who were then colonizing the Urals brought him into collision with Moscow; his envoys came to Moscow in 1555 and consented to a yearly tribute of a thousand sables. This source of wealth attracted Russian adventurers to the trans-Ural regions. As early as the 11th century the Novgorodians had occasionally penetrated into Siberia; but the fall of the republic and the loss of its north­eastern dependencies checked the advance of the Russians across the Urals. On the defeat of Stepan Razin many who were unwill­ing to submit to the iron rule of Moscow made their way to the settlements of Stroganoff in Perm, and tradition has it that, in order to get rid of his guests, Stroganoff suggested to their chief, Yermak, that he should cross the Urals into Siberia, promising to help him in this enterprise with supplies of food and arms. Yermak entered Siberia in 1580 with a band of 1636 men, following the Taghil and Tura rivers. Next year they were on the Tobol, and 500 men suc­cessfully laid siege to Isker, the residence of Khan Kutchum, in the neighbourhood of what is now Tobolsk. Kutchum fled to the steppes, abandoning his domains to Yermak, who, according to tradition, purchased by the present of Siberia to Ivan IV. his own restoration to favour. Yermnak was drowned in the Irtish in 1584, after having been defeated by the Tatars. After his death the Cossacks abandoned Siberia; but new bands of hunters and adven­turers, attracted by the furs, poured every year into the country, and were supported by regular troops from Moscow. To avoid conflicts with denser populations in the south, they preferred to advance eastwards along higher latitudes; meanwhile Moscow sent fresh detachments of troops under *voivodes,* who erected forts and settled labourers around them to supply the garrisons with food, gunpowder, and arms. Within eighty years the Russians had reached the Amur and the Pacific. This rapid conquest is accounted for by the circumstance that they met with no organized resistance: they found only the Tatar Kutchum on the Tobol, and in the Altai the Turkish stocks under the Kalmuck Altyn Khan, the centre of whose power was on the Kemtchik, and who collected tribute from the Teleuts, Uryankhs, Telesses, Beltirs, Buruts (Kirghiz), and other smaller tribes. Neither Tatars nor Turks could offer any serious resistance. When travelling down the Yenisei in 1607-10 the Cossacks first encountered Tunguses, who strenuously fought for their independence, but were at last subdued about 1623. In 1628 the Russians reached the Lena, founded the fort of Yakutskiy in 1637, and two years later reached the Sea of Okhotsk at the mouth of the Ulia river. The Buriats offered some opposition, but between 1631 and 1641 the Cossacks erected several palisaded forts in their territory, and in 1648 the fort on the upper Uda (Verkhne-Udinskiy Ostrog) beyond Lake Baikal. In 1643 Poyarkoff's boats descended the Amur, returning to Yakutsk by the Sea of Okhotsk and the Aldan, and in 1649-50 Khabaroff oc­cupied the course of the Amur. The resistance of the Chinese, however, obliged the Cossacks to quit their forts, and by the treaty of Nertchinsk (1689) Russia abandoned her advance into the basin of the river. In her anxiety to keep peace with China and not to endanger the Kiachta trade, Russia rigorously prohibited and punished all attempts of the Siberians to advance farther towards that river until 1855. In 1849 the Russian ship “Baikal’’dis­covered the estuary of the Amur; in 1851 the military post of Nikolaievskiy was established at its mouth, and two years later the post of Mariinsk near Lake Kizi. Next year a Russian military expedition under Muravioff explored the Amur, and in 1857 a chain of Russian Cossacks and peasants had already settled along the whole course of the river. The accomplished fact was recognized by China in 1857 and 1860 by a treaty. In the same year in which Khabaroff explored the Amur (1648) the Cossack Dejneff, starting from the Kolyma, sailed round the north-eastern extremity of Asia through the strait which was rediscovered and described eighty years later by Behring (1728). Cook in 1778, and after him La Pérouse, settled definitively the broad features of the northern Pacific coast. Although the Arctic Ocean had been reached as early as the first half of the 17th century, the exploration of its coasts by a series of expeditions under Ovtsyn, Minin, Prontchi- scheff, Lasinius, and Lapteff—whose labours constitute a brilliant page in the annals of geographical discovery—was begun only in the 18th century (1735-39).

