climate of Nyassaland is good, its scenery picturesque and enchanting. Now has the time come for its development and civilisation. The west shore of Lake Nyassa has been given to us, all—unfortunately—except the fairest spot, that beautiful undulating plateau land of which I have said so much, north of the Songwe river. This spot has been allocated to Germany. Our mission in Africa must be twofold—to develop commerce and to promote civilisation. I am hopeful of Africa. With proper measures we may found in it to a small degree what we have established in India—a vast, prosperous, independent, and beneficent empire. The work on which we have entered has indeed a nobler side than that of mere colonial extension, let alone of trade and barter. It is a mission of deliverance of man from the rapacity and tyranny of unprincipled men, and of the extension to helpless and unenlightened millions of those great advantages which we believe to be attendant upon a humane and a Christian civilisation.

The Russian Expedition to Central Asia under Colonel Pevtsof.

Translated from the Russian by E. DELMAR MORGAN, F.R.G.S.

IN former numbers of the 'Proceedings'* we published translations of Lieut. Roborofsky's letters on the progress of this important expedition as far as Nia, at the northern foot of the Kuen Luen, and in August last we communicated more recent intelligence concerning its movements. We are now indebted to our Honorary Corresponding Member General Venukoff for a copy of a later letter from the same officer, of which the following is an abridged translation:—

KARA-SAI (foot of Russian Range),
9th July, 1890.

We left Nia on the 24th April (1890), having previously sent the Cossack Shestakof, the soldier Manukof, with an experienced guide, to the Cherchend river to form a depôt there. They took with them 30 camels, needful for our homeward journey, and 20 bales of our baggage laden on oxen.

On the 2nd May we arrived at Kara-sai, at the foot of Russian Range. From this place two reconnaissances were sent to explore the nearest parts of Tibet: one, under the command of Kozlof, to the south-east and east; the other, under my direction, along the northern slope of Russian Range to the river Keria. Taking with me the Cossack Bainof and a guide, I started on the 7th May, and travelled upwards of 40 miles by a route already known to us from our exploring expedition of last autumn, when trying to find a pass into Tibet. We went by the valley of the Saryk-tuz, having on our left the Uzu-tagh, its summits now brushed with snow, and its rounded foot-hills sloping to the valley. On our right rose the wilder and more abrupt Astyn-tagh, rolling the debris of its cliffs and peaks into the bed of the valley. Here, as at Kara-sai, spring was in full progress. Clumps of willow,

* Vol. xii. 1890, pp. 19 and 161.

thorny caragana, scented wormwood, *Lasiagrostis*, *Reaumuria*, and *Sympegma* were already green. The soft loess hills were graced by many a blue Iris scattered here and there in the midst of *Festuca altaica* and *Stipa*. The northern slopes were speckled with the white flowers of *Androsace*, never met with below 10,000 feet of elevation, and ranging as high as 14,000 feet. On the banks of the rivulet and in the hollows of the hills, besides the dirisun grass and *Clematis orientalis*, sheltered in the clumps of *Myricaria germanica*, grew the Kashgarian barberry (*Berberis kashgarica*), its unopened golden buds twined round the branches with their small pointed leaves. Among the rocks two or three kinds of *Oxytropis* might be observed, not yet in flower.

Among animals we found only wild goat (*C. pseudo-Nahoor*) coming down to the river in herds to drink, and a species of *Bobax*, darting quickly into their burrows and uttering their shrill but not discordant note. Of the feathered tribe we also found but few representatives, for the hen-birds were sitting on their eggs and their mates keeping watch beside them, so that we saw only one or two stray rock pigeons, the restless and noisy thrush, its gay pink feathers glistening in the sun, and a few flocks of mountain finch. In the morning we heard the prolonged whistle of the ullars and the cluck of the rock partridge.

On the third day I went on to Kan-bulak, a gold placer much frequented by the natives not only for the sake of its gold, but as a welcome retreat from the Chinese, who never go there, it is said, because they are afraid of passing the shrine of Mandjilik-Khanum, which lies near the road. We found nobody at the workings, but met five men returning to Keria, starved out with cold and hunger; they said the lateness of this year's spring, storms and snow, had put a stop to all work, their asses had perished for want of food, and they themselves were now making their way home on foot as best they might. The gold is washed with melted glacier water from Astyn-tagh (Russian Range). The miners erect stone shelter-huts along the precipitous bank of the river, roofing these with felt; these huts are, however, a poor protection against the constant inclemency of the weather. We, too, experienced snowstorms at Kan-bulak, and saw no signs of spring; snow was lying for eight miles along the Saryk-tuz, the absolute elevation being 14,000 feet, and the thermometer falling to – 10° Cent. on the morning of the 10th May.

