

top of a fresh moraine at a height of over 11,000 feet, near the end of a small glacier, and finding a mile of snow and nearly a thousand feet of ascent still before us. Our Kirghiz guides then said they had known it would not be possible for us to make the pass. We had asked them many questions the day before and they had promised to show us the trail. Their silence about the difficulty of the pass apparently resulted from a feeling of deference to foreign travelers. We returned to Sazanovka, sold our horses at about half purchase price, discharged our packer, and set out in post wagon (fig. 45), retracing the road along the lake through the afternoon and night of July 24, descending northward through the Buam gorge of the Chu, between the Kungei Ala-tau and the Alexander ranges on July 25, crossing northeastward over the western branch of the Trans-Ili Ala-tau range in the night, following the piedmont plain eastward through the morning of Sunday, July 26, and reaching Vyernyi in the afternoon (altitude 2,400 feet).

On July 27 we called on General Yonof, governor of the province of Semiryetshensk, and on July 28 started for a ride of 1,000 versts northward across the steppes (fig. 48) in a tarentass, or springless post wagon (fig. 45). We made good time, stopping only to change horses and for meals, and in spite of the loss of seven hours from breaking one wheel and from binding another, reached Semipalatinsk, on the Irtysh, in the afternoon of August 2. The guest rooms in the post stations on the road were, with very few exceptions, clean and neatly furnished. Tea, bread, milk, and honey were among the chief articles of food to be had. At Semipalatinsk we waited two days for a boat to go down the river, starting in the early morning of August 5, and reaching Omsk on August 7. The fast express on the Siberian railway carried us westward from Omsk at midnight, August 8.

This journey furnished many entertaining incidents, some of which I have narrated elsewhere. It afforded continued opportunity for observations of geologic and physiographic interest, of which the most suggestive are here presented in classified rather than in narrative order, under such headings as mountains, glacial records, Tertiary basins, valleys with gorges and terraces, and lakes. The features of the mountains and the Tertiary basins do not bear directly on the work in hand. The other headings afford material of a kind that may, if sufficiently extended by further observation, suffice to determine a number of subdivisions of Quaternary time. On all these subjects, except the Tertiary basins, Mr. Huntington's report on his journey south to Kashgar and west to Fergana in August and September contains important information supplementing that which was gathered while we were together through July.

WEATHER, CLIMATE, AND VEGETATION IN THE TIAN SHAN.

The oppressive heat of the southern plains had already moderated at Samarkand and Tashkent. After leaving Andizhan the days were not uncomfortably warm, except for a few noon hours in the upper Narin Valley, and the nights were always cool or cold. Water froze near our tent at Son Kul on the night of