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Victor Dingelstedt ^a

^a Corr. Member R.S.G.S. ,
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THE SCOTTISH GEOGRAPHICAL MAGAZINE.

THE CAUCASIAN HIGHLANDS: A PHYSICAL, BIOLOGICAL,
AND ETHNOGRAPHICAL SKETCH OF SVANETIA.

By VICTOR DINGELSTEDT,

Corr. Member R.S.G.S.

I. PHYSICAL SKETCH.

THE Caucasus, which extends for a length of about 750 miles, and has a breadth from 70 to 150 miles, includes many high, longitudinal valleys, formed by parallel ranges, and drained by rivers flowing for some considerable distance in the same direction. In contrast to the Alps, where art and nature have contrived so many easy passes, the Caucasian Central range, with its lofty parallel chains, has but very few practicable *cols* and only one real carriage road. The few mountain passes are blocked in winter by snow and avalanches, and in no season of the year are they without their peculiar dangers. Thus the high valleys of the Caucasus have always served as an admirable abode and a safe refuge for those peoples who only desire to live in seclusion, preserving their ancient customs and ignorant of the world's affairs. Though, with the firm establishment of the Russian domination in the Caucasus, the isolation of these valleys is less complete, and the people are constrained by degrees to issue from their natural fastnesses and take some cognisance of what is going on in the wide world, yet the process is slow, the difficulties of road-making being still very considerable, and hence, even in our days, there are tribes who continue to live just as their ancestors did a thousand years and more ago, and who care as little about telegraphs, telephones, and railways as did the Jews in times of Abraham. The upper valleys of the Ingur and Tskhenis-Tskhali, constituting Svanetia, appertain to the

most secluded Caucasian regions, and their inhabitants may be taken as the fairest example of what a people left almost exclusively to its own material and intellectual resources becomes. For this reason among others, Svanetia merits the attention of the geographer and ethnographer, though, as a matter of fact, this attention has been very sparingly bestowed hitherto, and Svanetia still remains one of the least-known countries in the world. This high mountain region has a twofold interest—physical and ethnographical. Occupying the southern declivity of the highest part of the Central Caucasian range, it presents the largest development of glacial phenomena in these mountains; it is remarkable for its vegetable and animal productions, and it has many tectonic peculiarities and manifestations of subterranean energy interesting to the geologist. Ethnography finds abundant interest in a people who were renowned in the time of Strabo, speak a very peculiar language, have preserved some of the most ancient customs, and have fully experienced the inevitable but terrible consequences of isolation from the general movement of the world and the advance of civilisation.

Svanetia may be considered as a type of several Caucasian districts, situated in profound longitudinal valleys between high, rocky ramparts, across which as yet no roads have been constructed, and therefore necessarily shut off from light and knowledge. Such spots are favourable for the growth of ignorance and superstition, cruelty and barbarism, though they may perhaps also promote the development of some of the noblest human qualities—daring, courage, love of liberty, and enthusiastic patriotism.

I feel myself justified in presenting some account of Svanetia to the British reader, as no descriptions of this country in English exist, I believe; and as the subject is surely capable of exciting some interest, I shall dwell at some length on the physical nature of the country—for certain recent researches, undertaken by members of the Caucasian Section of the I. Russian Geograph. Society have revealed some facts quite unknown before. But I shall not neglect the inhabitants of Svanetia, who, though leading a miserable existence, victims of prejudices and ignorance, cannot but arouse sympathy in the gallant struggle for existence they maintain against so many odds.

Authorities.—The first account of Svanetia in modern times was written by Brosset in 1848 (*Rapport sur un Voyage archéologique dans la Georgie et dans l'Arménie*); eight years later it was visited by Bartolomey, in 1864 by Bacradze, and soon after by Abich and Radde. Twice it has been traversed by the Swiss geologist, Ernest Favre (*Recherches géologiques dans la partie Centrale du Caucase*. Genève, 1875); and five years later some investigations were made on behalf of the Russian Government, by a geological party. The glaciers of Svanetia have been studied quite recently by Zhukoff, and its folklore and songs by Akinfiëff. (*Sapiski Kavkasskavo Otdela*, 1894. *Sbornik materialof dla opissania mestnostei i plemen Kavkaza*. Tiflis, 1890).