At Kan-bulak the Uzu-tagh alter their appearance, for though continuing in a south-westerly direction they are much lower and their foot-hills less developed. At the foot of the north-western slope the Siu-bulak spring, the source of the Saryk-tuz, takes its course. On the south-west side of these hills lies Lake Khonghit-kul, possibly fed by springs and by the snow-water of Russian Range. We only saw a few widgeon here. Twelve miles to the west of Akka-tagh, Russian Range rises in another lofty group of snowy peaks to a height of 20,000 ft. above the sea, connected by a ridge of rounded clay hills with Uzu-tagh, this latter hardly deserving here the name of a range; it is rather a flat-topped ridge, subdivided on the west into several ridges, soon sinking in the plain.

Our bivouac was at Saryk-tuznyn-atasa, north of the highland. Here my guide and the Cossack fell ill, but recovered after I had treated them with quinine. The horse of the latter also sickened and had to be left behind, and we began to fear the other horses might also knock up; they shivered as though they had ague. On the morning of the 11th we made for a pass over some low hills, ascending gradually through red sandstone cliffs to the summit, whence we had a distant view to the west over a row of heights, the snowy crest of the Kerian range beyond the river of that name appearing as though swathed in clouds. On our right were the gigantic snowy peaks of Russian Range, fading away in the misty distance.

In the furthermost group of these peaks rises the huge mountain named by

Prejevalsky "Tsar-Liberator." On the south, Russian Range breaks off abruptly with a wall-like steepness, and without any foot-hills, to the barren valley of the Shor-kul lake. We descended from the pass, which has nearly 17,000 feet of elevation, to this valley, by a very gradual and delightfully easy slope. We found it composed of soft sand, mixed with pebbles, but devoid of all vegetation. Having marched 26 miles to the lake, we bivouacked by the side of a freshwater spring. Shor-kul is about five miles long by three broad, with its longer axis protracted from east to west. Its water is brackish, the shores are flat, marshy, and covered with a thick crust of some kind of salts. The southern shore, however, is steep, for here a spur of the Uzu-tagh runs down to it before extending in the direction of the Kerian river. The western shore of the lake (14,000 feet) is much wider and covered with vegetation. Here we saw several hundred Orongo antelope grazing. In order to lighten our tired horses for their great march to the Kerian river, we left all the things here except what was indispensable, and on the 12th set out, with some misgivings as to a safe return. For 12 miles we kept along the Shor-kul valley, then turned sharply to the south, and afterwards to the south-west, entering the mountains by a defile of red sandstone, and gradually ascending to the pass. Having gained it, we again saw the gigantic snowy mountains beyond the Keria. The day was already far spent when we hastened after our weary steeds.

At length we beheld the river; but, greatly to our astonishment, it was dry. The frost had turned its sources into ice. The guide was in despair. I bade him and the Cossack search for fuel, while I with tea-kettle and axe descended the bed of the river to look for water. Great was my joy when I came upon an excellent spring about a mile lower down. But fuel was so scarce that it was ten o'clock at night before we had some hot tea. The night was cold and clear as we lay down to sleep after giving our horses their corn. Early in the morning, taking advantage of the fine weather, I took a number of sights, and plotted the environs of the river on the map. To the west, at some distance from the river, and nearer the great mountains, stands a lofty but not a snowy range; it extends from north-west to south-east, and is divided by the river, which has a general course from south-east to north-west, its wide stony bed indicating a great volume of water in summer.

We were obliged to hasten our departure from this barren, waterless river-bed, as we feared for our horses, which showed signs of exhaustion. Having finished the observations necessary for the map, we started on our return journey. Another long day's march brought us to Shor-kul by the evening. Here we found everything as we had left it, and gave our horses a feed of barley.

Our return march was in every respect satisfactory, except that we had to face storms of wind and snow which hindered our advance and impeded respiration. On the 15th May we were back at Kan-bulak, whither, according to my instructions, a supply of corn had been sent for us. Here I succeeded in taking observations for latitude and longitude before the sky clouded over and a snowstorm began.

