routes from the Lena to the Sea of Okhotsk. (3) There are, moreover, two terraces in the plateau,—a higher and a lower, which are very well pronounced in Transbaikalia (*q.v.*) and in Mongolia. The Yablonovoi range and its south-western continuation the Kentei are border-ridges of the upper terrace. Both rise very gently above it, but have steep slopes towards the lower terrace, which is occupied by the Nertchinsk steppes in Transbaikalia and by the Gobi in Mongolia (2000 to 2500 feet above the sea). They rise to from 5000 to 7000 feet above the sea; the peak of Sokhondo in Transbaikalia reaches nearly 8500 feet. Several low chains of mountains have their base on the lower terrace and run from south-west to north-east; they are known as the Nertchinsk Mountains in Transbaikalia, and their continuations reach the northern parts of the Gobi.@@1

The great plateau is fringed on the north-west by a series of high border-ridges, which have their southern base on the plateau and their northern at a much lower level. They may be traced from the Thian-Shan to the arctic circle, and have an east-north-easterly direction in lower latitudes and a north-easterly direction farther north. Both the Alai ridge of the Pamir, continued by the Kokshal- tau range and the Khan-Tengri group of the Thian-Shan, and the Sailughem range of the Altai (see Tomsk), which is continued, in the opinion of the present writer, in the yet unnamed border-ridge of West Sayan (between the Bei-khem and the Us),@@2 belong to this cate­gory. There are, however, in these border-ridges several breaches of continuity,—broad depressions or trenches leading from Lake Bal- kash and Lake Zaisan to the upper parts of the plateau. On the other hand, there are on the western outskirts of the plateau a few mountain chains which take a direction at right angles to the above (that is, from the north-west to the south-east), and parallel to the great line of upheavals in south-west Asia. The Tarbagatai Mountains, on the borders of Siberia, as well as several chains in Turkestan, are instances of these upheavals. But, notwithstanding these com­plications, it remains certain that the Alai Mountains, the Khan- Tengri group, the Sailughem range, and the West Sayan are border- ridges of the high plateau fringing it from 70° to 100° E. long. These border-ridges contain the highest peaks of their respective regions; they are immense walls which render access to the high plateau extremely difficult, unless the traveller follows the above- mentioned trenches. Beyond 100° E. long. the above structure is complicated by the great lateral indentation of Lake Baikal. But around and beyond this lake we again find the same huge border- ridge fringing the plateau and turning its steep north-western slope towards the valleys of the Irkut, the Barguzin, the Muya, and the Tchara, while its southern base lies on the plateaus of the Selenga (nearly 4000 feet high) and the Vitim (see Transbaikalia). The peaks of the Sailughem range reach from 9000 to 11,000 feet above the sea, those of West Sayan about 10,000. In East Sayan is Munku-Sardyk, a peak 10,000 feet high, together with many others from 8000 to 9000 feet. Farther east, on the southern shore of Lake Baikal, Khamar-daban rises to 6900 feet, and the huge dome-shaped, bald summits of the Barguzin and Southern Muya Mountains attain an elevation of 6000 to 7000 feet above the sea- level. The orography of the Aldan region is but little known ; but travellers who journey from the Aldan (tributary of the Lena) to the Amur or to the Sea of Okhotsk have to cross the same plateau and its border-ridge, the former becoming narrower and barely attaining an average altitude of 3200 feet. Whether it projects farther into the land of the Tchuktchis remains unsettled, although the probability is that it does.

A typical feature of the north-eastern border of the high plateau is a succession of broad longitudinal@@3 valleys along its outer base, shut in on the outer side by walls of wild mountains having a very steep slope towards them. Formerly filled with alpine lakes, these valleys have now a flat alluvial soil occupied by human settlements, and are watered by rivers which flow along them before they make their way to the north through narrow gorges pierced in the mountain-wall just mentioned. This structure is seen in the valley of the Us in West Sayan, in that of the upper Oka and Irkut in East Sayan, in the valley of the Barguzin, the upper Tsipa, the Muya, and the Tchara, at the foot of the Vitim plateau, as also, probably, in the Aldan.@@4 The chains of mountains which fringe these valleys on the north-west belong to the wildest parts of Siberia. They are named the Usinsk Mountains in West Sayan and the Tunka Alps in East Sayan; the latter, pierced by the Angara at Irkutsk, in all probability are continued north-eastwards

in the Baikal Mountains, which run from Irkutsk to Olkhon Island and the Svyatoi Nos peninsula of Lake Baikal, thus dividing the lake into two parts, the great and the little.@@5 The Barguzin Mountains (on the right bank of the Barguzin river) and the Northern Muya range continue them farther to the north-east, and most probably they are prolonged still farther on the left bank of the Aldan.

