GUIDE

TO

The Great Siberian Railway.

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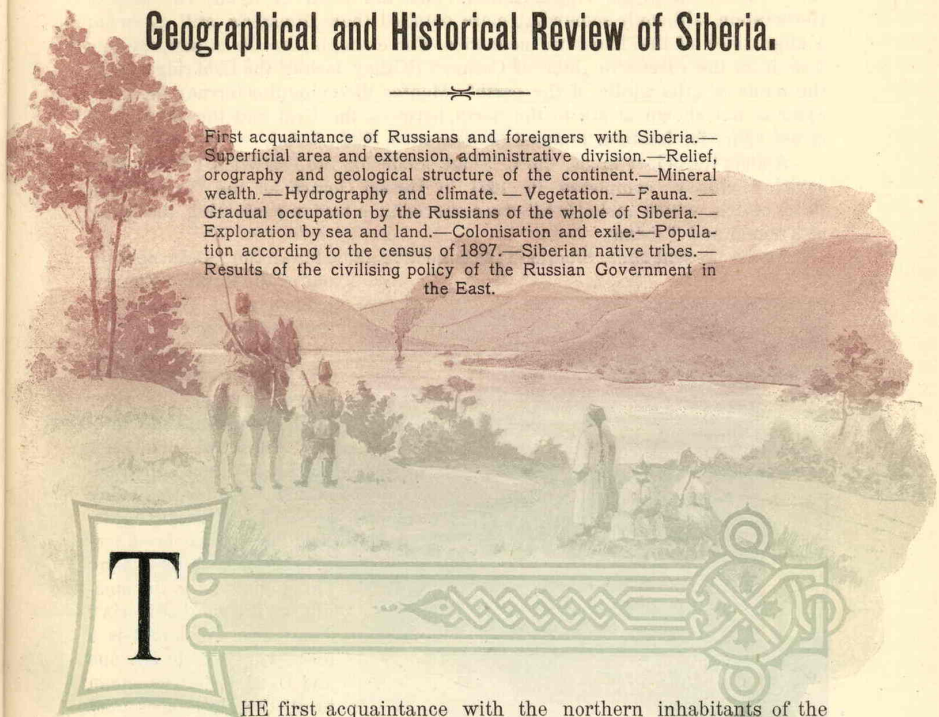


First acquaintance of Russians and foreigners with Siberia.—Superficial area and extension, administrative division.—Relief, orography and geological structure of the continent.—Mineral wealth.—Hydrography and climate.—Vegetation.—Fauna.—Gradual occupation by the Russians of the whole of Siberia.—Exploration by sea and land.—Colonisation and exile.—Population according to the census of 1897.—Siberian native tribes.—Results of the civilising policy of the Russian Government in the East.

THE first acquaintance with the northern inhabitants of the Asiatic continent was due to the enterprising citizens of Nóvgorod who, already in the XI century, were in commercial relations with them. All the tribes dwelling in the neighbourhood of the northern Urál and along the shores of the Arctic Ocean were known under the name of Yúgry. The geographical knowledge of foreigners as regards the lands lying beyond the Urál Range begins only with the XIII century, or with the time of the travels of Ascelin, Rubrukwiss, Plano Carpini and Marco Polo.

The work of the famous Venetian contains some precious particulars about the Pamír, Eastern Turkestán, Mongolia, China and even Japan, but Siberia remained unknown to him.

The towns of Bukharà and Samarkánd are marked on a map compiled in 1375, but the north of Asia is represented as a desert. Later on, the Dzhagatái, Altái and other mountains are to be found on the globe constructed by Fra Mauro in 1457, but the country, comprising the present territory of Siberia, was designated by him as a narrow strip of unknown land stretching between the Altái and the Arctic Ocean. More precise geographical notions relative to the Transurál countries were first given in 1544 by the Cosmography of Sebastian Münster published in Basle and, two years later, by the

famous work of Baron Herberstein entitled: „Rerum Moskoviticarum commentarii". Münster's map contains the river Ob in the extreme East, the lands of the Vogúls, Kalmyks, Kirgíz-Kaisáks and the town of Sybír. The map of Herberstein, although somewhat more detailed than Münster's, still gives but a slight idea of the Transurál countries. For example, the Ob is supposed to flow from the extensive „lake of Cathay" (Kithay lacus); the Urál ridge bears the name of „the girdle of the earth" (Montes dicti cingulus terrae), the town Sybír is not shown at all; to the north, between the Urál and the Ob, a place is set apart for heathen temples (Aurea anus, Slata baba).

Among the oldest maps, there is one made for the Tsarévich Feódor Borísovich Godunóv, completed in 1624 by Gessel Gerard for the Tsar Mikhaíl Feódorovich, which includes Siberia comprising a region containing the towns of Tiumén and Tobólsk.

At the present time, Siberia is the collective name for all the Asiatic dominions of the Russian Empire, exclusive of Transcaucasia, Transcaspia and Turkestán; the Urál and Turgái steppe territories, stretching beyond the river Urál and far into the interior of Central Asia do not belong to Siberia, their administrative centres being situated in European Russia. There have been frequent discussions among philologists as to the meaning of the word „Siberia": some suppose that it is a local word of the Zyriáns and Ostiáks, but common to all the Urál races and adopted by the Nogáis. In connexion with some archaeological researches among the remains of prehistoric civilisation, students of the East of Asia suppose that the word Siberia may be identified with the name of the Huns or Savirs.

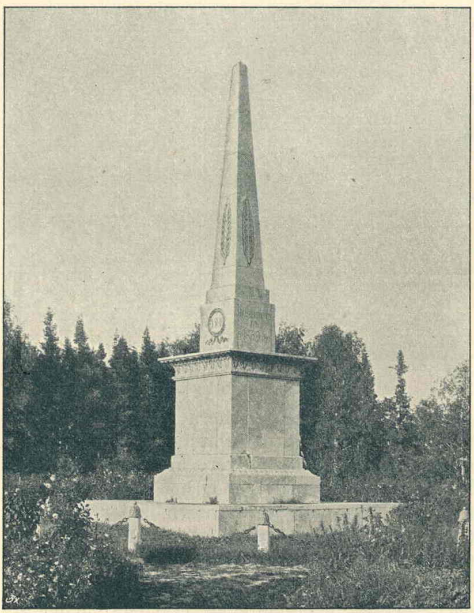


Plate 1. Monument to Yermák, the Conqueror of Siberia.

At present Siberia proper includes the following regions:

1) Western Siberia comprising the governments of Tobólsk and Tomsk in the basin of the Ob, subject to the general system of administration adopted in the governments of European Russia.

	sq. miles.	sq. versts.
Tobólsk gov	26,749.9	1,295,758.0
Tomsk gov	15,572.5	749,819.3
Total	42,322.4	2,045,577.3

2) Eastern Siberia, comprising the governments of Yeniséisk and Irkútsk in the basin of the Yeniséi, and the territory of Yakútsk in the basin of the Léna, Yána, Indigírka and Kolymá, under a governor-general resident at Irkútsk.

	sq. miles.	sq. versts.
Yeniséisk gov	46,699.8	2,259,562.3
Irkútsk gov	14,542.8	703,650.3
Yakútsk ter	71,358.3	3,452,655.3
	132,600.9	6,415,867.9

3) The north-western part of the Asiatic steppes, comprising two territories under the authority of the governor-general of the Steppe country.

	sq. miles.	sq. versts.
Akmolínsk ter.	9,903.0	479,200.2
Semipalátinsk ter.	8,856.7	428,527.8
	18,759.7	907,728.0

Pl. 2. Cone of Og-Dzhetnés on the shore of Lake Borovói, Kokchetávsk district. Akmolínsk terr. (phot. by Krékov).

4) The Amúr Littoral region comprising three territories and the Island of Sakhalín, united under the governor-general of the Amúr region, including the Russian part of the Amur basin and the Littoral belonging to the basin of the Pacific Ocean, together with the peninsula of Kamchátka and the Island of Sakhalín.

	sq. miles.	sq. versts.
Transbaikál	11,325.2	547,965.6
Amúr ter.	8,128.1	393,366.6
Littoral ter.	32,125.0	1,562,662.0
Sakhalín	1,379.0	66,762.0
	52,957.3	2,570,756.2

Thus, Siberia embraces an immense superficial area of 246,640.3 square geographical miles, within 45° and 77° of N. latitude and 60° and 190° E. longitude.

Bounded on the north by the Arctic, and on the east by the Pacific Ocean, Siberia extends towards the south to the Chinese Empire, and is bounded on the west by the Urál range.

Pl. 3. The Altái, Bom Ity-Kaïa on the river Chulyshmán (phot. by prof. Sapózhnikov).

In size, the area of Siberia represents the 1/13 part of the continental surface of the globe, and is about 1 1/2 times as large as Europe, 2 1/3 times as large as the surface of European Russia, and 25 times as large as Germany.

Covering so vast an area, Siberia must necessarily possess a very diversified relief and geological structure, and a most varied climate, flora and fauna.

Beyond the Urál, the traveller comes to the limitless plain of Westtern Siberia, having but a slight altitude above the level of the Arctic Ocean, extending over 1,500 versts to the east, and sloping from south to north. Its surface is occasionally broken by low ridges and hills with an altitude of scarcely 500 feet. The Kirgíz steppe gradually emerging on the southwest from this lowland, comes up to the Caspian and Arál Sea, which at a remote time formed one wide sea, whose bed including the three basins of the Balkásh, the Arál, and the Caspian, is known by the collective name of Aralo-Caspian depression.

The region of the Kirgız steppes is not absolutely level; their wide surface is sometimes broken by low, but very distinct ridges and dome-like hills of crystalline rock, mostly granite, diorite, diabase and other minerals including ores of copper, argentiferous lead and, at some points, auriferous gravels (pl. 2).

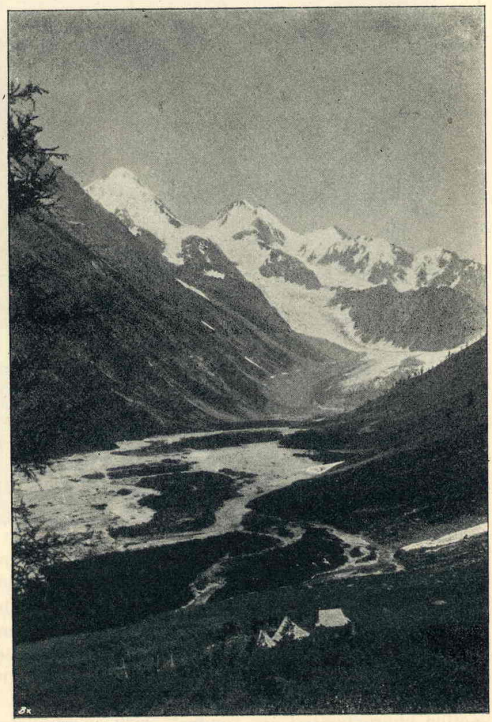
This treeless country with characteristic vegetation, salt marshes, brackish lakes and scanty steppe rivers, imperceptibly passing into the desert plains of Central Asia, reaches the plateau of Turán, and is only visited by

Pl. 4. Altái, the Yedygém torrent (phot. by prof. Sapózhnikov).

nomads. Extending towards the west, these steppe lands once served as an outlet for different tribes leaving Central Asia, during the great migrations of nations which, beginning with the movement of the Huns, continued till the great Mongolian invasion of the XIII century. At a remote date, centres of civilisation belonging to different Arian and Turanian races were created at the points where the steppes are traversed by the river basins of the Amû, Syr-Dariá and Ilí.

The character of the country, having a general inclination towards the Arctic Ocean, changes upon reaching the tributaries of the Ob-Irtysh basin, which represents one of the largest basins on the earth's surface, and can only be compared in respect of its volume to some of the Siberian watersystems, and to that of the Yellow and Blue Rivers, the Nile, the Mississippi and the Amazon.

The steppe, containing a great number of large and small lakes, presents a more varied flora and a more abundant tree vegetation. The Ishím, Barabá, and Kulundín steppes included in the middle zone of Siberia, although bearing the name of steppes, contain extensive areas of



Pl. 5. Altái, the Belúkha and the Katún glacier (phot. by prof. Sapózhnikov).

fertile and arable „chernoziom" or black earth. This region comprises the most prosperous districts of the Tobólsk and Tomsk governments (Kurgán, Ishím, Yalutoróvsk, Tára, Tiukalínsk, Kaínsk, Barnaúl and Bíisk), which constitute the granary of Siberia.

The agricultural zone of Western Siberia covers a space of 8,600 sq. geogr. miles, and including throughout areas of forest land, is essentially fit for the development of agriculture by a settled population.

As stated by Brehm, the chernoziom or black earth is the real treasure

Pl. 6. The river Katún (phot. by Sazónov).

of Siberia, upon which depends the future prosperity of the country. The land stretching towards the north with an increased fall, becomes more swampy within the intricate system of the Ob and Irtysh tributaries, and in the Vasiugánsk steppe, bounded by these rivers, presents a low plain covered by dense forests of lofty trees.

This forest zone alternating with tracts of cultivable land, comprises the northern parts of the Turínsk, Tobólsk and Tára districts, the southern portion of the Surgút and Beriózov districts, within the Tobólsk government, and the extensive Narym country in the Tomsk government.

The forest zone or „taigá" which divides Siberia into well marked sections has a total area of 17,000 sq. geogr. miles. The gloomy and thick firwoods offer more varied species of trees upon reaching the high land preceding the Kuznétsk Alatáu and the Altái. Extending towards the north, these continuous forests separate into scattered groves, with a thinner and diminishing vegetation, which gradually passes into dwarf bushes. This section characterised as „túndra", with an almost perpetually frozen soil and a marshy surface, covered with moss and lichens, is entirely unfit for civilised settled colonisation.

This polar zone, lying beyond 64° of N. latitude and comprising an area of 7,000 sq. geogr. miles, includes parts of the Beriózov and Surgút districts of the Tobólsk government. The frozen subsoil of this region in summer thaws only to a depth of half an arshin, and consists of alternate layers of frozen earth, clay and ice, which serve as a basis to the túndra formations.

The West-Siberian lowland possesses an alluvial soil which contains no stones over its whole extent.

It is only the south-eastern part of Western Siberia that rises to a considerable altitude above the sea level, gradually passing into the grand Altái highland, bounded on the west by the extensive Sayán mountain range (pl. 3, 4, 7, 9, 10, 11).

This alpine plateau, embracing a superficial area of about 7,800 sq. geogr. miles, is ten times as large as Switzerland. Its surface is covered with numerous mountain ridges, divided by parallel, and at some points perpendicular valleys.

These hills run from east to west, their respective ranges representing a half opened fan. The Narym mountain ridge, which on the south is bounded by the valley of Bukhtarmá, pursues an almost parallel course, while the

Pl. 7. Altái, the Talmén lake (phot. by prof. Sapózhnikov).

Kuznétsk Alatáu, leaving the eastern border of the Altái highland, stretches to the north-west in a perpendicular line, and the Salaír range takes a diagonal direction between the two above mentioned mountain ridges. The high summits of the Altái bear the name of „belkí", which means „alps", reaching above the zone of eternal snow. The Katúnskie Stolby are the highest among them, the Belúkha, which is its most elevated and picturesque point, having an altitude of 11,500 f. (pl. 5).

Many other mountain ridges are perpetually snow-clad, some of their peaks exceeding the height of 9,000 feet.

The „belki" of the Altái are formed principally of crystalline rocks, containing granite, syenite, diorite and porphyry.

The sedimentary rocks raised by crystalline strata belong to the palaeozoic age, divided into the upper silurian, the devonian and the carboniferous systems. The jurassic formation occurs only on the northern slope of the Altái. Deposits of silver-lead and copper ores are found between crystalline and sedimentary rocks. The considerable glaciers of the Belúkha are the feeding-ground of the Katún (pl. 6) which together with the Bíya forms the river Ob. The picturesque and large Lake Telétsk which in its beauty is not inferior to the Lake of the Four Cantons (Vierwaldstätter), has an outflow through the Bíya.

Pl. 8. Altái, the Razsypnói cataract (phot. by prof. Sapózhnikov).

The shores of this alpine lake, situated at an elevation of 473 feet above the level of the sea, have a wild and imposing beauty.

The surface of the blue waters, framed in verdant and hilly shores, narrows gradually, pressing its gushing and silver-lined waves over reefs into the steep and rocky bed of the Bíya.

Both rivers meet at the foot of the Altái and, joining their waters, form the majestic Ob. The Anúi, Charysh, and Aléi which, upon the left, are the upper tributaries of the Ob, take their rise on the Altái plateau. The Chumysh, Tom, and Chulym, rising among the Kuznétsk Alatáu, fall into the Ob on the right. The upper branches of the Irtysh, flowing into the Zaisán lake, also take their rise on the northern slope of the Altái plateau within the confines of the Chinese Empire. After leaving the lake, the Irtysh receives from the right the Bukhturmá, Ubá and Ulbá, rising among the belkí of the Siberian Altái. The valleys of these rivers, the north-western slope of the Altái, the Salaír ridge and the Kuznétsk Alatáu are well provided with silver-lead and copper ores, with iron-ore, quarries of varied-coloured stones, and gold in veins and gravel.

The remains of the ancient Chud mines found at many places, and the name of the mountains „Altái", which means „gold mountains", are a testimony to the mineral wealth of the country, which already in prehistoric

times was known to its inhabitants. The Altái mountains contain beautiful porphyries and jaspers of different colours, occurring particularly on the Korgón ridge, on the banks of the Charysh and Aléi, and in the environs of the Rídersk mines.

Rich beds of coal, included chiefly in the Kuznétsk coal-basin lying in the eastern part of the Altái mining district between the ridges of Salaír and Alatáu, represent the greatest treasure of the Altái.

The greater portion of the Altái plateau is almost uninhabitable on account of its elevated position and its rocky and stone-scattered soil; the well-watered plains, stretching at the foot of the mountains and interrup-

Pl. 9. Altái. The Great Akbóm on the Chúisk road (phot. by Sazónov).

ted by hills and valleys, are however well adapted for colonisation, agriculture, trade and industry.

The Tarbagatái mountain ridge stretches from the 47° parallel of N. latitude, south-west of the Altái group. It has an altitude of 10,000 feet at its highest point, and runs parallel to the gigantic Thian-Shan. The mountain ranges separate appreciably, forming a wide passage between the Siberian steppes and Central Asia, through which passed the prehistoric nations coming from the heights of Turán and Central Asia.

The relief of Eastern Siberia is of a quite different nature. From the borders of the Maríinsk and Achínsk districts, the country grows more hilly and is clad with forest. The Sayán mountain ridge leaving the chain of Tannu-olá runs in a solid mass through the Yeniséisk and the western part of the Irkútsk government, divided further into many branches which

stretch far northwards beyond 60°, and give a mountainous character to the whole country.

After leaving the Sayán, the Yeniséi breaks through its chain and flows among mountains and passes, winding its way among fine cliffs. The highest ridge of the Sayán, stretching from the southern part of the Irkútsk government to the Chinese border, culminates there in the Munkú-Sardyk, rising to an

Pl. 10. Altái, Valley of the Upper Ilgumén (phot. by Sazónov).

altitude of 11,430 feet above the level of the sea. The Tunkínsk mountain range, which is the most important among the foremost ridges, runs somewhat north of the Sayán in a parallel line to this group, and lies nearest to Irkútsk.

The Baikál mountains, which continue the range of the Sayán in a north-eastern direction, have an elevation of about 6,000 feet above the level of the sea, and skirt lake Baikál which, lying at a height of 1,561 feet above the level of the sea, is one of the largest lakes in the world, covering an area of 30,034 sq. versts. It receives the waters of the Upper Angará, the Bargusín and the Selengá, and is the source of the mighty branch of the Yeniséi, the Angará, which pushing aside the barrier of mountains, rushes past cliffs to the north, meeting frequent impediments in its course.

The Stanovói or Yáblonovy mountain ridge stretching up to Kamchátka, north-east from the Baikál, for a distance of above 3,000 versts, forms the watershed of the rivers flowing along its north-western side to the Arctic

Ocean, and of those which along its south-eastern slope drain into the Pacific Ocean.

This mountain chain is not particularly high, rising at some points barely to 2,500 feet above the level of the sea, while its most elevated peaks or „goltsy" are only about 7,000 feet in height.

Besides the Olékma and the Aldán which are both tributaries of the Léna, these mountains give rise to the affluents of the Yána, the Indigírka and Kolymá. The waters of the gigantic Léna take their source among the Baikál mountains. Crystalline rocks containing granite, syenite, diabase, diorite, porphyry and crystalline slate, form the principal ridges of the Sayán and its branches, and also those of the Yáblonovy chain. Basalt, dolerite, and real lavas coming from extinct volcanoes with volcanic tuffs, obsidian and pumice of volcanic origin, occur on the eastern side of the Sayán, as well as on the low ridges running across the East-Siberian plain between the Angará and the Podkámennaya Tungúzka. Some of these volcanic formations are also detected in the Yakútsk territory, on the Aldán mountain ridge. On the side of the Sayán mountains and along the branches and slopes of the Yáblonovy chain, as well as on many other mountains in the territory of Yakútsk, the sedimentary rocks are chiefly represented by sandstone, slate and lime-

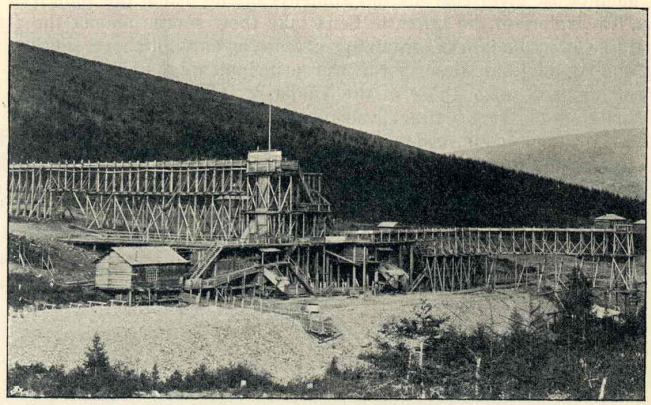
Pl. 11. Bom on the river Ursúl (phot. by Sapózhnikov).

stone of the palaeozoic age consisting of the upper silurian, the silurian and the carboniferous systems. The jurassic formations, which sometimes are found on the southern Sayán, occur more frequently ou the north. All the mountain ridges running in every direction over the vast East-Siberian territory contain great mineral wealth.

Silver-lead and copper ores are met with on the northern slope of the Sayán, within the confines of the Yeniséisk government, while, at the same time, rich beds of coal and iron-ore, of excellent quality, lie at the foot

of the mountains. The branches of the Sayán include also rich graphite deposits.

The Yáblonovy chain is particularly well provided in the Yakútsk territory with silver-lead, iron and coal deposits. But the essential resource of Eastern Siberia consists in its gold deposits, scattered all over the range of



Pl. 12. Four-barrel gold-washing apparatus.

mountains and at many elevated places. The basins of the rivers Vitím and Olékma, and some of the other tributaries of the Léna, most particularly abound in gold (pl. 12).

The greater portion of the East Siberian territory, containing numerous mountain ridges and elevated plateaus, has a considerable altitude, especially as compared with the steppe land of West Siberia. A well marked fall towards the sea is noticed at the 60° N. lat., on the north of the Yeniséisk government, and at 68° N. lat., in the Yakútsk territory, where the country passes into the plain through which the Yeniséi and Léna roll their majestic waves.

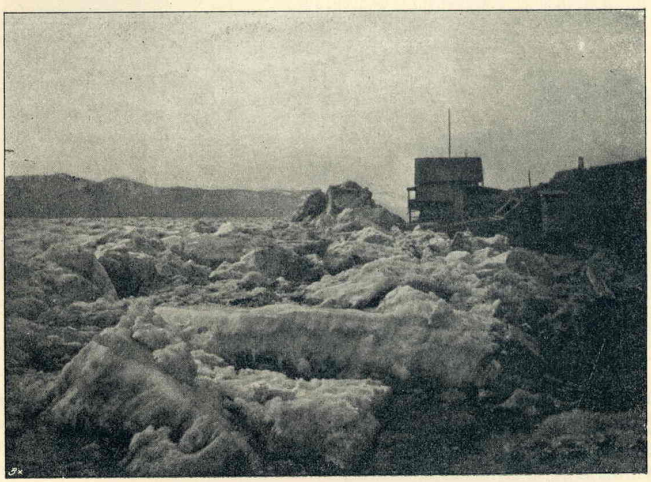
Eastern Siberia is just as abundantly watered as its western part. The Yeniséi (pl. 13) which is not inferior to the Ob and, like the latter, is formed by the junction of two streams, the Yeniséi proper and the Angará, flows towards the north through the Yeniséisk and Irkútsk governments. The basin of the Léna also formed by two branches, the Léna and the Aldán, waters the vast Yakútsk territory and pours its waves into the Arctic Ocean by means of a delta of islands extending far into the sea (pl. 14).

Stretching from the Chinese boundary, from south to north, East and West Siberia comprise many regions of varied nature and climate.

The cultivable zone of Eastern Siberia covering a superficial area of 10,000 sq. geogr. miles, includes the Minusínsk, Achínsk, Krasnoyársk and Kansk districts of the Yeniséi government, and the entire Irkútsk government, exclusive of the Kirénsk district.

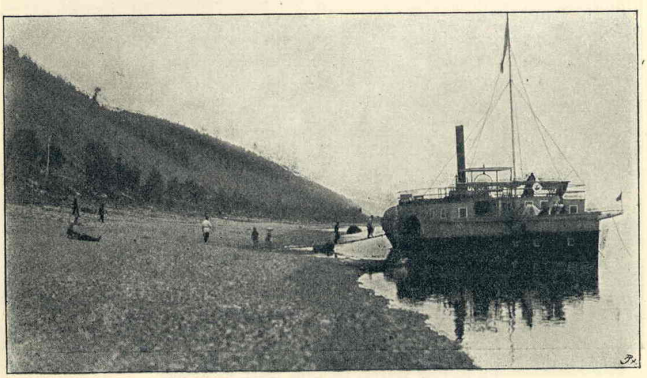
The southern valley of the Yeniséi has a most convenient position, and has long since been in great favour with the peaceful labourer and the half wild nomad.

Monuments dating from ancient times are scattered throughout the south of the Yeniséi government. Ruins of old buildings, earthen bulwarks, remains of towns, stones covered with inscriptions, rocks with designs and



Pl. 13. Ice-drift on the Yeniséi (phot. by Akselrod).

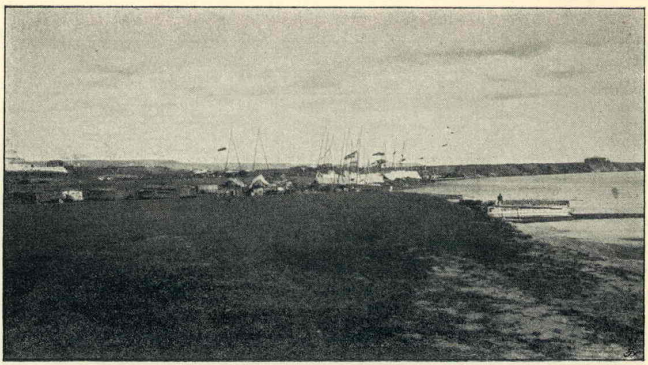
writing, abandoned pits and mines testify to former inhabitants and to a former independent culture (pl. 17).



Pl. 14. The river Léna (phot. by Gavrílov).

The forest zone, where forestry and agriculture are alternately practised, extends to the north, and comprises an immense area of about 65,000 sq. geogr. miles covered with forests and swamps which only on the south, at a

few points near the rivers, give place to oases of land more adapted for cultivation.



Pl. 15. The Léna near the town of Yakútsk.

The Kirénsk district of the Irkútsk government, part of the Yeniséisk government reaching the 66° N., and the greater portion of the Yakútsk, Olékminsk and the southern part of the Vilúisk district, are included in this zone.

Pl. 16. Post-boat on the Léna (phot. by Arnold).

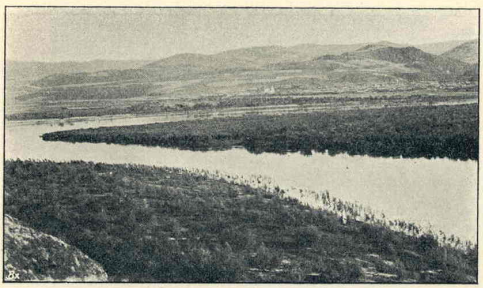
The forest vegetation of Eastern Siberia is practically similar to that found in its western part, represented by the same gloomy „taigá“ and inaccessible „urmán“ with its poor covering of thin grass passing into moss and lichens.

The polar tundra zone embracing all the northern part of Eastern Siberia, comprises an area of 56,000 sq. geogr. miles and includes one of the poles of greatest cold in the northern hemisphere. Near Verkhoyánsk, under 67° 34′ of N. latitude, which has the most continental climate of the old world, the mean annual temperature is—17° C., the mean winter temperature is—47°. At Ustiánsk, 70° 53′ of N. latitude, three and a half degrees nearer north, the average annual temperature (—16° C.) is a degree higher than at Verkhoyánsk; in the winter (—37° C.) there is a difference of ten degrees between the mean temperature of these two points. The climate, the conditions of the soil, which remains perpetually frozen and melts only under the hottest sun's rays to a depth of 3/4 arshin, and the short period of vegetation, exclude the possibility of agriculture in this region. This vast polar zone is only exploited by the northern reindeer tribes and by native and foreign hunters and fishermen.

Pl. 17. Tombstones in the Minusínsk steppes.

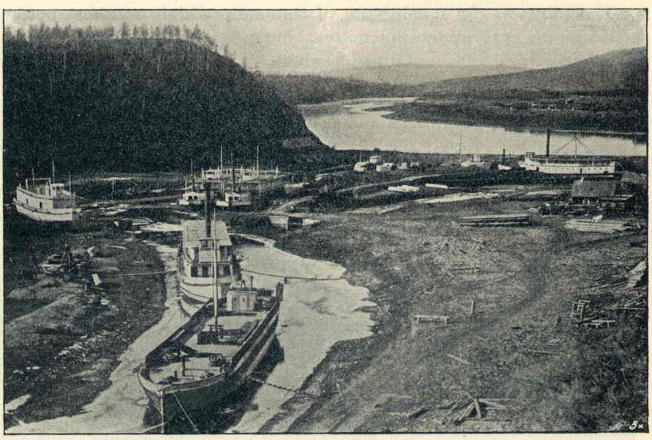
Pl. 18. On the Baikál, village of Kultúk.

After having crossed the stormy Baikál (pl. 18), to its eastern shore, the traveller reaches the wide spreading Amúr-Littoral province which, forming the eastern limit of the Siberian continent, is divided by its physical conditions into four well marked regions: Transbaikália, Amúr, Ussúri-Littoral and Okhótsk-Kamchátka, united for purposes of internal administration under one governor-general of the Amúr province.



Pl. 19. The Transbaikál, mouth of the river Nerchá.

Transbaikália characterised by the Transbaikál and Daurian plateaus, is a mountainous country, with the exception of the steppe lands comprising its south-eastern part, and coming up to the Chinese frontier, between the rivers Argún and Onón which by their joint course form the Amúr.



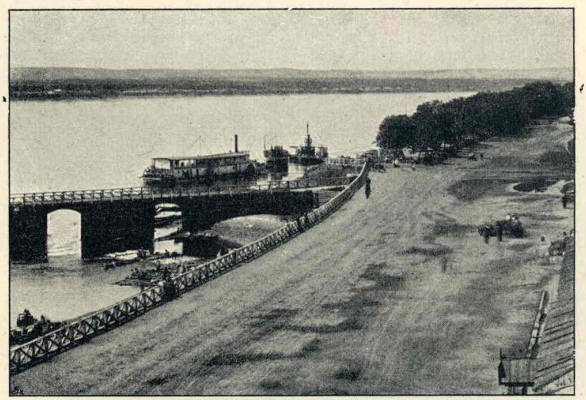
Pl. 20. Landing place for steamers near Strétensk.

The Yáblonovy chain, which in a diagonal line presses to the eastern part of the plateau, runs from south-west to north-east, and represents the central axis of the mountains.

The Baikál mountain group, with its dominant ridge Khamár-Dabán, stretches to the west, while the Nerchínsk chain extends to the east. The dominant axis of the Yáblonovy mountains forms the watershed of the rivers flowing from its north-western side into the Baikál, and into the Vitím the right tributary of the Léna, and of those which, from its south-eastern slope, fall into the Shílka river included in the Amúr basin.

Among the mountains of the Transbaikál, the Chokóndo without reaching the snow-line, rises to an altitude of 8,000 feet above the level of the sea. All the others are of an inferior height, some of their summits attaining barely 3,400 feet. Here the Great Siberian railway reaches its most elevated point crossing the Yáblonovy chain at an altitude of 3,416 feet above the sea level.

Almost all the mountain ridges of this plateau contain granite, gneiss and mica-slate obtruding through crystalline strata and, at some places, trachyte and basalt of volcanic origin. The sedimentary rocks lifted up by the crystalline strata include chiefly silurian and carboniferous formations of



Pl. 21. Mole on the Amúr at Blagovéshchensk.

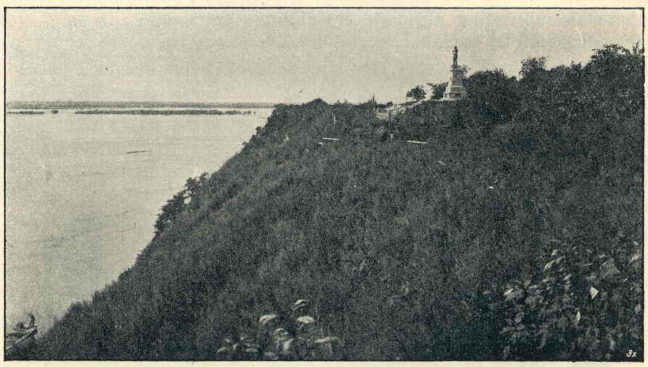
the palaeozoic age, as well as formations of the secondary (jurassic) and tertiary systems.