Division.—Svanetia is situated between 43° 15' and 44° 30' N. latitude, and between 42° and 43° E. longitude. It is naturally divided

into two parts by a high mountain range, which runs almost parallel to the Central Caucasian range and separates the valley of the Ingur from that of the Tskhenis-Tskhali. The valley of the Ingur is in its turn divided by a transverse range, separating the Central range from Tetnult. Thus we have three parts:—the southern, along the upper Tskhenis, called Dadian Svanetia; the western, along the lower part of the upper Ingur, called Princely or Dadishkalian Svanetia; and the eastern, along the sources and upper course of the Ingur and its tributaries, called Free Svanetia. The last designation, retained even by Russians in our day, is due to the fact that the inhabitants of this part of Svanetia alone succeeded in preserving complete independence till the arrival of the Russians in 1859. And the yoke of Russia is still a very light one. In the system of Caucasian administration, Svanetia constitutes what is called a "Pristavstvo,"—the smallest administrative division, subordinated to a "District," some six or seven of which make up a "Gubernia," or "Government." Svanetia appertains to the Lechkhum District of the Kutais Government; only a "Pristav"—that is, a quite subordinate police functionary—resides within its limits, and accordingly it is practically independent.

Approaches.—The chief roads leading into Svanetia run along the course of the Tskhenis, and up the rivers Rion and Lajanuri; the former is a carriage road, which leads from Khoni to Lentekhi by way of Alpani and Tsagheri; the other leads from Kutais along the Rion up to Lailashi, and thence along the Lajanuri, the right tributary of this river, which here turns in a southward direction, up to the Rokal pass in the Dadian range, the southern limit of Svanetia. Both roads are very far from perfect, but the latter is in reality only a mountain track, accessible to courageous pedestrians and light-footed mountain horses, mules, and asses. In Svanetia itself there are really no roads, but only some tracks more or less difficult.

Area and Population.—Svanetia is some 70 miles in length, and from 15 to 20 miles in breadth; it has, therefore, an area of about 1250 square miles. Its population is variously estimated at from twelve to fifteen thousand.

Mountains.—On the north of Svanetia the Central Caucasian range forms a lofty rampart of crystalline rocks, covered with snow and glaciers, rent and crevassed into most fantastic forms, and without a single pass lower than 9850 feet. The principal summits of this chain, which so completely separates Svanetia from Cheghem and Uruschai—elevated countries on the northern declivity of the Caucasus and the eastern slope of the Elbrus, where the Malka and Baksam, affluents of the Terek, take their origin—are from west to east the following:—Tsalmag, Uzhba, Gwalda, Tetnult, Adish, and Namkwam. With the exception of Uzhba, estimated to be 15,407 feet above the sea-level, their altitudes have not been calculated. In Svanetia proper there are two parallel mountain ranges, the one dividing the valley of the Ingur from that of the Tskhenis,

the other on the southern limits of Svanetia, separating it from the Racha and Lechkhum. The former range, covered for the most part with perpetual snow, detaches itself from the Central chain near Naksagan, and forms successively the summits of Kurulash, Dadiash, Latpari, Gur, Lasul, Laila, and Lakhuri. There are many small passes across this chain, but the most frequented is that of Latpari, $5\frac{1}{4}$ miles west of Dadiash.

The second mountain range, skirting the upper valley of the Tskhenis on the south, branches off from the Central chain at Passim-mpta; it forms the water-shed between the Upper Rion and the Tskhenis, and is designated in its different parts by the names of Goribolo, Sagher, Rokal, Chitkhoru and others. Secondary or transversal ranges shooting out from the Central and lateral chains intrude into the principal or longitudinal valleys, the most noteworthy of which are those which divide the waters of the Adish and the Khalde on the one side, and those of the Adish and Mulakh on the other. The latter is an offshoot from the Tetnult, a grand mountain resembling Mont Blanc. While the Central chain on the north of Svanetia maintains its south-easterly direction, the two parallel ranges already referred to follow parallels of latitude, and the two valleys thus enclosed widen considerably at their western ends, where, possibly, there may have been lakes in former times. The mountains of Svanetia have been little explored. Russians and Caucasians are not much addicted to mountain climbing; and it must be admitted that the difficulties met with here are far more formidable than those encountered in the Alps, owing not only to the character of the mountains, but still more to the wildness of the country, and the barbarous condition of its inhabitants.¹ In spite of these obstacles, an Englishman² attempted in 1888 and 1890 to ascend the Uzhba, the name of which signifies "monster," and which is easily distinguished by its awkward and ungraceful outline. This attempt was only partially successful, the daring Englishman, if the popular accounts of his expedition may be trusted, reaching only a saddle between the two summits after four days of immense toil on the glaciers. I regret to say that such enterprises excite little sympathy among the majority of even educated Russians, being looked upon as a phase of English eccentricity.

