CHAPTER II

GEOGRAPHICAL FACTS
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2.1. Physical Features

Manipur lies in between 23°50' and 25°41' N latitudes 93°2' and 94°47' E longitudes. It is bounded on the north by Nagaland; on the northeast, east and south by Myanmar; on the northwest and west by Assam and on the southwest by Mizoram (Table 6).

It can be divided into two natural zones: (i) the Imphal plain with an area of about 1820 sq. km, and (ii) the hill ranges which surround the valley covering about 90 per cent of the total area of 22,356 sq. km.

The Imphal plain is an elongated basin with an average elevation of 763 m above mean sea level, whereas the surrounding hill-ranges varying between 763 m and 3048 m above the sea level and occasional connecting spurs and ridges of lower elevation in between (Ansari 1976: 13-14).

The eastern hills form a compact and continuous mountain chain with an average elevation of 1500 m above mean sea level. The main peaks of this hill tract are Khayangphung (2,833 m), Haphu (2,778 m), Zingsui Khova (2,729 m), Zingsui Hora (2,698 m), Tusom (2,515 m), and Kachauphung (2,833 m), Poingashan (2,322), Chingaipongreitha (2,290), Shirui Kashong (2,568 m), Chingjui Peak (2,215.29 m), Phangrei (2,197.76 m), Harva Khangai (2,259.12 m), Mapithel (2,047.04 m), Kazingmalung (2,348.64 m), Hangou (about 2,133 m), and Angoching (about 2,438 m). The main ranges of these hills are Nupitel, Chingai, Malain, Angoching and Yomadung. The rocks of the eastern hills are commonly of the Dishang shales. There are also gabbro, dolerite, quartz-diorite, limestone and serpentinite deposits and Barail sandstones (Table 7).
The western hills run almost parallel in the north-south direction. The hills are higher in the north. Tanipu (2,994 m), Koubru (2,652 m), Iso (2,460 m), Leikot (2,831 m) and Tamphaba (2,664 m) are the important peaks of this hill tract. The rock type of these hills are predominantly sandstone and shale of Barail and Surma series (Singh 1982: 20).

Barak, Jiri, Mukru, Erung, Leimatak, Lengba, Imphal, Thoubal, Irl, Sekmaijin, Chakpi, Khuga, Nambul, and Nambol are the thirteen important rivers of Manipur

2.2. MINERALS

The Geological Survey of India has undertaken surveys in Ukhrul district and discovered a good quality and quantity deposits of valuable minerals, such as chromite, limestone, serpentine, salt, copper, nickel, coal, asbestos, evaporite, magnesium and precious stone such as jade.

1. Chromite: It is found at Phangrei and Shirui Kashong containing partly metallurgical grade ore that is of very limited occurrence in the country as a whole. The occurrences are important indications of possibility of locating larger deposits in the district.

2. Limestone: From archaeological excavation point of view, the only important mineral which is excavated locally is limestone. It is mainly available in Ukhrul Central Sub-Division. According to Geological Survey of India the total reserve of limestone in the district is 6.4 million tonnes and it can easily sustain a cement plant of modest capacity of 400 tonnes a day for about 45 years. The lime contents in these deposits varies from 34 to 53 percent.

3. Serpentine: Nearly the whole of Shirui Kashong and Phangrei range, and Hangkou peak and Zingsui peak are composed of
MANIPUR

Rainfall in cm

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International Boundary
State Boundary
District Boundary
VEGETATION MAP OF MANIPUR

CLOSED FOREST
CLOSED FOREST WITH SHIFTING CULTIVATION
CLOUDS
OPEN FOREST
OPEN FOREST WITH SHIFTING CULTIVATION
NON FOREST
WATER BODIES
RIVERS
serpentine rocks. The hills formed of serpentine may be distinguished at a distance by their barrenness of trees. It is a characteristics dark coloured chrysolite or sometimes carbonate of magnesia.

4. Salt: There are brine springs in the northern part of Ukhrul and Senapati districts. In Ukhrul District, they are located at Maremphung, Razai, Chalou, and Kharasom. Salt is manufactured locally through the simple process of evaporation.

5. Copper: It is available at Kongal Thana, Huimine and Ningthi area bordering Myanmar.

6. Nickel: Nickel is associated with the serpentine rocks and has been located at Nambisha area that borders Myanmar.

7. Magnesium: Minor occurrences of magnesium have been found in Kuingai area on the northeastern part of Ukhrul District.

8. Other Minerals: Only minor occurrences of asbestos, coal, and jade are found in the eastern part of Ukhrul District.

2.3. Environment

Depending on the elevation, Manipur has a subtropical to temperate climate (Table 8). It receives monsoon rain, and the annual rainfall reaches 2143.6 mm (1980). The rainfall is quite high in the Southern Naga areas where the average rainfall is 1958 mm for Tamenglong, 2249 mm for Thanlon, about 1300 mm for Chandel, and 1327 mm for Ukhrul. Normally rainy season begins from April and extends upto September or as late as upto October. The rainfall is more in the hills than the valley. Summer temperature reaches upto 39° and the minimum winter temperature comes down to 0° (ibid.). The climate of the study area may broadly be divided into three seasons: (i) Cold season (October
to March), (ii) Hot season (April to mid-June), and (iii) Rainy season (May to September).