This great variety of geological structure testifies to the untold wealth of the Transbaikál region, which abounds in gold ores and auriferous gravels, in silver-lead, copper and iron ores, in tin and mercury, and includes quarries of varied—coloured stones of fine quality, and extensive coal measures.

The extraordinary geological structure of this country, in connexion with a well regulated irrigation, and a fairly favourable climate, promises a prosperous future to this region, and opens a wide range to the development of mining industry. The line of the Great Siberian Railway, connected by the basin of the Amúr with the section of the Ussúri Railway, traverses the south-eastern part of Siberia, and is now interrupted within the confines of the Transbaikál, near Strétensk (pl. 20) situated on the left bank of the Shílka. The route resumes its course at Strétensk and reaches the eastern border of the Transbaikál region where the waters of the Shílka and Argún are collected into the Amúr basin, proceeding along the Shílka to the Cossack village of Ust-Strélochny.

The Amúr country commencing at the same place as the Amúr basin has quite different physical conditions from the adjacent Transbaikál and the

other regions comprising the Siberian continent. Its relief is represented by an elevated plain inclining from the west to the Pacific Ocean, bounded on the north, by the Yáblonovy chain, and on the south and south-west, by the Khingán stretching far over Chinese territory. The average height of the mountains which surround and cover the country with their branches, varies



Pl. 22. The river Amúr. Monument to Count N. N. Muravióv-Amúrsky in Khabárovsk.

from 3,000 to 7,000 feet above the level of the sea, and at some points rises only to about 2,000 feet.

The geological structure of these ridges, which are in close connexion

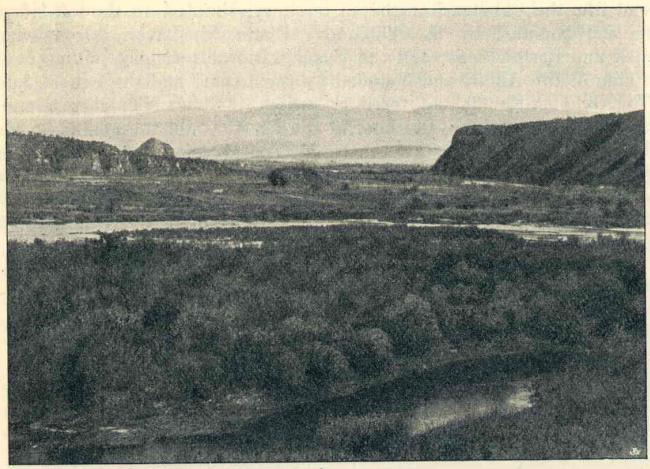
Pl. 23. Landing place at Nikoláevsk.

with the mountain masses of the Transbaikál, is chiefly characterised by the same crystalline and sedimentary rocks including rich and varied minerals.

Gold mines, with an ever increasing output, are worked in this region, where coal-beds, silver-lead and silver ores, as well as copper and iron ores occur plentifully.

The Amúr territory, which in the places bordered by the principal ridges is mountainous, has in respect of its geological formation some connexion with the Transbaikál and the northern portions of Siberia included within the range of the Yablonovy mountains. It contains a series of flat elevations which gradually decline into pasture steppes, stretching far over the valleys of the Amúr and its tributaries the Zéya and Buréya, covered by a rich vegetation recalling the prairies of North America.

The peculiar nature of this region characterised by a rich vegetation and a varied fauna, is due to its orographic and climatic conditions.



Pl. 24. The Ussùri province, Suifùn pass (phot. by Matskévich).

The waters of the Amúr rise more than 49 feet above their ordinary level at the time when, twice a year, the river overflows an immense extent of country. Although causing considerable damage, it for a long time furnishes the neighbouring land with moisture. Frequent and heavy rainfalls, caused by the quantity of moisture brought from the Pacific Ocean by the south-western winds, also exert a decided influence upon the structure of the surface and its vegetation.

The land that stretches at the foot of the mountains and along their oranches is covered with thick grass. The slopes of the mountains are clothed by dense forests of various species; by retaining the moisture, they transform the entire surface into a continuous swamp out of which rise bare hills scattered with stones.

Although this region occupies a southerly position, yet the Russian colonist has to cope with superabundant moisture and a severe climate, fighting for each foot of cultivable land; this hard contest with nature is the cause of the unsufficient population of the Amúr country up to the present time.

The imposing river Amúr which, from west to east, traverses the entire Amúr country and serves throughout its whole course as a navigable waterway, is the frontier between the Russian Empire and China, constituting at the same time the most important river system of Siberia, yeilding the most convenient access to the coast of the Pacific Ocean.

After having reached the eastern limit of the Amúr territory, the traveller comes to the town of Khabárovsk, the administrative centre of the country, standing on the right bank of the Amúr at its junction with the full-flowing Ussúri, and enters the Amúr territory comprising, from south to north, the Russian coast of the Pacific Ocean, stretching for a distance of 28 degrees, within the 42° and 70° of N. lat.

The Amúr river divides this region into two portions, north and south, which shew a well marked difference in respect of climate, soil and conditions of life: the Okhótsk-Kamchátka territory, situated on the left side of the Amur and bounded by the Yáblonovy Chain, the Arctic Ocean and the Okhótsk and Bering Seas; and the Ussúri-Littoral territory, situated on the right side of the Amúr, and bounded by the Ussúri and the Sea of Japan.

The Okhótsk-Kamchátka territory which includes the narrow and hilly coast of the Okhótsk Sea, the land of the Chukch and the peninsula of Kamchátka, is scarcely fit for a settled agricultural colonisation, on account of its geographical position, and severe climate; and can only be effectively exploited after a hard struggle with nature. According to explorations effected on the south-western coast of the Okhótsk Sea, there are mineral deposits obtruding through crystalline and sedimentary rocks.

Pl. 25. Railway pass over the Niurtsé ridge (phot. by Matskévich).

The northern portions, in particular the peninsula of Kamchátka, have up till now only been subjected to scientific explorations directed to the investigation of the action of volcanoes.

The Middle Kamchátka Chain running up through the peninsula, and all parallel ridges, contain a series of active and extinct volcanoes, among which

the Kliuchevskáya Sópka still active, rises higher than Mont Blanc, and is not inferior in size to Kazbék with its altitude of 16,000 feet above the sea level This peninsula includes a total of 12 active and 30 extinct volcanoes.

All the islands of the Siberian seabord offer but a slight commercial interest, on account of the inadequate exploitation of their resources. Wrangel's land is quite ignored and only visited by whale-fishers, as also the group of the New Siberian Islands which, having once afforded shelter to a now extinct organic life thriving at a remote date under the 75° and 76° N. lat., is now resorted to only by Siberian traders in search of the mammoth ivory abounding there.

Better known are the Commander Islands and Sakhalín. The former lie in the Bering sea, near Kamchátka, and are somewhat high, partly consisting of volcanic rocks. Seals are caught on their shores. The latter possesses a penal settlement.

On these islands the climate is very severe, and they are scarcely adapted for permanent colonisation, although endowed with rich coal mines already partly developed; these and the naphtha springs, which have been discovered of late on Sakhalín, will give some commercial importance to this inhospitable island.

The Ussúri Littoral territory (pl. 25), although lying near the ocean, presents a more elevated relief than the Amúr region, and affords geographical and climatic conditions, which are more favourable to the development of cultivation.

The climate is modified by the forest clothed Sikhoté-Alín Chain stretching parallel to the coast of the Japan Sea, which retains the excess of moisture in the narrow strip of land bounded by the sea. This mountain ridge which, at its highest point, is 3,600 feet in height, descends westwards, with a gradual fall to the interior, and gives the Ussúri region a mountainous character with here and there rich mineral deposits among crystalline and sedimentary rocks. Gold mines are worked at many points, chiefly in the south, and on Askóld Island near Vladivostók, where the bottom of the sea consists of gold-bearing strata producing auriferous sands.

Silver-lead mines which evidently were worked in former times, have been discovered in the vicinity of St. Olga and Transfiguration Bays; rich deposits of iron-ore occur in the same littoral regions, and coal of excellent quality is also to be found in thick seams in many parts of this rich country.

Among all the regions of Siberia, the Ussúri-Littoral territory is particularly well adapted for cultivation and colonisation; abundantly watered by the Ussúri and with a favourable climate, it possesses a fertile black-earth soil, a rich vegetation and a varied fauna which, together with abundant mineral deposits and its nearness to the ocean, opens a wide prospect for the development of trade and industry.

Leaving the town of Khabárovsk, the traveller reaches Vladivostók by the Ussúri railway, and comes to the coast of the Pacific Ocean, finding there the wide gulf of Peter the Great with its bay of the Golden Horn. This inlet situated on the north-western coast of the Japan Sea is accessible during all seasons with the exception of winter, which however, as in Odessa, does not last over two months (pl. 26).

The climate of Siberia is, on account of its vast area, very varied. but in general it is very severe, especially as compared with that of the corresponding latitudes of Europe and America; from its more continental character it has an inferior mean annual temperature.

This peculiar climate is due to the structure of the surface, which is left unprotected from the keen northern winds blowing on the coast of Siberia; bounded by the Arctic Ocean. Being separated from Central Asia by a barrier of snow-clad mountains, this region is entirely shut off by them from the mild influence of the south (pl. 27).

The highest mean annual temperature on the Siberian continent occurs at Vladivostók and in the bay of St. Olga (+4.5° C). as also in the southern

Pl. 26. View of Vladivostók.

portion of the Kirgíz steppe including Akmolínsk and Semipalátinsk (from +2 to 2.5°). As a rule, the mean annual temperature throughout Siberia does not rise above zero, exclusive of the following places in West and East Siberia, where the mean temperature is somewhat higher: Turínsk, +1.5°, Tiumén +1.4°, Kurgán +1.2°, Barnaúl +0.14°, Krasnoyársk +1.0°, Minusínsk +0.7°, and Khabárovsk +0.6°. According to the mean annual temperatures and to the average temperature in the winter months, the greatest cold is experienced on the north-east of the Asiatic continent; at the same time, it has been noticed that the mean annual temperature rises from north to south, and falls from west to east. As an example Tobólsk and Tomsk lying much further north than Nikoláevsk on the Amúr, and the Nerchínsk works, situated eastwards of both, have annual temperatures of —0.12° and—0.79°, while the latter have —2.7° and —3.7°. This difference increasing towards the east, is still more evident when the temperature of Vladivostók is compared with that of Vladikavkáz standing under the same latitude, or with that of Florence and Nice which are only three-quarters of a degree further north.

January is the coldest month in Siberia, June and July are the hottest; soon after the latter the temperature becomes colder.

The transitions from winter to summer are extreme, almost excluding spring, the most welcome season of the year. The differences of greatest cold and heat in Siberia, as shewn by the following figures, are of a wider range han anywhere in Europe:

	January.	July.	Difference of temperature in the hottest & coldest months.
Verkhoyánsk	— 48.9	+ 15.4	63.3
Yakútsk	41.8	17.3	59.1
Nerchínsk works	29.4	18.4	47.8
Blagovéshchensk	25.5	20.7	46.2

In general, the temperature in the cultivable zone of Siberia, which in Western Siberia is +13·5°, in the Eastern part +14°, in the Transbaikàl +13.5°, in the Amúr Territory, +12° in its northern part and +16° on the south,

Pl. 27. Winter road in the northern taigá.

+15° and +17° in the Ussúri-Littoral Territory, is almost the same as that of the corresponding latitudes of European Russia, during the five months period of vegetation, from May to October.

Accordingly, the cultivable zone of Siberia is better adapted for agriculture than the regions of European Russia situated between the same 55° and 58° N. lat., being provided with a better soil of blackearth, with more fertile and extensive pastures, with abundant rivers, and a sufficient quantity of forest land.

Pl. 28. Harnessed reindeer.

The population of Siberia is not excessively affected by the sharp winters, owing to the prevailing stillness of the air, the absence of strong winds, and to a generally clear and cloudless sky which, taken together, temper the effect of the extreme cold.

As stated by Réclus, there are few places which can boast of a healthier climate than cold Eastern Siberia, characterised as it is by an exceedingly calm, dry and clear atmosphere. Cases of consumption are unknown in Chitá, situated in the heart of the Transbaikál, where mercury freezes in the thermometer and remains thus during several weeks. These favourable conditions vanish towards the north, as appears from the difference in the flora and fauna; however, the traveller can testify that the aborigenes of the

Pl. 29. Horse of the Yakút breed (phot. by Gavrílov).

Yakútsk Territory notwithstanding the frightful cold, enjoy perfect health and are endowed with a good humour and lively character which many might envy.

The amount of the annual rainfall in particular is evidence of the more continental climate of Siberia as compared with the corresponding regions of European Russia; this difference is still more striking as regards the cultivable zone.

Pl. 30. „Skopéts" or „castrated" ploughman of the Viliúisk distr. in the Yakút terr. (phot. by Gavrílov).

The rainfall in Western Siberia amounts to 380, in Eastern Siberia to 360 mm. and in the Transbaikál to 290 mm.: in the corresponding countries of European Russia, the rainfall rises to 500 millimetres. These figures are exceeded in the Altái plateau, in the Amúr territory and in that of the Ussúri-Littoral, where they reach 500 and 600 mm.

The distribution of the rainfall according to the season is also characteristic in Siberia. In the period of vegetation and especially in summer, there is but a slight difference in this respect between Siberia and European Russia; in winter this difference increases considerably, the amount of moist-

ure falling in Siberia being little more than half that of the corresponding European zones.

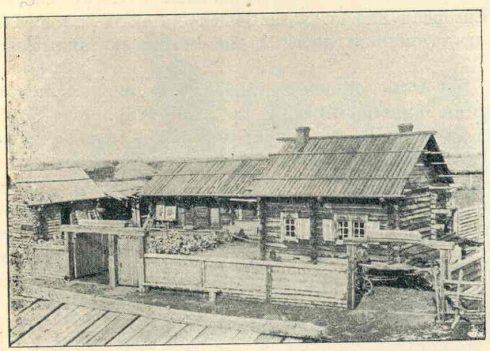
This distribution accounts for the sufficient quantity of moisture received during the period of vegetation, and the snowless winters prevailing over the entire agricultural area of Siberia.

Pl. 31. Calf bred by Skoptsy. Viliúisk distr. Yakút terr. (phot. by Gavrílov).

The forest zone is characterised by a far more abundant rainfall, and in this respect stands almost on a line with the corresponding European countries. A considerable decrease in the rainfall is to be noted further north, nearer to the polar tundra, so for example at Obdórsk with only 218 mm.

The climate of this country is more strikingly illustrated by the vegetation. The herbaceous flora covering the whole of Western Siberia but slightly differs from that of the corresponding European zones.

After crossing the Urál, the traveller traverses Siberia by a railway of 2,000 versts and reaches the Yeniséi without noticing any difference in the herbaceous flora, which throughout retains the same character except for a greater succulence and freshness, and more gaily coloured flowers than in European Russia.



Pl. 32. Skopéts farm. Viliúisk district (phot. by Gavrílov).

Beyond the Yeniséi, the vegetation changes, not only under the influence of the climate, but also on account of the hilly surface intersected by the spurs of the Sayán mountains. A mountain flora characteristic of the Altái-Sayán system now predominates, presenting the typical pecularities of alpine and subalpine pastures and hill-sides, with luxuriant and brilliantly coloured flowers.

Beautiful anemones (Anemone umbrosa, fischeriana, pulsatilla), peculiar varieties of buttercups (Ranunculus altaicus, R. pulchellus, R. natans and others), Altái species of cruciferae, various kinds of violets (Viola altaica, V. macrocarpa, V. acuminata and others), peculiar species of pinks and starworts (Dianthaceae and Alsineae), the Altái flax (Linum violaceum), many

species of astragalus, alpine roses, peculiar saxifrages, among which „chagír tea“ (Saxifrage crassifolia), whose big leaves are employed as a surrogate for ordinary tea, represent the characteristic flora of the Altái and Sayán mountains.

The chief ornament of these mountains are its spring flowers, yellow and blue hyacinths, irises and other bulbs.

The arboreal vegetation of the Siberian continent is very poor. Oak, hazel, elm, every species of maple, ash and apple disappear altogether just beyond the Ural, which is thickly clothed with a varied and rich forest growth. The forests of the Siberian plains, subject to periodical extinction, are very monotonous and contain but few species, represented by birch (Betula alba), aspen (Populus tremula), alder (Alnus glutinosa, incana), poplar (Populus alba), common hagberry (Prunus padus), and mountain ash (Sorbus aucuparia tomentosa).

Pl. 33. Church in a leper colony. Yakútsk terr. (phot. by Gavrílov).

The desert and gloomy „taigás“ or „urmáns“ consist mainly of species of fir-trees which usually characterise the north-eastern portions of European Russia, with the exception of the „cedar“ (Pinus cembra) which occurs throughout Siberia to the Bering sea, and passes over into North America.

The lofty tree flora of the Altái, although divided into many zones on the elevated mountain chains, does not differ, as far as the Yáblonovy range, from that of Western and Eastern Siberia; among the shrubs there are some varieties of acacias, wild roses, honeysuckles, and burning-bushes; dwarf rhododendrons and azaleas are only found on the southern slopes. The flora visibly changes on the eastern slope of the Yáblonovy mountain chain. Within the confines of the Transbaikál, the tree flora is much more varied, receiving an admixture of oak (Quercus mongolica), elm (Ulmus campestris), nut (Corylus heterophylla), and wild apple (Pyrus baccata). The shrubs present more characteristic forms and the herbaceous vegetation is of a quite peculiar nature, forming the transition between the floras of Siberia and Mongolia, viz. the so-called Daurian flora.

Pl. 34. Drove of horses in the steppe.

The flora of the Amúr territory and the Ussúri-Littoral region is still richer and more peculiar.

Within these regions the species of trees are quite different from those of Siberia, and even the Transbaikál.

The Manchurian cedar (Pinus mandshurica), the ajanen fir (Picea ajanensis), the yew, native to the Caucasian mountains, mingle here with the

Pt. 35. Kirgíz removing their camp. (phot. by von Kinits).

ordinary Siberian fir-trees. Foliage trees and shrubs are particularly well represented.

The lime tree assumes two different shapes: Tilia cordata and Tilia mandshurica, while the maple, unknown in western Siberia, has here four repre-

Pl. 36. Kirgiz girls on horseback. (phot. by von Kinits).

sentatives. The apple-tree, which in the Transbaikál bears very small fruits, develops here into new and beautiful specimens of Pyrus ussuriensis. Two different forms of walnut (Juglans mandshurica and J. stenocarpa) are the chief ornaments of the Amúr forests. Shrubs of still more peculiar forms are represented by 24 kinds which are quite new to Siberia and the Transbaikál.

The herbaceous flora includes about 110 species only found in the Amúr country, others occur as well in the Transbaikál, China, Japan, Kamchátka, and even America.

The fauna like the flora is distributed throughout Siberia in accordance with climate and surface.

The West-Siberian plain, together with the Kirgíz Steppe border-land and Eastern Siberia provided with rich pastures and leafy groves, giving a wide scope to the breeding of live-stock, support a greater number of cattle than the countries of America corresponding to this portion of the Asiatic mainland.

Pl. 37. Kirgíz cart.

Siberia can also rival America with respect to the quantity of fur animals finding shelter in the thick undergrowth of the taigá and urmán of the forest zone. The animal life is but poorly represented in the polar tundra, which is scarcely at all exploited by man.

Among the mammals, the white bear (Ursus maritimus) is the most northern inhabitant of Siberia; then comes the arctic fox (Canis lagopus), and the small striped „Ob leming" (Myodes torquatus, M. obensis). The polar hare (Lepus variabilis) and the reindeer (Cervus tarandus), both characteristic of the tundra, are to be found on the hilly uplands of Siberia (pl. 27—28).

Pl. 38. Flock of sheep in the steppe.

All the other mammals of the Siberian plain are almost the same as in the northern and central regions of European Russia.

The alpine wolf (Canis alpinus), two kinds of large cats (Felis irbis, F. manul), a kind of deer. the „marál" (Cervus elaphus), pl. 39, the mountain ram (Aegoceras montanus), the „arkhár" (Ovis Argali), the musk-deer (Moschus moschiferus), are the mammals most characterislic of the Altái - Sayán plateau.

The vertebrate animals are abundantly represented in Siberia by birds and fishes.

Siberia is particularly well provided with aquatic birds, gathered in immense troops on the coast of the Arctic Ocean, and along lake and river banks. In spring the river-floods coincide in time with the migration of the birds, and offer a beautiful sight, with their wide expanses of shining water, thickly dotted with birds of every hue moving rapidly in all directions.

The number of birds which find a shelter in some of the river systems is so great that, for example on the Baikál, the surrounding cliffs and rocks disappear under a thick layer of guano, which will long suffice as a source of manure.

All the immense river basins of Western and Eastern Siberia draining in one direction to the Arctic Ocean, as well as the abundant and extensive lakes, offer a great scope for the development of animal life.

These waters contain most varied kinds of fine and coarse fish represented by perch, pike, lote, sturgeon and sterlet. The Siberian rivers abound in particular in different species of gwiniad including nélma (Salmo nelma or Corregonus leucichthys) „ómul" a kind of salmon (Salmo or Corregonus omul), muksún (Salmo or corregonus muksun) and others.

The fauna of the Amur Littoral region changes essentially on the eastern side of the Yáblonovy chain, towards the Amur basin. Besides all the species prevailing in the cultivated and forest zone of Siberia, here are to be found species common to the Altái-Sayán mountains, and to the Mongòlian and Manchùrian steppes. Specially characteristic are: the musk-deer (Moschus

Pl. 39. Marál stud in the Altái (phot. by prof. Sapózhnikov).

moschiferus, the roe-buck (Cervus capreolus), the rat-hare (Lagomys alpinus), the korsák (Canis korsac), the steppe cat (Felis manul), the tiger (Felis tigris), the irbis (Felis irbis), two kinds of antilopes (Antilope gutturosa, A. crispa), the kulán (Equus hemionus), the Amúr raccoon (Canis procyonoides), the marál (Cervus elaphus), the boar (Sus scrofa), the mountain wolf (Canis alpinus), the Tibet bear (Ursus tibetanus) and others.

The bird fauna comprises northern and southern species, the latter being

represented by prairie chickens (Syrrhaptes paradoxus), black cranes (Grus monachus), blue mag-pies (Pica cyana) and others. A peculiarly rich and varied bird fauna is to be found on the last southern bends of the Amúr, breaking the mountain chain of the Little Khingán, and also at the junction of the Ussúri and Sungarí basins with the Amúr.

The ichthyological fauna of the Amúr and its tributaries is particularly noteworthy; there is the „kalúga" among the sturgeon family, which sometimes weighs about 50 puds, and the sturgeon itself 10 puds. The predominating salmonoid species are an article of commerce, and are employed for food by the inhabitants of the lower reaches of the Amúr. Remarkable among them are the Salmo proteus or „gorbúsha", so called from the hump appearing during the spawing season, and the „ketá" (Salmo lagocephalus).

Further typical forms are the Amúr fish (Pristidion Semenovii) the Daurian silurus (Silurus asotus), a roach (Plagiognathus Selskii) the „white fish" (Culter abramoides) and a peculiar kind of pike attaining a huge size (Esox Reicherti).

The fauna of the Arctic Ocean, although unsufficiently investigated, is known to be very rich, but not being easily accessible yields scarcely any profit. The Okhótsk and Bering Seas afford better conditions, but are also very insufficiently explored; hardly anything is known regarding their ichthyological fauna, although some species, as the „ketá" (Salmo lagocephalus) and the „malmá" (S. callaris) occur here most plentifully. Every year, an enormous quantity of herring, cod and gwiniad appear in shoals on the coasts of the Bering Sea. These waters give shelter to the following large mammals: seals (Phoca barbata groenlandica, leporina and others) dolphins (Phocaena orca, Delphinus leucas), whales (Balaenoptera longimana); the Bering sea contains sea-lions (Eumetopias Stelleri), occurring very rarely, the Kamchátka or sea beaver (Enhydris lutris), which is very like a walrus; the sea-bear (Otaria ursina) is abundantly represented on the islands of the Bering Sea, where from 10,000 to 50,000 of them are taken annually.

The annexation of Siberia to Russia was gradually effected within the space of three centuries, commencing from the XVI century; it was achieved without any particular bloodshed, chiefly by means of „Free Cossack" colonisation, which afterwards was utilised and regulated by the Government.

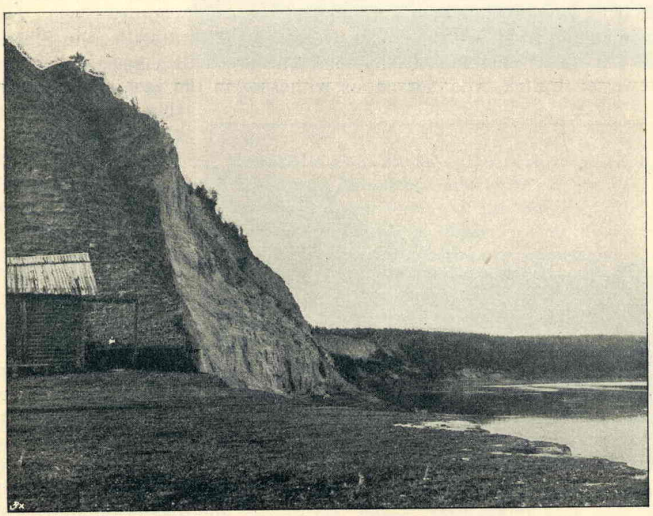
The Free Cossacks who gave the lead to the Russian emigration movement towards the lower reaches of the Don and Dnepr, very soon took possession of the Transurál countries, thus becoming the pioneers and founders of Russian colonisation in Asia. The vast empire of Chingiz-Khan, which fell to pieces in the XV century, was divided into the following kingdoms: Kazán, Astrakhán, Siberia, Khíva, Bukhará, and into the separate Nogái and Kirgíz-Kaisák hordes.

The Kazán and Astrakhán kingdoms, included in the Vólga basin, were of no long duration; in the XVI century, they were already conquered by the ever-growing state of Moscow, thus leaving an open road to the mineral wealth of the Urál and the fur animals of the Transurál forests.

The fall of these two mighty Tatar kingdoms and the constant dissensions in the Chingiz empire of Central Asia obliged the Siberian Tatar prince Yedigér to declare himself vassal of the Tsar Iván IV; however the Khan Kuchúm, who succeeded Yedigér, soon put an end to this peaceful submission to the Muscovite power and began hostile operations against his western neighbours.

The Muscovite government, being at the time engrossed in a war with Livonia, entrusted the defence of its Urál dominions to the Stróganovs, who became promoters of Russian trade and industry in the North-East, and to the Free Cossack bands of Yermák. In the year 1580, Yermák reached the banks of the Turá and, having defeated the Tatar prince Yepanchá, took by assault the Ostiák Tatar town of Chingí-Turá, which was situated on the spot where the town of Tiumén now stands.

According to a popular belief, which has a curious likeness to the legend connected with the conquest of Mexico by Cortez, two animals emerging from the Irtysh and the Toból were seen to fight on a sandy island in the Irtysh opposite its junction with the Toból. One was said to be white and shaggy and like a wolf, the other small, black and resembling a hound. The smaller animal killed the bigger one and disappeared under the water, but the latter rose in a few minutes, and also sought refuge in the river. Wizzards and soothsayers gave the following explanation of the portent to Kuchúm saddened by his reverses: his kingdom, represented by the big animal, was to be conquered by a Russian warrior, represented by the smaller one.



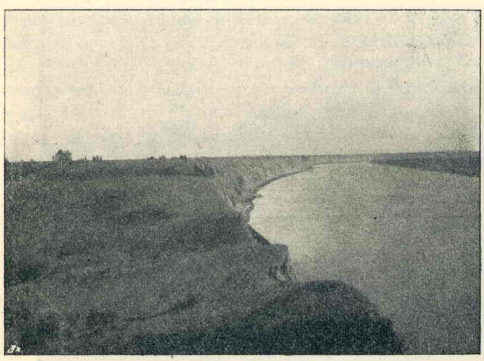
Pl. 40. Cape Chuvásh near Tobólsk (phot. by Usakóvsky).

Pushing on further, Yermák reached the Toból on the 23-rd October 1581, and completely defeated the hordes of Kuchúm near the Chuvásh Hill (pl. 40), and thus secured the Russian dominion beyond the Urál. He entered Iskér or Sibír, the capital of the Siberian kingdom, and hoisted there the Russian flag on the 26-th of October, the day of St. Demetrius of Solun (pl. 41). As Kazán was the key to the possession of the Vólga-Káma region, so was Iskér to that of Siberia. After its conquest, the entire country became open for Russian colonisation, Yermák's exploit determining the virtual annexation of Siberia to Russia. Yermák informed the Stróganovs of his success and des-

patched to Moscow the ataman Koltsó, his faithful companion, with a quantity of rich Siberian sables and a petition to the Tsar Iván Vasílievich to accept the new kingdom of Siberia.

The ambassadors were graciously received by the Tsar who duly rewarded them, and sent Yermák a pelisse he had worn himself (a special distinction), a gilded silver cup, two cuirasses and a hundred rubles. Yermák however did not long rule over Siberia; in 1584, lured by the wary Tatars, he met his death on the 6-th August in the waters of the Irtysh. „Thus perished", writes an historian, „the Russian Cortez and Pizarro, this brave and wise ataman, who from being a bold robber, thanks to circumstances and his great gifts, became a hero, whose name will never be forgotten by the Russian people". After having annexed Siberia to its dominions, the Muscovite government took good care to tighten the bond, between the old and new country, by sending at different times voyevodas or captains with Cossack, and Streléts troops for the establishment of administrative centres with a view to future colonisation. Tiumén, Tobólsk, Verkhotúrie, Pelym, Beriózov, Surgút, Obdórsk, Narym, and Tára were selected already in the XVI century as such centres for the Transurál.

The first attempts at colonisation made by the State, the establishment of the exile system, dates from the end of the same century. Thirty families of husbandmen from Solvychegódsk were sent as first settlers to Siberia, by order of the Tsar on the 3-rd May 1590. The first exiles were inhabitants of the town of Uglich, who served as witnesses in the case of the murder of the Tsarévich Dimítri, and were banished to the town of Pelym in 1593. In the same year, the Uglich bell, weighing 19 puds and 20 pounds, by way of punishment, was brought to Toból for having given the alarm at the time of the Tsarévich's murder.



Pl. 41. Iskér, former capital of Kuchúm (phot. by Ussakóvskaya).

The establishment of strongholds was continued in the XVII century, contributing largely to the rapid extension of Russian power in the East. The following stockaded posts: Tomsk, Turínsk, Yeniséisk, Kansk, Krasnoyársk, Yakútsk, Achínsk, Olékminsk, Barguzínsk, Irkútsk, Balagánsk, Nerchínsk, Kirénsk arose one after the other, and became later on prosperous towns. Thus the Russian dominion, rapidly reaching the Amúr, embraced the three immense water-systems of Siberia constituted by the rivers Ob, Yeniséi and Léna. After having established the needful centres, extended and regulated the frontiers, the government was anxious about the organisation of the Siberian province; for this purpose it fostered the development of agriculture and established a settled population by the addition of exiled husbandmen, post-drivers, women destined as wives to the Cossacks, and granted various immunities and exemptions in regard to taxation

In 1621, a diocese was established at Tobólsk for missionary purposes and for the satisfaction of the spiritual wants of the growing population. Besides the colonisation organised by the State, there was a free emigration of much greater proportions, consisting of husbandmen escaping from the bonds of serfdom, who gradually occupied and settled the country, building numerous villages. As a result of this movement, the number of the population at the beginning of the XVIII century amounted to 230,000.

Pl. 42. At a medical and feeding station for emigrants.

From the beginning of the XVIII century, a line of fortresses: Omsk, Bíisk, Semipalátinsk, Ust-Kamenogórsk, was built along the southern border of Siberia in order to protect the young colonies from invasion by the plundering Kirgíz-Kaisák and Kalmyk tribes.

The first relations of the Muscovite government with Siberia were, to a large extent, promoted by the trade and industrial enterprises of the Stróganovs, which had a great influence on the movement of the Russians to the East. In the XVIII century the miner Demídov, who in 1723 discovered the first mineral deposits on the Altái and established there copper and silver works, by his example rendered a similar service to the government.

At the same time, the Russians began to understand the necessity of exploring and studying the new country. The genius of Peter the Great took the initiative in this matter, by establishing communication between the Okhótsk Sea and Kamchátka, employing exiled Swedes to build the ships. In 1719, the scientific exploration of Siberia was entrusted to Dr. Messerschmidt. Bering's expedition, for the purpose of ascertaining the existence of a passage between the Asiatic and American continents through the Arctic Ocean, was organised in 1725.

The great Siberian scientific expedition, furnished with an extensive programme, continued its activity during ten years (1733—1743) and was the most important step taken in the XVIII century towards a nearer acquaintance with Russia's dominions in the East. Captains Chérikov, Spanberg, the naval officers and topographers Chelyúskin, Mínin, Ovtsyn, Pronchíshchev the two Láptevs, the astronomer Delille, the naturalist Gmélin, the historians Miller and Fischer, Steller, the student of the Academy of Science, Krashéninnikov and the geodesic surveyors Krasílnikov and Popóv were members of Bering's expedition. Its scientific results were the first detailed description of Kamchátka written by Steller and Krashéninnikov, the description of the Siberian flora by Gmélin, and a historical review of Siberia by Miller. Its practical result was manifested in the gradual Russian occupation of the north-western portion of America and of the Aleutian Islands.

