
Chapter 5

North-East Asia

The north-eastern protuberance of the Asian continent extends from Baikal Lake to the Bering Straits. Much of this landmass falls in eastern Siberia and the remainder is in north China. Fronting the Pacific coast are two peninsulas, Kamchatka and Korea, enclosing the islands of Japan. The tectonic structure of mountain ranges revolves around Precambrian exposures in Manchuria. The surrounding Palaeozoic/Mesozoic folded areas have an east-west strike in China and a north-west strike in Russia. The Siberian section north of Baikal Lake is mostly of flat sedimentary rocks. Lava plateaus are exposed around Kamchatka, while the island chain further south with extinct volcanoes is an active seismic zone. The mountain ranges are less imposing than those of Central Asia and have comparatively low relief. Therefore, the highest peaks in the region are not in the continental section but on the island chain of Taiwan (3,997m) and Japan (3,776m). The mountains of the North-East are described in the following four groups: Eastern Russia, North and East China, the Korean Peninsula, and the Japanese Archipelago (Figures 5 and 6 and Annex D).

5.1 Eastern Russia

The great expanse of Russian land east of the Urals is tilted to the north with most of its south-

ern and eastern parts being mountainous. One highland that stands far to the north, near 70° north latitude, is Gory Putorana (Figure 5). It is not a range but a domed plateau with a radial drainage pattern. Although its highest point is only 1,701m (G. Kaman), Putorana dominates the vast taiga plain for nearly 1,000km around. The next major ranges, Sayan and Stanovoy, are 1,500 km away west and east of Baikal Lake (Figure 4). The highland east of Sayan is so disturbed tectonically that it has led to creation of the graben lake of Baikal, the deepest in the world (1,737m). The surrounding mountains have pine and larch forests. East of the lake, a series of ranges trend north-east towards Stanovoy Khrebet. This Buryat Mongol area is endowed with rich forests and minerals such as gold, iron, tungsten, and molybdenum. A southern spur, Yablonovyy, joins the border ranges of Mongolia near Ulanbaatar. In the east, the Stanovoy Range forms the water divide between the south-flowing Amur and north-flowing Lena rivers. As the Amur turns north to join the sea, it is bounded by Sikhote Alin along the east coast. The Bureinskij Range runs parallel to Sikhote Alin west of the Amur.

East of the Stanovoy Range, the headwaters of the Lena approach to within a 100km of the Pacific but are blocked by the Dzhugdzhur Range. It is less than 2,000m in elevation and runs parallel



Figure 5: North-East Asia (A)



Figure 6: North-East Asia (B)

to the north-west orientation of the coast. The extreme north-east corner of Russia beyond the Lena has a series of young mountains, some of which exceed 2,900m. It is a land of intense cold and its vegetation demonstrates a transition from taiga to tundra. Larch, pine, fir, and birch are the major species of taiga. Reindeer herding, timber extraction, fur trapping, and gold mining are important activities. The alignment of ranges is in a southern arcuate towards Magadan. The western section has two parallel ranges aligned north-west/south-east.

These are the Verkhoyanskiy and Cherskogo flanking the north-flowing Yana River. The section east of Magadan also has two parallel volcanic ranges but they are aligned south-west/north-east. The northern one, Kolymskoye, traverses the mainland, which forms its spine, until terminating in the east. The southern range is made up of the Koryakskoye on the mainland and the Sredinnyy on Kamchatka Peninsula. The peaks of the last range, exceeding 4,700m, are the highest in Eastern Russia. However, the climate is much milder here and there is

adequate rain along the east coast. Fishing is a major industry along with seal hunting and lumbering.

5.2 North and East China

Most of the mountains of China are physiographically related to those of Central Asia. Those east of 110° longitude can be considered in two components as extensive ranges north of the Huang-Ho and the maritime hills to the south. Commencing from the north-west are two ranges, the Changbai and the Great Khingan enclosing Manchuria. The former range along the Korean border trends north-east/south-west and averages 1,000 masl with some peaks exceeding 2,700m. The latter straddles along the Russian and Mongolian boundary into Inner Mongolia. The Greater Khingan Range, from 1,100 - 1,400m in average elevation, has a gentle gradient with rounded tops. The eastern slopes have a comparatively moist climate and are covered with forests. These two ranges, with high points of 2,744m and 1,656m respectively, are aligned south-west/north-east. South-west of the Great Khingan across Inner Mongolia is the Taihan Shan. It stretches 400km north-south as a boundary between the Shani Plateau and the plain of north China. The high point on the range, Wutai Shan, has been a sacred site for Buddhist pilgrims from early times. It has a pronounced cold temperate climate becoming increasingly arid towards the west. The main cultural groups are the Korean in Changbai and the Manchu, Mongol, Evenki and Oroqen in Great Khingan, and they are mostly of the Altaic language family. The area has experienced extensive deforestation for agricultural expansion since the 14th century (Rost 1999). However, there has been intensified reforestation in recent decades.

