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CHINESE TURKESTAN I. GEOGRAPHICAL OVERVIEW

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i. Geographical Overview

The eastern portion of the Central Asian land mass (see central asia i. geography), between 70° and 100° E and 25° and 45° N, encompasses Chinese Turkestan, now Sinkiang (Xin-jiang) Uighur Autonomous Region of the People's Republic of China, with the Tarim basin and the high plateaus and mountains surrounding it (capital Urumchi [Wu-lu-mu-chi]); Tibet (capital Lhasa [La-sa]); the eastern portions of the Kazakh Soviet Socialist Republic between the Tien Shan and Altai mountains; and the Gobi (Shamo) desert, including parts of the Mongolian People's Republic and Inner Mongolian Autonomous Region of China.

The area is characterized by spectacular peaks and plateaus at high elevations, interspersed with generally arid lowlands. The steppes of Kazakhstan and Sinkiang, continuing into eastern Mongolia and northwestern Manchuria, form the easternmost portion of the desert belt that extends across the Persian plateau and Arabia as far as western North Africa. In contrast to Soviet Central Asia, however, in Inner Asia the natural severe aridity of the climate has not been altered by large-scale irrigation projects. The plains can be classified in three zones of elevation: 100-500 m, 1,000-1,500 m, and 3,000-4,500 m. As in

Central Asia, those in the lowest zone generally lie on the northern and western flanks of the great mountain ranges, the Alai (Fergana [Farḡāna] valley: 250-400 m), Tien Shans, Dzungarian Alatau, Tarbagatay, and Altai. The intermediate zones, on the other hand, generally lie south of the mountains, particularly the Tarim basin and Mongolia as far as the Greater Khingan range (Ta Hsing-an-ling [Xing-an-ling] Shan) in Manchuria and Inner Mongolia. Nevertheless, the second deepest depression on earth after the Dead Sea (-395 m), the Turfan oasis (-154 m), is found on the southern flank of the Tien Shans. The highest steppe zones include the Pamirs and the Tibetan plateau. Again following the pattern of Central Asia, the plateaus generally rise from east to west: For example, the elevation of the Tsaidam swamp in Tsinghai province on the northeastern perimeter of Tibet is 2,700 m, that of Lhasa 3,600 m, that of Chiang-tzu (Gyangtse) 4,000 m, and that of Ka-erh (Gartok) in western Tibet 4,467 m. Fertile yellow loess covers the plains at every altitude, even beneath the sand of the deserts. Today mechanized agriculture is breaking up huge areas of the loess plains, sometimes even removing the sand cover of the deserts, in order to convert them into arable land. Permanent settlements are generally confined to the northern foothills of the great mountain ranges and adjacent portions of the plains. On the steppes beyond only the nomadic life of the livestock herder is possible.

Precipitation, though minimal in the flatlands, increases with elevation; at 1,000 m it may reach a maximum of 1,000 mm a year, that is, almost as much as in coastal areas. The perpetual snow line generally lies between 3,000 and 3,500 m in peripheral ranges but slightly above 4,000 m in the massive systems farther east. In the central Tien Shans, for example, passes above 4,000 m are generally free of snow during the entire summer. In the Pamirs and most parts of the southernmost chains of the Himalayas the snow line lies as high as 5,500 m. The snow line on the northern slopes is often as much as 500-700 m lower than on the sunny southern slopes. In contrast to the broad expanses of steppe north of 45° N, where heavy snow cover lasts for a relatively long period because of low winter temperatures, on the southern borders of Kazakhstan it rarely exceeds a depth of 20 cm. It is not unusual for the arid zone to extend right up to the perpetual snow line. Taller vegetation is found only in irrigated areas, and forests are confined to higher altitudes along the northern mountain slopes.

The southern mountain barrier and Tibet. Except for the Greater Khingan range, which runs north-south, the crestlines of the mountain systems, like

those of western Turkestan, generally follow east-west axes, which seem to fan out from the Pamirs. Extending southeast from the Pamirs the Karakoram range, the Himalayas, and the parallel Trans-Himalayas (the Kailas [Kang-ti-ssu] range) describe a huge arc curving eastward and forming the boundary between the Indian subcontinent and Inner Asia. In the southeastern Chamdo (Khams) region of Tibet, between 90° and 110° E, these giant ranges turn southeast and south, forming the relatively unexplored mountainous region of southwestern China and northern Indochina. In the northwestern Karakoram, in the portion of Jammu and Kashmir controlled by Pakistan, the famous K2 (Mount Godwin Austen), the world's second highest peak, rises to 8,611 m. In the Himalayan and Trans-Himalayan chains are several very high peaks—-Nanga Parbat, also in Pakistani Jammu and Kashmir (8,126 m); Mount Dhaulagiri in Nepal (8,172 m); Mount Everest (Tib. Cho-mo-lung-ma), the highest peak in the world (8,848 m), on the border between Nepal and Tibet; and Kangchenjunga, , the third highest (8,579 m), between Nepal and Sikkim—and a great many at elevations just under 8,000 m.