The expedition of the academicians Pallas and Lepékhin, which took place in 1770—1774, was also of great import on account of its geographical results.

The discovery of the group of the New Siberian Islands by the merchant Liákhov between 1760—1770, coincides with the same epoch, as well as that of an island on the Bering Sea by the merchant Pribylov, which received his name, and soon became the centre of the seal trade.

At the same time as the Russians pushed their dominions further to the north and the nort-east, they moved their boundaries into the interior of Asia.

This extension began in 1731 by the subjection of the Little Kirgíz tribe to Russia, which was followed towards the end of the XVIII century by the subjection of the Middle tribe. During the XVIII century, colonisation was connected with the exile system which, at first adopted in extraordinary cases, soon became generally applied by the Government in order to increase the number of colonists. Compulsory settlements were established for the

Pl. 43. Movable school at an emigration station.

same purpose; this organisation however, in many instances, proved unsuccessful from the lack of the necessary provision for the welfare of the emigrants. The greatest contingent of colonists was represented by free settlers who squatted on the land without any authorisation.

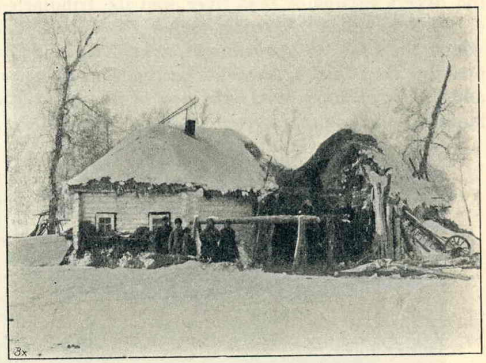
According to the census made by the sixth revision towards the end of the XVIII century, Siberia contained about 770,200 tax paying males, and a total of 1,500,000 inhabitants.

The most important territorial annexations strengthening the Russian power in the East, were made in the XIX century. All these occupations were effected according to the Russian custom without any bloodshed, by means of peaceful agreements and treaties. The nomads of the Kirgíz-Kaisák steppes, having confidence in the force of the Russian arms, often sought

shelter against the invasions of the hostile Asiatic Tatar tribes, and applied to the Russian authorities for the settlement of family dissensions.

Russia was thus encouraged to push her foreposts into the interior of the steppe, beyond the Siberian and Irtysh boundaries. In this way the Cossack settlement of Kokchetávsk was founded in 1824; that of Bayán-Aúl in 1826, and Akmolínsk in 1827.

An exploration of the steppes undertaken by the Russian naturalists and geologists Karélin, Schrenk, and Vlangáli, was carried on simultaneously with their colonisation.



Pl. 44. Settler's hut in winter.

The Russian government and men of science spared neither money nor labour for a scientific and geographical investigation of the north of Siberia; the first scientific exploration of the New Siberian Islands was organised in 1809—1810 under Hedenstrom. During the period from 1815 to 1820, an expedition of famous Russian navigators: Kotzebu, count Litke, baron Wrangel and Anjou surveyed the Arctic Ocean and the Bering Sea.

The Russian government was still more anxious about the exploration of the southern portions in view of future colonisation.

In 1826, the expedition of Ledebur, Meier and Bunge had for object the study of the peculiar Altái flora; while the expedition of Humboldt, Rose and Erenberg formed by the Emperor Nicholas I, was entrusted with the investigation of the geological structure of the Altái plateau. Two important scientific journeys to Siberia were made within the years 1842—1845: one by Chikhachóv, directed to the south-eastern part of the Altái; the other, by Middendorf to the Taimyr peninsula and to the coasts of the Okhótsk Sea.

Pl. 45. Settler's earthen huts in the steppe.

The discovery, in 1840, of the estuary of the Amúr, by the transport „Baikál" under command of Capt. Nevélsky, and of the mouth itself, by Lieut. Kazakévich on a sloop of the same vessel, gave a fresh start to Russian colonisation in the Amúr region.

The occupation of the Amúr mouth was effected without resistance from any side, the Chinese government having made no claim either to the lower reaches of the Amúr or to the land lying between the Ussúri and the Eastern Ocean. The important achievement of the annexation of the entire Amúr province to Russia was due to the energy of count Muravióv-Amursky, then Governor-General of Eastern Siberia. The organisation of settlements, on the lower waters of the Amúr, together with the opening of water communication with the Transbaikál, and the movement of Cossacks and peasants to the desert valleys of that river and its tributaries, led to the Pekin treaty of the 2 November 1860, concluded by Count N. P. Ignátiev, according to which the Chinese government, acknowledging the force of the Aigún treaty and the Tian-Tsin agreement, surrendered the possession of the Amúr river and of the entire Ussúri province to Russia. At the same time, the rich highland of Zailísk was annexed to the south-western part of Asiatic Russia.

Pl. 46. Group of emigrants from the Poltáva government on the shore of the Baikál (phot. by Drizhénko).

After these two regions were occupied, they were subjected to scientific exploration, and soon afterwards colonised.

Tha astronomer Schwartz, the naturalist Radde, the geologist Schmidt the zoologist Schrenk and the botanists Maksimóvich and Maak, who were despatched to Eastern Siberia in 1855, rendered an immense service to the new country by their scientific investigations. This portion of Siberia was also carefully explored by such eminent men as Semiónov, Sévertsov, Veniukóv, Fedchénko, Mushkétov, Potánin, Przewálski, Pevtsóv, Yádrintsev, Bogdanóvich and others, who all played an important part in the history of this country.

More lately, special attention was paid to the southern fertile zone of Siberia which is by nature itself particularly well fitted for colonisation; the economic conditions of peasant life in the already colonised districts, and the customs of the natives, have been subjected to special investigation in connexion with the geological exploration of the country traversed by the Great Siberian Railway.

In accordance with the programs which were drawn up for this purpose in 1881 by the Ministry of Agriculture and State Domains, in Western Siberia, and by the former Governor-General of Irkútsk, Count A. P. Ignátiev, in

Pl. 47. Settlement of Novo-Nikoláevsk.

Eastern Siberia, the condition of the village population was made the object of a special study, with the best ethnographical and economical results. At the same time, the geological researches of the mining parties, sent by the Ministry of Agriculture and State Domains, have ascertained the nature of the soil, and indicated the points where building-stone, fuel and other useful minerals are to be found throughout the entire course of the Great Siberian Railway, thus opening a wide prospect to the development of mining and industrial enterprise.

The attempts at establishing a sea-route for trade to the coasts of Northern Siberia, which from the end of the XVI and the beginning of the XVII centuries had been abandoned for a period of 250 years, have again been taken up in the present century by some Russian, and even Scandinavian, English and American, navigators. The success obtained in this direction by Wiggins in 1874 and by Nordenskjöld in 1875, modified the opinion hitherto held as to the inaccessibility of the Kára Sea; the expedition of Nordenskjöld organised in 1878—1879 with the assistance of Sibiriakóv reached the Siberian northern coast and the Pacific Ocean through the Bering Strait, and thus proved that the Arctic Ocean, in direct water communication with the sources of the Ob and Yeniséi, offers a most suitable route for navigation and trade.

About 20 expeditions, undertaken since 1887, all succeeded in reaching the coasts of Siberia, and thus served to establish the feasibility of this route now further facilitated by the use of icebreakers, insuring a free passage through the Kára Sea.

During the whole of the last century, Russian colonisation in Siberia was ever on the increase. At first, the number of exiles was about two thousand

a year; from 1830, rising gradually, their number reached ten times this figure, amounting to 20,000. This great contingent of exile settlers ought to have considerably influenced colonisation and the increase of the population; neither phenomenon was however observed.

The importance of the exile system, as a means of colonisation, was diminished by the unsuitable choice of localities; the exiles were not settled on unoccupied lands, but merely attached to settlements and villages of the older inhabitants in a proportion not exceeding 1/3 of the original population.

Want of economic organisation, poverty, absence of domestic habits, immorality produced by prison life and long wanderings from one étape to another, all these causes together produced a great mortality. The age of the convicts, which generally varies from 36 to 50 years, is not suitable for marriage and for a fresh start in family life. This too was an impediment to a sound economic organisation of convict life. On the whole, in the majority of cases the presence of exiles weighed heavily both materially and morally on the original population.

The greater part of the increase in the population, during the XIX century and the precedent period, was due to the settlement of peasants by the State, and to free emigration. Each time the State gave permission to settle certain localities indicated by it, all parts of Russia profited by this permission and joined in the movement.

Such periods of emigration occurred in the twenties, and again from 1847 to 1855. This movement was encouraged by the State. Part of the settlers, registered in the Siberian Cossack class, founded new settlements in the steppe borderland, and helped to colonise the western governments of Siberia. Emigration reached its greatest extent prior to the Crimean war, followed by a lull in 1855; it began again after the war, being evoked by the proposition of the government to settle on the banks of the Amúr.

Previous to 1862, which was the year of the abolition of serfdom, the stream again decreased, rising considerably soon afterwards, under the influence of the propagation of the emigration movement started in many governments of Russia.

Besides the legal emigration, which was attended with many difficulties, the movement beyond the Urál frequently took place naturally without any formal permission, according to the custom of former years, taking its course by different routes and spreading in all directions over the wide area bounded by the Irbít-Tiumén highway and the southern borders of the Orenburg government. Regulation of the emigration movement and registration of the bodies of settlers, bound for Siberia through the Vólga and Ob basins, was instituted at some central points in 1881.

The law of the 13 July, 1889, with regard to the free emigration of the village and town population to state lands, providing the new settlers with arable land, gave a more effectual regulation to this movement. According to this law, which at first comprised the government of Western Siberia, Tobólsk and Tomsk, and the Steppe countries, and in 1892 included the eastern governments of Yeniséisk and Irkútsk, the emigrants who had quitted their former abodes upon fulfilment of all the necessary conditions, received a grant of 15 desiatins of agricultural land a head with the right to enjoy the same for three years free of taxes. During the following three years, the tax is reduced to half, and is imposed in the full amount of R. 2. 71 k., or 18 1/18 k. per desiatin, only after the lapse of 6 years.

According to this same law, all lawful emigrants are permitted to postpone heir military service for three years.

The poorest settlers who are in need of help, in some cases receive additional grant of wood for the construction of their houses, and a loan of seed-corn, an alimentation allowance and farm inventary. This loan advance may be returned within a period of ten years reckoned after the first three years use of the land.

Since the time of the formation of the Committee for the construction of the Siberian Railway, which took charge of the emigrants on their way to Siberia, and organised their settlement within the range of the railway line, and since the opening of the traffic on the West-Siberian section, the greater part of the emigrants, whose numbers increased considerably, proceded to Siberia by the Samára-Zlatoúst line, by way of Cheliábinsk (pl. 42—48).

Pl. 48. Type of church in emigration settlements and at railway stations.

The increase of this movement, partly occasioned by the various economical considerations which generally cause a popular emigration, may further be explained by the facilitation in the methods of conveyance, which to a great extent reduced the expenditure and shortened the time formerly required for emigration. Provided with railway facilities and receiving assistance at the sanitary stations organised by the Committee of the Siberian Railway, where free medical help and cheap or free food is offered them, the settlers arrive at their new abodes without loss of strength and energy, which enables them to apply all their faculties and activity to the hard work connected with the establishment of a new husbandry. Only an eyewitness can judge of the great force of resistance and endurance of hard work, which the settlers bring with them and which increases as they approach the chosen and desired land, in prevision of the battles they will have to fight with a harsh and unknown nature, before settling down and organising their households. Their only support is the hope of a better future and their strong religious faith

State Secretary Kulomzín, who visited the colonised regions, situated along the Siberian Railway and is well acquainted with peasant life and

the conditions of emigration, declares that the leading element of the present emigration is represented by men who morally seem to be related to those enterprising Russians who in the XVI and XVII centuries wandered to the limits of the Muscovite state, to the Steppes, the Don, to the Yaík and to Siberia, and settled there as Free Cossacks, strengthening Russian power and planting Russian civilisation. The difference between the present emigrants and the hero colonists of former days consists in the absence among the former of the warlike spirit.

Our emigrants of to-day are more peaceful, more inclined to satisfy the homely tastes which have survived amidst the untoward conditions of their former life; at the same time, they are energetic and enterprising, capable of standing up for themselves and of fighting against misfortune, and also restless, dissatisfied with the existing order, neither fit nor willing to submit to the legal forms and ever increasing authority of the law prevailing in European Russia: all these traits give them a likeness to those ancient conquerors who developed and expanded Russian power.

As a result of natural increase and of emigration from without, comprising therein both exiles and settlers, the population of the four governments of Tobólsk, Tomsk, Yeniséisk and Irkútsk, and the six territories of Akmolínsk, Semipalátinsk, Yakútsk, the Transbaikál, the Amúr and the Littoral, including the island of Sakhalín, reached the figure of 7,091,244 at the census of the 28 January, 1897.

Within a space of 39 years, the total population of Siberia, comprising the same territories (exclusive of the Amúr, the Ussúri provinces and the island of Sakhalín, which at that time were almost uninhabited) increased by 100 per cent. (with a predomination of males over females) as compared with the data of the X-th revision of 1858—1859.

The following figures given by the X-th revision and those of the last census, illustrate the growth of the population in each separate territory:

GOVERNMENTS AND TERRITORIES.	POPULATION IN 1858.		
	Males.	Female .	TOTAL.
Tobólsk	504,105	517,161	1,021,266
Tomsk	354,580	340,071	694,651
Yeniséisk	160,676	142,580	303,256
Irkútsk	115,110	107,423	222,533
Akmolínsk	149,131	128,320	277,451
Semipalátinsk	118,040	99,411	217,451
Transbaikál	179,765	172,769	352,534
Amúr	—	—	—
Littoral	12,666	9,194	21,860
Total	1,763,099	1,667,839	3,430,930

GOVERNMENTS AND TERRITORIES.	POPULATION ON THE 28 JANUARY 1897.			
	Area in sq. versts.	Males.	Females.	TOTAL.
Tobólsk	1,295,758.3	711,982	726,502	1,438,484
Tomsk	749,819.3	970,780	958,312	1,929,092
Yeniséisk	2,259,592.3	291,555	268,347	559,902
Irkútsk	703,650.3	267,520	238,997	506,517
Yakútsk	3,452,655.3	136,061	125,670	261,731
Akmolínsk	479,200.2	354,839	324,587	678,957

GOVERNMENTS AND TERRITORIES.	POPULATION ON THE 28 JANUARY 1897.			
	Area in sq. versts.	Males.	Females.	TOTAL.
Semipalátinsk	428,527.8	364,832	320,358	685,197
Transbaikál	547,965.6	338,722	325,349	644,071
Amúr	393,366.6	66,595	51,975	220,557
Littoral	1,629,424.0	150,826	69,731	220,557
Sakhalín	66,762.0	20,518	7,648	28,166
Total	12,006,691.4	3,673,768	3,417,476	7,091,244

	Inhab. per sq. versts.	Proport. of women to 100 men.
Tobólsk	1.2	102.0
Tomsk	2.6	98.7
Yeniséisk	0.3	91.0
Irkútsk	0.8	68.1
Yakútsk	0.1	94.5
Akmolínsk	1.3	92.5
Semipalátinsk	1.7	87.8
Transbaikál	1.3	96.2
Amúr	1.3	75.6
Littoral	0.1	45.5
Sakhalín	0.4	37.3
All Siberia	0.58	93.3

Largest towns, according to the last census.

TOWNS.	POPULATION.			
	Males.	Females.	TOTAL.	Prop. of women to 100 men.
Tomsk	27,140	25,290	52,430	93.2
Irkútsk	26,567	24,917	51,484	93.2
Omsk	20,106	17,364	37,470	86.4
Blagovéshchensk	19,665	12,941	32,606	65.3
Tiumén	14,988	14,600	29,588	97.4
Barnaúl	15,122	14,286	29,408	94.4
Vladivostók	24,361	4,535	28,986	15.6
Krasnoyársk	14,573	12,027	26,653	88.2
Semipalátinsk	14,153	12,200	26,953	82.5
Khabárovsk	11,673	3,259	14,972	27.9
Chitá	6,429	4,603	11,032	71.6
Yakútsk	3,506	2,691	36,197	76.8

The proportion of the town population, forming not above 8 per cent. of the total, is much inferior to that of European Russia, a result of the insufficient development of manufactures, trade and industry.

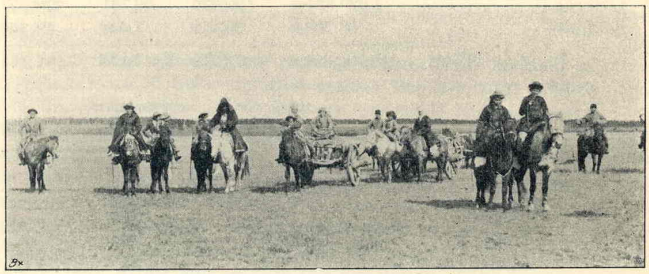
The Russian orthodox element takes the most important place among the ethnographical divisions of the whole population.

The traveller on his way from the Urál to the coast of the Pacific Ocean by the Great Siberian Railway running through the agricultural zone, traverses a broad stretch of land narrowing to the East, inhabited by Russians. To the south and north, the Russian population is surrounded by natives among whom it is also scattered in groups.

The native population of Siberia is divided with regard to its origin into the following tribes: 1) Turks, 2) Finns and 3) Mongols.

Among the aborigenes of the country, the Kirgíz, Tatárs, Bukhárians aud Yakúts belong to the Turk race.

The Kirgíz, forming the fundamental population of the Akmolínsk and Semi-



Pl. 49. Kirgíz removing their camp. (phot. by von Kinits).

palátinsk steppe regions, represented by above one million souls, speak a Turkish dialect, profess Mohammedanism and are nomadic cattle-breeders (pl. 49, 50, 51).

The Tatárs and Bukhárians, who have received an admixture of Finnish and Mongolian blood, are met within all the districts of the Tobólsk and

Pl. 50. Types of Kirgíz women and girls (phot by von Kinits).

Tomsk governments; they also speak a Turkish dialect, profess Mohammedanism, and subsist by agriculture and trade.

A number of Tatárs (pl. 52), inhabiting the Altái district, retain their nomadic habits and their ancient shamanistic faith. Many of them are related

to the Tatárs of Kazán and inhabit tho towns in the steppe region, occupying themselves chiefly with trade. Various localities in Eastern Siberia are inhabited by Tatárs. Thus for example, in the Yeniséisk government, at the foot of the Sayán, there are are about forty thousand russified, mainly orthodox, Tatárs engaged in agriculture. Approximately the total number of Tatárs and Bukhárians in Siberia is about 250,000. The Yakúts dwell in the Yakútsk territory; their number is given as 230,000. They speak a Turkish dialect, containing an element of Mongolian words; their religion is Shamanism and their occupation hunting and cattle-raising. The ethnographical character of this tribe is distinctly evidenced by their existing type, general appearance, manners, customs and dress (pl. 55—58).

The Vogúls and Ostiáks are descended from the Finnish race. The Vogúls belong to the ancient Ugro-Finnish tribes, and are closely related to the

Pl. 51. Chiefs and Bis of a Kirgíz village (phot. by Kessler).

historical Chud and Ugor; the Hungarians are a branch from the same stem, and the Bashkírs or Paskotírs also come of this stock. They occupy the northern part of the Tobólsk government being settled along the rivers Tavodá, Kondá and Sosvá. They number about 7,000 and inhabit forests and swamps. Hunting, fishing, gathering cedar-nuts, and other similar pursuits engage them in a nomadic existence for half the year. They stand at a very low stage of culture and their religion is mainly shamanistic, although they were nominally converted to orthodoxy by Filophéi Leshchínsky in 1714 and 1722. They are baptised, but have a preference for paganism, the faith of their forefathers.

The Ostiáks, scattered throughout the north of Siberia between 57° and 73° of N. latitude, dwell partly on the coast of the Arctic Ocean, in the Northern Urál, and partly within the area lying between the Irtysh and Ob, comprising the swampy and wooded wastes of the Vasiugánsk tundra (pl. 60, 63). It has not yet been ascertained what part they played in history, but it has been proved that they came from the south of Siberia. This tribe possesses a beautiful epos bearing some analogy to the Scandinavian sagas. They number approximately 30,000. Tha greater part of the Ostiáks, inhabiting the forest zone, get their livelihood by hunting, fishing and collecting cedar-nuts. Like the Vogúls, they only nominally belong to the orthodox religion, being virtually Shamanists. A number of them, dwelling in the polar tundra zone, pass their lives in tending their reindeer, and have become very much assimilated to the Samoyéds. Some of the Ostiáks in close connexion with the permanent Russian population of Northern Siberia, are thoroughly russified and profess the orthodox religion.

Pl. 52. Altáyans on the river Katún (phot by prof. Sapózhnikov).

The Mongolian stock is represented by the Teleút and Telengút, the Buriát, Samoyéd, Manchúrian, Tungús and Giliák tribes.

Pl. 53. Teleúts on the Altái.

The Teleúts inhabit the Altái plateau in the Tomsk, Kuznétsk and Bíisk districts: they number about 20,000 (pl. 53, 54), and are nomads devoted to cattle-breeding and hunting. They have a Mongolian type and belong to the Buddhist religion.

The Telengúts, wandering along the valleys of the Altái rivers, the Chúya, Chulishmán and others, are also known as Uriankháets and Kalmyks, and are split into many different insignificant tribes under such names as Akshishtym, Eliút, Oirát etc.

The Buriáts, whose number is about 290,000, form the main population of the Transbaikál and Irkútsk government (pl. 64). They are engaged partly in agriculture, but principally in cattle-breeding, and are either Buddhists or Lamaists.

The Manchurians, belonging to the permanent native population of the Amúr territory, practise agriculture. With regard to their habits and religion, they have a great likeness to the Chinese, although they seem to be less civilised than their Korean neighbours. Their number is given as about 3,000. The Samoyéd inhabit the extreme north of Siberia; their camps are scattered

throughout the coasts of the Arctic Ocean, within the borders of the governments of Tobólsk and Yeniséisk. Their number amounts to 6,000. They lead a nomadic life spent in hunting, fishing, and searching for mammoth ivory, which they sell. Reindeer are their chief resource, the more wealthy Samoyéds owning several thousand head. They possess in perfection the art of preparing furs and tanning hides. All the Samoyéds are pagans. The Yuráks wandering over the Tazóvsk tundra are related to them, as are also some of the small tribes of the Sayán now fast becoming extinct.

Pl. 54. Teleút dwellings

Pl. 55. Yakút of the Olékminsk district (phot. by Gavrílov).

The Tungús together with the allied Mongol tribes, account for the greater portion of the native population of Eastern Siberia (pl. 65, 66). Their nomadic life leads them from the Yeniséi to the Pacific Ocean, and southwards to the Chinese frontier.

Their herds of reindeer, hunting and fishing constitute their chief resources. The majority of the Tungús belong to the orthodox religion, but as they are ignorant of the Russian language, and their churches are few and at a great distance apart, the zeal of the missionaries meets with but little success.

The Lamút, Yukagírs, Chúkch and Chuvánets, Koriáks and other tribes inhabiting the arctic and polar regions belong to the Tungús stock, but have not passed the lowest stage of civilisation. The Manégr, Orochén, Gold, Olch and Mangún tribes, no more civilised than their northern brethren, come of the Tungús-Manchú race, and are located on the Amúr and in the Littoral territory. The proximity of China has had a marked influence upon them, as appears from their dress, the architecture of their dwellings, their wearing pig-tails etc. The women of the Gold tribe have the peculiar fashion of wearing a ring in the partition of the

nose, while those of the Orochén, insert it through the right nostril. Most characteristic are the fish-skin dresses worn in summer by the Golds and Orochéns; for which reason they have been nicknamed by the Chinese „fish-skinned". All these natives, amounting to about 50,000, profess Shamanism (pl. 67—68).

The Giliáks, dwelling on the lower reaches of the Amùr, and on the coast of the Okhótsk Sea, represent the most numerous aboriginal tribe of the Far East; they live by hunting and fishing. The dog is an animal which holds an important place in the life of this people; in winter they are employed in drawing sledges,and when they are too old for this, they are eaten and their skins used for making clothes. All the Giliáks, about 15,000 in number, are Shamanists.

All the Siberian native tribes are certainly derived from the interior of Asia.

Archaeological researches, begun in the XVIII century, have shewn that

Pl. 56. Yakút boy from Olékma (phot. by Gavrílov).

Pl. 57. Yakút types (phot. by Arnold).

the ancient tombs, tumuli and ruins of towns, starting from Central Asia, all follow the direction of the Siberian river basins, the natural ways of communication for the Asiatic aborigenes in their march to Europe. The discovery of stone figures, so-called „baba's", scattered over the steppes of Central Asia and Novorossía, has further confirmed the view of prehistoric migrations from Asia into Europe.

The past history of these little known tribes forms part of the general history of mankind. If Siberia is the land of the future, it may be affirmed with certainty that it contains a mass of future discoveries for history and archaeology.

The past century including many historical events consolidating the Russian power on the Asiatic continent, closed with

the triumph of the civilising mission of the Russian government in the East, pointing out a new course for civilisation and opening new prospects for the universal and historical development of the nations.

By the provisional rules, which in the beginning of the XIX century were drawn up during the reign of the Emperor Alexander I, and comprised a complete system of public instruction for the Empire, a university was to be founded in Siberia. The project, after being abandoned for half a century, was recalled to life by the Emperor Alexander II, who on the 25 April 1875, gave the following order to Adjutant-General Kaznakóv, former Governor-General of Western Siberia:

Pl. 58. Yakút tents (yúrtas) in Olékma (phot. by Arnold).

„By raising the level of public instruction, the population of Siberia will be able to produce a number of educated and well informed men, sufficient to satisfy the local demand. After a thorough discussion of the subject, let a project for founding a university in Siberia be pre-

Pl. 59. Lepers in the Yakútsk territory.

sented for the Imperial Consideration by the Ministry of Public Instruction.

Pl. 60. Ostiák types (phot. by Poliakóv).

The Tomsk university, which was to be the intellectual centre and promoter of culture in Asia, was inaugurated on the 22 July 1888, on the name-day of the Empress Mária Feódorovna, during the reign of the deceased Monarch-Pacificator Alexander III.

The recognition that the rich Siberian territory with its many needs was worthy of special attention, and that numerous important questions, not only regarding this country, but the whole Russian population, demanded to be solved, in a great measure determined the construction of a railway line which was to traverse Siberia from end to end.

Pl. 61. Ostiák girls (phot. by Poliakóv).

The first step towards the realisation of this grand enterprise was taken by the laying of the first stone at Vladivostók on the 19 May 1891 by His Imperial Majesty the Emperor Nicholas II, then His Imperial Highness the Tsesarévich. In His rescript of the 17 March 1891, He decided the question regarding the construction of the Great Railway, manifesting to the whole world, by the active part He took in the achievement of this essentially national work, His desire to facilitate the intercourse of Siberia with other lands and to secure peace and prosperity to His beloved country.

Pl. 62. Ostiák man and woman (phot. by Poliakóv).

The official acts dated August 26-th and December 4-th 1896, relative to the concession given to the Russo-Chinese Bank for the construction and exploitation of the East-Chinese Railway, and to the stipulation in the statutes of this railway, determining the mode of construction of the eastern section of the main Siberian Railway, are the result of the peaceful and civilising policy of the Russian Government.

As a consequence of the construction of the Siberian Railway connecting the Transbaikál with the Ussúri territory through Manchúria, this north-eastern portion of the Chinese Empire, although remaining politically under the Chinese dominion,

economically, i. e. as far as trade and industry are concerned, enters into the sphere of the continuous line of railway.

The special agreement of the 15 March 1898, come to in Pekin by the delegates of Russia and China, according to which Port-Arthúr and Talienván on the Liaodún peninsula, with their respective territories and waters, were assigned to Russia, together with the permission to construct a branch line, connecting these ports with the Main Siberian Railway, is a fact of great political significance to which the work of the Siberian line was the prelude. The opening of the port of Talienván to the merchant fleets of all nations, leading to the creation of new centres for trade and industrial enterprise in the Pacific Ocean, connected by the great Railway with the civilised trade centres of Europe, is surely a most important event, which finds a fit expression in the official communication of the 17 March 1898:

Pl. 63. Ostiák Prince Taishin of Obdórsk (phot. by Poliakóv).

Pl. 64. Buriát types (phot. by Máslov).

„It must be gladly welcomed by those who value the welfare of the world, based on the mutual intercourse of nations".

Until now, the life of Asia followed a separate course, being only out-

Pl. 65. Tungús types of the Yakút territory (phot. by Máinov).

wardly connected with European culture and civilisation, and serving as an object for European exploitation.

Pl. 66. Tungús (phot. by Drizhénko).

The civilising policy of Russia in the East, which may be regarded as an exception to that of other countries, was guided by other principles and, as mentioned in the above quoted communication, was directed to the mutual welfare of nations by the maintenance of peace throughout the immense extent of her dominions. The honour of having planted the flag of Christianity and civilisation in Asia, is due to Russia. The near future will show the

Pl. 67. Orochéns in the Transbaikál.

results of the activity of our Government and of our civilising enterprises, which will add to the glory and power of Russia and her Sovereign Chief.

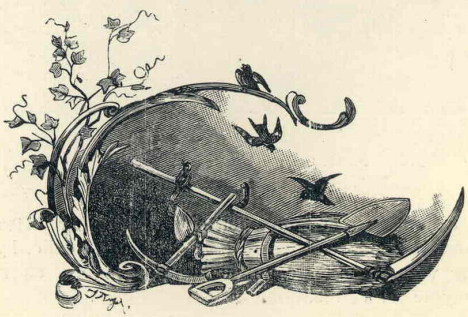
Pl. 68. Golds (phot. by Mazkévich).

The official communication published on the 6-th May 1899, removed from Siberia the shameful stain attached to it as a place of exile, by putting it on the same footing with all other countries of the Empire, as regards social life and the struggle for civilisation.

The deliverance of Siberia from the sad lot of affording a refuge to the worthless elements of the Empire, was the logical result of that work of civilisation which, giving social capacity and competency to that country, thereby

Pl. 69. Monumen to N. M. Przewálski on the shore of lake Issyk-Kul in Semiréchie.

strengthened its position as mediator in the great mission of Russia in the East for the introduction of the principles of Christian civilisation into Asiatic life.



MAP OF RUSSIA

composed in 1614 by Hessel Guérard from a sketch of Tzarevitch Feodor Borisovitch Godunof for the Tzar Michail Feodorovitch

THE LATE

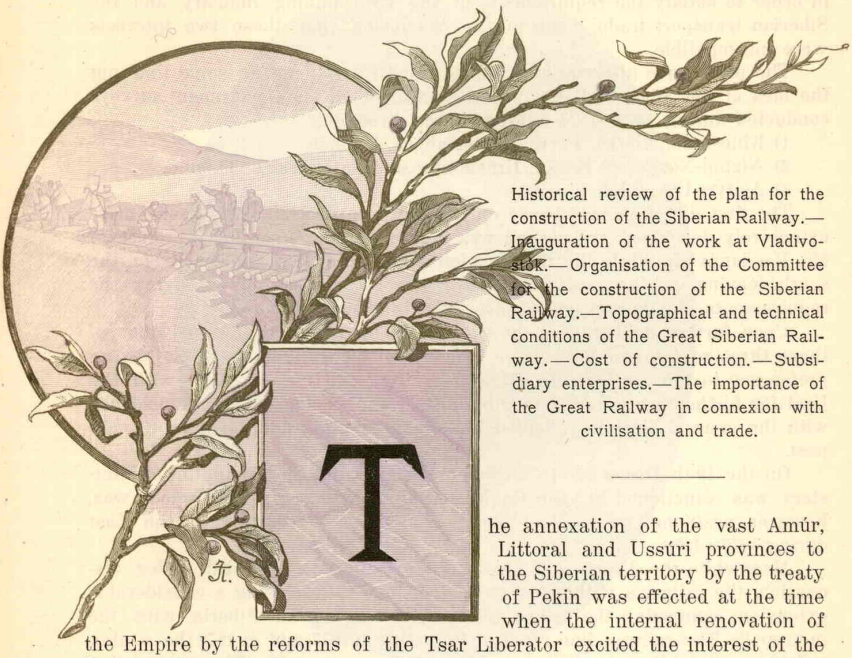
Emperor Alexander III,

Tsar Pacificator.

Most August Founder of the Great Siberian Railway.

Print. with the aut. of the Minist. of the Court Imperial. „Art. Printing Society", St. Petersburg, Prosp. Engl., № 28.

The construction of the Great Siberian Railway.



Historical review of the plan for the construction of the Siberian Railway.—Inauguration of the work at Vladivostók.—Organisation of the Committee for the construction of the Siberian Railway.—Topographical and technical conditions of the Great Siberian Railway.—Cost of construction.—Subsidiary enterprises.—The importance of the Great Railway in connexion with civilisation and trade.

The annexation of the vast Amúr, Littoral and Ussúri provinces to the Siberian territory by the treaty of Pekin was effected at the time when the internal renovation of the Empire by the reforms of the Tsar Liberator excited the interest of the Russian Government, society and foreigners, who clearly foresaw the future which lay in store for this new acquisition of Russia in the East.

The construction of new ways of communication in Siberia, and the connexion by rail of its different centres of population in view of strategical and commercial considerations, together with the building of a main railway line from Moscow or the Vólga to the Pacific Ocean, were projected at that time.

All these schemes were based solely on conjectures without any preliminary surveys or calculations as to the needs and trading possibilities of the districts affected and remained without any practical result. In was at the end of the sixties that three routes for the Siberian Railway, suggested by private individuals and supported by the petitions of Russian and Siberian merchants, seemed feasible.

These projected lines, which were frequently the subject of discussion in scientific societies and in the press, were as follows:

1) The northern project of Messrs. Rashét, Kókorev and Co. from Perm, through Nízhni-Tagíl and Ekaterinbúrg to Tiumén, with a branch line to Irbít.