The mountains of China south of the Huang River and east of the Wuhan Basin are basically hill ranges that appear prominent owing to the surrounding lowlands. The most northerly of these is the Tai Shan in Shandong province. It is an east-west aligned outlier rising above the vast delta of the Huang. The main summit, Yuhuang Ding (1,524m), known as the Jade Emperor Peak, has

been revered since ancient times in folk, Taoist, and Buddhist traditions. Another range north of the Yangtze River is the Dabai Shan on the border of Anhwei and Hupeh provinces. The fold axis running north-west/south-east links it structurally to the Qinling Shan to the west. The eastern section of the range is higher (approaching 3,000m) and more complex. The area produces timber and bamboo and also grows high quality tea.

There are numerous small ranges south of the Yangtze, all with south-west/north-east alignments. Those encircling the Kiangsi Plain (with Poyang Lake) clock-wise from the north-east are the Jiuling, Wugong, Nan Ling, Wuyi, and Tianmu. Jiuling Shan has three parallel ranges with extremely rugged topography. Most of the ranges exceed 1,000m in height, the dominant peak being the Wu-mei (1,686m). The area is heavily forested. Wugong Range lies south of the Jiuling Range, traversing the Kiangsi-Hunan border. Its western section averages 1,500m while the lower eastern section has three parallel ranges. The forests are rich in pine and cedar. The Nan Ling, running eastwards from Guanxi to Qiansi, forms the watershed between the Yangtze and Pearl Rivers; and these granite ranges are generally at 1,000m in altitude, approaching 2,000m in some places. Despite being low, the Nan Ling is an effective barrier to northern cold waves, so that the climate south of it is warm and supports crops all year round. The highest point is the Shinkenkong (1,902m) due north of the Guandong Basin. Further east from Huamei Shan (1,673m) the range has two spurs: the Luoxiao northwards and Dayu Ling eastwards.

The south-east maritime hills run parallel to the coastline east of the Qiangsi Plain. The Wuyi Shan runs north-east along the Qiangsi/Fukien border. The range is much eroded and the highest peak, Huangang (2,158m), lies towards the north. Further north, Tianmu Shan also trends north-west demarcating the boundary between Zhejiang and Anhui provinces. The high points on the range are the Shier Shan (1,262m) in the south and the Xitianmu (1,507m) in the north. The range is famous for dense forest and tea plantation. Fi-

nally, there are the coastal ranges of the Daiyun Shan and Donggan Shan which are traversed by the Min River, debouching at Fuzhou. There are about a dozen national minorities in these southern highlands who predominantly speak Sino-Tibetan languages and practise sedentary farming.

In contrast to the hills of coastal mainland China, those across the Formosa Strait in Taiwan are truly mountainous. The backbone of the island is the Chungyang Shanmo that trends north-south. It rises steeply from the Pacific to slope gradually westwards. Two-thirds of the land surface is composed of rugged highlands. The highest peak is the Yue Shan (3,997m) in the central part of the range. Abundant rainfall supports luxuriant vegetation. The tree line lies above 3,600m owing to the island's position astride the Tropic of Cancer. The montane people belong to the tribal Malay groups who practise shifting cultivation.

5.3 The Korean Peninsula

The Korean Peninsula (Hankuk) is dominated by highlands that run throughout its length. The

mountains are of ancient Archaen rocks that have been uplifted to the east and down-tilted to the west. The central range, known as Hamgyong in the north and Taebak in the south, runs parallel and close to the east coast. The northern section linked to the Changbai Range on the Chinese border is fairly extensive and includes the highest peak in Korea, the Paektu-san or 'White Top Mountain' (2,744m). The structure is also complex with lava plateaus in the interior and escarpment to the east. Two ranges, the Kangnam and Myohyang, trend to the south-west but elevations do not exceed 2,000m. Another eastern range, the Nangnim, turns south to join Taebak Sanmaek. The latter is not very high but forms the watershed of the peninsula. The slopes along the east coast are steep, while those in the west are gentle. The average height of the highest plateau, Gaema, is only 1,500m. The range continues south-westerly as Soback Sanmaek and its high point, Chii-san (1,915m), virtually approaches the sea coast. The climate of Korea is monsoon humid, midway between the continental and marine types. The highlands were once heavily forested and have been cleared exten-



14. Buddhist Shrine, Korea. A hill near Kyongju provides an ideal retreat for contemplation. Persimmons (*Diospyros geus*) with yellow fruit are indigenous to the area.

sively for agriculture and timber extraction. The people are derived from the nomadic tribes of Mongolia who have fused into a homogeneous group. Although Chinese cultural influence is dominant (Plate 14), their ancient heritage survives in shamanistic rituals generally performed by priestesses.

5.4 The Japanese Archipelago

The Japanese word for landscape, *sansui*, is derived from two characters: *san*, mountain, and *sui*, water. This compound term truly reflects the high relief of the country in that the Japanese mountains rise from one of the world's great oceanic depressions with depths of up to 10,000m. Forming part of a volcanic zone that rims the Pacific, the island chain may be likened to the crest of a submerged mountain. The mountains of Japan are described in three groups as those of Hokkaido, Honshu, and Kyusu.

