	-	-	-	-	-	-	-	+	-	-
53. <i>P. conchoni</i>	+	+	-	-	-	-	-	-	-	-	-
54. <i>P. sophore</i>	+	+	-	-	+	-	+	+	-	-	-
55. <i>P. sarana sarana</i>											
56. <i>P. ticto</i>	+	+	-	+	-	+	+	+	+	+	-
57. <i>P. dukai</i>	-	-	-	-	-	-	-	-	+	-	-
58. <i>P. stevensonii</i>	+	-	-	-	-	-	-	-	-	-	-
59. <i>Semiplotus modestus</i>	-	-	-		-	-	-	-	-	+	-
60. <i>S. semiplotus</i>	-	-	-	-	-	-	+	+	-	-	-
61. <i>Tor tor</i>	+	+	+	+		-	-	-		-	-
62. <i>T. putitora</i>	-		+		-	-		-			
63. <i>T. progneus</i>	-	-	-	-	-	-			+		
64. <i>Schizopygopsis stoliczkae</i>	-	-	-		-	-				+	
65. <i>S. richardsonii</i>	-	-	-		+	+	-	-	-		-
66. <i>S. progastus</i>		-	-		-	-		-	-	+	
67. <i>Psilorhynchus homaloptera</i>	+				-						-
68. <i>P. siacatio</i>	+	-	-			-		-			-

Name of species	1	2	3	4	5	6	7	8	9	10	11
69. <i>P. balitora</i>	-	-	-	-	+		-				-
70. <i>Noemacheilus prashadi</i>	-		+	-							
71. <i>N. manipurensis</i>	-		+	-	-	-					
72. <i>N. savona</i>	+	-	-	-	-	-		-	-		
73. <i>N. corica</i>	-	-	+	-	-		-	-			
74. <i>N. kangjupkhulensis</i>	-		-	-	+						
75. <i>N. multifasciatus</i>	-	-	-	-	-	+	-	-	-		-
76. <i>N. pavonaceous</i>	+		-	-	-	-	-	-	-		
77. <i>N. botia</i>	+	-	-	-	-		-		-		
78. <i>N. arunachalensis</i>	+	-	-	-	-		-	-	-		
79. <i>N. sikmaiensis</i>	-	-	+	-	-		-		-	-	-
80. <i>N. rupecola</i>	-	-	-	-	-	+	-	-	-	-	
81. <i>N. scaturigina</i>	+	-	-	-	-		-	-	-	-	
82. <i>N. garoensis</i> (= <i>Aborichthys garoensis</i>)	-	-	-	-	-	-	-	-	+	-	
83. <i>N. elongatus</i>	+		-	-	-	-		-	-	-	-
84. <i>N. tikadari</i>	+	-	-	-	-	-	-	-	-	-	-
85. <i>N. kemp</i>	-	-	+	-	-	-	-	-	-	-	-
86. <i>Balitora brucei</i>	+	-	-	-	-	-	-	-	-	-	
87. <i>Lepidocephalus</i> (L.) <i>guntea</i>	-	-	+	-	-	-	-	-	-	-	-
88. <i>Somileptes gongota</i>	-	-	-		-	-	-	-	+	-	-
89. <i>Acanthopsis choirorhynchus</i>	-	-	+	-	-	-	+	-	-	-	-
90. <i>Acanthopthalmus pangia</i>	-	-	-	-	-	-	-	-	+	-	-
91. <i>Botia berdmorei</i>	+	+	+	-	-	+	-	-	+	+	+
92. <i>B. (B.) rostrata</i>	+	+	-	-	+	-	-	-	-	-	+