2) The central project of Mr. Liubímov, from Perm, through Kungúr, Ekaterinbúrg, Shadrínsk to the village of Belozérsk on the river Toból, 49 versts north of Kurgán.

3) The southern project of Mr. Bogdanóvich, from the village of Ershóv (Sarapúl district), through Ekaterinbúrg to Tiumén.

Upon further deliberation, the special commission organised in the Urál, and entrusted with the selection of the most suitable direction for the route, in order to satisfy the requirements of the Urál mining industry and the Siberian transport trade, came to the conclusion that these two interests were incompatible.

The preference afterwards given to the Urál scheme for some time put the idea of the Siberian Railway in the background. The Government surveys conducted during 1872—1874 followed three directions:

1) Kineshmá, Viátka, Perm, Ekaterinbúrg, Tiumén.

2) Nízhni-Nóvgorod, Kazán, Krasnoufímsk, Ekaterinbúrg, Tiumén.

3) Alatyr, Ufá, Cheliábinsk.

The first direction was based on the northern project of Mr. Rashét more extensively developed; the second was taken from the southern project of Mr. Bogdanóvich, while the third, which was quite new and more to the south, leaving out the greater portion of the Urál, aimed at satisfying the requirements of Siberian and Central Asiatic trade.

Upon further deliberation, the Committee of Ministers deemed that of these three routes two only were worthy of consideration, while giving preference to the southern direction, as uniting existing railways with the Urál for further continuation to Siberia, and on account of its coincidence with the general direction adopted by the transport trade for many years past.

On the 19-th December 1875, the route selected by the Committee of Ministers was sanctioned by the Emperor; the execution of this project was, however, postponed by political complications and by the war in the East during 1877—1878.

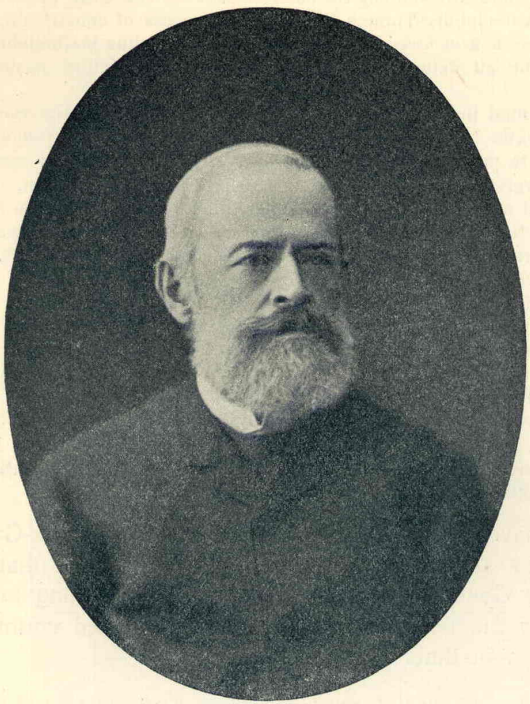
Meanwhile the direction of the Siberian main road was still under discussion, the railways within European Russia were receiving a considerable extension, connecting the future commercial centres of Siberia with the metropolis. The railway line reached Orenbúrg in 1877, and in 1878 the mining railway, uniting Perm and Ekaterinbúrg, was open to traffic. The construction of the great bridge of the Emperor Alexander II over the Vólga, was completed in 1880 and thus an uninterrupted line of railway connected the general railway system of European Russia with Orenbúrg, constituting the entrance to her Central Asiatic dominions.

The opening of the traffic on the Urál mining line from Perm to Ekaterinbúrg formed the motive for the humble petition of the Nízhni-Nóvgorod merchants laid before His Imperial Majesty in 1880, praying for the construction of a railway branch of 300 versts from Ekaterinbúrg to Tiumén to connect the basins of the Ob and Vólga.

The petition was handed by order of the Emperor Alexander II to the Committee of Ministers in order to find the necessary means for the construction of this branch.

According to the resolution of the Committee of Ministers of the 23 September 1880, the immediate construction of the Ekaterinbúrg-Tiumén line was to be effected at the cost of the Government.

The execution of this project, together with the further extension of Russian railways towards the East, as also the results of additional surveys, shewed the advisability of changing the direction chosen in 1875 for the Siberian main line.



Actual Privy Councillor N. K. Bunge, ex-President of the Committee of Ministers, and first Vice-President of the Committee for the Siberian Railway.

In 1882, after the project of 1875 had been reexamined, the Minister of Ways of Communication, by order of His Imperial Majesty, was directed to present a new scheme to the Committee of Ministers as regards the route of the Siberian Railway.

This was accordingly done in the year 1884 by Adjutant-General Possiét. According to this plan and the technical and economic considerations upon which it was based, the southern route was to give place to the following lines:

1) Nízhni-Nóvgorod, Kazán, the Nikólo-Beriózov wharf, Ekaterinbúrg, Tiumén.

2) Samára, Ufá, Krasnoufímsk, Ekaterinbúrg, Tiumén.

3) Samára, Ufá, Zlatoúst, Cheliábinsk.

In accordance with the order of the Committee of Ministers, sanctioned by the Emperor on the 6 January 1885, the selection of the route through Siberia was deemed premature on account of the want of the necessary data; at the same time, the construction of a line beginning at the point where the Orenbúrg railway crosses the river Kinél, and thence passing through Ufá and Zlatoúst along the eastern slope of the Urál, to meet at some point the Ekaterinbúrg-Tiumén line then in process of construction, was decided upon as a first step. The continuation of this line to Cheliábinsk would have once for all determined the direction of the future route through Siberia.

After a final investigation of the Samára-Zlatoúst line, the work of construction, begun in the spring of 1886, was brought to a conclusion and the line opened to passenger and goods traffic in 1888. The total cost of this line, 453.19 versts long, was R. 24,122,252, or R. 53,227.3 per verst.

The final surveys for the Ufá-Zlatoúst line were made during 1886—1887; the construction was begun in the spring of 1888, and the line was opened to regular traffic in 1890. The total cost of construction of the 298.68 versts, was R. 20,439,481, or R. 68,432 per verst.

Meanwhile, the projects regarding the direction of the Siberian main line in connexion with the future economical progress of the country, were discussed in the highest administrative spheres. The Siberian Governors-General, Baron Korf and Count Ignátiev, tried to prove the necessity of providing for the needs of Russia's eastern possessions.

On a report drawn up in 1885—1886 by Count Ignátiev, then Vice Governor-General, the late Tsar-Pacificator, who was always anxious to further Siberian interests, traced with his ewn hand the following resolution, which so greatly influenced the decision of the question:

„I have read many reports of the Governors-General of Siberia and must own with grief and shame that until now the Government has done scarcely anything towards satisfying the needs of this rich, but neglected country! It is time, high time!"

The petitions of Count Ignátiev and Baron Korf presented at the end of 1886, for the construction of a railway-line from Tomsk to Irkútsk, and from the Baikál to Srétensk, uniting by means of the Amúr the West and East Siberian navigation systems, together with the plan for connecting by rail Vladivostók and the post of Bussé, were submited by Imperial command to a special Conference of Ministers under the presidentship of Actual Privy Councillor Abazá.

As a result of this Conference, a Special Commission was directed to make surveys along the Mid-Siberian, Transbaikál and South-Ussúri lines. His Imperial Majesty wrote the following decision on the report of the Minister of Ways of Communication presented to him on the 12 June 1887, in consequence of the data obtained by the Conference and from the surveys made:

„Quite right. I hope the Ministry will practically prove the possibility of the quick and cheap construction of the line".

This note of the Emperor's was made known by the Minister of Ways of Communication to the Board of Government Railways and to the Survey Commissions.

The Emperor shewed a special interest in the execution of the surveys, which were carried on most successfully. Frequent reports as to their pro-

Actual Privy Councillor I. N. Durnovó, President of the Committee of Ministers.

gress were presented to His Majesty by the Minister of Ways of Communication.

In the mean time, the events which occurred in the countries adjoining the Far East: the opening of the Canadian Railway, the subsidies given by the English Government to the Canada-China steamers, the introduction of the telegraph in China and the building of Chinese steamers for the naviga-

tion of the rivers Sungarí and Amúr, together with other preparations of the Chinese Government in connexion with the organisation of its military forces, excited the special attention of the Amúr Governor-General, Baron Korf, causing him to maintain the opinion, expressed by him in 1887, at the time of the beginning of the surveys, of the necessity of quickly establishing railway connexion between Vladivostók and the Ussúri in view of strategical considerations.

The necessity of uniting Vladivostók and the Amúr basin by rail was made evident in 1875 by a Commission presided over by His Imperial Highness the Grand Duke Alexis Alexándrovich. Without such facilities, our most important port in the Pacific Ocean remained cut off from the interior of the country and lost much of its significance. By resolution of the Committee of Ministers, sanctioned by the Emperor on the 29 November 1887, the Minister of Ways of Communication was desired to make arrangements for carrying out immediately the necessary financial and technical investigations, and to proceed to the construction of the above mentioned line, excepting it from the general plan of the projected Siberian railways.

Various requirements of the Government engrossing the attention of the administration, for some time delayed the realisation of the projected railway in Siberia.

The proposal of State Secretary von Hubbenet, Minister of Ways of Communication, relative to the construction of the Ussúri line founded on Baron Korf's peition, and by Adjutant-General Vannóvsky, Minister of War, was laid before the Committee of Ministers on the 8 May 1890, but as the necessary sums for its execution were not assigned, the Committee, in accordance with the Imperial command of the 2 June 1890, decided to continue only the Ufá-Zlatoúst line to Miás. The Board of Government Railways was entrusted with the execution of this project.

In consequence of a report presented to the Emperor by the Acting Minister of Ways of Communication on the 12-th July 1890, based on fresh information received from Baron Korf, demonstrating the urgent necessity for the construction of the Ussúri line, His Imperial Majesty made the following inscription:

„Necessary to proceed at once to the construction of this line".

As the result of this decision and in accordance with the Imperial desire made known on the 16-th August, the plan of the Ussúri line was added to the general plan and submitted to the consideration of a special council, and thence to the Committee of Ministers. The means and conditions for the construction of the Siberian Railway, and the detailed note presented on the 15-th November 1890 by State Secretary von Hubbenet as to the points of junction of the Siberian line with the lines of European Russia, and the course of construction of the Siberian Railway, were made the subject of a special conference held under the presidentship of Actual Privy Councillor Abazá.

Taking the extension of Russian railways towards the East into consideration, with their termini, Tiumén on the Urál line, Orenbúrg on the Orenbúrg line and Miás on the Zlatoúst-Miás, State Secretary von Hubbenet demonstrated the economic importance of continuing the communication from

these points into the interior of Siberia, and presented the specifications for their construction.

The considerations set forth in the report of State Secretary Hubbenet had a decisive effect upon the choice of the direction for the great Siberian Railway, and therfore merit a place in the history of the question. They were,

1) Beginning at Tiumén, the line was planned through Yalutorósvk: Tiukalínsk, Kaínsk, avoiding Tomsk to Marínsk, and thence to Achínsk, Krasnoyársk, Kansk and Nizhneúdinsk, with a total length of 2,474 versts from Tiumén to Nizhneúdinsk.

Actual Privy Councillor State Secretary S. I. Witte, Minister of Finance.

In order to preserve the commercial importance of this line, it would be necessary to construct an expensive railway, connecting Perm and Nízhni-Nóvgorod, 1000 versts in length, running parallel to the existing water-way.

A railway line of 3,474 versts reaching Nizhneúdinsk would have been necessary for the same object, leaving Moscow at a distance of 4,656 versts.

2) From Orenbúrg the line was to pass by way of Orsk, Atbasár, Akmolínsk, Pavlodár, Bíisk, Minusínsk, and Nizhneúdinsk, in its eastern portion crossing the Altái mountains; this route would be very expensive and have a length of 3,400 versts, running a total distance of 4,820 versts from Moscow to Nizneúdinsk.

3) Starting at Miás, 2,683 versts from Nizhneúdinsk, the road traversed the most populated localities of Western Siberia, following the fertile black-earth zone and having a total length pf 4,551 versts from Moscow to Nizhneúdinsk. Thus the line beginning at Miás was 791 versts shorter than that from Tiumén; beginning at Orenbúrg it was reduced by 717 versts, while from Moscow to Miás works, it was to be 105 versts shorter than the northern route, and 269 versts less than the southern line.

According to the estimates, the cost of the Miás line would be less than the others; thus it became evident that the continuation of the Samára-Zlatoúst line passing through Cheliábinsk, Kurgán and further east was the most advantageous.

As regards the course of the work, State Secretary von Hubbenet referred to the note of the Minister of Finance, which was laid before the Council, where Privy Councillor Vyshnegrádsky, comparing the respective importance of the diferent sections of the Siberian Railway, gave his view of the commercial importance and the future progress of Siberia.

According to the plan of Privy Councillor Vyshnegrádsky, the construction of the Siberian Railway was not to aim solely at the opening of new Siberian markets for the products of European Russia, but also to assure the regular economic development of Siberia, thus placing this vast and rich, but hitherto inaccessible country, on a level with European Russia.

Siberia's growth and prosperity depended solely on a close economic intercourse with European Russia which in its return would find there new sources of progress and wealth.

The Minister of Finance was further of opinion that it would not be expedient to commence the Siberian Railway by the construction of the Ussúri line. According to his view, this line did not possess any great economic or strategic importance, but merely established communication between Vladivostók and the Ussúri river. To begin operations from the west would be much more to the purpose. Traversing a more densely populated country, the new line would yield a certain revenue and at the same time increase economic intercourse with European Russia, and secure the more rapid conveyance of reserve troops to Eastern Siberia, serving at the same time the interests of the Russian population of Siberia settled between the Urál and the Baikál.

Although holding the same opinion as to the economic importance of the Siberian main line, State Secretary von Hubbenet, referring to its political and strategical significance, urged by the Ministers of War and Foreign Affairs, attached great importance to the Ussúri line and insisted on the necessity of its construction, as previously decided by the Committee of Ministers and sanctioned by the Emperor on the 29-th November 1887.

The special conference, leaving the decision as to the construction of new railways to the Committee of Ministers, only discussed the sum which, according to the estimate for the extraordinary expenditure of 1891, could be assigned for commencing the construction of the new railways.

Having received the Imperial authorisation to carry into effect the resolution of the special conference, State Secretary von Hubbenet, on the 4-th

Actual Privy Councillor Prince M. I. Khilkóv, Minister of Ways of Communication.

February 1891, proposed to the Committee of Ministers to commence the construction of the Siberian Railway by the Miás-Cheliábinsk line, a distance of 94 versts, and the Ussúri line running from Vladivostók to Gráfskaya, a distance of 293 versts, in connexion with the surveys conducted from Cheliábinsk to a point on the Mid-Siberian section, and from the Gráfskaya station to Khabárovsk.

The Committee of Ministers, having taken the project of the Minister of Ways of Communication into consideration, issued the following order sanctioned by the Emperor on the 15 and 21 February 1891: 1) To approve the direction of the Ussúri line from Vladivostók to Gráfskaya station; 2) To commence the construction of the Miás-Cheliábinsk line in 1891; 3) To conduct surveys in the same year, from Cheliábinsk to Tomsk or some other point of the Mid-Siberian section, and from the terminus of the first section of the Ussúri line to Khabárovsk; 4) To carry out these works under the direction of the State; 5) The Minister of Ways of Communication to receive the sanction of the State Council for the necessary expenditure.

The Imperial Rescript addressed to His Imperial Highness the Grand Duke Tsesarévich on the 17-th Marsh 1891, finally and irrevocably decided the question of the construction of the Great Siberian Railroad.

This memorable document was made known by His Imperial Highness upon his again treading Russian soil at Vladivostók, on the 14-th May 1891, on his way back from the Far East.

Your Imperial Highness!

„Having given the order to build a continuous line of railway across Siberia, which is to unite the rich Siberian provinces with the railway system of the Interior, I entrust to you to declare My will, upon your entering the Russian dominions after your inspection of the foreign countries of the East. At the same time, I desire you to lay the first stone at Vladivostók for the construction of the Ussúri line, forming part of the Siberian Railway, which is to be carried out at the cost of the State and under direction of the Government. Your participation in the achievement of this work will be a testimony to My ardent desire to facilitate the communications between Siberia and the other countries of the Empire, and to manifest My extreme anxiety to secure the peaceful prosperity of this Country".

I remain your sincerely loving

ALEXANDER.

The question of the construction of the Great Siberian Railway, which for a third of a century had occupied the attention of the Government and

society, was now settled, representing the most important event of the century, not only in our country, but in the whole world.

On the 19-th May, at Vladivostók, His Imperial Highness the Grand Duke Tsesarévich, with his own hands filled a wheelbarrow with earth and emptied it on the embankment of the future Ussúri line, and then laid the first stone for the construction of the Great Siberian Railway.

Actual Privy Councillor State Secretary Kulomzín, Secretary to the Committee of Ministers and to the Siberian Railway Committee.

In the same year, surveys were carried out from west and east, the results of which made it possible to establish the course to be pursued in the Great Work, which were the subject of preliminary discussion by the special conference on the 21 November 1892. The following points, included in a note by State Secretary Witte, the Minister of Finance, were submitted to this conference:

1) Determination of the order of construction.

2) Means for the construction of the Siberian line.

3) Successive construction of sections in connexion with subsidiary enterprises.

4) Organisation of the Committee for the Siberian Railway.

The resolution of the Committee, based on the opinion of State Secretary Witte, and sanctioned by the Emperor at Gátchino on the 10 December 1892, included the following points:

I) The division of the work into three parts; the first comprising the construction of the West-Siberian line, from Cheliábinsk to the river Ob, a distance of 1328 versts; the Mid-Siberian line, from the river Ob to Irkútsk, 1754 versts, and the termination of the Vladivostók-Gráfskaya line, as well as the construction of the branch line (uniting the Urál mining line and the Siberian Railway), the necessity of the last being urged by the Minister of Agriculture and Imperial Domains.

The second part included the construction of the Gráfskaya-Khabárovsk line, 347 versts, and that of Mysováya along the shore of the Baikál to Srétensk, 1009 versts. The third comprised the line running round the Baikál, 292 versts, and the section from Srétensk to Khabárovsk of about 2000 versts.

The following dates were fixed for the termination of the works: the sections from Cheliábinsk to the Ob, and from thence to Krasnoyársk, 2059 versts, were to be finished in 1896; the Krasnoyársk—Irkútsk section of 1023 versts, in 1900; the branch line to Ekaterinbúrg, in 1894; the section from Vladivostók to Gráfskaya, in 1894—95. At the same time it was proposed to develope subsidiary enterprises, such as the colonisation of the fertile West-Siberian districts in connexion with the progress of peasant emigration, the extension of water communications, and the growth of some branches of mining industry.

II) The Acting Minister of Ways of Communication was requested to present without delay to the Committee of Ministers and to the State Council for their confirmation, the direction and estimates of the lines to be first constructed.

III) A sum of R. 150,000,000 was appropriated for the construction of the Siberian Railway, including from R. 14,000,000 to R. 22,000,000 for subsidiary objects.

IV) It was decided to organise a special Committee, to be styled the Siberian Railway Committee under the presidentship of a person appointed by the Emperor.

On the 14-th January 1893, His Imperial Highness the Grand Duke Tsesarévich, the present Emperor Nicholas II, by a rescript of His Imperial Father was appointed President of the Committee. On the 15-th January 1893, Actual Privy Councillor Bunge was named Vice-President; the management of the business of the Committee was entrusted to the Secretary of the Committee of Ministers and the expedition of business was concentrated in the Chancery of that Committee.

At its first meeting on the 10-th February 1893, His Imperial Highness the Grand Duke Tsesarévich addressed the following words to the members of the Committee:

„In opening the first meeting of the Committee for the construction of the Siberian Railway, I contemplate with emotion the grandeur of the task before us. But love of my country and an ardent desire to contribute to its wel-

fare, have induced me to accept the commission from my beloved Father. I am convinced that you are animated by the same feelings, and that our joint efforts will bring us to the desired end".

The composition of the Committee was decided at this meeting, as follows: the President and the Vice-President appointed by the Emperor, the Ministers of the Interior, Finance, War, Agriculture and State Domains, Ways of Communication and the State Comptroller".

The Committee was entrusted with the direction of the construction of the Siberian line and with the ancillary works connected therewith, while the executive power was left to the Ministers. Matters of legislation laid before the Emperor, were subject to the juridiction of the joint Session of the Members of the Committee and of the Department of the State Council. This resolution was sanctioned by Imperial ukaz given to the Senate on the 24 th February 1893.

The execution of the construction of the Siberian Railway was at first entrusted to the Board of State Railways but, upon the further development of operations, a special board for the construction of this Railway was organised, according to the Imperial command of the 5-th June 1893, in the Central Administration of the Ministry of Ways of Communication in which, under the chief direction of the Minister, was concentrated the executive power for the construction of the Siberian Railway.

The Central Administration of the Ministry of Ways of Communication was reorganised on the 1 July 1899, and the special Board for the construction of the Siberian Railway included in the general Administration for the construction of all the Russians Railways in the Emqire.

Since the institution of this Committee, all the affairs regarding the construction of the Siberian Railway and the organisation of the auxiliary works, were submitted to the consideration of the Committee, whose resolutions together with those of the Department of State Economy of the State Council, required the direct sanction of the Emperor.

After the decease of his Imperial Father, the present Emperor Nicholas Alexándrovich retained the post of President of the Committee of the Siberian Railway.

At the meeting held on the 30-th November 1894, which was the first after his ascension to the throne, His Imperial Majesty addressed the following memorable words to the members of the Committee and of the Department of State Economy:

„Gentlemen! To have begun the construction of the railway line across Siberia is one of the greatest achievements of the glorious reign of my never to be forgotten Father. The fulfilment of this essentially peaceful work, entrusted to me by my beloved Father, is my sacred duty and my sincere desire. With your assistance, I hope to complete the construction of the Siberian line, and to have it done cheaply and, most important of all, quickly and solidly."

After having heard the gracious words of His Imperial Majesty, the Vice-President of the Committee, Actual Privy Councillor Bunge expressed as follows the loyal feelings of all the members:

„We are most happy that in accordance with Your Imperial Majesty's desire, the work of construction of the Siberian Railway will remain under Your Majesty's immediate direction. At the time of Your visit to distant lands, Your Majesty took the first step at Vladivostók towards the execution of the Siberian Railway. Upon Your Majesty's return, You were appointed President of the Committee for the construction of the Siberian line by the late Emperor, Who thus assured the fulfilment of the task entrusted to the Committee, which always was the object of Your constant endeavour. At present, Your Majesty having desired to retain the direction of this vast enterprise, which is to connect European Russia with the shore of the Pacific Ocean, we are convinced that this grand work bequeathed to Your Majesty by Your Imperial Father, will be brought to a successful end and constitute the glory of the late and present reigns".

Strictly following the plan set by the Emperor Pacificator, the Committee always endeavoured to satisfy as far as possible the various requirements attached to the execution of the grand work in Asia.

The activity of the Committee, directed towards the moral and material renewal and quickening of the productive forces of Siberia and towards the extension of the influence of the Great Siberian Railway over the culture and the economic life of the East, comprised:

1) The construction of the Siberian main line and of other routes in accordance with the interests of the East and with the development of commercial intercourse.

2) The arrangements for the general economic welfare of Siberia and for the revival of its commercial intercourse with the Asiatic Continent.

3) The settlement of the country within the range of the Siberian line, and the regulation of the emigration movement to the East.

The Siberian main line, from Cheliábinsk to Strétensk, has a total length of 4865 versts, and is divided into the following sections: the West-Siberian, 1329 versts, the Mid-Siberian, 1715.5 versts, the Irkútsk-Baikál, 64 versts, the Transbaikál 1035.5 versts, and the Ussúri, 721 versts.

The total length of the railways, connected with the Siberian line and under the control of the Committee, is about 6445⅓ versts, including besides the main line the branch-lines to the landing places of the Siberian rivers, traversed by the main trunk, with a length of 19 versts, the branch-line to Tomsk, 89 versts, and the Ekaterinbúrg-Cheliábinsk line, 226 versts.

The branch-line of the Manchúrian railway, from Kaidálovo to the Chinese frontier, comprises 3241.3 versts; that from Nikólsk to the Chinese frontier, 110 versts; and that from Perm to Kotlás, 812 versts.

The total cost of these railway works under the control of the Committee is R. 355,377,911.

In accordance with the desire of the Monarch Pacificator, this costly Siberian line was constructed exclusively by Russian engineers and with Russian materials.

During the achievement of this work, the principal attention was paid to the speedy and solid construction of the permanent way; the building of stations was to be effected gradually, with a view to economy, and to avoid the risk of useless expenditure, which might result from a false estimate as to

the future traffic. The buildings for the accomodation of passengers and goods were to be constructed in proportion as they were called for by the actual requirements. Considerable modifications and technical simplifications were admitted in the construction of the Siberian Railway, with a view to a more speedy execution of the work and a reduction of the expenditure.

Privy Councillor K. Y. Mikhailóvsky, Engineer, Constructor of the West-Siberian Railway.

Thus for example, the gauge of the Siberian line is 2.35 instead of 2.6 sazhéns, the standard usually adopted on European Russian railways; the grades on straight runs are 0.0074 on level, and about 0.0174 on hilly sections; the curves have a radius of 250 and 150 sazhéns, and the depth of the ballasting of the roadbed is reduced; all the engineering works and station buildings are simplified and the rails employed throughout the whole extent of the Siberian Railway are 18 pounds to the foot.

The construction of a branch line to Tomsk, one of the most important intellectual and economic centres of Siberia, was considered necessary by the Committee alike for the development of the existing commercial activity of this city, and to avoid the displacement of other points traversed by the Siberian trunk line

The addition of a branch line connecting the Trans-Siberian with the Manchúrian railway, was also approved after the Russo-Chinese bank, founded in 1896, had received the concession from China for the construction and exploitation of a line within the limits of Manchúria. A joint stock company for the East-Chinese Railway was organised for this purpose.

The plan of this last great work quite abolished the necessity for continuing the Siberian line to the Amúr, attended as this would be by considerable technical difficulties, and put a stop to the construction of the Transbaikál line from Strétensk further East.

Branch lines, running from the Transbaikál and Ussúri railways to the Chinese frontier for a length of 434 1/3 versts, were to be constructed in place of the abandoned scheme, thus reducing by about 500 versts the distance to be traversed from one terminus of the Siberian Railway to the other.

The branch-line uniting the Trans-Siberian and the Urál railways, was laid down at the end of 1895, with a view to providing for the needs of the Urál mining industry, and for those of Siberia which, although possessing great mineral treasures, had hitherto suffered from a dearth of metal goods and the high prices produced by the insufficient development of mining industry.

For this purpose, the districts including the greatest number of works were selected by the Committee for the route of the line which, commencing at Cheliábinsk, without neglecting the interests of Siberian traffic, was made to join the Urál line at Ekaterinbúrg, the chief mining centre of the Urál.

The project of the line from Perm to Kotlás, situated on the northern Dviná, was laid before the Committee by special Imperial command.

The Committee paid special attention to the establishment of railway communication between Siberia and the port of Archángel by the Urál line and the branch from Ekaterinbúrg to Cheliábinsk. This line would make Archángel an important trading port for Siberia, and greatly contribute to the reanimation of the North, and to the development of our commercial fleet.

The opening of the White Sea route, representing the nearest and most independent outlet for the export abroad of Siberian goods, consisting chiefly of grain, would coincide with the interests of agriculture in Siberia, and save the central districts of Russia from the excessive fall of prices produced by the flow of cheap grain to the interior markets of the Empire and to the Baltic ports.

In the opinion of the Committee, the construction of the Perm-Kotlás line was also necessary for satisfying the local requirements of the North of Russia, and chiefly for securing the food supply of that region. The establishment of a close commercial intercourse between the Siberian governments and the energetic and purely Russian population of the Archangel government, would also favourably influence the development of private enterprise in Siberia.

Endeavouring to develop trade and the exploitation of Siberia, the Committee instituted geological explorations which were carried on along the Railway line in order to ascertain the existence of useful minerals which, like coal, anthracite, iron ores etc., used in the mining industry, were necessary for the exploitation of the railway line.

By order of the Committee, mining parties explored the country from Cheliábinsk to Irkútsk, the Kirgíz steppe and the regions along the Angará

river, round Lake Baikál, along the Ussúri line, and along the rivers of the Amúr basin. As a result of these investigations, many useful minerals were discovered near the Siberian main line, and also in more distant spots, which however are easily accessible by branch lines.

Actual State Councillor N. P. Mezhéninov, Engineer Constructor of the Mid-Siberian Railway.

Deposits of fuel were found at many points throughout the course of the Siberian Railway, from the Kirgíz steppe to the coasts of the Pacific Ocean, and the Island of Sakhalín. The untold wealth of Siberia in brown ore and magnetite, the best varieties of iron ore, was once more confirmed by geological parties, which discovered many hitherto unknown deposits.

The few iron works and foundries actually existing in Siberia, although situated in the proximity of rich mineral deposits and well supplied with

fuel, do not suffice for the local demand for iron goods. Thanks to the very limited iron industry, the prices are high in Siberia. A few merchants hold a monopoly and charge what they like.

The increasing demand for iron required for household, agricultural and industrial purposes, makes the construction of new iron works absolutely necessary on the Siberian Railway, and especially in the Mid-Siberian and Transbaikál sections where a great number of rich iron mines have been found of late.

Among other useful metals, silver, lead and copper have deen discovered by mining parties at many points near the Railway. The annual output of lead iu the Empire is not much more than 100,000 puds, while an import of 2,000,000 puds only just suffices for its needs; this fact clearly demonstrates the necessity for increasing the exploitation of the mineral wealth of Siberia. Copper smelting is practised on a very limited scale in Siberia, and exists only in ihe Altái mining district, within the confines of His Majesty's Cabinet lands, and in the Kirgíz steppe where it is obtained, either by smelting copper ores or in refining silver. The annual output of copper amounts to about 20,000 puds.

The development of the goldmining industry, which is of first rate importance for the Government and for the economic welfare of Siberia, was also the object of the special solicitude of the Committee.

In view of the wide prospect opened for this industry in Siberia, the Committee recognised the immediate necessity for its technical and statistical economic study, in order to establish the extent of its requirements, and also the value of explorations to ascertain the extension of the gold bearing regions.

At the present time, the gold-mining industry of Siberia, yielding gold to the value of R. 20,000,000, comprises a vast area. Gold is obtained in the Ob, Yeniséi, Léna and Amúr basins, and throughout all the governments of this enormously rich country. All the goldbearing regions on the Ob, Yeniséi and Léna, are situated in the basins of rivers flowing from the east, viz, from the western slopes, falling gradually to the North Siberian plain, of the mountain ridges bounding the basin of the Arctic Ocean on the south.

The strata containing auriferous gravels have a thickness which varies from 2 feet to 3 sazhéns, and are covered by an alluvial soil or turf. They are from 1 to 50 versts in length, and include sometimes uninterrupted beds of auriferous sand fit for exploitation. The proportion of gold is not the same in all the mines: the top of the mine generally contains an accumulation of coarse grained gold, with an admixture of quartz, magnetic iron ore and pyrites; in the middle of the mine, the gold grains are smaller and its richness inferior, while at the bottom the mines contain only gold dust.

The thickness and the width of the gold strata vary greatly. In Siberia auriferous quartz is found in the Yeniséisk government, on the Altái, in connexion with silver in the Zyriánov and Ríddersk mines, and in the Transbaikál region. Several beds of gold ore have been discovered more lately in the Marínsk district of the Tomsk government.

The first step towards a more complete study of the mining industry of Siberia was made in 1895 by the organisation of a special commission attached to the mining department, comprising representatives of different departments entrusted with the collection and elaboration of all the particulars of the gold mining industry, and with the establishment of a programme for the exploration of the auriferous regions.

One of the problems of the commission was to shew clearly and in a popular form the actual extent of gold mining in the Empire, others consisted in the collection of materials and the making of calculations, which were to serve as a basis for the more accurate elaboration of the general plan and programme for future geological, technical and statistical-economic investigations.

According to the data obtained, it appears that, with few exceptions, gold is at present obtained in Siberia by washing machines of very primitive construction, the goldbearing regions are but imperfectly exploited, and the mines unsufficiently worked, while two thirds of them are entirely undeveloped for want of capital and workmen. Some technical improvements in the working of gold mines are being adopted now at a few places; thus for example, in the Lensk district, gold is washed in winter with warm water; in the Amúr territory, dredging machines are employed, and the work time is extended by washing the ore in the night by electric light. The resolution of the Committee of Ministers sanctioned by the Emperor in 1898, permitting during 10 years (till the 1 January 1909) the free import of foreign machinery and appliances required for the mining industry in Siberia and the Urál, will surely, in the near future, contribute to the development of a more regular exploitation and of a greater production of gold by enlarging the districts worked, and getting a greater quantity of gold from the existing fields.

The greater part of Siberia's mineral wealth is as yet lying waste, and is even scarcely known; the results of the extensive and varied investigations carried out within the range of the Great Siberian Railway, will undoubtedly attract promoters who, on the basis of the existing information, will find application for their capital and labour, and duly develop many branches of the mining industry, for which Siberia offers the most advantageous conditions.

The progress of economic life in Siberia produced by the Great Railway, marked by the increase of freights over the water systems of Siberia, raised the question of improving the navigation on the Siberian rivers, which represent the chief natural branches and feeding lines of the main railway. With this in view, the Committee selected the water-ways of the Ob basin. Accordingly a department of ways of communication was organised at Tomsk in 1895. Further, the channels of the rivers Turá, Toból, Irtysh, Ob and Tom were put in order, and water-gauges and meteorological stations established. The exploration of the Shílka, Ussúri and Amúr rivers has been undertaken with a view to facilitating navigation of the Amúr system; their fair-ways have been straightened and cleared, and a special dapartment for the management of the water-ways belonging to this basin has been organised for the same purpose. Considerable expenditure was required for the improvement of the navigation on the Angará and for a provisional steamboat service established for the shipment of railway materials and especially for the conveyance of the heavy and bulky parts of the icebreaker for the Baikál.

