huge glacier, which has to be ascended with the help of the ice axe.

One river only, the Tarim—now lost in the marshes of Lob-Nor—and its tributaries, water this region. It is formed by the confluence of several rivers flowing from the semicircle of mountains which fence in East Turkestan on the south, west, and north. The Kashgar-Daria rises under the name of Kizil-su on the Aɫai. The Yarkand- Daria has its origin in a high valley between the Kuen- Lun and Karakorum Mountains, at the base of Dapsang, from several streams, such as the auriferous Zerafshan, which is fed by the glaciers of the Karakorum pass ; after piercing the Kuen-Lun, it enters the plain, where its waters are soon diverted to the fields and gardens of the Yarkand oasis. The Khotan-Daria rises farther east in the same valley, and also pierces the Kuen-Lun, its two branches— the Kara-kash and Urung-kash—being renowned for their “ black ” and “ white ” jade. This river only reaches the Tarim during the summer. The Tian-Shan Mountains contain the sources of several feeders of the Tarim ; but some of them no longer reach the main stream. The Kizil-Kunghei disappears after having watered Utch-Turfan (Uj-Turfan); the Ak-su meets the Khotan-Daria at its junction with the Tarim ; but the Baidu-gol and the Kutcha are lost in Lakes Baba-kul and Sary-kamysh. From the Yuɫduz plateau comes the Haidu-gol, which flows past Kara-Shar and enters the Bagratch-kul Lake, whence it issues under the name of Kontcha-Daria, and, crossing the east of East Turkestan from north to south, joins the marshes of Lob-Nor ; thus the long-doubted con­nexion between these two lakes—the northern and the southern—really exists. The Tarim is navigable for steamers from the confluence of the Yarkand and Khotan rivers all the way to Lob-Nor.@@1 These rivers, however, do not bring life to the immense deserts, the aspect of which recalls partly the Aral-Caspian depression and partly the Mongolian Gobi. Their undulating surface is covered with a gravelly soil, out of which all the finer particles have been winnowed by the wind, and it resounds under the hoofs of the passing hordes ; grass covers it only in the beginning of spring. Here and there occur clayey deposits with an efflorescence of salt, which is hard in summer but impassable after rains. Then come immense areas of loose sand, which is raised in clouds by storms of wind, and the hills of which, moving on like waves, invade the cultivated fields that have been conquered by laborious effort from the desert. The features with which the traveller in the Sahara, or on the plateau of eastern Iran about Lake Zareh (Hamun) is familiar, are here reproduced on the same large scale. The Takla-makan desert north of Khotan covers 93,000 square miles—an area nearly equal to that of Great Britain. As one approaches Lob-Nor, and thus touches upon territory that has emerged at a still more recent epoch, the desert becomes still drearier and still less passable on account of the shifting sands. Lob-Nor now consists of two basins ; but the largest of them, although it has an area four times as large as that of the Lake of Geneva, can hardly be called a lake, since its greatest depth is less than 20 feet, while reeds rise 20 feet above the thin film of water and extend far beyond its shores. In fact the whole of the region, notwithstanding its considerable altitude above the ocean, has but recently emerged from under water. During the later portion of the Tertiary period it was covered with an immense Mediterranean sea, and even during the Post-Pliocene period was occupied by a lake. But, as we see on a smaller scale in Finland and Sweden, where the higher

lacustrine depressions are more advanced in the process of desiccation than those situated at lower levels, so in Central Asia the more elevated Tarim region is more advanced in its desiccation than the Balkash basin, and this latter again is in a more advanced stage of the same process than the Aral-Caspian depression. The desiccation of East Turkestan must have gone on, however, within historical times at a much more rapid rate than geologists seem pre­pared to admit. East Turkestan has not always been the desert it now is. Many cities, in which Greek and Byzan­tine coins have been found, lie buried beneath the sands, and in one of these Buddhist statues have been discovered. Indeed it is very probable that the great migration of the first centuries of our era resulted from the necessity of abandoning East Turkestan.

The climate is severe : a cold winter follows a burning summer. A few showers slightly moisten the surface in spring ; but the summer and autumn are rainless. The air is continually charged with dust, and often with sand.