The northern island of Hokkaido is dominated by volcanic mountains. In the east, some of these

volcanoes are still active. The central core, Ishikari Sanchi, has the high peak, the Daisetsu-zan (2,290m). Two ranges radiate from here: the Kitami to the north and Hidaka to the south. These are of granitic rock formation. West of these are the Teshio Sanchi, parallel to the coast, and the Yubari Sanchi inland, representing a metamorphic belt. Hokkaido is the home of the Ainu, the only aborigines surviving in Japan.

The main island, Honshu, has an arcuate form with mountains as its backbone. These ranges are recognised in three zones: five in the north-east, three in the centre, and three in the south-west. The north-south aligned ranges of Ou, Mikuni, and Kanto form the spine of the north-west zone. The Kitatami and Abukama Ranges run close to the east coast. The central zone is a knotted complex of ranges running at right angles to the main spine of the island. Known as the Japanese Alps, these include the Hida Range in the north, the Kiso Range in the centre, and the Akaishi Range in the south. These constitute the highest mountains in Japan and there are at least seven peaks above

Author



15. Tateyama area, Japan. Mt. Tateyama, with a Shinto shrine on the summit (2,872m), is much revered by the Japanese. This range in the Japanese Alps has numerous cirques (background) and thermal springs dotted with huts (foreground) for visitors.

3,000 m, including Mount Fuji (3,776m) east of Akaishi. Composed of Palaeozoic and Mesozoic rocks intruded by igneous ones, the ranges have very steep slopes. The north-west winds bring heavy snowfall in winter. The windward side has climax montane forest while the south-east leeward side has mostly scrub vegetation (Kikuchi 1981). The south-western zone commences west of Nagoya in the form of a long north-south mountain linking the Ryohak, Suzuka, and Kii Ranges. The extreme western part has the Chugoku Sanchi extending between Kyoto and Hiroshima. It is an up-faulted granitic highland with mature, rounded relief. There are no peaks over 2,000m in the south-west zone. The highest is on Shikoku Island across the southern inland sea : the Ishizuchi-san (1,911m).

The southern island of Kyushu is an area of young folded mountains with some vulcanism to the

south. The Kyushu Sanchi straddles north-south across the centre of the island as a distinct watershed. The high point, Kuju-san (1,787m), is situated on the northern end of the range. The Tsukushi is a minor range in the north-west aligned transverse to the central range.

The Japanese islands receive very heavy precipitation in the form of snow, rain, and typhoons. Despite the rugged topography, the mountains have dense forests. If their provenance is climatic, their preservation owes much to the sedentary orientation of Japanese agriculture without livestock and to settlements in which the main economic activity is coastal fishery. In Japanese culture, mountains are less for profane use and rather associated with spirituality. So mountains, *sangaku*, revered as divine, inspired *shugendo* or the cult of the mountain (Picken 1994) (Plate 15).

(see Figures 5 & 6)

Annex D : Ranges of North-East Asia			
S.N.	Range (subsidiary)	Prominent Peak (metres)	Location
1.	Bureinskij Khrebet		Russia
2.	Chereskogo	(2,640)	Russia
3.	Changbai Shan	Aborigen (2,586)	China/North Korea
4.	Chungyang Shanmo	Paektu-san (2,744)	Taiwan
5.	Dabie Shan	Yue Shan (3,997)	China
6.	Daiyun Shan	Huo S. (1,774)	China
7.	Dznugdzhur	Baiyan S. (1,596)	Russia
8.	Great Khingan Range	Gore Topgo (1,909)	China
9.	Gory Putorana	Fuka S. (1,656)	Russia
10.	Hamgyong-Sanmaek	Gora Kaman (1,701)	North Korea
11.	Hokkaido	Kwanmo-bong (2,540)	Japan
12.	Japan Alps	Daisetsu-zan (2,290)	Japan
13.	Jiuling Shan	Fuji-san (3,776)	China
14.	Kolymskoye Nogor'ye	Wu-mei (1,686)	Russia
15.	Koryakskoye , ,	-	Russia
16.	Kyushu	Gora Led' anaja (2,562)	Japan
17.	Nam Ling	Kuju-san (1,787)	China
18.	Sikhote Alin	Huamei S. (1,673)	Russia
19.	Sredinnyj Khrebet	Gora Tardoki-jan (2,077)	Russia
20.	Stanovoy Khrebet (Yablonovyy Khrebet)	Kl'ucevskaja Sopka (4,750) Gora In'aptuk (2,578)	Russia Russia
21.	Taebak-Sanmaek	Burun Sibertuj (2,519)	South Korea
22.	Taihang Shan	Chii-san (1,915)	China
23.	Tai Shan	Wutai S. (3,058)	China
24.	Tianmu Shan	Yuhuang Ding (1,524)	China
25.	Verkhoyenskiy Khrebet	Xitianmu S. (1,507)	Russia
26.	Wugong Shan	Gora Mus-Chaja (2,959)	China
27.	Wuyi Shan	Wugong (1,585) Huangang (2,158)	China