The Committee gave special attention to the regulation of the navigation on the Baikál, closely connected with the interests of the railway traffic, for which this lake is one of the most important natural factors. The Committee is further anxious to insure the regular navigation of the Baikál, in order to develop the economic growth of the localities situated on its shores, endowed with fisheries and mineral deposits.

A special commission was entrusted with the detailed study of the Baikál, and with the collection and registration of topographical, meteorological and astronomical observations in its basin. Its principal object was to secure safe navigation by making a map, placing pilot marks and buoys.

In order to establish regular water communication with Siberia and encourage the industry of the North, the Committee organised special expeditions for the hydrographic exploration of the sea route to the mouths of the Ob and Yeniséi, and for the description of the straits of the Yúgorsky Shar and Kára Sea, and the islands Bély and Vilkítsky.

After having selected the town of Vladivostók on the coast of the Pacific Ocean as the commercial port of the terminus of the Siberian Railway, the Committee occupied itself with the organisation in the bay of the Golden Horn of the necessary facilities for foreign trade and for our navy.

An icebreaker purchased in Denmark was put to work in the port of Vladivostók in order to maintain navigation uninterrupted in winter, which is of great importance for our commerce and for our Pacific squadron.

The Russo-Chinese Bank, founded on the 27-th August 1896, for the commercial transactions of Eastern Asia, contributed to a great extent to the promotion of Russian trade with China and Japan in the Far East, brought nearer by the Great Siberian Railway to the centres of trade and consumption in Europe. The East-China Railway Company, entrusted by the Bank with the construction and the working of a railway line within the confines of China, began operations by building a line from Port-Arthúr to the town of Nikólsk situated at the junction of the Littoral and Manchúrian Railways, which was to serve as a link to the Great Siberian line.

The Imperial founder of the Great Siberian Railroad attached special importance to the settlement of the regions traversed by it, regarding emigration as a factor which in Russian history had always tended to secure Russian dominion and Russian culture, and would serve as a stronghold of orthodoxy and Russian law in Siberia.

According to the plan of the late Emperor, His Imperial Majesty Nicholas II expressed the desire to give a more conscious and regular character to the emigration movement, and to prevent such emigration from injuriously affecting the economic condition of the settlers. For this purpose the Committee made all sorts of arrangements to harmonise with the former life of the peasants at home, meeting their needs on the road and facilitating their settlement in the new locality.

To ascertain the prospects offered by emigration to Siberia, and to avoid false information, villagers who intend to emigrate have the right to previously send a pioneer to examine the places of future settlement. These men travelling at a reduced fare and subsidised with grants of money, are allowed the right to choose land for the families left behind, as being better able than any else to form exact notions as regards colonisation in Siberia. Short but exact descriptions of Siberia, including the general regulations for peasant emigration were spread among the population with the same object. Special land surveying parties, sent by the Ministry of Agriculture and State Domains to assist the settlers, are entrusted with the exploration of the cultivable areas fit for colonisation, traversed by the Great Siberian Railway, and with the surveying of the lands allotted to the emigrants.

With the continued growth of the movement and its expansion over wider regions, in 1896 was begun the settlement of the taigá or urmán dis-

tricts adjacent to the railway line, a measure of much importance for colonisation in general, as it greatly extends the limits of the cultivable area.

The settlement of the steppe lands, which are well suited for agriculture, has been carried into effect at the same time.

Engineer A. N. Púshechnikov, Constructor of the Transbaikál Railway.

The interests of the indigenous nomad population, the Kirgíz, have been taken into consideration during the colonisation of the steppe regions; detailed investigations of the natural history and statistics of the Akmolínsk, Semipalátinsk and partly of the Turgái steppes, have been made with a view

to determining the extent of the districts occupied by the nomads, and of the free lands which might be allotted to emigrants, without damage to the aborigenes. In arranging the allotments for settlers, care was taken that they might include land suitable for cultivation and be sufficiently provided with water. Since the first organisation of these survey and allotment parties, including the work done in 1898, 5,744,000 desiatins have been assigned for accomodation of settlers along the Siberian Railway, of which 4,308,000 are already occupied.

The land statistics give about 5,000,000 surplus desiatíns of Kirgíz land in the Akmolínsk territory, which are partly to be colonised. The unfavourable hydrographic conditions of the Ishím and Barabá steppes traversed by the Railway, within the confines of the Akmolínsk territory and the Tobólsk and Tomsk governments, necessitate the organisation of an irrigation system for these localities.

The hydrotechnical parties sent by the Ministry of Agriculture and State Domains have undertaken the regulation of the irrigation of the scantily watered emigrant lands in the Ishím steppe, and the drainage of the swampy Barabá steppe.

Putting a free land-fund at the disposal of the settlers, the Committee at the same time has taken measures to provide them with the due authorisation and to supply them with grants of money for travelling expenses. It has further organised medical and feeding stations along the road. Every emigrant suffering from an infectious disease is detained at Cheliábinsk, the starting point of the Siberian railroad. The medical and feeding stations are organised at the points of the railway where the emigrants leave the train and continue their journey with horses. At these stations, they get gratuitous medical assistance and hot food at very low rates. Loans of money for the installation of the household, seed-corn, and timber for house-building are also allotted to settlers. Special stores of necessary household furniture and of timber, obtainable by the settlers at low prices or instead of money loans, are organised at places where forests are scarce and the supply of wood attended with difficulty.

The Committee is not only solicitous for the material welfare of the settlers in their new dwelling places, but also provides for their spiritual wants by the building of churches and primary schools in the new settlements.

The topographical conditions of the cultivable zone of Siberia require a considerable distance between the settlements, which places the Russian colonist in a very isolated position. The few parish churches, which very often are situated at some distance from the villages, are hardly accessible to the whole of the population. In this respect, the emigrants settling amidst nomad Mohammedans in the steppes are in a still worse condition.

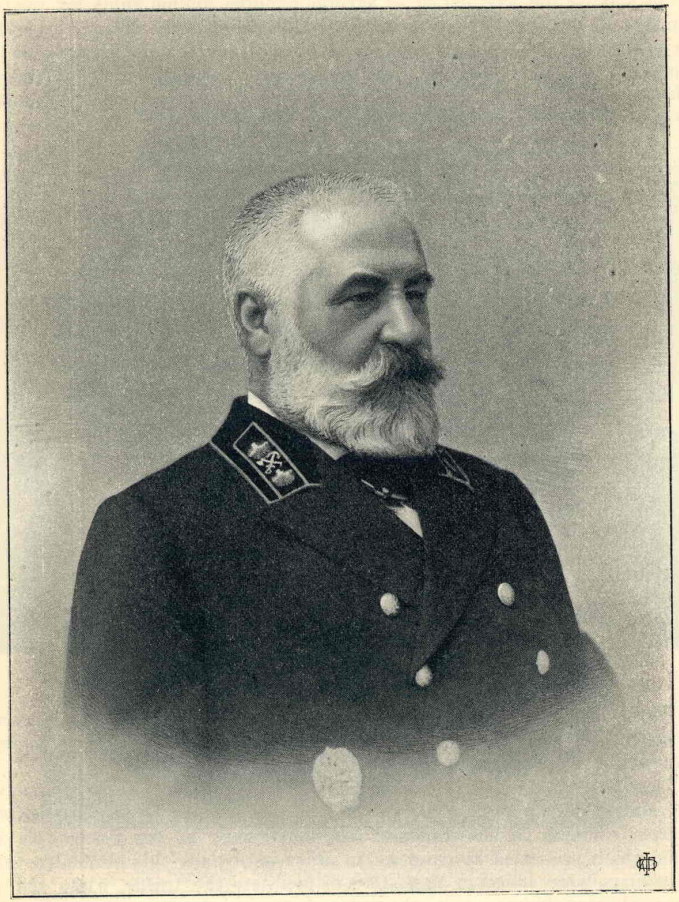
Dwelling sometimes at a distance of 150 to 200 versts from the orthodox churches of the Cossack villages, they are visited for the performance of the rites of the church by the clergy of these temporary parishes not more than twice a year.

The number of national schools in Siberia is also very small.

The Siberian Railway plays a part of the first importance in the creation of churches and schools. The stations, although situated at a considerable distance from existing churches, become fresh centres of population. Further, at stations distinguished by a large traffic, are concentrated considerable numbers of railway officials, while some stations have become centres

of the emigration movement, whence emigrants start for the inspection or definite settlement of the localities indicated for the purpose.

The first step towards the building of churches and schools was taken by the Emperor-Pacificator, followed in 1894 by an appeal to public benefi-



Actual Privy Councillor Engineer O. P. Viázemsky, Constructor of the Ussúri Railway.

cence, and by the establishment of a fund for the construction of churches and schools in Siberia, sanctioned by the present Emperor and entitled the Fund of the late Emperor Alexander III. This has afforded the means for the building of a number of churches and schools to meet the requirements of the numerous population.

The sum of R. 21,800,000, or R. 4,000 per verst, have been assigned at various times in addition to the total expenditure for the construction of the Siberian Railway, with a view to organising auxiliary works, settling the localities contiguous to the railway line, and developing trade and industry in Siberia.

In making the vast outlay of several hundred million rubls for the construction of the great Siberian Railway, the Government did not expect in the near future to get a strictly commercial return. Its profit was based on numerous elements of increase in the national economy, conjectural and incapable of arithmetical calculation, connected with the commercial and industrial development of the country.

Church-car.

The Railway exercised however such a mighty influence on the growth of economic life in Siberia that its commercial success far exceeds the most extravagant expectations.

Upon the opening of provisional traffic on the West Siberian Railway in 1895, and of regular traffic in October 1896, the means at its disposal were far from sufficing for the transport and conveyance of the passengers and goods which presented themselves. In order to obviate this difficulty, thirty one sidings were added in 1896—1898 to facilitate the traffic, while the rolling stock was increased by thirty locomotives and 600 carriages. However during the winter af 1899, 7,000 waggons carrying over 5,000,000 puds of goods blocked the line.

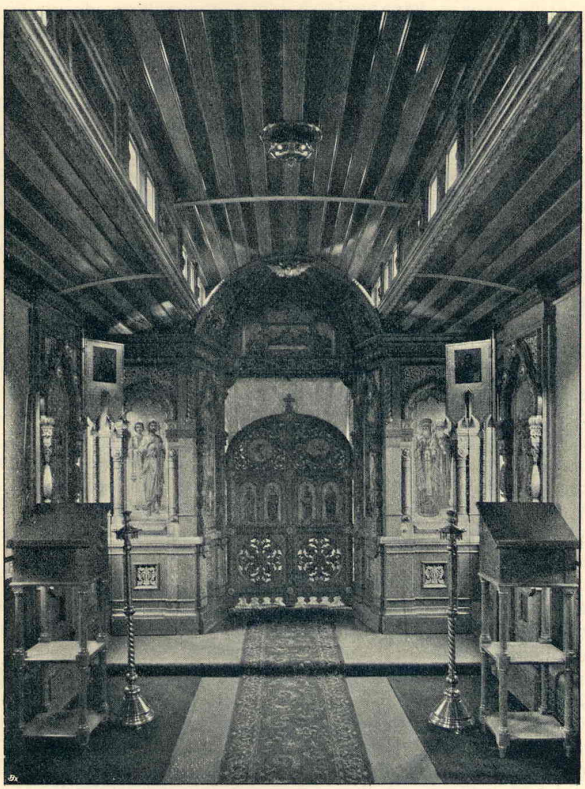
The following figures illustrate the increase of passenger and goods traffic:

The West Siberian Railway conveyed in 1896: 160,000 passengers, 169,000 emigrants, and 10,500,000 puds of various goods; in 1897—236,000 passengers, 78,000 emigrants, and 21,190,000 puds of goods; in 1898—379,000 passengers, 195,000 emigrants and 30,000,000 puds of goods.

The Mid-Siberian Railway conveyed in 1897—177,000 passengers and 5,393,000 puds of goods; in 1898—476,000 passengers and 11,000,000 puds of goods.

On the West Siberian Railway, which was first opened, the passenger traffic increased by 50 percent and the goods traffic by still more.

Further progress in the development oi the traffic of the Great Siberian



Interior of the Church-car.

Railway is certain, especially upon the junction of the main line with the port on the Pacific Ocean, when there will be continuous railway communication between Europe and the East of Asia, and there will be created the safest, quickest, cheapest and most convenient route. Brought into connexion with the network of European railways and running through the Russian Empire for a distance of about 10,000 versts, the Siberian Railway mostly traverses cultivated and productive countries, uniting their commercial centres and offering new outlets and prospects for Russian and international

intercourse and trade. It must be mentioned that China, Japan and Korea, comprising a total population of about 460,000,000 souls, and having a foreign trade to the amount of R. 500,000,000 gold, are yet far from having fully developed their commerce with Europe. Upon the completion of the Manchurian railway, they will be able to take a greater share in the international market, thanks to the Great Siberian Railway, constituting a most important factor in the further development of trade.

At the present time, Europe communicates with Asia via the Suez Canal by means of four great steamship companies: the Peninsular and Oriental, the Messageries Maritimes, and the German and Austrian Lloyds and the lesser companies: the Russian Steamship and Trading C° and the Volunteer Fleet. They all work well, but do not suffice to meet the demand for transport, so that it is necessary to apply in good time in the case of both passengers and goods.

Considering Moscow as the centre of Russia, and London and Shanghai as the termini for foreign trade, it appears that the voyage from Moscow, via Odéssa to Vladivostók, requires not less than forty days, and costs R. 600 for first class cabin passengers, and R. 450 for second class passengers while the passage from London to Shanghai requires from 34 to 36 days, and costs from R. 650 to R. 900.

The journey from Moscow to Vladivostók or Port-Arthur, comprising a distance of about 8,000 versts, at the rate of 30 versts an hour and with the existing tariff, will take ten days, and cost R. 114 first class, by fast train, inclusive of Government tax and sleeping accomodation; R. 74 second class, and R. 51 third class, by post train. Without sleeping car, the fares are R. 89, R. 56, and R. 36.

According to this calculation, the journey from London to Shanghai includes: three days from London to Moscow, cost R. 125, ten days from Moscow to Vladivostók, cost R. 114, three days from Vladivostók to Shanghai, cost R. 80, or a total of 16 days and R. 319. The journey second class costs R. 200, third class-about R. 130.

The conveyance by the Siberian Railway will be over twice as quick as and 2½ times cheaper than that now existing. By increasing the speed up to that adopted in Europe, the journey from London to Shanghai will be reduced to ten days.

There can be no doubt that, besides the international mails of Europe and Eastern Asia, the greater part of the more vaulable goods, as well as such as are liable to spoil or require to be conveyed rapidly, will go by the Great Siberian Main Line.

All these considerations relative to the actual progress and to the future importance of the Siberian Railway, led to the organisation of a commission in 1898, for establishing the necessary facilities for the increase of the through traffic and means of transport on the Siberian Railway. Its result shewed that the Siberian line, uniting as it does the European and Asiatic markets, and running a distance of 10,000 versts through countries promising a great development of industry, will soon acquire an immense importance for local traffic and for international transit, with a view to which, it must be made equal to the future wants of the home and foreign passenger and goods traffic.

Arrangements for a more extensive organisation were deemed most necessary by the Committee to meet the interests of the public and, in view

of the unexpected commercial success of the Siberian Railway which, as is estimated, upon its completion, will have an annual revenue of about R. 8,000,000. Even this amount will in time be exceeded, and R. 16,000,000 will not be too high a figure, if we include all the indirect benefits which may be expected by the Government.

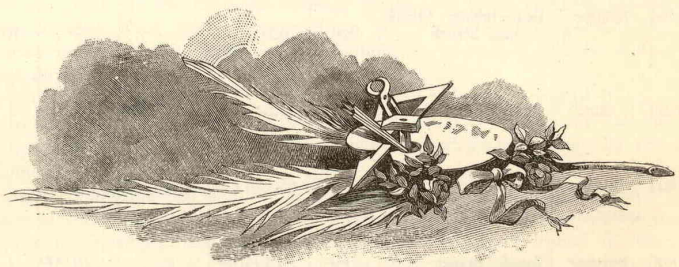
The estimated cost of these additional facilities, required for the Siberian Railway, from Cheliábinsk to the station Kaidalóvo (united by a branch line with the Manchurian railway) is R. 91,316,791 inclusive of the expenditure for the increase of the capacity for through traffic and conveyance, the introduction of a higher speed, the replacement of the light by heavy rails, and the improvement of the roadway.

The rapid increase in the profits of the Great Siberian Railway, connected with the general economic growth of Siberia, strikingly illustrates the effect produced upon civilisation and commerce by this great work, which will serve as a monument to the reign of the Tsar Pacificator and to the Russian Slavonic nation, which is destined to propagate Christianity and civilisation in the East of Asia.

Sections of the Great Siberian Line already built and in course of construction.

COMMENCEMENT.	SECTION.	Length in versts.	Cost of line in rubls.	Cost of rolling stock in rubls.	Working capital in rubls.	Opening of regular traffic.
1892 7 July.	West-Siberian.....	1329	37,571,940	9,552,758	1,200,000	1 Oct. 1896.
1894 Summer.	Ekaterinbúrg Cheliábinsk branch	226	6,2026,40	—	—	10 Oct. 1896.
1893 May.	Mid-Siberian I Section.	711	31,541,481	4,715,690	624,000	1 Jan. 1898.
1894 Summer.	II section	1004 1/2	65,133,379	6,646,085	888,000	— 1898.
1896 Summer.	Tomsk Branch	89	2,494,198	—	79,000	1 Jan. 1898.
	Irkútsk-Baikál Branch.	64	3,626,336	—	—	— 1899.
1895 11 April.	Transbaikál	1035 1/2	54,992,381	3,258,000	1,000,000	In course of construction.

COMMENCEMENT.	SECTION.	Length in versts.	Cost of line in rubls.	Cost of rolling stock in rubls.	Working capital in rubls.	Opening of regular traffic.
1897 —	Kaidalóvo Chinese frontier.....	324 1/3	25,281,278	2,727,600	314,280	In course of construction.
1894 3 July.	North-Ussúri.....	339	20,365,033	2,093,846	579,200	1 Nov. 1897.
1891 19 May.	South-Ussúri.....	382	19,117,229	1,466,250	681,000	1 Febr. 1896.
1897 —	Nikólsk Chinese frontier.....	110	8,046,867	811,120	176,000	In course of construction.
	Total . . .	5614 1/3	274,372,762	20,271,379	5,571,480	



The Samara-Zlatoust Railway.

Importance of the line as connecting the Russian European railways with the Siberian trunk.—Its divisions and the time of construction.—Topography.—The economic and commercial conditions of the localities traversed by the Railway.—Guide from Batrakí to Cheliábinsk.—Description of the stations and environs.—Effect of the railway.—Batrakí.—Samára.—Kinél.—Krotóvka.—Cherkásskaya.—Buguruslán.—Abdúlino.—Belebéi - Aksákovo.—Davlekánovo.—Yumátovo.—Ufá.—Miniár.—Tímskoe.—Kropachévo.—Ust-Katáv.—Viazováya.—Suleyá.—Zlatoúst.—Urzhúmka.—Syrostán (Asiatic frontier).—Miás.—Cheliábinsk.—Emigration medical and food station.—Importance of the Cheliábinsk station as the junction of three railways.—The Cheliábinsk-Ekaterinbúrg and Perm-Tiumén line.—Chief points along the railways.—Description of the towns of Ekaterinbúrg and Tiumén.—Commercial operations of the Perm-Tiumén railway.—Bibliography.

The Samára-Zlatoúst line represents the principal link between the network of railways in European Russia and the main Siberian line. Commencing at the station of Batrakí, the terminus of the Syzràn-Viázma railway, situated on the western or right bank of the Vólga, the line runs eastwards a distance of 1,057 versts and terminates at Cheliábinsk, which is the junction of three railways: the Samára - Zlatoúst, West - Siberian and Perm-Tiumén lines. The construction of the Samára-Zlatoúst line was divided into the following sections: 1) Batrakí-Kinél, 155 versts, belonging to the Orenbúrg railway, constructed in 1875—1876, including a bridge over the Vólga, and opened to traffic in 1880; 2) Kinél-Ufá, 452 versts, open to traffic in 1888; 3) Ufá-Zlatoúst, 299 versts, completed in 1890; 4) Zlatoúst-Cheliábinsk, 151 versts, open to traffic in 1892.

The sections of this line have been successively constructed by the engineer Mikhailóvsky under the direction of the Government, with the exception of the first section, which was constructed by a joint stock company,

and passed under the management of the Government in 1893 together with the Orenburg line. Commencing at the eastern border of the Simbírsk government, the railway line, throughout its extensive course, runs from west to east through the central parts of the Samára and Ufá governments, and terminates at Cheliábinsk, situated on the northern frontier of the Orenbúrg government.

The topography of this line is very varied. In its extreme western section, from Batrakí station to Kinél, it runs through a level and almost steppe country, only interrupted by hills near the river Pádovka at the 138-th verst. At this point, the conditions for the construction of the line are more favourable: its maximum grades are 0.010 (both ways) and the maximum radius 250 sazhens, it has 50.63% of horizontal sections, and 82.275% of straight runs throughout its course. In the Kinél-Ufá section, the line passes mainly through a level country, where straight sections and horizontal planes predominate. Its ruling grades are .008 in the direction from Ufá to Kinél, where a greater goods traffic is expected, and .010 in the reverse direction; the maximum radius for curves is 200 sazhens; 39.82% of its total length is taken up by horizontal planes, and 71.24% by straight sections. The Ufá-Zlatoúst section is essentially mountainous, the line has a most irrigular profile and a great number of curves. There is a maximum grade of .0085 in the direction of the expected greatest goods traffic, while the maximum radius of curves is reduced to 150 sazhens; horizontal planes form 26.66%, and straight sections 54.53% of the total length.

The extreme eastern section, Zlatoúst-Cheliábinsk, is mostly hilly, as far as the station Cherbakúl, whence it changes into level country towards Cheliábinsk. The line crosses the highest point of the Urál chain between the stations Zlatoúst and Urzhúmka, a section which has also numerous grades and curves. The maximum rate of both is the same as on the Ufá-Zlatoúst line, but the horizontal planes form only 21.30%, and the straight sections 55.66% of the total length. This section is characterised by a zigzag of four versts between the stations of Zlatoúst and Urzhúmka, by which the line ascends to the principal ridge of the Urál, having in a direct line only 400 sazh. from end to end.

The section, comprising a distance of 286 versts, from the station of Ashá to Cherbakúl, intersected by the Urál chain, is mainly hilly. The line proceeds along rocky ravines, winding its course on the banks of sinuous mountain streams, crossing cliffs through cuttings and passing alternately from one side to the other of the rivers it meets. This district is peculiarly picturesque and' with its various constructions answering to local conditions, presents also great technical interest.

The Samàra-Zlatoúst line may be divided into the following four sections in regard to its economic position, industry and technical conditions:

From Batrakí to Ufà, running a distance of 607 versts, the line passes through a country where manufacturing industry is but little developed, and where the inhabitants are mainly engaged in agriculture and cattle raising. Beyond the Ufà, the line traverses a wooded district, where besides agriculture and cattle-breeding, forestry holds an important position. From Miniàr to Miàs, the line runs a distance of 244 versts, through a country with a predominating mining and metallurgic industry.

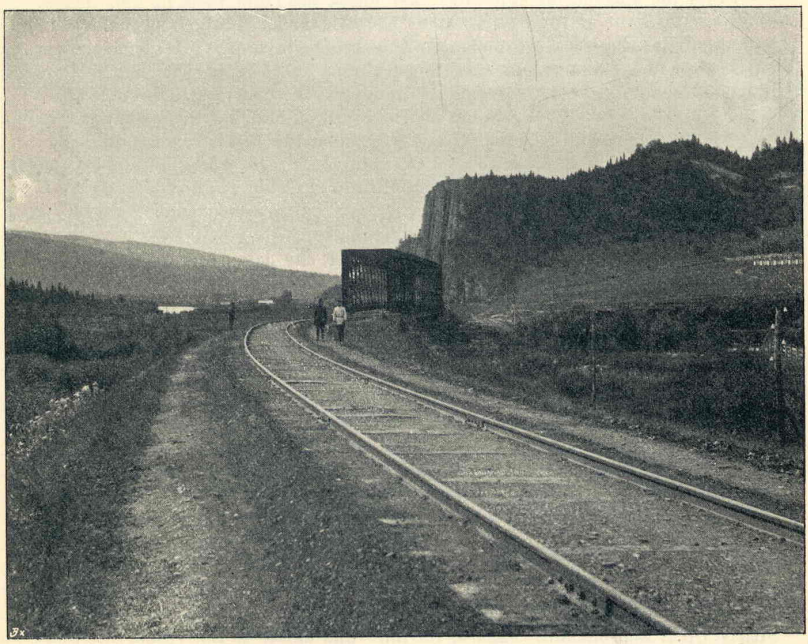
Beyond Miäs, near Cheliábinsk, the country is level, and tge population is engaged in agriculture and cattle-breeding and, within tge confines of the eastern Uràl, in gold-mining.

Along the course of the railway, the Samàra government (pop. 2,763,478; 1,365,215 m., 1.398.263 f.) has tho most extensive trade, especially in grain,

which is despatched from all the stations of the agricultural zone, principally from Samára, Cherkásskaya, Buguruslán and Abdúlino.

The total freights sent and received by the stations situated within this government amount to 40,000,000—50,000,000 puds, exclusive of freights in transit. The goods traffic on the railway traversing the Ufá government (pop. 2,277,158; 1,116,541 m., 1,160,617 f.) increases every year, in connexion with the expansion of the region under cultivation and with the progress of mining industry. At present the quantity of goods conveyed to and from the stations of the Ufá government exceeds 20,000,000 puds. The stations of Belebéi-Aksákovo and Devlekánovo may be held to take the first place as regards grain export.

The following iron-works situated along the railway line also yield a considerable quantity of metal goods for conveyance by rail: the Simsk works



Railway line near the station of Miniár (phot. by Arséntiev.)

(Miniár, Simsk and Nikoláev) belonging to Mr. Balashóv; the Katávsk works (Ust-Katávsk, Katáv-Ivánov) of Prince Belosélsky-Belozérsky; the Yuruzánsk works of Mr. Sukhozanét, and the Government works of the Zlatoúst district (Sátkin, Kúsinsk and Zlatoúst). All these works produce pig-iron, iron rails and fastenings; the Government works produce in addition shells and side-arms.

The Samára-Zlatoúst railway comprises a total of 56 stations:

1) **Batrakí**. Buffet. (53°9′ of N. lat., 18°23′ E. long., 1500 v. from St. Petersburg, 896 v. from Moscow, 1057 v. from Cheliábinsk). The station is situated near

the village of Batrakí on the right bank of the Vólga, in the Syzrán district of the Simbírsk government, and has a convenient wharf for steamers and other craft. The village contains a population of 2,500, a church and a school. Many of the peasants occupy themselves with gardening and have fine orchards.

The naphtha masters Nóbel, Dochár and Bóberman, have constructed large reservoirs near the station for the storage of naphtha and petroleum, 10,000,000 puds of which are brought here by barges, whence they are forwarded by the Syzrán-Viázma railway in special tanks to the interior governments. A smaller quantity is conveyed further east by the Samára-Zlatoúst railway. Deposits of asphalt occur along the Vólga banks, which is converted into mastic at the factory established by a company near the village of Batrakí.

From the station, the line runs east along the right bank of the Vólga, crossing the river at the 8-th verst by the Alexander bridge, so named in honour of the Emperor Alexander II. This bridge is worthy of consideration on account of its dimensions and the technical details of its construction. It has 13 spans of 50 sazhens each, a total length of 650 sazhens and a distance of 674.125 sazhens between abutments. It is built on the double girder system with parallel chords, and road-way upon the lower chord; the rails are laid on metal beams; the piers and abutments are made of stone, and the ice-breakers are covered with granite brought from Finland. All the piers are laid on caissons, the right abutment rests on the rock, while the left is supported on piles.

Beyond the bridge, the line after reaching the left bank of the Vólga passes through the Samàra government along the Vólga valley, only quitting the river in order to avoid spring floods and the engineering work involved.

2) **Obsháravka** (17 v.), 3) **Mylnaya** (32 v.), 4) **Bezenchúk** (56 v.), 5) **Tomylovo** (79 v.), 6) **Lipiágі** (101 v.), 7) **Kriazh** (109 v.). All these stations are situated in the Vólga valley. The line here traverses a mountainous country, affording however favourable conditions of construction.

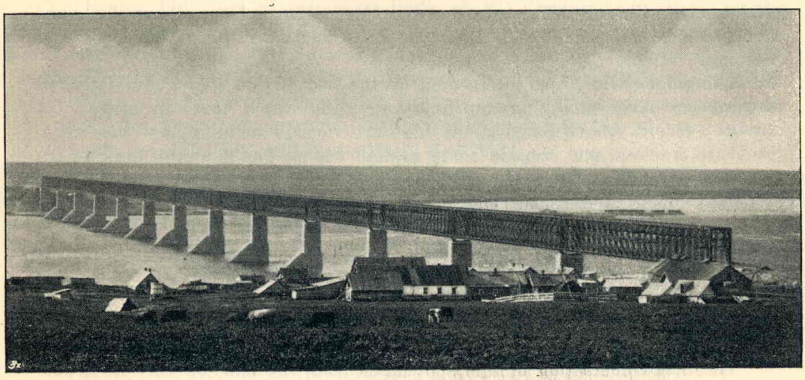
Between the stations Bezenchúk and Tomylovo, it crosses the river Mócha on a bridge 40 sazhens in length. The stations of Obsháravka and Kriazh have some importance, being the points whence cattle and animal products are forwarded from the Samára and Orenbúrg steppes.

There are several mills near the station of Obsháravka, producing annually about one million puds. Two steam flour-mills belonging to Bashkírov with a daily output of 3,000 puds, stand near the station Bezenchúk. Close to the station of Kriazh is the mill of Shikobálov grinding about a million puds of grain a year, and a shambles where about 200,000 sheep are killed yearly. Upon approaching Samára, the line runs closer to the Vólga, and crosses its right tributary, the river Samára, on a bridge 120 sazhens in length with three spans of 40 sazhens each.

8) **Samára.** Buffet (116 v.). The railway station is situated near the government town of Samára on the left bank of the Vólga, at its junction with the river Samára (pop. 91,654; 53° 11′ N. lat.; 19° 46.5′ E. long.).

The Samára government contains an area of 132,724 square versts divided into seven districts: Samára, Stavropól, Bugulmínsk, Buguruslán, Buzulúk, Nikoláev, Novouzénsk. Its surface offers scarcely any variety, although there is a noticeable difference between its northern and southern portions, delimited by the river Samára, flowing through the government in a north-

western direction. The northern portion, including the Bugulmínsk, Buguruslán. Stavropól and part of the Samára and Buzulúk districts, is mountainous; the suthern part, comprising the remainder of the Samára and Buzulúk districts, and those of Nikoláev and Novouzénsk, presents a steppe. In the north of the government, the soil consists of clayey blackearth or sand. The subsoil is formed of different kinds of clay and, at some points, of sandstone and limestone. On the south, in the eastern portion of the government, the soil consists of sedimentary rocks, while on the west, the steppe



Alexander Bridge on the Vólga.

is chiefly characterised by tertiary and more recent formations. In the first instance, it is represented by a thin layer of argilaceous blackearth which, diminishing in thickness towards the south, further on disappears altogether. The banks of the Vólga have a sandy and blackearth soil, while in this part of the government the subsoil contains clay, limestone and different kinds of slate.

The climate of the Samára government is continental, the highest mean temperature in July being 21.4°, and the lowest in January,—16.2°. In its southern portion, the heat and cold are greater. Near Samára, the Vólga is free of ice from the 16-th April to the 13-th December; thus, the winter lasts four months. The settlement of the Samára government, whose past history is closely connected with that of the Vólga river, the chief water-way of Russia, dates from the end of the XVI century. Its colonisation progressed rapidly after 1764, when the Empress Catherine II permitted the settlement of foreigners and dissenters, granting them considerable immunities. The whole population may be ethnographically divided into the following groups: 1) the Russian Slavonic village and town population forming 68%; 2) the natives belonging to the Finnish race, and represented by Mordvá, Chuvásh, Votiák, and Cheremís (14%), inhabiting the north of the government; 3) the natives of the Mongolian race, the Tatars (2%); 4) those of the Vogúl race, the Bashkírs (8%), and 5) German colonists, forming about (8%) of the total population.

Agriculture is the most important industry in this government, which on account of its physical conditions is one of the most fertile in Russia.

Cattle-raising is practised in its southern portion, which abounds in pastures and salt-marshes. Manufactures are limited to the conversion of the local raw materials, serving as an aid to agriculture. Steam flour-mills and sugar refineries occupy the first place among the local factories.

The town of Samára stretches along the eastern bank of the Vólga, and being situated at the spot where the river causes the most extensive spring floods, is justly considered one of the finest of the Vólga towns. Here the river has a breadth of 600—700 sazhens and turns westwards, forming the long and narrow peninsula called Samárskaya Luká 200 v. in length. The famous Zhíguli hills commence at this point, and run along the right bank, while the Sókol hills stand opposite between the rivers Sok and Samára.