Rivers.—The two principal rivers that drain Svanetia have been already mentioned, namely, the Ingur and the Tskhenis-Tskhali. The Ingur is formed by the union of three glacial torrents descending from the most elevated of the longitudinal valleys on the south side of the Central chain, between Elbrus (18,519 feet), and Adai-Khokh (15,239 feet), and called the Kwirishi, Jalai, and Medan. The first is the largest of these headwaters, and descends from the Naksaghara (8813 feet), a mountain connected with the Central chain by the western spur of the Kurulda, called the Lesghara. This ridge skirts the Kwirishi on its right bank, dividing it from the Jalai, which descends from two glaciers lying on the slopes of the Shkara and Namkwam. The Medan issues from the glacier on the Ugva, which connects the Naksaghara with the Mesghar.

Beyond the confluence of these streams, the united Ingur takes a

¹ *Journey in Svanetia*, by Akinieff. (*Sapiski Kavkasskaro Otdela*, vol. xvi. p. 108.)

² Mr. T. G. Cockin.

westerly direction for some 35 miles, receiving on its right bank the waters of the following tributaries:—Chalakh, Khalde, Adish, Muzhal, Mestia (or Mulkhra), Becho (Dodra) or Shturg, and Nakwa or Nakra. The Chalakh issues from the glacier Tiuber, and the two following affluents from the glaciers Shkara and Gutum-tau, their watershed being formed by the Karetta and Jukmer, transversal ranges attaining 9696 feet in altitude. The rivers Muzhal and Mestia spring from the glaciers Tiuber and Gwalda, while the Becho and Nakra originate from those situated on the southern slopes of the Uzhba and Ulukol. The watershed between the Mestia and the Becho is known as the Baal mountains. The directions of all these upper affluents of the Ingur are inclined at a small angle to that of the river, and the beds of the stream are for the most part deeply excavated. There are but few and unimportant affluents on the left bank of the Ingur.

After the confluence with the Nakra, the river turns, near the village of Pari, to the south-west, leaves Svanetian territory, and after passing through a very narrow and profound rocky defile, some 40 miles long, enters the Mingrelian plain at the confluence of the Eight, near the village of Jvari. Along this part of its course the Ingur receives on its right side the Sunturi and Nenskra, the latter named in its lower course the Chuber. It is the meridional range Larak, separating the basins of the Nakra and Nenskra, which, approaching the bank of the Ingur, forces it to change its direction and enter the narrow defile, one of the most picturesque scenes in Transcaucasia. On emerging, the Ingur pursues its further course in the same south-westerly direction for about 40 miles, as far as Anaklia, where it winds slowly to the Black Sea through marshy and malarious ground. Its tributaries on the plain are the Tarak, Khube, and Eight on the right, and the Khaisht, Tsiskwa, and Natsiskwil on the left.

The valley of the Muzhal, in which are situated the communes of Muzhal, Mulakh, and Mestia, is the most beautiful and most thickly populated in Svanetia.

The second river of the country is the Tskhenis-Tskhali, or "horse river," probably so named on account of its swiftness; it is formed by three streams, the Tsena on the north, issuing from the glacier Kuruldu; the Lapuri on the south-east, from the glacier of the same name, both on the Central chain; and the Mashkhara, on the north-east, flowing from the glacier of that name. This river follows in general in a westerly direction, cutting its way through the mountain chain which, higher up, separates its basin from that of the Upper Rion, of which the Tskhenis is the most important tributary.

The chief tributaries are the Morghul and the Lefsher on the left bank, and on the right the Kheshkur, Mokhshut, and, most important of all, the Cholchula. After receiving the last-mentioned, the Tskhenis turns southward and enters the territory of Lechkhum by a narrow defile. At Muri, some 8 miles farther down, it diverges to the south-west, and, flowing some 45 miles farther in the same general direction, enters the plain of Mingrelia near Khuntsi, and joins the Rion near Orpiri on the Batum and Tiflis railway.

All the rivers of Svanetia are true mountain torrents, with very impetuous currents, and are generally full of water, though occasionally low. They break with their uproar the dead silence of the solitudes, work destruction on their way when swollen and violent, and fall in many magnificent cascades; they are of no use for navigation, even by rafts; but in the distant future they may furnish motive power for industries which at present are not even dreamt of.