A strip of alpine region, 100 to 150 miles in breadth, fringes the north-western border of the plateau beyond the ridges just men­tioned. This constitutes what is called in Eastern Siberia the *taiga* : it consists of separate chains of mountains whose peaks rise from 4800 to 6500 feet above the sea, beyond the upper limits of forest vegetation (the *goltsy*); while the narrow valleys afford diffi­cult means of communication, their floors being thickly covered with boulders, or else swampy; the whole is clothed with thick impenetrable forests. The orography of this alpine region is very imperfectly known; but the chains have a predominant direction from south-west to north-east. They are described under different names in Siberia:—the Altai Mountains (see Tomsk) in Western Siberia, which also belong to this category, the Kuznetskiy Ala-tau and the Us and Oya Mountains in West Sayan (see Yeniseisk), the Nijne-Udinsk *taiga* or gold-mine district, several chains pierced by the Oka river, the Kitoi Alps in East Sayan, the mountains of the upper Lena and Kirenga, the Olekminsk gold-mine district, and the yet unnamed mountains which protrude north-east between the Lena and the Aldan.

A broad belt of elevated plains, ranging between 1200 and 1700 feet above the sea, extends beyond these alpine regions. These plains, which are entered by the great Siberian highway about Tomsk@@6 and extend farther in a south-westerly direction, fringing the Altai Mountains, are the true abodes of Russian colonizers ; they are fertile for the most part, although sometimes dry, and are rapidly being covered with Russian villages. About Kansk in Eastern Siberia they penetrate in the form of a broad gulf south- eastwards as far as Irkutsk. Those on the upper Lena, having a somewhat greater altitude and being situated in higher latitudes, are almost wholly unfitted for agriculture. The north-western border of these elevated plains cannot yet be determined with exactitude. In the region between Viluisk (on the Vilui) and Yeniseisk a broad belt of alpine tracts, reaching their greatest ele­vation in the northern Yeniseisk *taiga* (between the Upper and the Podkamennaya Tunguzka) and continued to the south-west in lower upheavals, separates the elevated plains from the lowlands which extend towards the Arctic Ocean. In Western Siberia these high plains seem to occupy a narrower area towards Barnaul and Semi­palatinsk, and it is difficult to say whether they are separated by an abrupt slope from the Aral-Caspian depression.

Farther to the north-west, beyond these high plains, we find a broad belt of lowlands extending as far as the Ural Mountains and the Arctic Ocean. This vast tract, which is now only a few dozen feet above the sea, and most probably was covered by the sea during the Post-Pliocene period, stretches from the Aral-Caspian depression to the lowlands of the Tobol, Irtish, and Ob, and thence towards the lower parts of the Yenisei and the Lena. Only a few separate mountain ranges, like the Byrranga on the Taimyr penin­sula, the Syverma Mountains, the Verkhoyansk and the Khara- utakh ranges, diversify the monotonous surface of these lowlands, which are covered with a thick sheet of black earth in the south and assume the character of barren tundras in the north (see Tobolsk and Yeniseisk).

The south-eastern slope of the great plateau of Asia cannot pro­perly be reckoned to Siberia, although parts of the province of Amur and the Maritime Province are situated on it; they have quite a different character, climate, and vegetation, and ought properly to be reckoned to the Manchurian region. As already said, we have to the east of the Yablonovoi border-ridge the lower terrace of the high plateau, reaching about 2000 to 2500 feet in Transbaikalia and extending farther to the south-west through the Gobi to East Turkestan. The south-eastern edge of this lower terrace is fringed by a massive border-ridge—the Khingan—which runs in a north-easterly direction from the Great Wall of China to the sources of the Nonni-ula. The traveller crossing it from the west is hardly aware of its existence; but it has a very steep slope towards the east, and forms a most important boundary for the Manchurian flora, which does not extend over the plateau. The northern parts of the Khingan are quite unexplored; the most northerly point that has been visited is the sources of the Gañ, where the present writer crossed it on his way to Mergeñ; and we have no direct data for determining where it is crossed by the Amur. But, considering the structure of the country on the left bank of the Amur, it appears probable that this river crosses it below Albazin (between Tołbuzina and Kuznetsova, where it makes great windings), and the Zeya where it is joined by the Gilui,—

@@@1 The lower terrace is obviously continued in the Tarim basin of East Turkestan; but in the present state of our knowledge we cannot determine whether the further continuations of the border-ridge of the higher terrace (Yablonovoi, Kentei) must be looked for in the Great Altai or in some other range situated farther to the south. There may be also a breach of continuity in some depression towards Barkul.

@@@2 See “Orographical Sketch of Minusinsk, &c.,” *ut* *supra.*

@@@3 The word “longitudinal” is here used in an orographical not a geological sense. Meglitzki in 1856 and recently M. Chersky have shown that these valleys are not synclinal foldings of rocks ; they seem to be erosion-valleys.

@@@4 We do not know at present whether the same structure is exhibited in the Altai at the foot of the Sailughem range. The upper Bukhtarma valley seems, however, to belong to the same type.

@@@5 The deep crevice filled up by Lake Baikal would thus appear to be made up of two longitudinal valleys connected together by the passage between Olkhon and Svyatoi Nos.

@@@6 “Levelling of Siberia,” in *Izvestia* of the Russian Geogr. Soc., vol. xxi.