On the 18th May I was once more at Kara-sai, having in twelve days marched 134 miles to the Keria river, and 134 miles back, 268 miles in all, and plotted my route on the scale of 10 versts to the inch. No collections, except plants and a few minerals, were made. It would have been impossible for a caravan to have gone that way owing to the great elevation and want of food.

Kozlof's reconnaissance also proved there was no route available for a camel caravan in that direction, owing to the difficult and broken nature of the country and the scarcity of fodder in the more distant marches.

It was accordingly decided to send two exploring parties to the Tibetan plateau and a third along a range of mountains to the east. Bogdanovitch undertook this last reconnaissance, Kozlof that into Tibet in an easterly direction, while I went

south. As the region I was about to enter was not only uninhabited but had never before been visited, and as nobody knew anything about it, I considered it unnecessary to take more than one man with me, my orderly, Sergeant Bezsonof. We started together with one pack-horse besides the two we bestrode.

For the first 60 miles, as far as Siu-bulak (the source of the Saryk-tuz) the ground was familiar. At Siu-bulak springs force their way to the surface and form a good-sized brook fed by the snows of Akka-tagh. It lies at an elevation of 14,500 feet; the only plant is a species of *Eurotia*, serving both for fuel and forage for the horses. Here we formed our depôt, leaving all spare things and enough provisions for our return journey, and taking with us only what was absolutely necessary for a five days' march. In this way we were able to lighten materially our horses' burdens. On the morning of the 31st we began the ascent of Uzu-tagh. The slopes were easy of ascent, the summit of the col flat and wide, with outcrops of schistose rocks continuing the whole way down the southern side of the mountain. The height is about 17,000 feet. On the south-west the snowy Kerian mountains were visible in the distance, and nearer our point of view a mass of slaty, weather-worn heights and ridges stretching to the east and north-east: from their midst rose an isolated range with three sharp peaks covered with snow. Due south stood a solitary, very high mountain, its summit wrapped in clouds and a snowstorm lashing its foot; in the foreground were other schistose, weatherworn ridges, connected with Uzu-tagh by a valley five miles long. Some of the higher ridges on the south-east continue a long way to the west as far as the river Keria. On the east and north-east they all fall away to the level of the plain. About 40 miles south-east from Uzu-tagh a lofty, steep spur detaches itself, covered, as far as we could judge, with freshly fallen snow.

Our direction was a little east of south, the north-east gale blowing behind us. Having gone 21 miles, and seeing the first little bushes of white willow, we halted for the night. The road we had come was exceedingly fatiguing for the horses, the elevation often exceeding 16,000 feet, and the soil being almost always composed of schistose strata tilted on edge. The ridges before us were even higher and of the same character, having all a north-easterly direction. The strata bore evidence of much distortion, lying either edgewise or completely turned over with a general strike from the north-west. There were no signs whatever of human habitation, neither did we see any animals except a few antelope in an exhausted, starved condition running towards the north, and so tired that they passed within fifty paces without noticing us. This gave us grounds for inferring that these animals had come a long way, and that the country to the south was equally barren and inhospitable. We also observed the skulls of a few yak, but saw none of their tracks. Probably these animals had also entered the country and perished. Our horses were in wretched condition, the driving snow affecting them more than anything. Though covered with felt they trembled like aspens. I had never before been in so wild and lonesome a desert, and felt that, carried away by my curiosity, I had ventured further than prudence would have dictated.

Nevertheless, the next day we continued to advance, crossing, after a few miles, the bed of a river flowing towards the Keria. It had very little water, and this only in places; but judging from the width of its channel, there must be a time when it becomes a raging torrent. The valley of this river has an elevation of 16,000 feet; there were a few little bushes of white willow half concealed below the soil. We now ascended to the watershed, finding it not much below 17,000 feet. Henceforward the drainage was to the south over the Tibetan plateau, and we soon came to a river flowing from west to east, and then south-east, at an elevation of 16,000 feet. Beyond it rose another of the slaty ridges, which we ascended and,