Name of species	1	2	3	4	5	6	7	8	9	10	11
93. <i>Aorichthys seenghala</i>	-	-	-	-	-	-	-	-	+	-	-
94. <i>Batasio tengana</i>	+	+	-	-	-	-	-	-	-	-	-
95. <i>Mystus montanus</i>	+	-	-	-	-	-	-	-	-	-	-
96. <i>M. cavasius</i>	+	-	-	-	-	-	-	-	-	-	-
97. <i>M. vittatus</i>	+	+	+	-	-	-	+	+	+	+	+
98. <i>M. menoda menoda</i>	-	-	+	-	-	-	-	-	-	-	-
99. <i>M. bleekeri</i>	-	-	-	-	+	+	-	-	-	-	-
100. <i>Kryptopterus indicus</i>	+	-	-	-	-	-	-	-	-	-	-
101. <i>Ompok pabda</i>	+	+	-	-	-	-	-	-	+	-	-
102. <i>O. bimaculatus</i>	-	-	-	-	-	+	-	-	-	-	-
103. <i>O. pabo</i>	-	-	-	-	-	-	-	-	+	-	-
104. <i>Wallago attu</i>	-	-	-	-	+	-	-	-	-	-	-
105. <i>Ailia coila</i>	+	-	-	-	-	-	-	-	-	-	-
106. <i>Pseudeutropius atherinoides</i>	-	-	-	-	+	-	-	-	-	-	-
107. <i>Amblyceps mangois</i>	-	-	-	-	-	-	-	-	-	+	+
108. <i>Erethistoides montana</i>	-	-	-	-	-	-	-	-	+	-	+
109. <i>Euchiloglanis hodgarti</i>	-	-	-	-	-	-	-	-	-	-	+
110. <i>E. kamengensis</i>	-	-	-	-	-	-	-	-	+	+	-
111. <i>Exostoma berdmorei</i>	-	-	-	-	-	-	-	-	-	-	+
112. <i>E. stuarti</i>	-	-	-	+	-	-	-	-	-	-	-
113. <i>Glyptothorax annandeli</i>	+	+	+	-	+	+	-	+	-	+	-
114. <i>G. striatus</i>	-	-	-	-	-	-	-	-	+	-	-
115. <i>G. trilineatus</i>	+	-	-	-	-	-	-	-	-	-	-
116. <i>Gagata cenia</i>	+	-	-	-	+	-	-	-	-	-	+
117. <i>Nangra viridescens</i>	-	-	-	-	-	-	-	-	+	-	-

Name of species	1	2	3	4	5	6	7	8	9	10	11
118. <i>Sisor rhabdophorus</i>	-	-	+	-	+			-	+		
119. <i>Pseudecheneis sulcatus</i>	-	-		+	-		-	+	-	+	+
120. <i>Clarias batrachus</i>	+	+	+	-	-	-	-	-		+	
121. <i>Heteropneustes fossilis</i>	+	+	-		-		+	+	-	+	
122. <i>Olyra horai</i>	-	-	-	-	-		-	-	+	-	
123. <i>O. longicaudata</i>	+		-	-	-			-			
124. <i>O. kemi</i>	-	-	-		+	-	-	-		-	-
125. <i>Xenentodon cancila</i>	+	+	+	-	-					-	
126. <i>Channa orientalis</i>	+	+	-	-		-		+	+	-	
127. <i>C. striatus</i>	+	+	-		+	-		+	+	+	
128. <i>C. stewartii</i>	+	+	+	-	+		-	-	+	+	
129. <i>C. punctata</i>	+	+	+	-	-	-	-	+	+	+	
130. <i>C. barca</i>	-	-	+	-	-	-	-	-	-	-	-
131. <i>C. marulius</i>	+	-	+	-	-	-	-	-	-	-	-
132. <i>Monopterus albus</i>	+	-	-	-	-	-	-	-	-	-	-
133. <i>Chanda nama</i>	+	+	+	+	-	-	-	+	+	+	-
134. <i>C. ranga</i>	+	+	+	+	+	+	-	-	+	-	-
135. <i>Badis badis</i>	+	-	-	-	+	-	-	+	-	-	-
136. <i>Nandus nandus</i>	-	-	+	-	-	-	+	+	-	-	-
137. <i>Glossogobius giuris</i>	+	+	+	+	-	+	-	+	+	+	-
138. <i>Anabas testudineus</i>	+	+	+	-	-	-	-	+	-	-	-
139. <i>Colisa sota</i>	+	+	-	+	-	-	-	-	-	-	-
140. <i>C. fasciata</i>	+	+	+	+	+	-	+	+	+	-	-
141. <i>Mastacembelus armatus armatus</i>	-	+	+	-	-	-	+	+	-	-	-
142. <i>M. pancalus</i>	+	+	-	-	-	-	-	-	-	-	-
143. <i>Macrognathus aculeatus</i>	+	+	+	-	-	-	+	-	-	+	-