Glaciers.—There are also in Svanetia many glaciers, and, indeed, as recent researches have revealed, the glacial fields and streams, though generally receding, are far more extensive in this part of the Caucasus than was formerly supposed. Some glaciers descend as low as 7500 feet above sea-level, that is, considerably below the limit of birch, sorb-apples, and rhododendrons.

The principal glaciers, in order from west to east, are the Tiuber, Tsanner, Adish (*alias* Lerkha or Lardkhat), Kkalde, and Chkhkar. The Tiuber or Tviuber descends from the western flank of the Tetnult, a fine mountain, about 15,000 feet high, which also bears the Tsanner and Adish. In its upper part it is named Lychat, and in its middle course Dsynam. Its total length is about 6 miles, its breadth in its lower part 340 to 1000 yards, and its mean thickness, where it terminates in the valley of the Muzhal at an elevation of only 6664 feet, 49 yards. It takes at first a westerly direction, then turns abruptly southwards, forming a cascade, and in its middle course moves south-westwards, afterwards bending to the south down to its foot. It has a number of tributary glaciers, of which the following deserve mention:—the Laskhedar, on the east of Bashil-tau, a mile and a half long by 330 yards broad, with a cascade 160 yards high; the Iret and Tot, descending from the Gwalda, the former one and a half miles long and 300 yards broad, while the second is only half as wide and about a mile long and terminates in a splendid cascade 460 yards high; the Amashi and Seri, on the western side of the same ridge, two miles long by half a mile broad, and two and a half miles long by 620 yards broad, respectively. But the greatest of all the tributary glaciers of the Tiuber is the Kitlot, almost as long as the main glacier itself, and about 660 yards broad. Its upper part is surrounded by an almost vertical wall of the Central chain, and it falls into the main glacier on its eastern side in a cascade 370 yards in height. The three first-mentioned glacial affluents of the Tiuber have no moraines, and the other three only lateral moraines, which, in the case of the Kitlot, have partly disappeared into crevasses. The Tiuber itself has some medial moraines composed of large boulders, which run at first parallel to one another, and then, converging to the left side, terminate in an enormous pile of stones and other *débris*, which covers also all the lower part of the glacier. There are few crevasses on the upper and middle parts of the Tiuber, but below its fusion with the Kitlot the glacier is rent by very numerous fissures.

The second important glacier of Svanetia, the Tsanner, also descends from the Tetnult, or, more exactly, from that part of it which is called Jamb, opposite the head of the glacier Bezinghi, or Ulu-Chiran, on the northern side of the Central chain. It has a very extensive snow-field

(*Firn*) at its origin, whence the icy stream descends over an easy declivity for about 4 miles, then flows into a defile between lofty vertical rocks, and falls in a magnificent cascade 440 yards in height. Then it takes a westerly direction, and continues on its course, with a slight fall, for about two and a half miles more, its average breadth here being 1100 yards, when it strikes against the hill Goghish-Zaghar, which deflects it southward into a narrow defile only some 320 yards broad, where accumulated masses of ice are jammed together and thrown up into the most fantastic forms, and produce strange thundering noises as they are forced through the gorge. After an eastward course of over 7 miles, during which it attains a maximum breadth of about 1100 yards, the Tsanner terminates at an elevation of 6840 feet above sea-level. Its bulk is increased by many secondary glaciers. At an altitude of 9524 feet it is joined on the left side by the glacier called Tsanner No. 2, coming from a mountain connecting Tetnult with the Central chain; this glacier is three and a quarter miles long and half a mile broad. Farther down, near its foot, the Tsanner receives the Nagheb, which comes from a ravine on the north-west side of Tetnult hemmed in by the ranges of the Pkarash and Lak-Chkhildar. The Nagheb is 4 miles long, with a breadth of 300 to 700 yards. The position of the lateral moraines, raised above the ice both of the tributaries of the Tsanner and of the main glacier itself, testifies to a considerable decrease of these glaciers in recent times.