from its summit had a splendid view of the mountains, folding the Kerian river in their stony embrace, and stretching away to the south-east, and then suddenly falling away to the east, where they are interrupted by a wide plain, and break up into a number of small schistose ridges, continuing to the horizon. We could see for 20 miles to the south of us, as far as a distant ridge, the intervening expanse being filled with bare weatherworn heights and serrated ridges, all of one character. It was a monotonous, dreary landscape, devoid of human beings and animal life of any kind, with those everlasting dark, slaty ridges, worn by time and weather, all in one direction. The region is rainless, for there are no water-channels here, and the heights of the mountains are scored by the winds, not by aqueous agencies. The atmosphere is excessively dry, judging from the total absence of moss on the soil and rocks. Snow falls daily, but is swept away by the winds, and evaporated by the dryness of the air. Wherever drifts collect and thaw in the sun the ground is damp. We came upon no springs, lakes, or other natural reservoirs. The winds from the north-west and north-east blow with terrific force, mostly from 11 to 12 o'clock in the day, and at 8 in the evening—sometimes at night when the frost exceeds - 10° Centigrade.

We descended to bivouac, having marched 29 miles that day; having collected enough willow fuel to make a fire—we had brought our supply of water—we drank tea, and lay down to sleep, intending to begin our return journey on the morrow. It was indeed time to retrace our steps if we hoped to save our horses. The height of our bivouac was ascertained by boiling water to be 16,500 feet. In the morning our steeds looked very ill, though they had had enough to eat. At the eighth mile the one Bezsonof rode refused to go any further; hoping it might be only a temporary weakness, we halted and waited, but the animal became worse and died in an hour. We then continued our journey, Bezsonof being obliged to go on foot. The weather was fortunately better, and after marching 20 miles we halted by the side of a brook flowing towards the Keria; here we bivouacked. But great was our astonishment the following morning to find our pack-horse dead; mine was still alive, but it refused its corn. We were only two in this weird, death-like solitude, where probably no human being had ever set foot before. A long march lay before us, and on foot it is impossible to go far or long at these altitudes. We decided on throwing everything away, merely retaining our warm clothing, which we fastened on our one remaining horse, in order to have some protection against the cold at night, and our kettle to make us some tea; this and a little barley meal being our only nourishment. No other warm food of any kind passed our lips for four days. Shouldering our rifles we started on foot at 6.45 a.m. The difficulty of marching at these high elevations was increased by the sharp rocks over which we had to make our way, and the keen winds. The dreary aspect of nature too oppresses the soul. Our horse fell lame owing to the rocky ground; it lay down every half hour, and could hardly be forced to get up. In this way we advanced the whole of one day. It was with great difficulty we surmounted Uzu-tagh. Here, however, the nearness of our cache of provisions and the hope of reaching it infused new energies into our bodies; we actually ceased to feel tired and starved; even the horse seemed to take fresh courage and went better. But twilight overtook us half-way down the mountain, and stumbling along in the dark we only reached our cache at 10 p.m., having taken 15¼ hours to come 10 miles.

Our joy was great, and we soon forgot our fatigues as we caressed the good horse that had borne our warm clothing and been the saving of us. Cheerily that night we sat over our willow fire, a sufficient supply of this fuel having been left over from our last bivouac at this spot. Bringing forth our supplies from the hiding-place, we consumed them with the avidity of Pharaoh's lean kine. After the horse

had rested awhile we gave it corn, but it would not eat; we would have led it to the water, but it would not move its aching legs. We brought it water in our kettle and gave it to drink, and it was one o'clock before we lay down to rest, the night being warm and unusually starlit. . . . My waking slumbers were disturbed by the cries of widgeon flying to their feeding-grounds. When the sun woke me with its scorching rays, Bezsonof was still asleep, and the horse stood where we had left it at night. Its legs were still excessively stiff and tender, and it could not move them. I woke my companion, and we decided to cook our dinner and make a good meal before starting in the afternoon to march the 13 miles that remained to Kan-bulak. By half-past one we were quite ready to start, and were about to load the horse, when we perceived it could not move. We placed before it two days' rations of barley, and leaving everything behind except our guns, at 2 p.m. set out for Kan-bulak.