The vegetation of the interior of East Turkestan is very poor, being the same as that of the steppes of West Turkestan. On the sandy hills are some tamarisks and *Elæagnus,* rapidly being used up as fuel ; along the rivers are copses of poplars, which have diffi­culty in maintaining themselves, because no humus gathers in their shade, the dry leaves being blown away by the storms and scattered as dust over the desert ; and, finally, along the old beds of rivers and lakes grow dense and rank beds of reeds, where the wild boar has his habitat. Immense areas are covered with *Salsolaceæ,* and the gravelly ground is clothed in spring with a rich carpet of grass. The oases possess all the plants which are cultivated in West Turkestan,—the mulberry, walnut, pear, apple, apricot, olive, and vine. Cotton, rice, maize, millet, and wheat are grown ; and Middendorff's@@2 remark, that on the edge of the desert we find the best cultivated fields and the richest gardens, is still more appli­cable to the oases of East than to those of West Turkestan. But outside the oases desolation reigns. Wind freely modifies the sur­face, carrying away the finest particles of the gravelly soil, breaking down the *barkhans* as soon as man has destroyed the vegetation which grew on them, and lifting the sand into the air and whirling it along in columns of the most fantastic shapes.

As a rule, the mammals are not numerous, and the fauna closely resembles that of the Tian-Shan. It seems to be owing to the loneliness of its deserts that East Turkestan has preserved the wild ancestors of our domestic animals. Besides the wild ass (*Equus hemionus),* Prjevalsky discovered in the Dzungarian steppes the wild horse—the real ancestor of our domestic horse—and on the plateau of Tsaidam the wild camel and the wild yak.@@@3

Raw cotton and silk are exported to a considerable amount ; but of manufactured cottons only a rough *mata* is sent to Semiryetchensk for the Kirghiz. Some silk wares, carpets, and silk “grain” are exported from Khotan, leather-ware from Yarkand, polished and copper ware from Ak-su, and small iron ware from Kutcha. Stock- breeding is of paramount importance, and cattle, asses, camels, and sheep are reared in considerable numbers. Mineral resources are not wanting, but the mining industry is in a primitive condition. Gold is obtained from alluvial deposits at Kiria, coal at Kashgar, jade in Khotan, and sulphur and saltpetre at Utch-Turfan.

It is only along the base of the mountains, where there is a fringe of loess, and where streams bring the necessary moisture, that human settlements have sprang up, or rather maintained them­selves until now. The series of oases skirts the base of the Tian- Shan and the Kuen-Lun. Kashgar stands at the apex of the angle made by those two ranges, while Yanghi-hissar, Yarkand, Khotan, and Kiria lie along the Kuen-Lun, and Utch-Turfan, Ak-su, Bai, Kutcha, Kurta, Karashar, and Turfan along the Tian-Shan. Many miles of desert separate these oases from each other ; and their population could be, and has been, much greater than it is, for there is no lack of water in the streams which rise beneath the snow covering of the mountains. The various oases, which are named after their chief towns, have always been nearly independent of each other. Still, in the course of their much disturbed history, Khotan, Yarkand, Kashgar, and Ak-su, one after another acquired a kind of supremacy over the rest. At present Yarkand and Kash­gar are the most important. The city of Yarkand has nearly 60,000 inhabitants ; it is surrounded by walls, and has a separate fort, Yanghi-hissar ; rains of old settlements are scattered around. Its Chinese merchants carry on an active trade, and the Turkish popu­lation are breeders of cattle on an extensive scale. Wheat, barley, rice, beans, sorghum, mulberries, and a variety of fruit trees are

@@@1 At the confluence the Tarim has at low water a depth of 3 to 5 feet and a width of 190 yards ; towards Lob-Nor the depth increases to 14 feet (Prjevalsky, in *Izvestia* of Russ. Geog. Soc., 1887).

*@@@2 Op. cit.*

@@@3 Prjevalsky, *Reisen in Tibet,* &c. ; and Wilkins (naturalist of Μ. Kuropatkin’s expedition) in the Russian periodical *Priroda,* 1887, No. 3.