The third glacier in the north-east of Svanetia is the Adish or Lardkhat (Lerkha); it is formed in a large *Firn*, situated between the mountains Adish (or Katyn-tau), Ghistola, and Tetnult, at about 13,594 feet above sea-level. Its upper part makes an exceedingly rapid descent, falling to the altitude of 8783 feet in a distance of only a mile and a half, while the lower section descends gently to 7448 feet above the sea. The length of the glacier is estimated at 5 miles; its upper part is almost inaccessible; it has lateral moraines lying far above its present level. The fourth glacier I have mentioned, the Khalde or Gheresho, flows in two branches from the Shkhara and the Janghi-tau, at a height of 8057 feet above sea-level. It is $5\frac{1}{4}$ miles long and of variable breadth—from 400 yards to nearly a mile. It runs in a broad valley, at first due south, then westwards, and finally makes a long curve to the south-west. It has, perhaps, receded even more than the other glaciers of Svanetia, and there are reasons for assuming that the decrease has taken place quite recently. I have mentioned only the glaciers in the north-eastern part of Svanetia, which have been lately investigated by M. Zhukoff, but there are also some not unimportant ice streams in the north-west, descending from the Uzhba and Gwalda, as well as some of smaller dimensions with their sources in the chain separating the basins of the Ingur and Tskhenis; but I can give no particulars about them. The Uzhba glacier, called Gull, is almost as large as the Tiuber. There are, besides, glaciers which have been neither named nor explored, as, for instance, the two seen on the way over the Becho pass, much frequented by the Svanetians. But on the whole it must be concluded that the development of the glaciers, though considerable, is less than might reasonably be expected in this latitude and in a country so elevated.

But the glaciers had formerly, and in times not very remote, a far greater extension, as is proved by the old moraines, which cover a very wide area.

Ancient Moraines.—Numerous moraines occupy all the lower slopes of the mountain Nuamkwam (Namkwam), the small glaciers of which feed, as we have seen, the headwaters of the Ingur on its right side. They are composed of crystalline fragments, including gneiss, mica-schists, and granite. The largest villages in the communes of Ushkul, Murkmeri, and Tsuviani or Chubiani, are built on the remains of old moraines. Farther down are seen immense accumulations of boulders and erratic blocks, which, becoming rare in the vicinity of the commune of Khal, again increase some half mile above the junction of the Khalde and Ingur valleys, where they cover both flanks of the mountains to a height of 600 to 650 feet. The bottom of the Khalde valley is for some miles below the glacier encumbered with huge blocks. The same deposits cover also the headland between the Khalde and Ingur valleys. From the confluence down to the village Bosrech detritus is almost entirely absent, but it reappears where the Adish joins the Ingur. Remains of moraines also extend to a great height on the sides of the Ingur valley near the village of Zvirmiki. The spur between the Adish and Khalde is covered on both sides with boulder-clay to a height of 1000 feet. This mountain mass is traversed by a steep road, passing the foot of the Adish glacier, and at its highest point affords an admirable view of the imposing masses of Tetnult, Adish, and Nuamkwam, adorned with their crown of glaciers. The spur dividing the Adish from the Mulakh valley is also covered with boulder-clay to a height of about 1000 feet above the present level of the glaciers. There is, therefore, every indication of a far greater extent of glaciation in former days than is found in our own. I do not venture to give any opinion about the cause of the general retreat of the glaciers; to decide whether cosmic influences are at work, or whether, as is presumed by some Swiss geologists, the mountains are gradually sinking where this phenomenon is observed, or to suggest any other cause. All these are moot questions, which demand for their ultimate solution a far larger number of observations than have been made up to the present.

Geology.—The geology of Svanetia is that of the Central chain itself. This interesting subject cannot, however, be treated fully, and I shall, therefore, only say a few words on some peculiar geological features of Svanetia. The whole range forming the northern boundary of the country, that is, the Central chain between Ollukaia and Adai-Khokh, is composed of granitic rocks closely resembling in their varieties the Alpine rocks, especially in containing protogine. The Uzhba is partly formed of very fine-grained granite, yellowish felspar and quartz being equally distributed, while fine plates of black mica are disseminated through the whole mass. The various white and greenish varieties of granite sometimes resemble syenite, and are sometimes gneissose, but are always more or less markedly fine-grained. Among the components of these mountains are to be found very fine syenitic gneiss containing

yellow orthoclase, black mica in abundance, some green mica and amphibole; syenite containing minute crystals of felspar and amphibole (or hornblende), and an abundance of pegmatite or graphic granite. On the south of the granitic zone beds of crystalline schist—gneiss and mica-schist—apparently underlie the granite, and crop out in a narrow band along the flanks of the Central chain. Farther southwards clay-slate and shales appear below the crystalline rocks, showing that a complete inversion of the strata has been produced by faults, subsidence, and powerful lateral pressure, the last being an agency which had exercised a most marked influence on the orographical conformation of the whole southern declivity of the Caucasus.