The march of the previous evening had left its effects upon us. Our limbs ached dreadfully and our heels were sore from walking over the sharp rock. But we went steadily forward, occasionally stopping to get breath, for the wind was right in our teeth. Half-way to the spring we saw antelope, probably the same we had met beyond the Uzu-tagh. But they had had time to rest, and would not let us come within range. We arrived at Kan-bulak about 6 p.m., and received a cordial welcome from the owner of one of the placers, the miners evincing great interest in us, and asking us a number of questions. At daybreak the following morning I despatched a letter to Colonel Pevtsof, informing him of my necessitous position, and begging that horses might be sent. Four of the miners volunteered to fetch our things left behind at Siu-bulak, and returned with them late that evening. But nobody would consent to go for those we had abandoned on the other side of Uzu-tagh, though I offered good pay; they all feared the great elevation and want of inhabitants, and declared that that country killed every living creature. From the 4th to the 8th June we were obliged to remain at Kan-bulak, the weather all the time being execrable. Daily storms of wind and snow prevented the miners from working, and compelled them to seek the shelter of their wretched shanties. On the 7th June the Cossack Bainof and Osman Khaisi (my guide to the river Keria) arrived, bringing us horses, and we lost no time in starting on our journey. I proposed to Osman that he should fetch the things left behind; at first he would not consent to go alone, but having found a companion in one of the boldest of the miners, he promised to bring them.

We were impatient to return home, and on the 10th arrived at Kara-sai where our companions were expecting us, and where we gave a full account of our adventures. Kozlof and Bogdanovitch had also returned; the former having gone 100 miles and seen a country very similar to that visited by me, and as impracticable for camels. Bogdanovitch had gone along the southern slope of the mountians to the Kona Pass. This, too, is very difficult on the northern side and unsuitable for camels. I had advanced 120 miles altogether, 46 miles south of Uzu-tagh, whence I had seen 20 to 30 miles further, that is to say, about 70 miles in all, and had ascertained that the country was impassable for beasts of burden. The enormous altitude and constant storms which had cost me two horses; the absolute want of fodder, and the rocky surface injuring even shod horses, render a passage in this direction impracticable. This country, it may therefore be assumed, will long remain unexplored by Europeans.

Taking into consideration all the information obtained by these reconnaissances and the complete impossibility for a caravan to advance in this part of Tibet, Colonel Pevtsof determined to try one more scouting expedition under his own leadership, in order to acquaint himself personally with this wild inaccessible country, and after-

wards to move the caravan by the road at the foot of the mountains to Achan and the Cherchend river to join Shestakof's depôt. Thence we shall march for Prejevalsky range by the route explored by me in spring, and dividing into two parties, explore this range and the country round it.

VSEVOLOD ROBOROFSKY.

GEOGRAPHICAL NOTES.

Mr. Theodore Bent's Expedition to Zimbabye.—Mr. Bent left England last Friday (January 30th) on his mission to explore the strange ruined buildings in the gold region of South-east Africa. An unfortunate error in our note on this expedition in the January No. of the 'Proceedings' escaped correction in proof. It is the Chartered South African Company (not the East African) which has interested itself in Mr. Bent's archæological and topographical exploration. This company and our Society have each contributed a grant of 200*l.* towards the expenses of the expedition.

The Zimbabye and other Ruins in Mashona-land.—We have received from Mr. E. A. Maund the following information regarding these famous ruins, which he has obtained from Mr. Phillips, in correction and amplification of the remarks made by him at the meeting of the Society on the 24th November last:*—Mr. Phillips was all over that part of the country in 1866, and was with Mr. Hartley the year after, and saw many old gold diggings near the hill which then first got its name of Hartley Hill. In 1868 he and Mr. Westbeach crossed the Hanyani and went down the Mazoe. In October 1871 he was hunting at the junction of the Ingwesi and Lundi rivers, when a letter was brought to him from Herr Mauch. It was not signed, but the writer reminded him of an adventure they had had together with five lions on the Mahalapsi, so that he might identify him. Mauch said he was living with a man named Renders (not Kinders), and was in a bad plight, having been robbed of everything except his papers and gun. He begged him not to bring a Matabele with him, as they were living among the Mashonas. Phillips went and found Mauch and Adam Renders, an American, living on the top of a kopje, a few miles south-west of the ruins of Zimbabye. It was a pretty place; a waterfall coming down from the ridges above fell into a pan by the hut, in which it disappeared, to come out again in a gushing fountain several hundred feet below—a cave of refuge being close by, with water flowing through it, to which they and their Mashona hosts could fly and barricade themselves in with a boulder of rock when Matabele raiding parties were afoot. Mauch told him of some ruins in the neighbourhood, and next day the party went to see them. It was really Renders who first discovered these ruins, three years before Mauch saw

* 'Proceedings R.G.S.,' *ante*, p. 20.