The scientific exploration of Siberia begun in the period 1733 to 1742 by Messerschmidt, Gmelin, and De Lisle de la Croyère was soon followed up by Miiller, Fischer, and Georgi. Pallas, with several Russian students, laid the first foundation of a thorough exploration of the topography, fauna, flora, and inhabitants of the country. The journeys of Hansteen and Erman (1828-33) were a most important new step in the exploration of the territory. Humboldt, Ehrenberg, and Gustav Rose also paid in the course of these years short visits to Siberia, and gave a new impulse to the accumulation of scientific knowledge; while Ritter elaborated in his *Asien* the true founda­tions of a sound knowledge of the structure of Siberia. Midden- dorff's journey (1841-43) to north-eastern Siberia—contemporaneous with Castrén’s journeys for the special study of the Ural-Altaian languages—directed attention to the far north and awakened in­terest in the Amur, whose basin soon became the scene of the

expeditions of Akhte and Schwarz (1852), and later on (1854-57) of the great Siberian expedition to which we owe so marked an advance in our knowledge of Eastern Siberia. The Siberian branch of the Russian Geographical Society was founded at the same time at Irkutsk, and afterwards became a permanent centre for the ex­ploration of Siberia; while the opening of the Amur and Saghalin attracted Maack, Schmidt, Glehn, Radde, and Schrenck, whose works on the flora, fauna, and inhabitants of Siberia have become widely known.

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Ges. zu St Petersburg*; *Meteorologischer Jahrbuch* and *Annales* of the Central Physi­cal Observatory; *Drevnyaya i Novaya Rossiya*; the medical and topographical *Sbornik,* the *Sbornik Sudebnoi Mediciny,* and “The Health" *(Zdorovie)* contain most valuable contributions to the demography of Siberia ; the newspapers *Amur, Vostochnoie Oboszrenie,* and especially *Sibir,* now published at Irkutsk; *Russische Revue; Priroda,* a popular review containing valuable information about hunting; *Pamyatnyia Knijki* (almanacs) of separate governments. The official publication of the ministry of navy, *Morskoi Sbornik.* contains many important contributions to the geography of Siberia, as also, occasionally, the *Voennyi Sbornik.* Complete indexes by M. Mezhoff are published by the Geo­graphical Society.

(2) *Flora and Fauna.—*Besides the works of Gmelin, Georgi, Pallas, Lede­bour, Middendorff, Maack, Schrenck, Radde, Schmidt, Glehn, and Maximo­wicz, see a large number of monographs by Schmidt, Regel, Trautvetter, Herder, Brandt, Polyakoff, Martynoff, Budischeff, and many others scattered through the publications of the Academy of Sciences, the St Petersburg Botanical Garden, the Society of Naturalists of Moscow, the Society of Friends of Natural Sciences of Moscow, and the Geographical Societies of St Petersburg and Irkutsk. Several of them are complete *florulæ* of separate regions, or import­ant monographs of separate classes of the vegetable or animal kingdom, or lists of plants and animals collected during separate journeys; see also Taczan- owski’s lists of birds in *Bull. de la. Soc. Zool. de France,* 1882. Mezhoff's *Biblio­graphical Indexes,* yearly published by the Geographical Society, and the *Indexes* of the Kieff Society of Naturalists give full details.

(3) *Geology.—*Geological observations occur in nearly all the above-mentioned works of travel and serial publications. Of recent monographs the following, published in periodical publications, may be mentioned:—Meglitzky, in *Verh. der Miner. Ges. zu St Petersburg,* 1856; Schmidt, “Mammuth Reise,” in *Mem. of St Petersburg Ac.*; Lopatin, on the Vitim, Yenisei, and Krasnoyarsk, in *Mining Journal* and serials of the St Petersburg and East Siberian Geographical Society; Czekanowski, in *Mem. Ac. of Sciences*;Czerski (map of shores of Baikal), in *Izvestia,* East Siberian Geographical Society, and several papers, especially on mining districts, in the *Gornyi Journal.*

(4) *Ethnology.—*Slovtsoff, *History of Siberia* ; Shashkoff, a series of papers on the “Indigenous Races of Siberia,” “The Native Question,” “Serfdom in Siberia," “Historical Sketches,” in various reviews; Polyakoff, *Journey to the Ob* (translated into German); Schapoff, in various historical works and in