2.4. Flora

Sunlight being abundant and humidity being high, the ecosystem of Manipur is vigorous. The following are the available plant species, including both edible and nonedible. (Local names are given in italics; common names in normal letters; and the botanical names within the brackets.): kuivah, Stemless Carline Thistle (Carlina acaulis), havathan, Hoary Plantain (Plantago media), Mountain Everlasting (Antennaria dioica), Wild Strawberry (Fragaria viridis), sirsa, Pale Polygonum (Polygonum lapathifolium), kathirinah, Thorn Apple (Datura stramonium), Rough Chervil (Chaerophyllum temulum), lamkhavahthei, Black Nightshade (Solanum nigrum), Wood Sorrel (Oxalis acetosella), Musk Strawberry (Fragaria moschata), Dandelion (Taraxacum officinale), phanang, Groundsel (Senecio viscous) timrawon, Martagon Lily (Lilium martagon), kongrihan, Marsh Pennywort (Hydrocotyle vulgaris), hashongthei, Dog Rose (Rosa canina), theithukthei, Crab Apple (Malus sylvestris), yongpa, Horse Mint (Mentha longifolia), khaizahthei (Coriaria napalensis), japankaho (Ageratum conyzoides), haochakwon (Bauhinia variegata), hanahan (Aconogonum molle), kokluiwon, Rhododendron (Rhododendron campanulatum; R. kendrickii), meikhetrong (Grevillea robusta), namuinah (Amomum subulatum), khanjivei (Phoenix humilis), shimphut (Thysamolaena maxima), phanora (Apios carnea), haojakwon, Variegated Bauhinia (Bauhinia variegated), Shirui Lily, (Lilium macklinae), vatrong, Sil-cotton tree (Salmalia malabarica), kaharathei, Blackberry (Rubus sp.), vahrhung (Suillus pictus), macharong, Bracken (Pteridium aquilinum), sahartheirong, Cherry (Prunus cerasus), Gmelina arborea, Acacia mearnsii, Aceros nipalensis, Acridotherus fuscus, Algaia edulis, Ailanthus grandis, Amoora wallichii, Albizzia lebbek, Apuse affinis, Aquilaria agallocha, Arborophila torquiola, Artocarpus
2.5. Fauna

The faunal wealth of Manipur includes Brow-antlered deer (Cervus eldi eldi, McClellan), Capped langur (Presbytis pileatus, Blyth), Chinese pangolin (Manis pentadactyla, Hodgson), Clouded leopard (Neofelis nebulosa, Griffith), Golden cat (Felis temmincki, Vigors and Horsfield), Hog badger (Arctonyx collaris, F. Curvier), Hoolock gibbon (Hylobates hoolock, Barlan), Indian elephant (Elephas maximus, Linnaeus), Panther (Panthera pardus, Linnaeus), Barking deer (Cervulus muntjac), Malayan-Sun bear (Helarctos malayanus, Raffles), Wild boar (Sus cristatus), Leopard cat (Felis bengalensis, Kerr), Slow loris (Nycticebus...
coucang, Boddaert), Pink-headed duck (Rhodonesa caryophyllacea, Latham), White-winged wood duck (Cairina scutulata, S. Muller), Fork-tailed drongo (Dicrurus adsimilis), Great tit (Parus major), Coppersmith barbet (Megalaima haemacephala), Pied wagtail (Motilla alba), Cuckoo (Cuculus canorus), Yellow-legged green pigeon (Treron phoenicopters), Andalusian hemipode (Turnix sylvatica), Hoopoe (Upupa epops), Red-whiskered bulbul (Pycnonotus jocosus), White-throated bulbul (Criniger flaveolus), Whistling teal (Dendrocygna bicolor, Vicillot), Bamboo partridge (Bambusicola fytchii, Godwin-Austen), Blyth's tragopan (Tragopan blythii, Jerden), Hume's bartailed pheasant (Syrmaticus humiae, Hume), Peacock pheasant (Polylecotr bicalcaratum, Linnaeus), Masked finfool (Hollopais personata, G.R. Gray), Brown-backed hornbill (Ptilolaemus tickelliausteni, Jerdon), Rufous-necked hornbill (Aceros nipalensis, Hodgson), Wreathed hornbill (Rhyticeros undulatus, ticehursti, Deigan), Great pied hornbill (Buceros bicornis homrai, Hodgson), Red Junglefowl (Gallus gallus), Rose-ringed Parakeet (Psittacula krameri), Common Koel (Eudynamys scolopacea), White-tipped sicklebill hummingbird (Eutoxeres aquila), Water monitor (Varanus salvator, Laurenti), Indian monitor (Varanus bengalensis, Daudin), Rock python (Python molurus, Linnaeus), the Himalayan newt (tylototriton verrucosus, Anderson), Urodela amphibia (Tylototriton verrucosus, Anderson), Common toad (Bufo melanostictus, Schneider), Indian bull frog (Rana breviceps, Schneider), Tree frog (Amolops afghanus, Gunther), Microhylid frog (Microhyla ornata, Dumeril and Bibron), Flying tree frog (Rhacophorous reinwardtii, Schlegel), Bamboo frog (Polypedates leucomstax, Gravenhorst), and so on.