The ridges which are intersected by the bed of the Vólga, gradually fall towards the river, changing into limestone cliffs which have an altitude of 400 to 700 feet. Above Samára, the hills are wooded while, below the town, they are treeless, and contain some asphalt seams. The mouth of the Samára river forms a deep and extensive bay which together with the port can accomodate about 50 vessels. None of the Vólga towns afford more convenient wharves than Samára, situated as it is close to the river, which at this point has a considerable depth. The landing places for passengers and light cargoes lie on the Vólga, while those for grain, furnished with a branch line, are situated on the Samára river, the grain being shipped direct from the warehouses. During high water, vessels are enabled to come almost right up to the storehouses, which greatly facilitates their loading.

The first colonisation of this spot dates from the end of the XVI century (1586), when a stockaded post with earthen bulwarks and ditches was established here on the confines of the Russian domains, for strategical considerations, with a view to restraining the Nogái and Kirgíz-Kaisák tribes and the Free Cossacks. According to an existing legend, the Moscow Metropolitan St. Alexis, on his way to the Golden Horde in 1357, visited the site of the present town, and finding there a pious hermit, gave him his blessing and foretold the founding of a great town. A stone chapel has been built on the banks of the Vólga in commemoration of this event. In 1688, the military post was transformed into a town, which for a long time belonged to the Simbírsk government. The Samára government was created in 1850. The rapidly growing town contains two cathedrals called respectively Voznesénie and Kazán, 22 orthodox churches, the monastery of St. Nicholas, the nunnery of Our Lady of Iberia, a dissenting chapel, four sectarian prayer-houses and a Mohammedan mosque. The number of houses exceeds six thousand, 1362 of which are of stone.

There is a stone theatre, and over 40 schools. Among the latter are two gymnasiums for boys and girls, the professional school of the Emperor Alexander the Blessed, a technical railway school, a seminary, a clergy school, a diocesan school for girls, a school for the education of village women teachers, a local school for assistant surgeons and midwives, and several elementary parish and urban schools. Among the charitable institutions and societies, the most important are: a humane society, the local administration and the ladies' committee of the Red Cross Society, the Society for the Relief of the Poor, and the Mary Soldiers' Children's Home; the Alexis Children's Home, the Nicholas Orphanage, a foundling hospital, a night refuge, a workhouse, a committee of Orthodox missionaries, and three poorhous-

es. There is a local hospital with 250 beds, with a lying-in room, and a bacteriological station, a lunatic asylum within 10 versts of the town, and a railway hospital.

A bronze monument to the Emperor Alexander II, after the design of the Academician Sherwood, stands in the Alexis square; the pedestal is of Finnish granite. Symbolic figures stand at the feet of the Tsar-Liberator, representing the four most important events of his reign: the liberation of the serfs, the subjugation of the Caucasus, the liberation of the Slavonic tribes, and the conquest of Central Asia.

Banks: branches of the State Bank, of the Nobles' Land Bank, of the Peasants' Land Bank, and of the Vólga-Káma Commercial Bank, and the Samára Town Bank. Private credit institutions of Samára and its environs: the Samára Mutual Credit Co., the Samára District Branch Board of the Mutual Land Credit Co. and the Vólga Bankers and Commissioners Associations Office; the banks of Serbulóv, Níkonov, Kalachóv and the village banks in the Samára, Nikoláev, and Novouzénsk districts.

Periodicals: 1) non-official: Samára Gazette (daily), Samára Messenger, Samara Advertiser. 2) Official: Government Gazette, Diocesan Gazette.

The Alexander Public Library, the reading room of the Emperor Alexander II and the Samára Museum are open every day (on working days from 9 to 1 and from 4 to 9 in the evening, on holidays from 9 to 12). A society for the encouragement of education exists in Samara since 1873. The Society of Doctors and that of Musical and Dramatic Amateurs date from 1882.

Hotels: European, Central, Theatrical. Clubs: Nobles' Assembly, Merchants' Assembly.

There is a kumys sanatorium near the town.

The history of the town is marked by the following events:

1) The visit of the Emperor Alexander the Blessed on the 8—9 September in 1824. He arrived on a steamer by the Vólga, attended by a brilliant suite, on His way to Orenbúrg.

2) The solemn opening of the first government zémstvo meeting by N. P. Mansúrov, governor of Samára, on the 28 February 1865.

3) The arrival of the Tsar Liberator, the Emperor Alexander Nikoláevich with the Grand Duke Tsesarévich, the future Tsar Pacificator and the Grand Duke Vladímir Alexándrovich on the 29 August 1871.

The construction of a railway to Orenbúrg and Zlatoúst transformed Samára into one of the most important grain, cattle and tallow markets of the Empire. The opening of the traffic on the great Siberian Railway still further increased the importance of this town, which became a centre for freights coming from the Far East and Central Asia. The market of Samára attracts a great quantity of grain, which is brought by rail, by water along the Vólga and Samára, and by road from the adjacent villages of the Samára, Buguruslán, Nikoláevsk and Novouzénsk districts. The total yearly dealings in grain in Samára amount to about 18,000,000 puds, including about 12,000,000 puds of wheat. There are private granaries in the town containing about 12,000,000 puds, and others, situated on the Samára river, near the branch line, containing about 7,000,000 puds. Upon the opening of navigation, the grain accumulated in Samára is loaded on barges and forwarded to the towns of Kazán, Nízhni-Nóvgorod, Rybinsk and other commercial centres. Thus Samára is a grain depot, but is not a centre for its conveyance by rail.

The grain of the Samára market is purchased not only by local merchants, but also by strangers. Among the latter the most important are: the St. Petersburg Export Trade Company of Brandt and Co., Messrs Polezháev, who in 1897 puchased about 1,000,000 puds of grain; the Bashkírovs of Nízhni-Nóvgorod; Blinóv (purchaser of 1,800,000 puds), the Rostóvskys of the Russian Company of Export Trade; Vagliano (purchaser of 910,000 puds); Dreifus and Co. of Paris (puchaser of 590,000 puds).

Samára drawing its grain supplies from all the Samára-Zlatoúst line and the Orenbúrg branch line, is at the same time the centre of the wheat flour trade on the Vólga; besides imported flour, its mills situated in the environs of the town produce an average of 10,000,000 puds of flour yearly. These mills belong to the following firms: Shikobálov, Bashkírov, Romashóv, Krásikov, Shadrín. The sale of the flour and grain is mainly effected in summer to the Vólga towns, whither they are conveyed in steamers in considerable quantities.

An elevator on the bin system holding 300,000 puds of grain, supplied with machinery for loading, is situated near the railway station.

From Samára station, the line proceeds along the river of the same name.

9) **Smyshliáevka.** (136 versts). Having crossed the river Pádovka on a bridge 10 sazhens in length, the line ascends the hills and having reached the siding Pádovka, situated at their highest point, descends from this altitude and crosses the river Great Kinél, a tributary of the Samára, by a bridge 60 sazhens in length.

10) **Kinél.** Buffet (155 v.). From here a branch line runs south-west for a distance of 353 versts towards the town of Orenbúrg. This branch commences its course on the right bank of the Samára, and traverses the elevation between the rivers Samára and Kulutúk, the latter being a tributary of the Kinél. Further on, it crosses to the left bank of the Samára by a bridge of 100 sazhens long near the town of Buzulúk, and reaches the source of this river near the station Perevolótskaya, situated on the watershed of the Samára and Urál. Here the line commences its ascent and reaches the Orenbúrg government along the slope of the Obshchi Syrt. Coming to its highest point at the 304 verst, the line descends toward Orenbúrg.

The greater portion of this branch line is included within the confines of the Samára government, and terminates in the north-western corner of the Orenbúrg government, within a distance of 63 versts from the frontier of Samára. Throughout its entire course, the line runs through a steppe country, where the population is mainly engaged in agriculture and cattle breeding. The following stations are the most important on the line as regards the quantity of forwarded freights:

1) **Bórskaya** station (74 v. from Kinél), situated near the trading village of Bórskoye with a population of 4,000, belonging to the Buguruslán district (grain).

2) **Buzulúk** (129 v. from Kinél), within 2 versts of the town of the same name with a population of 14,000 (grain, flour and meat).

3) **Sarochínskaya** (194 v. from Kinél) near the great trading village of the same name with a population of 6,000, in the Buzulúk district (grain, flour, buckwheat meal, millet).

4) **Orenbúrg** (51°45′ N. lat. and 24°46.5′ E. long.; pop. 72,740), (grain, flour, millet, tallow, leather, wool, cotton.).

Orenbúrg, which formerly played an important part in the history of Russia's occupation of Central Asia, lost its importance as a strategical base after the conquest of Tashként and Turkestán, and since 1865, which is the date of the organisation of the Orenbúrg government, became an ordinary government town.

The line connecting it with the other railways of the Empire somewhat contributed to the development of its trade and industry. However, the opening of traffic on the Transcaspian line soon diminished the commercial importance of this town; cotton and other Central-Asiatic goods are now mostly conveyed by this line, and Orenbúrg no longer acts as a medium between the interior and the Central Asiatic markets.

The execution of the proposed plan to connect by rail the town of Orenbúrg with Tashként, will again raise the commercial importance of Orenbúrg, and call to life the productive forces of the Steppe region, lying in the northern part of the Aralo-Caspian plain.

From the station of Kinél, the Samára-Zlatoúst line proceeding further east follows the valley of the river Great Kinél till its junction with the river Kísla near the station, of Zagládino (306 v.)

11) **Turgénevka.** (169 v.) Approaching the next station, the line crosses the river Kutulúk, a tributary of the Kinél, by a bridge 25 sazhens in length.

12) **Krótovka.** Buffet (190 v.) The Timashóv refinery of the State Domains is situated within 8 versts of the station. This refinery produces brown and loaf sugar (about 600,000 puds) from beetroot of local growth and from brown sugar imported in considerable quantity from the neighbouring governments The refinery is united by a branch line to the Krótovka station.

Naphtha received from Samára is employed as fuel in the production of sugar. Another sugar refinery is situated 30 versts from the first, near the station Bogátoye, on the Kinél Orenbúrg line, belonging to the Bogátovsk Sugar Refining Company, The operations of this refinery, owning 2,000 desiatins of beetroot, are being still further developed.

The Krótovka-Sérgievksk narrow-gauge railway branch runs a distance of 80 v. from the station of Krótovka to the supernumerary town of Sérgievsk (pop. 4,000) of the Buguruslán district, situated in the vicinity of the Sérgievsk mineral springs (pop. 1500).

Among the Russian waters, the Sérgievsk springs are remarkable as containing a great percentage of sulphuretted hydrogen and for their strong effects. The temperature of the mineral water is 6 1/2°; it produces the same results as the springs of the Caucasus, and has like properties to those of Aix-la-Chapelle and Neudorf. Several doctors reside there during the season, which is from the 15-th May to the 15-th August. A bath costs 50 kop., a shower bath—25 k., a mud bath—75 k., a slime bath R. 1. There are rooms at the rate of from R. 10 to R. 20 a month, and family lodgings of R. 20 and upwards, with furniture and attendance.

On its way to the next station, the line crosses the river Kurtamák, a tributary of the Kinél, by a bridge 10 sazhens long.

13) **Mukhánovo.** (204 v.)

14) **Cherkásskaya.** Buffet. (220 v.) The large commercial village of Cherkásskaya in the Buguruslán district, with a population of 8,000 lies 2 versts from the station. It is the centre of the local grain, mainly rye trade, whence the grain is forwarded to Samára. There is a special granary near the station, holding 90,000 puds.

Proceeding from the station eastwards, the line crosses the river Little Kinél by a bridge 30 sazhens long.

15) **Kliuchí.** (244 v.)

16) **Pókhvisnevo.** Buffet (266 v.)

17) **Buguruslán.** Buffet (285 v.)

The district town of Buguruslàn, belonging to the Samára government, is situated at a distance of 3 versts from the station, (53°39′ N. lat., 22°27′ E. long.; pop. 20,000) It stands on a flat elevation, surrounded by mountains on three sides, on the right side of the Kinél, at its junction with the Tarkhánka.

The large village of Buguruslán was founded in 1748, and created a town in 1797. It contains two churches, two hospitals, a clergy school, and urban school with three classes, a preparatory gymnasium for girls, and two parish schools; the Pokróv nunnery with three churches, founded in 1874. Grain is the principal article of trade; it is brought to the town, not only from the neighbourhood, but also from the contiguous Bugulmín and Buzulúk districts. Some of the local traders are in direct relations with the ports of St. Petersburg, Libáva and Rével. Great quantities of, in the main, rye flour amounting to as much as 300,000 puds, are ground by Shuválov's water mill. About 400,000 puds of unhulled buckwheat meal are annually forwarded from this point. A granary holding 90,000 puds of grain is situated near the station.

18) **Zagládino.** (306 v.). After passing over the river Kinél by a bridge 30 sazhens long, the line proceeds along the valley of the Kísla, and gradually ascends to the watershed of the Vólga and Káma.

19) **Alexéyevo.** (316 v.).

20) **Elán (Filíppovka).** (335 v.).

21) **Saráі-Gir.** (353 v.). Reaching here the highest point of the watershed, the line descends to the next station.

22) **Abdúlino.** Buffet (374 v.). Previous to the construction of the Samára-Zlatoúst line, an insignificant Bashkír village, taking no part in trade, was situated on the spot where the station stands at present. Its geographical position in a fertile and cultivated region, at some distance from commercial centres (Buguruslán 90 v., Belebéi 54 v. the village of Sorochínskoye 150 v. to the south) soon transformed the small Bashkír village into an important corn market, where mainly agricultural products are offered for sale. At the present time the population of the village of Abdúlino exceeds 2,000; grain is brought to this point, especially in the winter time, from the Bugulmínsk, Belebéi and Buzulúk districts. Besides the local merchants, corn-traders from St. Petersburg, Rével and Riga come to this village. Agents of different manufacturing firms are to be met here, and the Russian Trading Bank is starting operations by advancing money on duplicates of way-bills. The greater portion of the grain exported is rye, which forms 70% of the whole, and is forwarded direct to the ports. A considerable quantity of rye flour is also exported. Four water-mills with a grinding capacity of about 1,200,000 puds of rye per annum, are situated near the station. They belong to the merchants Márkov, Svirídov, Rogóv, Zhídkov and others. Great freights of buckwheat, grown within the range of the Samára-Zlatoúst line, are annually forwarded from this station. A steam wheat-flour mill producing about 600 puds a day, and buckwheat shelling mills, belonging to Rogóv, Svirídov and others, are also situated close to the station. The export of buckwheat is effected in very large quantities; good harvests yield occasionally about

750,000 puds of this grain. Two granaries holding 30,000 puds each, are situated near the station.

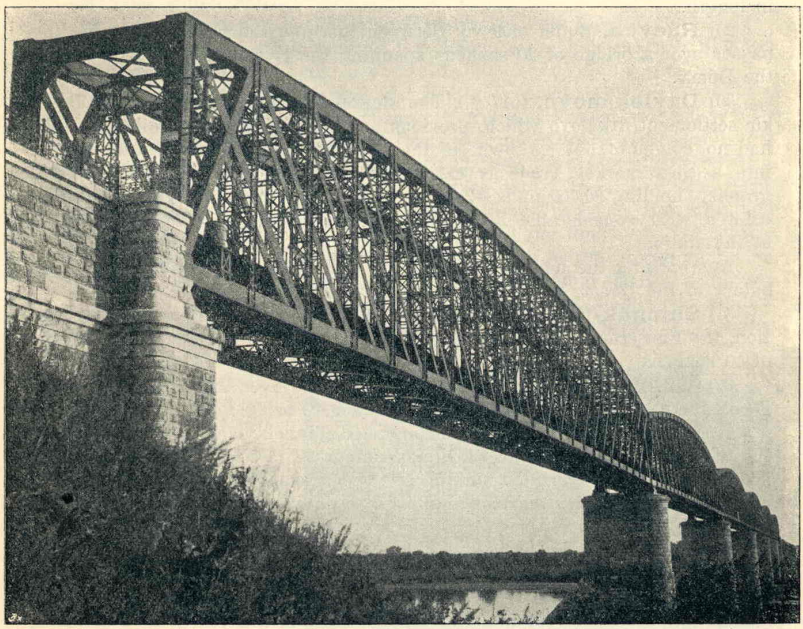
From the station of Abdúlino, the line resumes its ascent to the watershed of the rivers Káma and Bélaya, and crossing the river Ik on a bridge 15 sazhens long, enters the confines of the Ufá government.

23) **Taldy-Bulák.** (392 v.).

24) **Priútovo.** (408 v.).

25) **Belebéi-Aksákovo.** Buffet (427 v.).

The district town of Belebéi (54° 7′ N. lat., 23° 52½′ E. long; pop. 5,161) of the Ufá government, is situated on the left bank of the Belebéika river, within ten versts of the station. This place was first settled in 1745. The district town of Belebéi was founded in 1781; it was superseded in 1797, and reestablished in 1802. The town contains 671 houses, only six of which are of stone, 5 churches (four of stone, 1 of wood), one Mohammedan mosque, one parish school, two schools belonging to the church, and a hospital.



Bridge over the river Bélaya (phot. by Arséntiev).

The town revenue is R. 24,596. Its inhabitants are mainly engaged in agriculture or small trade. Manufactures do not exist, and the town has scarcely any commercial importance. The station is in a more favourable condition, surrounded as it is by cultivable land, whose products go to feed the railway, and exports a considerable quantity of grain. The corn is chiefly purchased by local merchants, among them the firm of Rogóv carries on

trade with the ports, sending the grain direct to its destination. A considerable quantity of rye flour is exported from this point, after having been ground in small water mills of most primitive construction. It is bought up straight from the village carts.

26) **Glukhovskáya.** (444 v.).

Here the line reaches the highest point of the watershed of the rivers Káma and Bélaya, and commences its descent to the Bélaya.

27) **Aksénovo.** (464 v.). From this station to Ufá, the line for a distance of 143 v. follows the valley of the river Déma, the left tributary of the Bélaya. The river is scantily supplied with water and not navigable. Its picturesque and steep banks consist of friable schistous sandstone, containing copper ores, those of Karakalínsk being the most important. Remains of Chud mines occur along the banks. The picturesque banks of the Déma with their oak and linden groves were sung by S. T. Aksákov.

28) **Shafránovo.** (479 v.). On its course to the next station, the line crosses a tributary of the Déma, the river Kyly by a bridge 25 sazhens in length.

29) **Ráevka.** Buffet (499 v.). Between this and the next station the line passes over a bridge of 20 sazhens spanning the river Tiulén, a tributary of the Déma.

30) **Davlekánovo.** (517 v.). The station is situated near a small Bashkír settlement, Itkúlovo which, previous to the opening of the railway traffic, had no commerce of its own; at the present time Itkúlovo is transformed into a corn market. Trade is carried on exclusively in winter. A special granary holding 30,000 puds of grain stands near the station. A number of estates with considerable areas under cultivation lie in the neighbourhood of the station.

Approaching the next station, the line traverses the river Urdiák, a tributary of the Déma, by a bridge 25 sazhens long.

31) **Shingák-Kul.** Buffet (539 v.). Pursuing its course to the next station, the line crosses the river Balyshly, tributary of the Déma, by a bridge of 10 sazhens.

32) **Chishmá.** (563 v.). Further on, it passes over the tributaries of the Déma, the rivers Kolomysh and Uzá spanned by bridges of 20 sazhens each.

A peculiar geological phenomenon called „funnels" is observed throughout the whole course of the line Chishmá-Yumátovo-Ufá-Urákovo. These funnels are produced by the sudden sinking of the surface, forming pits of considerable dimensions. An immense funnel having a diameter of 15 sazhens and a depth of 10 sazhens is to be seen 6 versts from Ufa on the way to Urákovo.

New funnels appear every year in spring and summer, and are a usual occurrence at the time of the spring floods. It has been observed that the strata of the Permian system, generally containing a great number of caves, are liable to sink. The limestone mountains rising above the Bélaya abound in natural caves among which those of Baislán and Shulliugín consist of a number of superposed hollows united by passages.

33) **Yumátovo** (586 v.) Approaching the next station Ufá, the line crosses the river Bélaya spanned by a bridge of 300 sazhens, having six spans of 50 sazhens each of the semi-parabolic system, with the track upon the lower chord; the piers and abutments are laid on caissons lowered to a depth of 8.14 sazhens below the ordinary water level.

The course of the river Bélaya, called Ak-Isyl by the Bashkírs, flowing on the left into the Káma, is about 1,000 versts long. The country along its upper reaches, between the branches of the Urál and Bugulchán, is mountainous; the cliffs on the banks consist mainly of chlorite and mica slate, gneiss and partly of limestone of the silurian system. Picturesque and wooded mountains abounding in caves surround the basin of this river; copper and iron works are established on its tributaries. Limestone of the carboniferous system occurs plentifully between Bugulchán and Sterlitomák; on its lower reaches, especially nearer to Ufá, gypsum, marl and sandstone of the permian system are the predominating rocks. The left bank is low, the right has a higher level. The river has a very sinuous course and near Ufá a breadth of 80 sazhens, which further on widens to 175 and 250 sazhens. Its waters are navigable from the Belorétsk works, within 70 versts of its mouth; there is regular navigation for passengers and freights throughout the summer from Ufá. On the average, the ice on the river breaks up by the 11 April and freezes again by the 4 November.

34) **Ufá.** Buffet (607).

The railway station is picturesquely situated near the government town of Ufá, on the right elevated bank of the Bélaya at its junction with the Ufá (54°43′ N. lat., 25°37.5′ E. long.; pop. 50,576.).

The vast territory embracing the Ufá government (107,217 sq. v.) and part of the contiguous Orenbúrg, Samára, Perm and Viátka governments, included in the Russian dominions towards the end of the XVI-th century, is known under the name of Bashkíria, derived from the name of the Bashkírs, who have inhabited this region since a remote date. The land of the Bashkírs became known to the Russians since the Mongol conquest. However, their nearer acquaintance with this country dates from the time when the Moscovite government was struggling for the possession of the Horde of Kazán. Wearied by internal and family dissensions, persecuted by the Kirgíz-Kaisáks, and seeing the growing power of Moscow, the Bashkírs voluntarily submitted to Russian dominion, and paid in 1557 their first tribute in furs, called „yasák". Ufá was the first Russian town founded in Bashkíria for collecting yasak. Iván Nagói was the founder of this town. The date of its foundation is not positively known; however it is supposed that it was between 1573 and 1586. According to an ancient tradition, an old Tatar town with the same name of Ufá was situated on the site of the present town; remains of earthworks, now called the Devil's mound, testify to its former existence. With the foundation of Ufá, the Russians were securely established in Bashkíria and then began the colonisation of this country. The

Types of Bashkírs.

frequent revolts of the Bashkírs, joined in by almost the whole of the native population, especially in 1662, during the Seit rebellion, and in 1708, assumed considerable proportions, and led to the institution of military Cossack settlements, which were organised in the reign of the Empress Anna by Nepliúev, a statesman of Peter's school.

Private mining industry was established in the Urál Bashkíria on the initiative of Nepliúev, which greatly contributed to the colonisation of the country. In 1760, 28 factories, including 15 copper and 13 iron works were in full operation, with a Russian population of 20,000 men. Although the Bashkírs joined in the Pugachóv revolt and in other mutinies of the Vólga inhabitants, still they were pacified towards the end of the XVIII century, and employed in 1798 as irregular troops, specially formed for maintaining military cordons along the Orenbúrg frontier.

Types of Mordvá women.

This army of natives, as well as the irregular Cossack cavalry, became famous during the campaign of 1812—1813; the French called them the Cupids of the North on account of the effectiveness of their arrow shots. Since 1863, the Bashkírs have been put on the same footing with the rest of the country population and, after the disbanding of the Bashkír troops in 1874, they have all become subject to obligatory military service.

The origin of the Bashkírs is not yet scientifically ascertained. Some suppose that they descend from the Ugro-Finnish race and only in course of time acquired the Mongol type, others believe that they are Vogúls, who represent one of the Ugor tribes, or form part of the great Altái family, to whom belong also the Magyars. The present Bashkírs have two marked types. One is the more common Kalmyk or Mongól type characteristic of the steppe Bashkírs, recognised by a large and flat face, by a broad and straight nose or by one bent in at the root; they have a protruding chin, a large head, and are of middle size. The other, which is more like the Caucasian type, and common to many Central-Asiatic nations, is characterised by a hooked nose, a marked profile and high stature; these are the forest Bashkírs, inhabiting such mountainous and wooded regions as are situated at the source of the Bélaya.

All the Bashhírs are Mohammedans. The majority of them read and write Tatar, thanks to the efforts of the clergy attached to a great number of mosques scattered all over Bashkíria. They are provided with a certain quantity of land, and pursuing agriculture and cattle-breeding are settled in groups, forming small villages. In spring, they leave their crowded and smoky huts and live in felt „kibitkas", which they pitch in fields and pastures, forming

their common property. The poorest among them have summer dwellings made of lime bast. They usually wear the same costume as the Tatars. The Ufá government contains a total of about one million Bashkírs. The minority of the native population of Ufá is represented by Teptiárs and Meshcheriáks, who mostly live in the north of the government. Their mode of life differs but little from that of the Bashkírs, but they are at a much lower stage of civilisation, and are heathens. The whole of the population, comprising 2,277,158 souls, is distributed among the six following districts: Ufá, Belebéi, Birsk, Zlatoúst, Menzeínsk and Sterlitomák. Of these, 105,667 represent the town population; there are 967,757 Russian peasants and 1,059,126 Bashkírs, Teptiárs and Meshcheriáks. The remainder includes smaller ethnographical groups. The greater portion of the inhabitants are Mohammedans, namely 1,151,198; there are 994,508 orthodox; 106,029 heathens, 4,812 dissenters, 1,312 catholics, 766 lutherans and 722 jews. The Ufá government occupies the south-eastern part of European Russia, and is one of the central Vólga governments belonging to the fertile zone. According to the last local statistics, the land is divided as follows:

DISTRICTS.	Fields and pasture in desiatins.	Forests.	Uncultivable land.	TOTAL.
Ufá	644,696.4	1,090,327.1	68,138.4	1,803,161.9
Birsk	862,550.5	1,278,329.9	95,989.2	2,286,869.6
Menzelínsk	707,436.4	388,580.5	69,557.2	1,165,574.1
Belebéi	1,390,683.2	547,497.4	123,401.4	2,061,582.0
Sterlitomák	976,338.	864,248.2	71,834.7	1,917,470.9
Zlatoúst	419,074.7	1,167,951.1	62,660.3	1,679,686.1
TOTAL	5,090,779.2	5,341,984.2	521,581.3	10,864,344.6

The soil and climate of the Ufá government are mostly well adapted for agriculture, which is extensively practised by its inhabitants everywhere, with the exception of the mining district. Within the last few years, the area sown comprised:

Winter corn	630,049	desiatins.
Spring corn	819,561	„
Potatoes	29,830	„
Total	1,479,440	desiatins.

Mining is the principal industrial feature in the Ufá government. According to the last data, the production of all the works, 130 in number, was represented by R. 8,029,637. The State mining works of the Zlatoúst district and the private concerns of the Simsk and Katáv districts have an annual production of R. 5,480,000.

The pretty town of Ufá is the capital of Bashkíria. It contains 4,726 houses (165 of stone, 4,561 of wood), 23 churches (7 house chapels, 12 of stone, 4 of wood), 2 monasteries, one Roman catholic wooden church, 2 Mohammedan mosques. There are 24 schools, inclusive of two gymnasiums for boys and girls, a geodetic school, a seminary, two clergy schools for boys and girls, a commercial school, a district school, several primary and parish schools. The charitable institutions are: 2 homes for orphans and waifs, under the managemeut of Her Imperial Majesty's Chancery for the Institutions of the Empress Mary, and a poor-house established by the local administration. The following institutions are kept up at the cost of the Ufá patronage

committee of the Imperial Philanthropic Society: 1) a free day-hospital, 2) free lodgings for the poor, 3) an old women's asylum, 4) the Alexander poor-house for women, 5) asylum for aged Mohammedans, 6) a free workhouse, 7) a free information office for providing work. There are also a school with two classes for blind boys, under the management of the local committee, night refuges with cheap dinners, a work-house, a division of the Red Cross Society, a branch of the Imperial Humane Society, a society for agricultural colonies and artisans asylums' a diocesan committee for helping the poor clergy.

Scientific and other societies are represented by: a branch of the Agronomic Society of Moscow, a society of physicians, a committee for public readings, a society for amateur singing, music and dramatic art, a racing society. Further there are a town library and museum, the latter founded in

Bridge over the Ufá (phot. by Arséntiev).

1864 by the local statistical committee. The museum occupies a separate building on the Trade Square, and includes ten divisions: agriculture, forestry mining industry, mineralogy, archaeology, palaeontology, entomology, zoology, numismatics and history.

Agricultural tools made at the Vótkin State Works are offered for sale at the museum. The periodicals are: the Diocesan Gazette, twice a month, the Government Gazette, and the Ufá Advertiser, the two latter dailies.

The 29 factories working in the town yield a revenue of R. 467,349; a wax candle manufactory (R. 63,000) a beer and mead brewery (R. 89,000), a

sweatmeat manufactory (R. 30,000), a rope walk (R. 30,000), and a saw mill (R. 90,000), are the most important among them. There are the following banks: a branch of the State Bank, a branch of the Peasant Land Bank and the Town Bank.

The town has an annual revenue of R. 175,000.

The town of Ufá, representing the administrative centre of a vast government, used to be an important commercial centre for the entire Urál, where local and imported goods were bought and sold. Formerly, also, this town served as a depot for a great quantity of Siberian wares. However, since the opening of the Samára-Zlatoúst line, Ufá has lost much of its importance, and its commercial operations are greatly reduced.

The Ufá station has some significance as the point to which considerable quantities of grain are brought for further conveyance by the river Bélaya. and on account of the imports of other grain products consisting principally of wheaten flour for local supply. It has no importance for the corn traffic by rail. Shitóv and Stakhéev have built naphtha reservoirs near the station, to supply the localities situated in the direction of Cheliábinsk.

Ufá might recover its former prosperity by the construction of the projected railway uniting Orenbúrg and Perm, connecting the commercial centres of the Perm government with the plains of Orenbúrg. If this line were run further into Central Asia and reached Tashként, it would certainly exert a most beneficial effect upon the town of Ufá.

From the station of Ufá, the line ascends again and reaches the watershed of the rivers Bélaya and Ufá, crossing the latter by a bridge 150 sazhens in length.

Sale of onions and boiling water at a railway station.

35) **Urákovo.** (628 v.). A great tallow melting manufactory belonging to Krestóvnikovs is situated near the station; the Samára-Zlatoúst railway supplies this manufactory with over 350,000 puds of tallow, bought chiefly at the Ishím fair in the Tobólsk government. From Urákovo, the tallow is forwarded to the candle and soap manufactory of the Krestóvnikovs in Kazán, by the rivers Ufá, Bélaya and Káma.

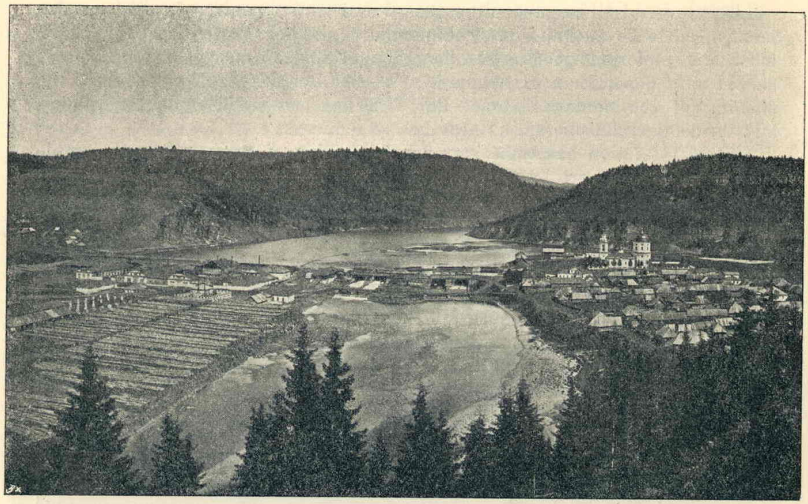
The line follows the left or eastern bank of the Ufá, and gradually ascends the watershed of the rivers Ufá and Síma. On its way to the next station, the line passes over a bridge of 10 sazhens spanning the river Tauzh.

36) **Iglino.** (640 v.). Two steam saw-mills belonging to Bolshakóv and Bazilévsky are situated close to the station.

37) **Tavtimánovo.** (658 v.). Leaving this station, the line reaches the highest point of the watershed between the rivers Ufá and Síma, and descending towards the Síma traverses the river Ulú-Teliák by a bridge of 10 sazhens.

38) Approaching the next station, the line crosses the river Ashá by a bridge of 15 sazhens in length.

39) **Ashá-Balashóv.** Buffet (704 v.). New blast furnace works are being constructed by Messrs Balashóv close to the station.



The Miniár ronworks (phot. by Arséntiev).

From here the line winds its course amidst ridges, and is intersected by the Síma.

The famous Kazarmén rock, consisting of limestone, lies within a few versts from the station and falls in a plumb line to the water's edge. The line is built on a recess separating the Kazarmén rock from the river. The Vorobéi mountains stretch further to the left of the railway, the Andzhigordák stands on the right.

40) **Miniár.** (723 v.). The Miniár works of Messrs Balashóv, founded in 1784 by Tvérdyshev and Miasnikóv, is situated within two versts of the station. Its annual output exceeds 800,000 puds of iron and 200,000 puds of steel. The foundry has no blast furnace, and for this reason does not produce any pig-iron; the latter is brought from the Síma works situated 18 versts from Miniár. Rolled iron is the most important item of this works, wrought iron plates being the chief article of sale. The roof-iron of Messrs Balashóv enjoys a considerable reputation. The Miniár works and its environs stretching along the Síma, which flows into the Bélaya, offer one of the most picturesque sites on the western side of the Urál. The works support about four and a half thousand inhabitants, and employ about 900 men. Upon reaching the valley of the river Síma, the line follows along it and, on its way to the next station, crosses the same river four times by bridges 40, 25 and 25 sazhens in length; the latter has three spans of 5, 25 and 5 sazhens, and a height of 7.72 sazhens above low water mark.