Valley glaciers clustered around such peaks are the basic and permanent sources of all the rivers that flow through Inner Asia, but, whereas most empty into self-contained lakes with no outlet to the oceans, those rising on the Tibetan plateau include many of the major river systems in southern and southeastern Asia. The Baltoro, Siachen, and Remo glaciers south and southeast of K2, as well as others on the northern slopes of the Himalayas, are particularly important; although most are in retreat, thick moraine cover in their lower reaches deters thawing. The Indus and the Brahmaputra originate in close proximity in a geological fold between the giant ranges of the Karakoram and the Himalayas, the watershed between them marked by Ma-na-sa-lo-wu (Manasarowar), a large salt lake 150 km southeast of Ka-erh (elev. 4,602 m). The Indus (Tib. Seng-ge Kha-bab) flows northwest through a number of deep, narrow gorges in the western Himalayas onto the plains of the Punjab, where the major rivers draining the southern slopes of the mountains in the west flow into it. The Brahmaputra (Tib. Rta-mchog Kha-bab) follows a similarly intricate course around the eastern end of the Himalayas into the huge, tropical Assam valley. The Tibetan plateau itself is an arid steppe, dotted with large salt lakes. The four great river systems of Southeast Asia and China have their sources in the eastern portion. The three southernmost—the Salween, the Mekong, and the Yangtze (Kinsha-kiang)—flow generally south and southeast, separated by high parallel ranges extending into Indochina. The fourth, the Yellow river (Huang Ho), follows the Yangtze closely in its

upper course, then bends east and northeast toward Mongolia. Most of the population of Tibet is concentrated in the river valleys along the southern margin of the plateau.

The Kunluns and the Tarim basin. Directly east of the Pamirs and the parallel Mu-ssu-t'a-ko-a-t'e (Muztagh Ata range; highest peak Muztagh Ata: 7,546 m) the Kunlun Shan and its eastern extension, the Nan Shan (Southern mountains), separate the Tibetan plateau from the Tarim basin and the Gobi desert farther east. Wu-luk'o-mu-shih (Ulugh Muztagh: 7,723 m) is the highest peak in the Kunlun range, located at 87.5° E, where the A-erh-chin Shan (Altin Tagh) splits off to the north; many other peaks rise above 6,000 m, particularly in the western portion of the range. Farther east some of the southern chains, for example, the A-ni-ma-ch'ing Shan (Amne Machin Shan; highest peak Amne Machin, 7,164 m) and Pa-yen-k'a-la Shan (Bayan Kara Shan), which separate the upper reaches of the Yellow (Tib. Rma Chu) and Yangtze (Tib. Bri Chu) rivers, extend deep into western China; in their western stretches there are apparently many high peaks that have not yet been surveyed or remain unpublished. North of the A-ni-ma-ch'ing Shan are the southern chains of the Nan Shan system, which itself continues as the Ch'in Ling (Tsinling/Qin-ling) Shan as far as western Honan province in China, forming the watershed between the Wei and Han rivers. The elevations surveyed in the Nan Shans so far do not exceed 5,000 m and are progressively lower farther east.

North of the Kunluns lies the Tarim basin, nine-tenths of its surface consisting of sand desert, the Takla Makan (Ta-ko-pi), with dunes up to 20 m high; its constantly shifting sands are steadily encroaching on the cultivated areas. The Yarkand (Yeh-erh-ch'iang) river, which rises in the eastern Karakoram, flows together with the Kashgar (Kyzylsu, K'a-shih-ka-erh), which has its sources in the Alai and Trans-Alai ranges, to form the Tarim river (T'a-li-mu Ho), the main tributary of which is the A-k'o-su (Aksu), descending from the Tien Shan mountains to the north; all the former southern tributaries, which rise in the Kunluns, disappear into the dry earth before they reach the Tarim. The river flows eastward through the desert to feed the shallow Lop Nor (Lo-pu Po, elev. 730 m), the "wandering lake" discovered by Sven Hedin in 1896 and again in 1934, when it had shifted to the northeast of its former position. Such shifts are frequent and reflect both irregular changes in the volume of the Tarim and the effects of wind on the shallow waters. The major towns in the basin are laid out along two branches of the ancient Silk Road starting from Kashgar (K'a-shih; elev. 1,230 m) at the western end. The northern branch followed the

southern slopes of the Tien Shans through Aqsu (A-k'o-su, 1,010 m), Kuçā (K'u-ch'e), Qārāšahr (1,090 m) near the Baghrash Köl (Po-ssu-t'eng Hu, 890 m), and Turfan (T'u-lu-fan, -50 m), crossing the mountains to Barkol (Pa-li-k'un,1,720 m). The southern branch followed the northern slopes of the Kunluns through Yarkand (So-ch'e, 1,200 m), Khotan (Ho-t'ien, 1,410 m), Keriya and Niya (both 1,430 m), and Cherchen (1,280 m). The ancient city of Krorain (Lou-lan) was situated northeat of Lop Nor.

The Tien Shans and the northern plains. The Kok Shaal Tau branches off from the Pamirs to the northeast, linking them with the Tien Shans, which run generally parallel to the Kunluns. Beginning about 70 km east of Tashkent, the western Tien Shans, the highest peaks generally exceeding 3,000 m in elevation and snow-capped most of the year, separate the fertile Fergana valley from the southern Kazakh steppes. The major cities in the valley, Andizhan (Andejān), Namangan, Margelan, Kokand (Ḵoqand), and Leninabad (Ḵojand) along the upper Syr Darya, are in the Uzbek S.S.R. Osh, near ancient Uzgen in the southeastern comer of the valley, is in the Kirgiz S.S.R.

Farther east the Tien Shans comprise a number of parallel chains extending along the northern perimeter of the Tarim basin and separating it from the low plateaus of eastern Kazakhstan and Dzungaria. About 600 km east of Tashkent the northern chains divide into the Kungey and Zailiĭskiĭ (Trans-Ili) Alatau on the north and the Terskey Alatau on the south, flanking the large basin of the Issyk Kul (Issiq Köl, lit. "warm lake," because it does not freeze), 1,623 m above sea level and 700 m deep. Located about 240 km east-southeast of Issyk Kul is Victory Peak (Pik Pobeda; 7,439 m), the highest in the Tien Shan system; slightly to the north is Khan-Tengri (6,995 m) with the associated Inilçäk glacier, 65 km long and 400 m thick, extending down to 2,883 m above sea level.

The highest elevation in the eastern Tien Shans is Po-ko-to Shan (Mong. Bogdo-ola "venerable mountain"; 5,445 m), about 70 km east of Urumchi. Although the highest peaks of the Tien Shans thus cannot compete with those of the Alai and Hindu Kush, the average elevation of the relatively even crest line is only slightly below 4,000 m. The elevations of the Tien Shans decline considerably at around 95° E; a number of lower parallel ridges, generally known in Chinese as the Pei-t'a Shan (Mong. Baytag Bogdo "Northern mountains"), form a kind of barrier between the northern perimeter of the Tarim basin and the Gobi desert. Nevertheless, between the eastern reaches of the Tien Shans and the Nan Shans the two expanses open into each other, forming part of the

continuous desert belt across Asia; temperatures in these arid continental regions can reach as high as 50° C.

Several relatively short parallel ranges lie between the Tien Shans and the Altai range farther north, for example, the Dzhungarian Alatau (Char-ka-erh-a-la-t'ao Shan), which includes one peak rising to 4,158 m at 78° E, where it approaches the P'o-lo-k'o-mu Shan (Borokhoro) chain of the Tien Shans, and the generally much lower Tarbagatay range farther north and east, broken by large valleys serving as natural passageways between the plateaus of Inner Asia and the vast lowlands of northern Kazakhstan and Siberia. Mus Tau, marking the transition from the Tarbagatay range to the Altai at 85° 40' E, rises to 3,805 m. Urumchi, the capital of Sinkiang, lies on the ancient northern caravan route that passed north of the Tien Shans through Kuldja (I-ning, at present the second largest city of Sinkiang), near the present Soviet border, and Dzharkent (Panfilov in the Kazakh S.S.R.).

Near the western end of the Tien Shans, at about 72° E, the low Karatau ridge splits off to the northwest, defining the western border of the Muyunkum desert (elev. 300-700 m) of the southern Kazakh S.S.R. Two small rivers flowing from the Tien Shans, the Talas and the Chu, vanish in its sands. The Chu forms the boundary between this desert and the Yetisu (lit., "seven rivers," Rus. Semirech'e) desert farther east, which takes its name from a few small watercourses that cross it from the Dzungarian Alatau and empty into Lake Balkhash, 340 m above sea level and 26 m deep. The surface of the lake is shrinking at a rapid rate and may soon be cut in two. The most important river in this region is the Ili, which drains the long valley between the eastern Kungey Alatau and the P'o-lo-k'o-mu Shans, then flows north across the plains to a marshy delta at the southern end of Lake Balkhash. The population of these desert areas is concentrated along the southern perimeter, particularly in Dzhambul (former Aulie Ata) on the upper Talas river, Frunze (former Pishpek), capital of the Kirgiz S.S.R., on the upper Chu; and Alma-Ata (former Vernyi), capital of the Kazakh S.S.R. at the base of the Kungey Alatau.

To the east of Lake Balkhash lie other shallow lakes, for example, the Sasykkol (Stinky lake) and Alakol (Blue lake) north of the Dzungarian Alatau and the smaller Ebi Nor (Ai-pi Hu) south of it, at the western end of the central Dzungarian desert, all fed by local streams.

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