41) **Símskaya.** (736 v.). Is picturesquely situated at the foot of a mountain ridge. The Síma works of Messrs Balashóv, within 8 versts of the station, are connected with it by a tramway. These works were founded in 1759 by Miasnikóv. They contain two blast furnaces, and produce mainly cast-iron (about 1,300,000 puds per annum). For this purpose, iron-ore is brought from the station of Viazováya, whither it is forwarded from the Bakál mine. The Shíshka, which is a conical mountain standing half a verst from the works, emerging on its western side from a small lake, contains a large cave at a height of 100 sazhens. At a small distance up the Síma, is the mountain called Yamazé-Tau, which has another cave of still larger dimensions, where Pallas found bones of man and animals. In general, caves occur very frequently in the southern Urál.

The Síma works have about 5,000 inhabitants, and employ about 300 men regularly, and about 800 occasionally. The valley is surrounded with high tree-clad mountains. There is a hospital, a school, a very good theatre, and

Cutting through the Dergách mountain (phot. by Arséntiev).

tea and reading rooms open to the public. A telephone connects the works with other manufactories in the district.

Here begins again the ascent toward the watershed of the rivers Síma and Yuriuzán. At its highest point is the station.

42) **Kropachévo.** (758 v.). The Nicholas iron works of Messrs Balashóv, founded in 1866 by Count Stróganov, are situated at a distance of 23 versts from the station. There is also a blast furnace with an output of about 500,000 puds per annum, which is principally forwarded direct to the station of Púshchino and the New Port. The ore is obtained from the same mine which supplies the Síma iron works. The number of workmen is from 50 to 60, while 600 others are employed about the works. From this station, the line descends to the valley of the Yuriuzán, traversing it by a bridge with spans of 10, 46 and 10 sazhens, and a height of 12.02 sazhens above the low water mark. This is one of the most picturesque spots on the whole line.

43) **Ust-Katáv.** (774 v.). Lies amidst cliffs and rocks. The Ust-Katáv iron works of Prince Belosélsky-Belozérsky, founded in 1759, are situated within four versts of the station, in a deep mountain pass at the junction of the rivers Katáv and Yuriuzán. The works have above 5,000 inhabitants and 300 workmen, the number of men employed about the works exceeding 1,000. There is no blast furnace and the pig-iron for the production of assorted iron is brought by road from the Katáv-Ivánovsk and Yuriuzán works. After the construction of the railway, these iron works lost much of their importance, and are now specially occupied with the manufacture of rail spikes and fastenings.

Puddling, welding, finery and cast-steel production are carried on there. It has lately been proposed to establish a railway-carriage works. Remarkable caves are to be found in the mountains within a few versts of the iron works. They contain numerous and spacious chambers united by narrow passages.

The caves in the Ignatius mountain are celebrated as having given shelter to the lay-brother Ignatius who is regarded by the people as a saint and is buried there. This cave is one of the most extensive in the southern Urál. The saint's image is placed over the grave, where an oil lamp is perpetually kept burning. A crowd of people from the neighbouring works and villages stream to this cave on the ninth Friday after Easter. According to popular belief, it was the refuge of many other hermits, called „workers" in the Urál.

From the station of Ust-Katáv, the line follows continuously the right bank of the Yuriuzán. Rocks, at times quite bare, at others clad with moss and trees, rise perpendicularly on either side of the way.

44) **Viazováya.** Buffet (791 v.). This is one of the important and well organised stations on the Samára-Zlatoúst line. Its situation is picturesque. Around it are hills and fir forests, which are like a park. The river Yuriuzán with its fine banks and islands is in close proximity to it. A small wooden church was built at the station in 1898. M-r Sukhozanét's Yuriuzán works, founded in 1798 by Tvérdyshev and Miasnikóv, are situated at a distance of nine versts. The works have 7,896 inhabitants of both sexes. At the present time, they are leased by Prince Belosélsky-Belozérsky and, within recent years, have considerably extended their operations. The works are provided with three blast furnaces, twelve welding furnaces and eight rolling lathes. The ore for the production of pig-iron is conveyed by carts from the Bakál mine, situated 35 versts from the works. As much as 1,000,000 puds of pig-iron and iron are turned out yearly. The chief products are rolled merchant iron and rail fastenings and bridges, besides a certain quantity of wrought iron plates and hoop iron. About 800 men are occupied in the works and as many as 2,400 are employed outside. Yuriuzán has long since been a centre of various sects

which are represented by 1,400 adherents of the chapel sect, 190 of the maritime sect, 10 of the Austrian sect, and 21 dissidents. The surrounding hills serve as an asylum for hermits, who there occupy themselves with gardening and beekeeping.

The Katáv-Ivánov rail-rolling and iron works of Prince Belosélsky-Belozérsky founded in 1755 by Tvérdyshev and Miasnikóv, are situated 27 versts from the Viazováya station. They may be ranked among the first Urál mining enterprises for their output. The population of the works is 10,000. There are now four blast furnaces, a rail-rolling mill, puddling, welding and machinery works, a locksmith's shop, a forge and a saw-mill. The works and the adjacent grounds are provided with electric light and a telephone uniting all the works in the district. The iron ore is conveyed by carts from the Bakál mines. Rails are the chief article of produce, exceeding a million puds per annum. Warehouses and sheds for the storage of the metal

The Sátka ironworks (phot. by Arséntiev.).

goods of the Katáv-Ivánov and Yuriuzán works, have been built near the station, and connected with it by a branch line. The goods are brought to these warehouses in winter, and gradually forwarded further. The Katáv works, having extended their operations, adopted mineral fuel in 1890, and naphtha since 1893.

The Viazováya station also receives the metal goods from the Belorétsk iron works, situated in the Verkhneurálsk district of the Orenbúrg government, belonging to the Belorétsk works of Vogau and Co. The Tirliand works, which is one of them, is 110 versts from the station. The output is about one million puds of pig-iron and iron; 200,000 puds are transported by the Samára-Zlatoúst line from Viazováya to Ufá. The remainder is floated in barges down

the river Bélaya. The greatest quantity of metal goods for the whole line are conveyed from the Viazováya station.

From here the line runs through cuttings and mountain passes; further on the country is more open, with far-stretching fields and meadows surrounded by high mountains.

45) **Mursalímkino.** (813 v.). The Bashkír village Mursalímkino with its half ruined buildings is situated near the station. From here the railway proceeds almost in a straight line, without encountering any mountains, but only occasional ridges, covered with a rich vegetation, and intersected by pretty valleys.

Leaving the station, the line traverses the rivers Uluír and Sikiáz spanned by bridges of 10 sazhens each. Near the next station, it crosses the river Ishelgá by a bridge 10 sazhens long.

46) **Suleyá.** (837 v.). The Sátka iron foundry, belonging to the State and founded by Mosólov in 1757, is situated 18 versts from the station. It contains about 10,000 inhabitants of both sexes, including a great many sectarians. The number of workmen emplyed is 1800. The works contain two blast furnaces, a puddling furnace, a rolling mill, a foundry,—the latter is mainly

The station of Zlatoúst from Mt. Kosutúr (phot. by Arséntiev).

used for producing shells,—there is also a forge and a locksmith's shop. The machinery and casting shops are united by 135 sazhens of rail on the Deco-

ville system. Iron, amounting to about 1,800,000 puds per annum, is brought from the Bakál and Yelník mines. Pig-iron is the chief article of produce, amounting to above a million puds per annum; about 250,000 puds of pig-iron are employed in the manufacture of iron and shells. The rest of the pig-iron,

Station of Zlatoúst.

amounting to about 800,000 puds, is forwarded, for the use of the Navy and Artillery Department to the Izhórsk, Obúkhov, Perm, Vótkin, Zlatoúst and Ártinsk works.

Wood and charcoal obtained from the adjacent forests are employed as fuel in the Sátka iron works. A telephone unites the works with the Zlatoúst and Bakál mines. In 1824, the iron works were visited by the Emperor Alexander I. The famous Bakál mine, which contains one of the most extensive iron beds in the Russian Empire, is situated 21 versts from the works, on the Bulandíkha mountain. The quantity of ore is estimated at 400,000,000 puds. Its chemical composition is: 81.44% of oxide of iron, 6.78% of silica, 5.46% of alumina, 57.36% of metallic iron. The Síma and Katáv iron works obtain iron from mines belonging to the same group. A bed of tripoli, employed for the polishing of metals and for roof slates, is situated within five versts of the station.

Up to the river Sátka, the line runs through a hilly country, and crosses this river by a bridge having three spans of 64, 30 and 6 sazhens, and an elevation of 8.46 sazhens above the low-water mark. Further on, it runs through a more level country.

47) **Berdiaúsh.** (859 v.). A wide gauge railway branch twenty versts in length connects the Sátka iron works with the station.

The iron from the Bakál mine, supplying the Zlatoúst works, has been forwarded to the station since 1893.

48) **Tundúsh.** (878 v.) Proceeding further east, the line descends to the valley of the river Ai, crossing the latter at the 881 verst by a bridge 30 sazhens long, and then mounts again towards Zlatoúst. The line winds its course along the bank of the Ai, among fir-clad mountain ridges.

The **Kusínsk** platform. The State iron foundry, founded by Lugínin in 1778, stands at a distance of 14 verts from this place. It contains about 4,500 inhabitants, and has two blast furnaces producing about 300,000 puds of pig-iron per annum; the output of iron is from 70,000 to 100,000 puds; cast-iron and founded wares represent 70,000 to 100,000 puds. Special attention is given to neat and artistic work; in this respect, the works rival the famous Kaslínsk works. The number of workmen employed amounts to 500. Iron is supplied by the Akhténsk mine, from a distance of 25 versts; it represents a kind of bog-ore with 73% of oxide of iron, and above 50% of metal. Pig-iron is forwarded from the Kusínsk works to the works of Vótkin and Artinsk, while the iron is sent partly to Kólpino near St. Petersburg, for the Izhóra works, and partly to Nízhni-Nóvgorod, where it is stored in the Government iron works. Wood and charcoal are employed as fuel. The works are connected by a telephone with Zlatoúst and the Kusínsk platform.

The line runs through extensive cuttings in which chalk is noticeable At the 902 verst, near the station of Zlatoúst, there is a parabolic tube which is the first of this system on Russian railways.

49) **Zlatoúst.** Buffet (907 v.). Is picturesquely situated at the foot of fir-clad mountains. A whole settlement, containing a telephone, a school, and a small theatre, has been founded quite close to the railway on a piece of land belonging to the town. The town of Zlatoúst is at a distance of two versts from the station. It belongs to the Ufá government, and spreads over the valleys of the rivers Ai, Gramotúkha, Tesmá, Kámenka, Chuváshka and Tatárka (55°10' N. lat. and 29°21'E. long.; population 23,676 souls). The Ai, held up by a dam, forms a large pond which supplies the iron works with water.

The Túla mechant Mosólov established an iron foundry in 1754 on a piece of land purchased from the Bashkírs, and from a church erected in honour of the three saints: Basil the Great, Gregory the Theologian, and John Chrysostom, it received its name. In 1811, the foundry became the property of the State. At the time of the organisation of the Ufà government, in 1865, Zlatoúst was ranked as a district town. It contains 2.916 buildings (2,617 of wood, 299 of stone), 4 Russian orthodox churches (2 of stone, 2 of wood), 8 chapels (3 of stone, 5 of wood), a stone dissenting chapel, a Roman catholic and a protestant church, both of stone.

The schools are: a town school with three classes, two schools with one class for boys and girls at the iron works, 4 town primary schools. There is also a hospital and dispensary built by the local administration. The Government iron foundry has also a dispensary and hospital. The town library contains a reading room. There are a private typography, three book shops and two clubs. Within the town are the following factories: a soap works producing goods of an annual value of R. 11,200, a beer and mead brewery (R. 15,300), a pig-iron and iron foundry (R. 941,264) seven polishing works (R. 16,740), a cloth factory (R. 3,000), a gingerbread manufactory (R. 2,300) and a cracknel manufactory (R. 1,700). The town revenue amounts to R. 22,684. A monument to the Emperor Alexander II stands in the middle of the square

in front of the arsenal buildings and the cathedral. The pedestal is made of marble, the iron statue representing the Emperor at full length, was cast at the Kusínsk works belonging to the Government. Samples of all the articles produced at the side-arms factory since the time it opened operations, are kept in the arsenal, which can be seen from 9 to 12 in the morning and from 3 to 5 in the evening.

The Emperor Alexander I visited the foundry in 1824, and a nail forged with his own hands is preserved in the local museum. The Emperor Alexan-

View of the town of Zlatoúst (phot. by Arséntiev).

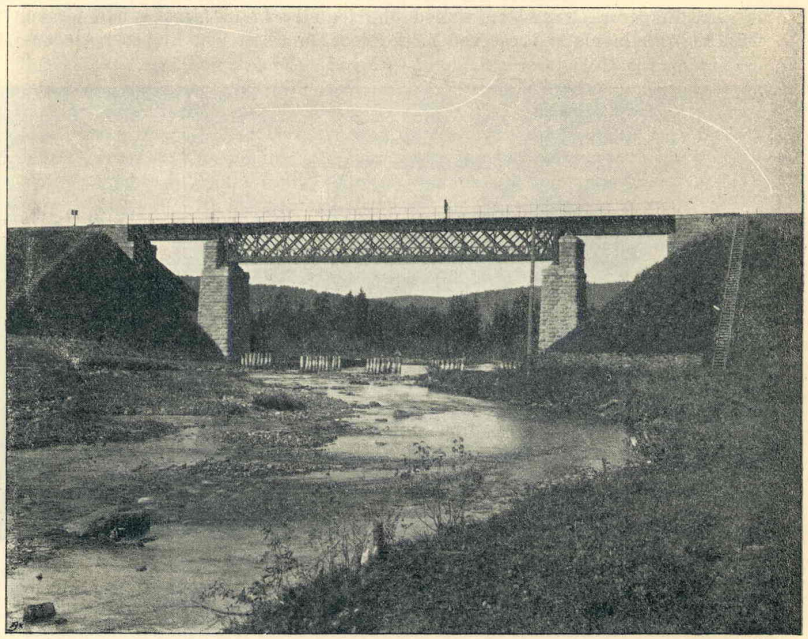
der II, then heir apparent to the throne, visited Zlatoúst in 1857; a stone chapel was built on one of the hills in commemoration of this event.

The Zlatoúst works produce pig-iron, Marten steel in three furnaces, cast steel in two furnaces of the Siemens system, puddled and rolled iron; blades are worked in the forge division. There is also a machinery tool and a railway fastenings works. The number of workmen is about 1,000. Many of them occupy themselves with the manufacture of hand-made metal goods, exemplified by the famous Zlatoúst knives and forks. Since 1895, the workmen have organised associations with a store for their hand-made wares. They receive orders for different articles in steel and iron, excepting side-arms, the manufacture of which is forbidden. About 3,000 men are occupied in working knives and forks with a business of R. 200,000 to 300,000.

The metal goods produced here are distributed in the following manner: the iron is forwarded to Nízhni-Nóvgorod, the side-arms to Moscow, the shells to Kóvno, Osovéts, Kíev, Dvinsk and other towns; the fastenings are sent to Cheliábinsk for the use of the Siberian Railway. The works being insufficiently provided with fuel, cannot further develop their operations; in order to obviate this difficulty, petroleum is employed in many maufactories to the amount of about 300,000 puds per annum. Coke and anthracite from the Donéts basin are also used for the same purpose.

In 1897, the average output of the Zlatoúst works was: 415,000 puds of half-rolled iron, about 200,000 puds of different kinds of iron, 180,000 puds of pig and cast steel, and 41,000 puds of assorted steel.

Leaving the station of Zlatoúst, the line descends to the river Tesmá crossing it by a bridge having three spans of 4, 15 and 4 sazhens, and an eleva-



Bridge oner the Tesmá (phot by Arséntiev).

tion of 6.35 sazhens above the low-water mark, and ascending the Uràl mountain ridge, reaches the highest point on its entire course.

50) **Urzhúmka.** (925 v.) The station stands in a place remote from all habitation, where the Urál ridge forms a cavity among the wide and lofty rocks of the principal central chain.

The frontiers of the Tróitsk and Zlatoúst districts, viz of the Ufá and Orenbúrg governments meet near the station. A stone pyramid with the inscription „Europe" on one side, and „Asia" on the other, is placed within half a verst of the station. Here the line passes its summit on the Urál and begins its descent by a zigzag four versts in length crossing the river Great Syrostán, tributary to the Miás of the Ob basin, by a bridge of three spans of 4, 10 and 4 sazhens, and a height of 6.50 sazhens above low-water level. Thence the line continues its descent along the right bank of the Great Syrostán. The summit of the Alexander cone, having an elevation of 3,500 feet above sea-level, remains in view all the time. The top of this mountain consists of bare stone ridges. It was visited by the Emperors Alexander I, Nicholas I and Alexander II.

51) **Syrostán** (947 v.) surrounded by mountains, has received its name from the village lying beyond them at a distance of one verst. Continuing its descent, the line enters the Cheliábinsk district, which represents the Asiatic portion of the Orenbúrg government, and taking a north-eastern direction, towards the Little Syrostán, twice crosses this river, effecting a circuit of 2½ versts. The descent towards the eastern slope of the Urál terminates at the second passage over the Little Syrostán. Further on, at the 953 verst, the line traverses the river Atlián, spanned by a bridge of 15 sazhens, and passing the watershed of the rivers Atlián and Miás, crosses the latter by a bridge with an opening of 25 sazhens. It then approaches the station of Miás.

The vast area of the Orenbúrg government (50°49′ and 55°52′N. lat. and 23°7′ and 34°5′E: long. Area 167,989 squ. versts. Pop. 1,609,388, males 802,936, females 806,452.) is divided by the Urál chain and the river Urál into a western and eastern portion. The former lies in Europe and comprises 70,736 sq. versts, the latter is in Asia, and covers an area of 97,253 sq. versts. The natural frontier between these two quarters of the globe runs along the meridian. The Ilmen mountains, stretching to the east from the central Urál cháin, culminate in the Ishkúl mountain, 2,245 feet in height. They are at first covered by a rich vegetation of trees, but gradually lose it and pass into the steppes of the Cheliábinsk and Tróitsk districts, representing the Transurál portion ot the Orenbúrg government. At first the steppes are varied by hills and dotted by sopkas of granite and porphyry. Further east, they become more level, abounding in lakes and covered with leafy groves. The eastern slopes of the Urál are richly provided with gold, copper and iron ores, giving scope to a considerable development of mining industry. Auriferous gravel is found partly on lands belonging to the State, and partly on that of the Bashkírs and Orenbúrg Cossacks. Deserving of mention are the Kachkár mines, containing gold in veins, situated 50 versts west from the town of Tróitsk.

The mining industries of the Orenbúrg Transurál are comprised in the Cheliábinsk, Tróitsk and Verkhneurálsk districts, which from their geographical, topographical and economic conditions, are in close connexion with the Samára-Zlatoúst line; their management is entrusted to the Orenbúrg Mining Office located in the Miás iron works. Besides the Miás goldmining association, leasing the State mines of Miás and washing over 70 puds of gold annually, the following mines should be mentioned on account of their output: the Vladímir goldmining Company in the Cheliábinsk district, yielding from 6 to 7 puds, Podvintsév and Co, belonging at present to a newly organised association (over 50 puds), the mines of Tarásov and Co, Sokolóv and others (over 20 puds), of Símonov (10 puds); the Karatybáno-Baratynsky Association (from 8 to 10 puds), the trading firm of Paklévsky-Kózell (about 4 puds); the Russian goldmining Company established in the Transural in the Tróitsk district since 1895 (about 6 puds), Pribylov (about 5 puds), Ratkóv-Rozhnóv in the Verkhneurálsk district (the same quantity). The gold production of the Urál mining region reaches from 550 to 580 puds, of which 40% or 10% of the total gold production in the Empire, are obtained in the Transurál from the Orenbúrg government. The granites of the Ilmen mountains abound in precious stones.

The steppe portion of the Cheliábinsk and Tróitsk districts bounded by the Toból and Miás rivers is characterised by a great number of lakes; about 1150 of them are scattered throughout this region, where fresh water lakes occur in close proximity with brackish or bitter lakes. Without

mingling their waters, they are even sometimes connected by a channel. The steppe lakes are either entirely covered with reeds, or girt by red flowers called salt-wort (Salsola kali, Salicornia herbaria). The quantity of salt contained in the lakes, and their chemical properties are not always the same. The salt lakes, where salt has been obtained since the middle of the XVIII century, are now granted on lease to private individuals. The bitter lakes, containing much Glauber's salt, are not worked at all.

The water in some of the lakes has medicinal properties. The climate of the Transurál is continental, with extreme transitions. The highest mean temperature is +28.6°, the lowest on the average is —38.8°, with a total range of 67.4°. The annual rainfall is more abundant in the north of the Transurál, than in its southern part. The climate is healthy, particularly in the mountainous regions; only a few places in the Cheliábinsk district must be excluded as containing lakes with unhealthy exhalations. In the mountainous part of the country, the forests contain various species, such as fir, pine, spruce, larch, birch, linden and oak; in the steppe, the small groves and tree clumps shew a predomination of birch. The oak does not occur beyond the Urál, and appears again only in the region of the Amúr. The fauna does not differ from that of the contiguous governments of Enropean Russia. Woody Bashkíria gives shelter to a great number of bears. The soil mainly consists of sand and clay; blackearth occurs only in river valleys, and in localities lying at the foot of the mountains; further away, the blackearth seam diminishes in thickness. For this reason, the vegetation of the steppes grows richer as they approach nearer the mountains. However, the harvests are very uncertain, being sometimes very poor on account of the drought. The mountain valleys and the steppes abound in pastures and are well adapted for cattle-breeding.

The conditions of soil and ciimate in this region are favourable to the growth of good qualities of wheat, other kinds of corn and oil producing plants. Agriculture is principally based on the fallow-land system. The extensive pastures are well suited for the development of cattle-breeding, which is practised on a large scale by the Bashkírs. Grain and animal products are exported into the interior governments of Russia and abroad.

The construction of a railway from the Samára-Zlatoúst line towards the south, to the town Tróitsk and further to Turkestán, intended to meet the economic interests of the country, has frequently been proposed, the project being supported by the extraordinary fertility of the southern part of the Transural.

52) **Miás.** Buffet (967 v.) Is situated at the foot of the Ilmen mountains on the shore of the lake Ilmen. The environs are extremely beautiful. The Miás works, founded in 1777 by Lugínin, stand 6 versts from the station, in a deep valley surrounded by the Cháshkov mountains. Formerly, the works smelted copper; this industry is abandoned at present and replaced by the machine shop of the gold mining company. Externally the works resemble a town; there are many stone houses, stores and shops, a club and two libraries. The number of inhabitants exceeds 14,000. At the present time, the works forms the centre of an extensive corn trade. The valley of the Miás is well known on account of its gold-bearing strata. The famous Tsar Alexander mine, in which the Emperor Alexander I worked in 1824, lies within two versts of the iron works. The tools employed by His Imperial Majesty are kept in the museum of the works. In these mines, gold is found in veins

and gravel. The number of workmen employed is about 3,000 men. The Ilmen mines, which are quite close to the station, are connected with the goldwashing works by a narrow-gauge line, provided with diminutive trucks and engines.

The gold-bearing strata contain clayey sand with a considerable admixture of pebbles and gravel. In it occur fragments of quartz, gneiss and flinty slate. Its depth is about 7 metres, the thicknesss of the surface or turf varies from 2 to 4 metres. One hundred puds of auriferous gravel contain from 25 to 55 dolias of gold. Miás is a station which, on account of its position, receives freights of metals, grain and animal products. In 1897, 301,658 puds of grain were forwarded from this point to the ports and abroad. The quantity of animal products despatched from the town of Tróitsk, in the Turgái

View of the town of Cheliábinsk.

territory, and from Kustanái, exceeds 100,000 puds. Leaving the Miás station, the line mounts to the branches of the Ilmen ridge, which precede the Urál chain and, descending again, passes through the narrow and uneven isthmus between the Chebarkúl and Yelóvy lakes.

53) **Chebarkúl.** (990 v.). The village of Chebarkúl is situated near the station on the lake of the same name. A fortress, which was included in the line of the Uisk fortifications, stood here at the end of the XVII century. After having served, at the time of the revolt of Pugachóv, as a rallying point for the Siberian troops employed in opposing that popular leader, itwas burned by Pugachóv when he was pursued by the brave Colonel Míchelsohn.

54) **Bishkíl.** (1,009 v.). Proceeding eastwards from the station, the line crosses the river Bishkíl spanned by a bridge of 20 sazhens. Mines of vein and gravel gold are to be found in the environs.

55) **Poletáevo.** (1.033 v.). In the direction of Cheliábinsk, the line passes over the river Birgildá by a bridge 10 sazhens long, and ascends to the elevation where are situated the gold mines of Krasheninnikov.

56) **Cheliábinsk.** Buffet (1.057 v.). The railway station is at a distance of four versts from the district town of Cheliábinsk, included in the Orenbúrg government, and situated on both sides of the Miás (55° 10'N. lat., 72° 2' E. long; 2,451 versts from St. Petersburg, 7,112 versts from Vladivostók. Pop. 18,454). This town, which is the oldest in the government, was founded in 1658. It arose, like many other Russian towns, out of a small wooden fortress which, in the north-eastern part of Bashkíria, served to protect the villages and the works established by Russian colonists, on the picturesque and fertile banks of the rivers Isét and Miás. It is thought that the town was called after the name of the Bashkír Cheliába, the fortress having been built on his land. Constant revolts and disturbances occurring among the Bashkírs and Meshcheriáks, gave this fortress some importance as an administrative centre. In 1743, the famous historian V. N. Tatíshchev, who at that time was director-general of the iron works in Siberia and Perm, established there the headquarters of the voyevóda of the newly organised province of Isét, comprising the left side of the river Yaík, now called the Urál. In the years 1773 and 1774, from the beginning to the end of Pugachóv's revolt which spread all over Bashkíria, Cheliábinsk was frequently attacked by the rebels, and was the rallying point of the Siberian troops commanded by Lieutenant General Clappier de Colongue, who became famous for the suppression of the revolt and the defence of the Isét province, the works of Ekaterinbùrg and the Siberian territory.

Cheliábinsk, the Odigidri nunnery.

At the time of the Pugachóv revolt, Cheliábinsk had a male population of 736, inclusive of 243 soldiers, 189 town Cossacks, with a chancery, an ecclesiastic department and a town-hall.

In 1781, Cheliábinsk was registered among the district towns of the Ufá province; in 1796, upon the abolition of the latter, it was included in the Orenbúrg government.

The Emperor Alexander I visited the town in 1824.

It is situated on the river Miás which, picturesque higher up, loses its mountainous character in the Cheliábinsk district and falls into the river Isét, left tributary to the Toból, beyond the confines of the Orenbúrg government. Notwithstanding its extensive course of about 500 versts, rafting by the Miás is possible only in spring; for this reason, the river has but slight economic importance.

The Cathedral erected in honour of the Nativity of our Lord, the chapel built in memory of the Tsar-Liberator Alexander II, and the Odigidri nunnery, are the chief ornaments of the town. There are 6 stone orthodox churches, a

chapel for old-believers, a mosque and a jewish prayer-house. The schools are: a clergy school for boys, a preparatory gymnasium for girls, a school with four classes for boys, a parish and three municipal schools. There are also an orphanage, three hospitals organised by the municipality, the local and the prison administrations. A library with a free reading-room was opened in memory of the 14 November 1894, the day of the marriage of Their Imperial Majesties, the Emperor Nicholas II and the Empress Alexándra Feódorovna.

The town consists mainly of wooden buildings, and is without a pavement, although situated in proximity to rich quarries of gray sandstone. Of

View of the town of Cheliábinsk.

the 1,308 houses, only 30 are of stone; about 40 shops are built of the same material, the rest being of wood. Cheliábinsk takes the first place in the northern part of the Transurál on account of its corn (mainly wheat) trade. Horses, cattle, sheep and various animal products are sold for several hundred thousand rubls at the St. Nicholas and St. John fairs, held in the town in May and October. The market is open every day with the exception of sundays and holidays.

There is a private warehouse capable of holding over half a million puds of grain. A considerable quantity of grain is ground in the surrounding mills. The steam flour-mill of Messrs Stepánov, situated within 10 versts of the town, is specially remarkable on account of its working capacity, the daily output amounting to about 2,400 puds. Among other factories etc., may be mentioned: the distillery of Messrs Pokróvsky producing 500,000 vedros of spirit, a slaughter-house, where about 80,000 head, mostly sheep, are killed annually, tanneries with an annual production of about 50,000 skins, and tallow-boileries producing 100,000 puds per annum. The town has a revenue of about R. 50,000.

A branch of the State Bank has been established here since 1893, and a town pawnshop since 1896. Other financial institutions are represented by branches of the Commercial Bank of St. Petersburg and of the Yaroslávl-Kostromá Bank.

The hotels are very bad (the Siberian Rooms, the Commercial Hotel and others). Hackney coaches without springs ply according to tariff. Carriages (linéikas) run several times a day between the railway station and the town (5 kopeks a seat).

Cheliábinsk contains the Department for the Exploitation of the West-Siberian Railway, the Railway Control Department, and a first-class custom house for goods. The station Cheliábinsk possesses special importance as the junction of the European railways with the Siberian main line.

The connexion with the Perm-Tiumén line, carried right on to Kotlás, by causing an increase of goods traffic to the northern water-systems of European Russia, will undoubtedly still further enlarge the operations of this central station.

Occupying an important position in regard to the transit goods traffic, the station of Cheliábinsk in also distinguished by a considerable export of goods from the surrounding localities. Great supplies of wheat are forwarded from this station. The local merchants buy up annually about 500,000 to 700,000 puds; a considerable quantity of this grain is also purchased by representatives of firms at Rével, Libáva and Rostóv on the Don.

The increasing importance of the station attracted a numerous new population, which, in 1896 founded the Nikólsk settlement in close proximity to the railway line. At present, the number of its inhabitants exceeds 3,000 souls. A wooden church capable of holding 750 has been built near the station, at the cost of the Emperor Alexander III fund, in order to satisfy the spiritual needs of the railway and country population. The first stone of this church was laid in presence of State Secretary Kulomzín on the 5 June 1897, and it was inaugurated on the 30 January 1898, in honour of the Blessed Virgin.

A school with two classes under the direction of the Ministry of Public Instruction was established in 1898 near the station in a special wooden building constructed for this purpose; it is supported by the West-Siberian Railway, and by the fees of the scholars. A parish school for girls is being built near the church in honour of Father John Sérgiev.

A station for emigrants has been erected near by, with a branch line to the barracks for parties of emigrants bound for Siberia. This branch line is provided with sidings, platforms, lodgings for railway and telegraph agents. The wooden barracks can accomodate 1,500 emigrants; in summer the number rises to 2,500. The hospital barracks contain 70 beds, 50 of them for infectious diseases. There is a pharmacy, a dining-room supplying the emigrants with 1,500 rations of food in winter and with 2,000 in summer, which during the latter season are boiled in pots in the open air. A bath, with two divisions for women and men, is arranged for 50 persons, and there is also a laundry. This fully organised emigration station resembles a small town, including 25 separate, clean and sanitarily planned cottages. It is also the residence of the official entrusted with the regulation of the emigration movement.

Since 1893, when the West-Siberian line was opened to traffic, over 600,000 emigrants of both sexes have been registered at the emigration station of Cheliábinsk.

The Smolínsk lake, which in the Transurál is famous for its salutary properties, lies within 9 versts of the town. It contains a considerable quantity of chloride and iodide of potassium. In the summer, many people re-

Church near the station of Cheliábinsk.

siding in the environs and other patients visit the lake for bathing. The latter, whose number increases every year, live in the cottages of the Smolínsk Cossack settlement on the shore of the lake.

The Cheliábinsk-Ekaterinbúrg Branch.

This branch, connecting the Great Siberian Railway with the Perm-Tiumén line, leaves the West Siberian section at the Cheliábinsk station, and runs in a north-western direction a distance of 226.5 versts.

Within four versts of Cheliábinsk, the branch line crosses the river Miàs, spanned by a bridge of 40 sazhens, and ascends towards the watershed of the rivers Ufá and Miás. Leaving the latter, it traverses the river Ziuzélka and reaches the first station.

1) **Esaúlskaya.** (24 v. from Cheliábinsk). From here the line runs through the steppes adjoining the Urál dotted by lakes of various sizes for the most part picturesquely situated.

2) **Argayásh.** (53 v.). Is situated near the lake of the same name. Beyond it, the line leaves the Orenbúrg government, and enters into the confines of the Perm government (Ekaterinbúrg district) where commences the forest-clad region passed through before reaching the Urál.

3) **Kyshtym.** Buffet (84 v.). Lies at a height of 200 sazhens above the level of the sea, and is one of the prettiest spots on the Ekaterinbúrg branch. The Nízhni-Kyshtym works is at a distance of one verst. The Vérkhni-Kyshtym, founded by Nikíta Demídov in 1757, is within two versts of the station. The works belongs to the successors of the Baroness K. A. Meller-Zakomélsky, the widow of General-Major Druzhínin, and the successors of the hereditary citizen A. A. Zótov. The Vérkhni-Kyshtym works is one of the largest in the Transurál, having a population of about 18,000 souls of both sexes, while the Nízhni-Kyshtym contains only 2,000. A marble monument, erected in memory of the liberation of the serfs, stands on an elevated spot in the centre of the works. The existing museum contains articles manufactured at the Káslin cast-iron foundry, well known for its artistic work, as well as mineralogical and geological collections. The works produces pig, Marten and fagotted iron and different kinds of machinery. About 500,000 to 600,000 puds of pig-iron, and about 1,000,000 puds of iron are turned out annually.

The Shíshka cliff (104 v.).

All the Kyshtym district contiguous to the works, where the Ilmen mountains stretch northwards, is richly provided with mines and mineral deposits and contains, besides gold, copper, iron and chrome-iron ores, many other minerals. From here, the line mounts to the station Maúk, crossing numerous dales, ravines and streams, and ascends along a steep and broken slope towards the watershed of the rivers Maúk and Ufaléika to a height of 286.90 sazhens above sea-level.

4) **Maúk.** (106 v.). 240 sazhens above the level of the sea. The Káslin works contains a population of 15,000 and, founded in 1747, is situated 18 versts

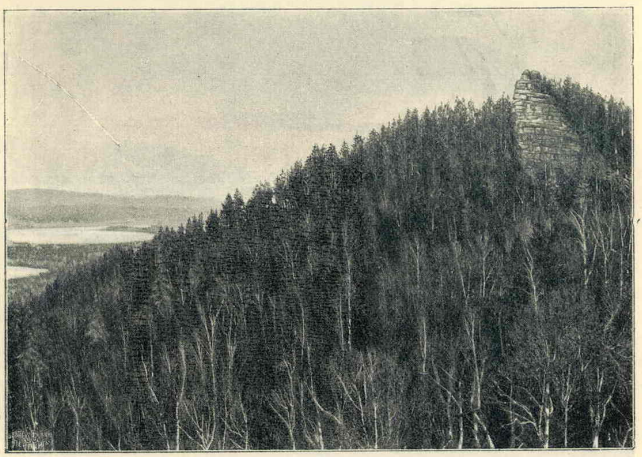
from the station. The works produces above 400,000 puds of pig-iron and has some reputation on account of its fine and artistic castings.

After having crossed the great swamp called Constantine Dale, the line enters into a country with a broken surface.

5) **Ufaléi.** Buffet (133 v.). 250 sazhens above the sea level. The Ufaléi works with a population of 6,000 founded in 1761 by Mr. Mosólov, stands within half a verst of the station. The works now belongs to the Sérginsk Ufaléi Mining Company. It has an annual output of about 400,000 puds of pig iron, 220,000 puds of raw iron, and 150,000 puds of common iron.

The Nízhni-Ufaléi works (4,500 inh.) belonging to the same joint-stock company, is situated 15 versts from the station. The annual output amounts to 400,000 puds of pig iron, 350,000 of raw iron, and 300,000 puds of common iron. From here the line runs north, and twice crossing the river Korkadín ascends to the watershed of the rivers Ufá and Chusováya. Leaving the latter it proceeds along the Poldnévnaya river.

6) **Poldnévnaya.** (162 v.). Stands in a desert and wooded country, 244 sazhens above the level of the sea. The village of Poldnévnaya, containing 200 inhabitants, lies close by. The famous chrysolite mines, almost unique in the Transurál, are situated on the right bank of the Chusováya river, on land belonging to the Polévsk works. Proceeding further through a level



The Ará-Kul sopka (114 v.).

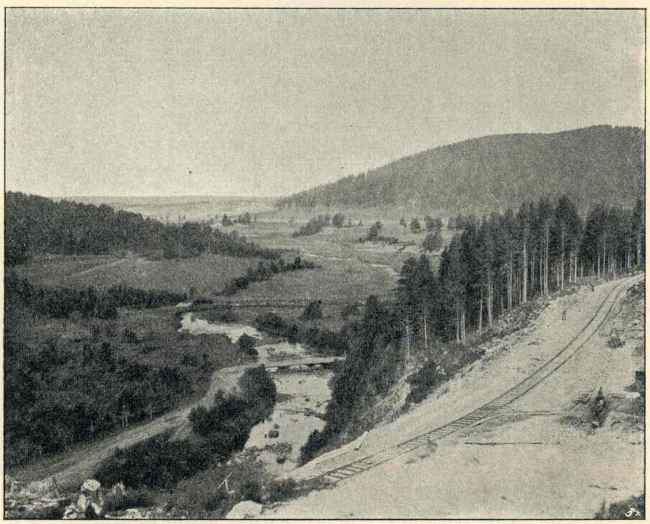
country, the line twice crosses the upper reaches of the Chusováya, on bridges of 10 and 15 sazhens each, and enters the district containing the Sysert mining works.

7) **Mrámor.** (191 v.). Is situated in a wooded district at an elevation of 262 sazhens above the sea level. Close by is the Mrámor works with a population of 1,000 souls; it is well known for the marble goods it produces. Large articles, such as marble monuments, baths, washstands, window sills, tables etc. are manufactured here, besides smaller objects made of selenite,

serpentine and ophite. The blue and white Polévsk marble is considered the best. The marble quarries are situated four versts from the village. Although living in a salubrious climate, a great percentage of the population is affected by consumption, owing to the bad organisation of the workshops.

A monument to the Emperor Alexander II stands in the centre of the village, in commemoration of the liberation of the serfs. There is a warehouse for the productions of the Sysért district at the station.

The Sysért works is situated 20 versts to the south-east; there are further the Vérkhni-Sysért and Ilyínsk works, which together with the Sysért and Polévsk works are the property of D. P. Solotírsky and of the successors of A. A. and P. M. Turchanínov. The Sysért works contains 10,000 inhabitants and above 50 different branches of iron and copper manufacture, among which are axes, horse-shoes, trivets, hooks and eyes, door locks, pails, fire-proof doors, candle-sticks, tea-urns, saucepans and other copper articles. There are blast furnaces, puddling and welding works. Over 700,000 puds of pig-iron, and 350,000 puds of iron are produced. The number of workmen employed is 600; besides 1500 occupied about the works. The works is connected by telephone with Ekaterinbúrg and other works in the district. The grounds and works are provided with electric light. The Vérkhni-Sysért works containing puddling and welding furnaces, stand within 9 versts south-west of those of Sy-



View taken near the Ufaléi station.

sért. It numbers a population of 1000 souls; there are 300 workmen, while 400 men are employed about the works. The annual output of iron amounts to 400,000 puds. The Ilyínsk works, manufacturing only sheet-iron, is situated on the river Sysért six versts from the Sysért works. It contains 500 inhabitants, employs 150 workmen, and 100 about the works.

The Séversk works (pop. 4,000, with 500 workmen, and over 1000 supplementary hands) lies south-west of the railway within 12 versts of the Mrámor works. It contains two blast, furnaces, one puddling, furnade, two Marten furnaces, a fagotted iron furnace etc. and machinery shops. The annual pro-

View of the town of Ekaterinbúrg (phot. by Ravénsky).

duction of pig-iron exceeds 900,000 puds, while that of iron amounts to 100,000 puds. The Polévsk works lies 6 versts from the latter with a population of 7,000 souls. The number of workmen employed is 300, with about 600 supplementary hands. Puddled, fagotted and rolled iron are manufactured at the works. The Séversk works supplies the pig-iron required.

Archaeological discoveries were made at the end of the XVIII century near the works in the Chumashév mines. The objects date from a prehistoric age and belong to a nation which in ancient times occupied itself with mining.

After leaving the station of Mrámor, the line runs along the watershed of the rivers Chusováya and Isét, through a level country which further north grows more and more monotonous.

8) **Uktús.** (221 v.). Lies in a treeless plain, 182 sazhens above the level of the sea. The village of Uktús is situated at a distance of two versts. Its inhabitants occupy themselves with agriculture and domestic industries, mainly that of pottery, carried on in about 30 shops. The wares are of a good quality and find a ready sale.

The Nízhni-Isét Government works founded in 1797 (pop. 3,500) is situated within 5 versts of the station. The annual production amounts to 200,000 puds of iron, 12,000 puds of cast-iron, and about 15,000 puds of sheet-iron. The works employs 350 workmen and contains about 30 shops for hand-made metal wares. A monument to the Emperor Alexander II stands on an open place in the works. There is telephone communication with Ekaterinbúrg. From here, the line runs along a plain covered with dwarf bushes and, after having

crossed the river Isét by a bridge of 15 sazhens, joins the Perm-Tiumén Railway line.

9) **Ekaterinbúrg** 2 (226 1/2 v.). The Tiumén, Cheliábinsk and Ekaterinbúrg lines meet at this station, the latter runs on further to Perm. On its course to the station Ekaterinbúrg 1, the line sweeps round the town following its outskirts for a distance of 4 versts. Ekaterinbúrg is a district town of the Perm government (56°49' N. lat; 30° 16 1/2' E. long.) stands on the river Isét and, being one of the best district towns of European Russia, may be called the capital of the Urál. The census of 1897 shewed a population of 43,052 inhabitants; the town was founded by Tatíshchev in 1721, and received its name in honour of the Empress Catherine II. A mint, striking special copper and other coins called „platas", was established here in 1735. Ekaterinbúrg contains above 5,500, mostly wooden, houses; the Novotíkhvinsk nunnery; 15 orthodox churches, besides those of the monasteries and inclu-

Cathedral in Ekaterinbúrg (phot by Ravénsky).

sive of six house chapels; one church and two dissenting chapels; an evangelical Lutheran and a Roman catholic chapel; a Mohammedan mosque and a jewish prayer-house. Ekaterinbúrg is also the residence of the bishop of the Ekaterinbúrg-Irbít diocese, and is the seat of a consistory. The fraternity of St. Simon the miracle-worker of Verkhotúrie is established in the diocese. The schools are: a clergy school, a diocesan school for girls, a classical gymnasium, the Alexis modern school, a gymnasium for girls, the Urál mining school, town schools of four and three classes; eight primary schools, three parish schools and a number of private schools .The town contains also: the Urál mining department, the Imperial stone-cutting works, the Urál chemical laboratory with a gold-melting department, which receives all the slich gold from the Urál mines, a meteorological and magnetic observatory, the council of the congress of mine-masters. Charitable institutions are represented by a children's home in the nunnery, a lodging for children, night

shelters, the Alexander poor-house, a work-house, the Núrov children's home. The medical institutions are: the town hospital, a local day-hospital for the poor, a lying-in hospital, the hospital of doctor Onúfriev. Besides these, there are charitable and other societies: the society of orthodox missioners, the local Red Cross commitee, a charitable society, the committee for the classification and care of beggars, the miners' children's home, a humane society, an amateur society of art, the sporting society, a racing society and a society for natural science with a museum founded in 1870, and considerably enlarged since the Siberia and Urál Science and Trade Exhibition, organised by the society in 1887. The museum includes sections for palaeontology, mineralogy, geology, zoology, botany, ethnography, archaeology and numismatics. The town numbers four libraries and contemplates opening one in honour of V. G. Belínsky. There are two clubs, one for the public, the other for the nobles. A wooden theatre of considerable dimensions belongs to the town. There are two summer gardens, one belonging to Kharitónov, the other to the public club; two boulevards from the Moscow barrier to Uspénsk street, and along the Voznesénsk prospect; a square, containing busts of Peter the Great and Catherine II. The pedestal for the projected monument to the Tsar Liberator stands in front of the cathedral. The periodicals of Ekaterinbúrg comprise: the Diocesan Journal, and three private papers: the Ekaterinbúrg Week, with a literary tendency; the Urál founded in 1896, discussing politics, public life and literature; the Business Correspondent, containing mainly trade and industrial information. Memoirs in Russian and French are periodically issued by the Ural Society for Natural Sciences under the patronage of His Imperial Highness the Grand Duke Michael Nikoláevich.

The Annual revenue of the town amounts to R. 200,000. For the development of trade and industry, there exist an office of the State Bank, a Branch of the Vólga-Káma Commercial Bank, the Siberian Trade Bank, the Town and Public Banks. Bankers: Y. P. Andréev, with a loan bank, Pelénkin and Co., a branch of the St. Petersburg Lombard.

Factories and works: 1) the steam mill of the merchant Símonov, which is an immense six-storeyed building, standing near a pond almost in the centre of the town, surrounded by a beautiful garden with hot-houses; 2) the match manufactory of the joint stock company of Vorontsóv and Lóginov, turning out annually about 60,000 boxes of phosphorus and safety matches, and employing 250 workmen; 3) the cloth factory of the Brothers Zlokázov on the river Isét, weaving daily over 600 arshins of different kinds of cloth, made of Kirgíz wool, mainly for Siberia; 4) the machinery works of the Brothers Korobéinikov and Yates, constructing steam-engines, boilers of different systems etc. 5) the paper-mill of Vorontsóv and Co. manufactoring over 10,000 puds of common writing-paper; 6) the pottery of Davydov producing fire-bricks, tiles etc.; and a number of soap-boileries, tallow-factories, oil manufactories, and beer and mead breweries. The total production amounts to over R. 4,000,000.

The town contains the following hotels and rooms: the American Hotel of Khólkin is the best, rooms from R. 1 to R. 4 a day; Atamánov's furnished rooms from 1 r. 25 k. to 2 r. 50 k., Wunder and Plótnikov, 75 k. to 2 r. The hackney coaches are driven by one horse and are hired by the tariff: 25 k. an hour or 15 k. the drive; the rate for a drive out of town is fixed by mutual agreement; the drive from the railway-station costs 35—50 k. in the daytime according to the distance, and 50—80 k. at night. In autumn and spring, 5 k.

are added to the usual rate. At Easter. Christmas and during the Butter Week, the tariff is not adhered to. Within the last ten years, the town has greatly improved. Electric light was introduced three years ago. The chief defect is the absence of water-pipes, which makes it necessary to bring water from springs in the neighbourhood. The most important events in the

Ekaterinbúrg. Quay, court of justice (phot. by Ravénsky).

history of the town are: the visit of the Emperor Alexander I in 1824; the institution of the Court of Justice; the publication of the first private newspaper in 1878; the opening of the Urál mining railway from Perm to Ekaterinbúrg; the Siberia and Urál Exhibition in 1887; the completion of the branch line between the Siberian and Urál railways in 1895.

The Vérkhni-Isét works, belonging to the Countess Stenbock-Fermor is situated at a distance of one verst from the town; it includes blast, fining, Marten and puddling furnaces, rolling mills and machinery works (pop. 10,000) About 350,000 puds of iron and 250,000 puds of assorted iron are produced annually. Roof iron is supplied in considerable quantity.

The number of workmen employed is 1500. The pond belonging to the works is 10 versts long and 3 versts wide, and is an ornament to the country.

The Ekaterinbúrg-Tiumén line.

This line, which is comprised in the Perm-Tiumén railway, goes by the name of the Tiumén section and is formed by the main line and the Kámensk branch. The main line which has a total length of 308.88 versts connects the district towns of Ekaterinbúrg and Kamyshlov in the Perm government, and

terminates at the station Túra close to the town of Tiumén. The Kámensk branch, 37.31 versts in length, unites the Bogdanóvich station, on the main line, and the Ostróvskaya station, situated near the Kámensk Government cast iron foundry.

From the Ekaterinbúrg station, lying at an elevation of 121.73 sazhens above the level of the sea, the line rnns through a level country in a north-eastern direction.

1) **Istók.** (15 v.). The line reaches its highest point at the 24 v. lying 128.95 sazhens above sea-level.

2) **Kosúlino.** (33 v.).

3) **Bazhénovo.** Buffet (53 v.). Emerald mines are situated 35 v. from the station in the forests belonging to the Ekaterinbúrg mint, along the river Great Réfta falling into the Pyshma. These are the only emerald mines in Russia. They are leased for 24 years to Mr. Necháev, who with a view to extending the enterprise formed an agreement with the New Emeralds Company in Paris, working emerald mines in Columbia. Asbestos mines belonging to Baron Girade, successor to the trading firm of Poklévsky-Kózell and Korévo, are at some distance from the first.

4) **Griaznóvskaya.** (75 v.).

5) **Bogdanóvich.** Buffet (94 v.). The Kurínsk mineral springs are situated 15 versts from the station in the Kamyshlov district of the Perm government. They are efficacious for rheumatism, paralysis, scrofula and anaemia Furnished houses and an hotel with good rooms are situated near the baths there is a garden and a promenade with band; theatricals and concerts take place in the casino. The Government cast-iron foundry, producing annually about 400,000 puds of cast-iron, with a population of 10,000, is situated at a distance of 37 versts from the station of Ostróvskaya.

6) **Pyshmínskaya.** (113 v.). Approaching the town of Kamyshlov, the line traverses the Pyshma by a bridge 30 sazhens long.

7) **Kamyshlov.** Buffet (134 v.). The district town of the same name in the Perm government, with a population of 7,000, is situated near the station. It contains 5 orthodox churches and the following schools and institutions: a preparatory gymnasium for girls, a district and clergy school, a municipal poorhouse and a children's home. There are also a distillery, a tannery and a tallow-candle manufactory. The local trade in grain is rather considerable. The Mutual Credit Company have a bank in the town.

The Obúkhov brackish, sulphurous and chalybeate mineral springs are situated within six versts of the station. There are furnished houses with rooms and buffet for the patients. There are further a library and a band of music. A drive from the station Kamyshlov to the Obúkhov springs costs 50 k. The town of Irbít famous for its fair, lies 110 versts from Kamyshlov.

8) **Arsárikha.** (151 v.).

9) **Oshchénkovo.** (171 v.).

10) **Poklévskaya.** Buffet (201 v.). The Tálitsk factories, belonging to the successors of Poklévsky-Kózell, are four versts from the station. They comprise a spirit distillery, a yeast manufactory, a rectifying works and a brewery. Their production is: 450,000 vedros of spirit of wine, 100,000 vedros of the same, about 15,000 puds of yeast, and 450,000 and 160,000 vedros of spirits. The population is 4,000, and the number of workmen 350. There is a stud producing a thorough-bred stock founded by Poklévsky-Kózell.

The successor of this gentleman established a glass works near the village of Ertársk, 30 versts from the station. The annual output is 1,500 boxes of sheet glass, and about 600,000 spirit bottles.

11) **Yushála.** (232 v.).

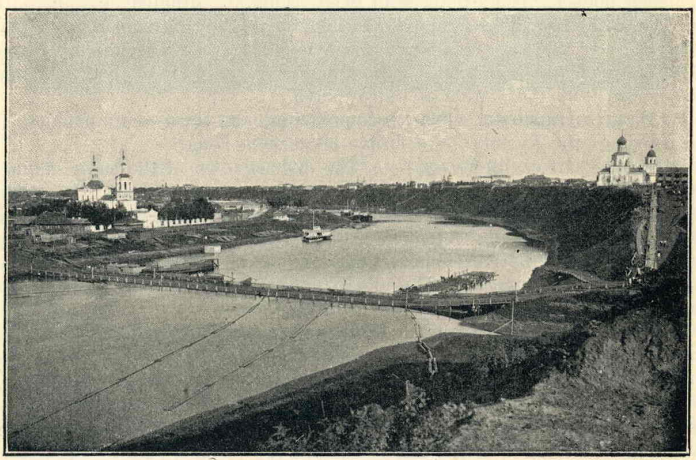
12) **Tugulym.** (248 v.).

13) **Karmák.** (266 v.). Close by is the Uspénsk paper-mill founded by Shcherbakóv and producing yearly about 100,000 puds of different kinds of paper. The mill employs 300 workmen.

14) **Pereválovo.** (285 v).

Tiumén. (304 v). Buffet (304 v.). Leaving the station, the line skirts the town and descends to the landing place on the Turá which is the terminus of the East-Siberian section of the Perm-Tiumén line (308 v., 26.15 sazh. above the level of the sea).

Tiumén, which is a district town of the Tobólsk government, is situated 57° 10′ N. lat., 35° 12′ E. long., and is one of the oldest towns of Siberia. It was built on the site of the former Tatar town of Chingí Turá, which is believed to have been fonded in the XIV century by the Tatar Khan Taibúga. The voyevódas Vasíli Súkin, Iván Miasnói and Iván Chulkóv, sent to Siberia by the Tsar Feódor Ivánovich in 1581, after the death of Yermák, founded the first Russian town on the bank of the Turá, giving it the name of Tiumén in remembrance of the Tiumén Khan to whom this place formerly



View of the town of Tiumén.

belonged. These voyevódas erected also in the new town the first Russian church in honour of the Nativity of the Blessed Virgin. Fragments of a rampart and a moat exist to the present day in the part designated by the name of Tsar town, and are clear evidence of the former Tatar dominion.

The commercial importance of Tiumén was established long ago. Previous to the construction of the Great Siberian Railway, this town represented

the connecting point of Siberia and European Russia, a consequence of its water communication and proximity to Ekaterinbúrg and Perm. After its foundation in 1782, Tiumén was under the command of voyevódas; among them may be mentioned Voéikov, Prince Bariátinsky, Godunóv, Volynsky, who all contributed to the power and progress of the town. In 1782, Tiumén was included in the Tobólsk government.

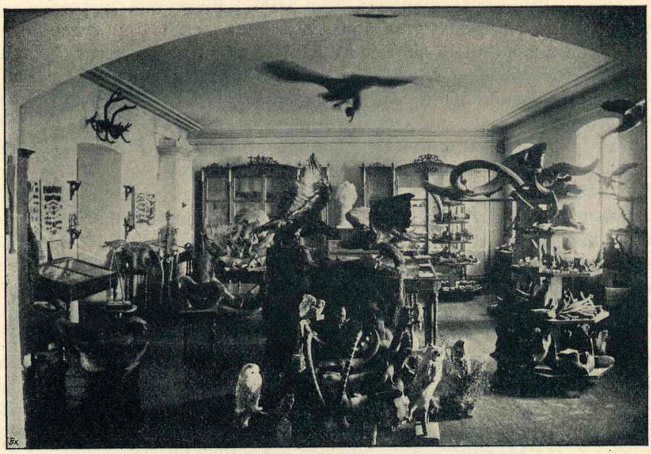
At present, this town comprises over 3,500 houses and a population of 29,588, according to the census of 1897. It is built on uneven ground broken by ravines, and contains 15 churches, inclusive of three house chapels (in the prison, modern school and orphans' home). The church of Our Saviour, that of the Holy Trinity in the ancient monastery, and the church of the Annunciation, are noteworthy on account of their architecture. The Tiumén monastery was founded in 1616; the Metropolitan of Tobólsk, Filoféi Leshchínsky became a hermit in this monastery in 1711, receiving the name of Feódor. This famous missioner and ascetic was buried at the gate of the church erected in the monastery during his life time, in honour of the Holy Trinity. An iron-roofed monument, representing this zealous servant of God, stands on his grave. A wooden altar-cross, covered with silver, and containing relics, was sent by the Tsar Alexis Mikháilovich in 1664, and is now kept in the church of the Annunciation. The church of the Blessed Apparition contains a miraculous image of rude design dating from 1624, representing the Apparition of the Virgin Mary. This image has been held in particular veneration since the time when the cholera ravaged Tiumén in 1848. Schools are represented by the Alexander modern school, the preparatory gymnasium for girls, four municipal schools, one district school. The former town-bailiff of Tiumén, P. I. Podarúev, built a modern school at his own cost, while its director I. Y. Slovtsév arranged a most remarkable museum, including many branches of natural history, opened in 1879. Since 1896, professional lectures have been added to the school.

The charitable institutions are: the Vladímir orphans' home, founded by the citizen Trúsov in commemoration of the Grand Duke Vladímir Alexándrovich's visit to Tiumén; a poor-house maintained out of the fund given by the merchants Maxímov and Vóinov: the Alexander lying-in hospital, instituted by the merchant Vóinov in commemoration of the happy escape of the Emperor Alexander II, and a night shelter. The town with a considerable population, has but one hospital, for men and women, with 30 beds. Outpatients are received only thrice a week. Among the charitable and other institutions may be mentioned: a temperance society (tea-rooms and a library for the lower classes), a society for the relief of the poor, one for the pupils of district and primary schools with a public library and Sunday school, a volunteer fire-brigade, a racing society, a society for the protection of animals with a hospital, a cooperative supply society, a society for the relief of poor emigrants on their way from European Russia to Siberia.

Before the construction of the Great Siberian Railroad, the greater number of emigrants passed through Tiumén, which was the centre of different medical and other organisations for the help of the settlers. A total of about 500,000 emigrants moved through Tiumén in a space of 16 years, from 1883 to 1900. The society for the assistance of poor emigrants, since the time of its organisation on the 4 July 1892, has constantly endeavoured to collect means for the help of the emigrants, and on account of its unwearying activity merits an honourable mention in the history of the emigration movement.

A. I. Efímov and P. P. Arkhípov were the leaders and initiators of this society, whose activity has now somewhat fallen off.

The exile office of Tiumén, registering and regulating the exiles and their distribution throughout Siberia, is an important and active institution. From 1823 to 1898, a period of 75 years, 908,266 peasons have been registered



The museum of the Tiumén modern school.

and forwarded by this office. The town has neither gardens nor boulevards; a small wood out of town is little frequented, being too far off. There are two clubs, one for public assemblies, the other for clerks; the latter has at its disposal scenery for amateur theatricals, belonging to A. I. Tekútiev. The circus of Borovskói, built of wood, is situated on the market place of the town.

The Siberian Trade Gazette with an extensive literary and industrial programme, has been published in Tiumén since 1897. There is also a branch office for the Urál Gazette issued in Ekaterinbúrg.

Although the town revenue amounts to R. 175,000 per annum, it is badly kept: only the Tsar street and those leading to the landing places have been paved. Petroleum is used for lighting, and the telephone has only recently been adopted. Tiumén as the centre of an active trade is provided with numerous financial institutions represented by a branch of the State Bank, a branch of the Siberian Bank, a town loan-bank, two State savings banks and Andréev's private loan-bank.

A first class custom-house was established here at the end of 1899. Hotels: Central Hotel, on Tsar street, North Hotel, near the theatre, the Warsaw on the Sadóvaia street. Rooms for travellers are kept by Zalévsky.

The hackney coaches are very bad, without springs and are hired by tariff. A fair is held annually from the 20 June to the 20 July, the goods sold exceeding in value R. 2,000,000. The town line includes many factories: tanneries (Kolmagórov is the most important firm) soap boileries, candle works and pelisse

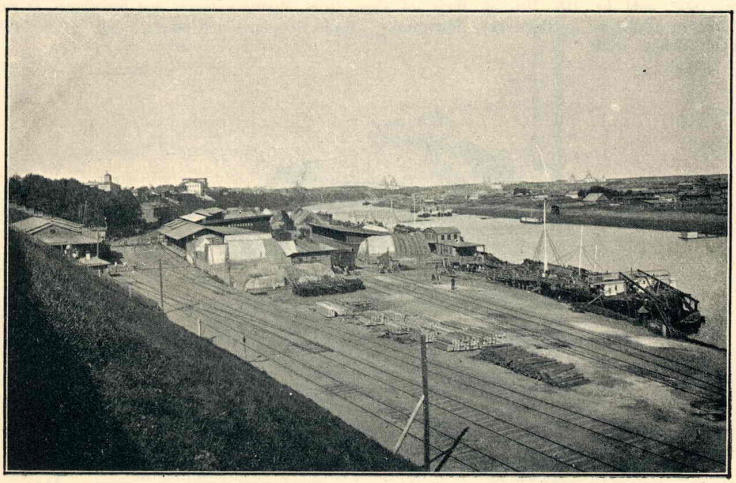
manufactories, a bell foundry, belonging to Gilév and supplying the churches constructed along the main Siberian line with bells; the machinery works of Gullet, the shipbuilding wharf of Ignátiev and Kurbátov, and the wheat-flour mills of Tekútiev. Their total production is above R. 3,000,000.

The inhabitants of the town are mainly engaged in house industries, of which carpet weaving, introduced from Bukhará and employing women, occupies the first place. The carpets are offered for sale at the fairs of Irbít and Nízhni Nóvgorod.

The town of Tiumén has several times been visited by Imperial personages, as by the Emperor Alexander II, when heir apparent to the throne, on the 31 May 1837. On the 1 July, the Imperial Guest crossed the Turá and arrived at Tobólsk. For this purpose, the inhabitants of Tiumén built a fine boat with a crew of 11 oarsmen, taken from the most honoured citizens of the town.

The Grand Duke Vladímir Alexándrovich was conveyed in the same boat in the year 1868, and the Grand Duke Alexéi Alexándrovich in 1873. The first exhibition of articles manufactured in the Tobólsk government took place during the stay of the Grand Duke Vladímir Alexándrovich.

The banks of the river Turá have been so strengthened that railway carriages may be brought right up to the steamers, which considerably facilitates loading and unloading. Landing places belonging to the Ship and Trade Company (Kurbátov and Ignátov), to Kornílov, Trapéznikov, Plótnikov, Morózov and to the Bogoslóv mining district, are situated on the quay. They are lighted by electricity and connected by telephones.



Landing-places for steamers in Tiumén.

Previous to the construction of the Great Siberian Railway, the Ekaterinbúrg-Tiumén line, which belongs to the Perm-Tiumén Railway, was the sole means of communication between the basins of the rivers Ob and Vólga, the

most important water systems of Asia and Europe. The Siberian main line, connecting the southern sections of these basins, brought new life to a vast, but scarcely civilised country and, although somewhat lessening the importance of the northern route, secured the commercial development of the latter, by promoting the industry of Siberia.

The data concerning the Perm-Tiumén line, covering the period it was under the management of the Government, from 1888 to 1898, clearly illustrate the growth of its operations. In 1888, the gross receipts were R. 5,119,605, with an expenditure of R. 3,228,167, and a revenue of R. 1,908,438; the total number of versts run by engines was 2,545,915, the total run by trains 1,941,540; the number of passengers carried was 480,212; and the number of puds of goods conveyed 42,816,771. In 1897, the gross receipts were R. 7,969,740, expenditure R. 5,096,784, revenue R. 2,902,955, the total versts run by engines 4,733,810, the total run by trains 3,511,655, the number of passengers carried 1,034,389, and the number of puds of goods conveyed 77,046,083. In 1898, the total revenue amounted to R. 8,538,778.

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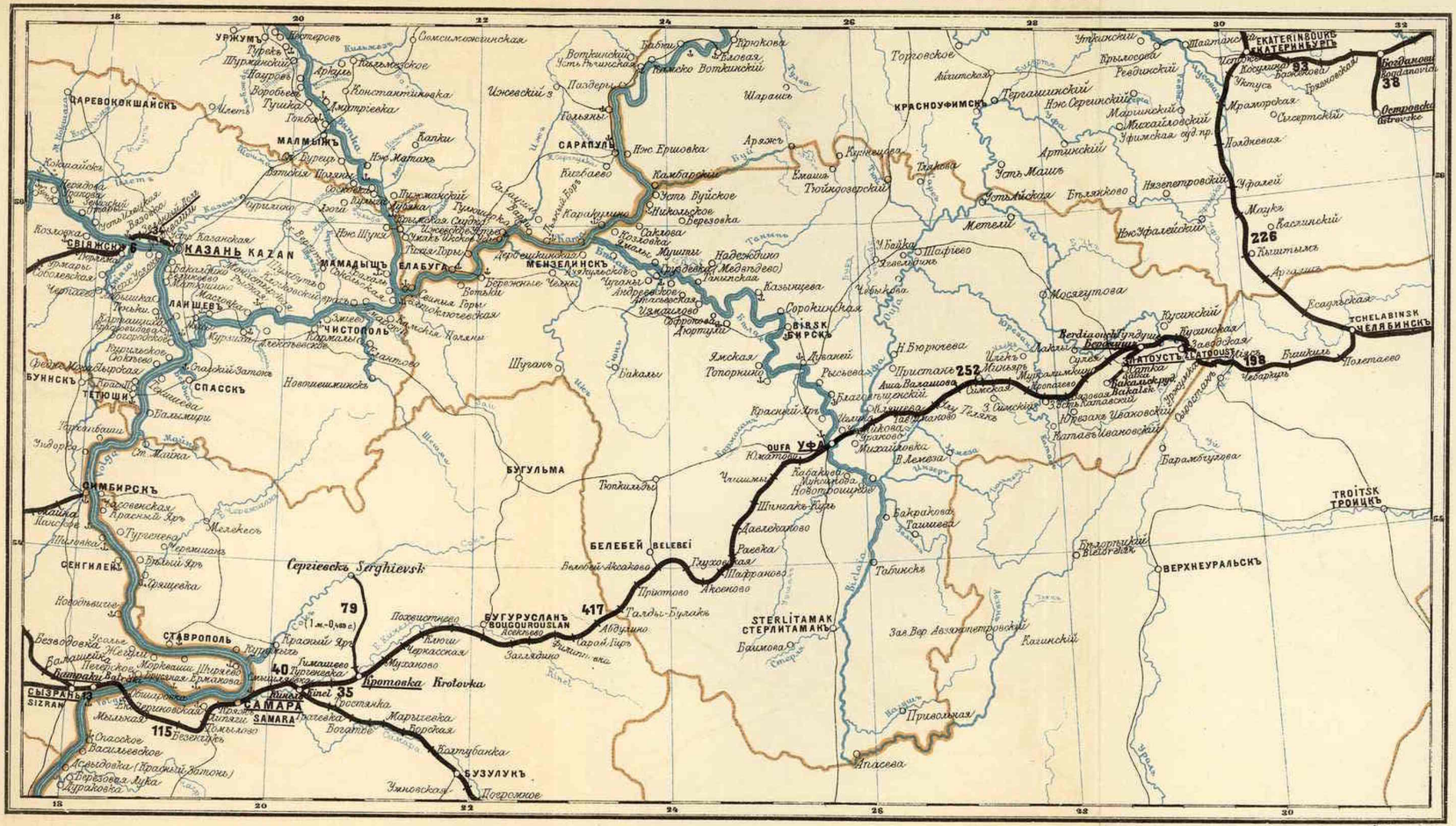
САМАРО – ЗЛАТОУСТОВСКАЯ Ж. Д. Chemin de fer SAMARA–ZLATOOUST.



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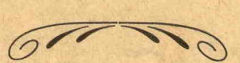

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