The Ingur has excavated its bed along an anticlinal ridge of clay-slate, dipping north and south. These slates are of a deep grey colour, often very dark, and have usually a silky lustre, though occasionally they are dull; frequently they are very compact, and capable of being split into large laminae. In many places, especially the Adish and Khalde valleys, are intercalated beds of lighter coloured calcareous slate, and also some arenaceous beds. The argillaceous slates contain a large quantity of pyrites, and are traversed in every direction by veins of milky white quartz one to three feet wide. Scarcely any fossils have been discovered in these sedimentary rocks, and of the few that have been found only a fucoid, found by E. Favre, has been identified and classified by him under the genus *Bythotrephis*. Consequently the age of these rocks is still a subject of controversy; according to Abich, they pertain to the Lias, whilst E. Favre believes them to be of more ancient origin. There is as yet no definite knowledge of the age of Caucasian rocks, and no serious efforts have been made to establish their relation to the rocks of Europe.

The upper valley of the Tskhenis is sunk in shales and clay-slate of dark greyish tint. Some of the layers are soft and split easily into thin laminae, while others are quite hard; others again break into longitudinal fragments. The general dip of the beds is north-north-east.

Of the tectonic, or structural, features of these mountains I can say but little. It has only been ascertained with certainty that the strata exhibit a great variety of arrangement, that every kind of fold and flexure is to be found among them—a complete inversion of the beds having been caused in some cases—and that in the pass of Latpari, for instance, a remarkable fan-like construction occurs.

Minerals.—The mineral wealth of Svanetia has not yet been fully investigated, but its auriferous rocks were famous in very ancient times. The Ingur valley has the familiar type of Alpine valleys between dislocated rocks, being long, narrow, and profound, with steep, almost perpendicular, sides. Owing to the steepness of its banks and the rapidity of its current in the upper section of the river, alluvial deposits are rare, being only found at the bends and at the confluences of tributaries. On the upper Ingur the place where these deposits are most extensive is near the confluence of the Eight in Mingrelia, and is called Tkabednieri. Boulders of milky white quartz, calcareous gravel,

fragments of granite, diabase and diorite, breccia, conglomerates, and porphyritic greenstone are here collected. Crystals of quartz, occurring only sporadically at the confluence of the Ingur and Sunturi, become more frequent towards the source of the river. Along the middle course, outside Svanetia, the alluvium consists principally of fine-grained sand interspersed with granitic fragments and an abundance of black and white mica. Gold in very fine scales and grains is occasionally found here, but it is naturally more abundant in the quartziferous deposits near the sources of the Ingur, where nuggets and veins of gold have been found. The quartz veins, abounding in the argillaceous shales which are the prevailing rock in the Ingur valley, may be justly called auriferous. In the Svanetian mountains occur also deposits of yellow or copper-pyrites, and half-way up the Latpari pass, the summit of which is among schists, are found iridescent shales besprinkled with small granulated crystals of iron pyrites. Other mineral wealth undoubtedly exists in the country, but it can only be investigated and exploited when good roads have been made and the country has been rather more civilised.

Climate.—No regular meteorological observations have been taken, but it may be said that the climate is characterised by a long and cold winter and a short, rainy, and very hot summer. The amount of the annual rainfall in this western part of Transcaucasia must be very considerable, and, to judge from observations recorded in certain similarly situated parts of the country, is probably rather more than 84 inches, or more than double the quantity that falls on the Lake of Geneva.

II. BIOLOGICAL SKETCH.

Flora and Natural Productions.—As regards the Svanetian flora, the extraordinarily luxuriant vegetation in some of the lower and sheltered valleys, at an altitude of 4500 to 5000 feet, is very remarkable. By some authorities the mean elevation of Svanetia is estimated at about 6500 feet; and though this estimate is probably exaggerated, the mean can scarcely be put much lower than 6000 feet. But, in any case, the astonishing exuberance of the vegetation in some parts of the country cannot be attributed solely to favourable climatic conditions, such as humidity and sheltered situation; it is also, and to a great degree, due to the exceptional richness of the soil, composed to a large extent of the remains of plants that have grown on the same spot through many thousands of years. Underneath the living forest there is a dead forest; at every step one sees and touches immense trunks which fall and sink gradually into the earth, after having supplied the means of existence to innumerable generations of epiphytic plants—ferns, mosses, lichens, and fungi. A similar process goes on in the pasture-lands, where the tall grasses, rarely disturbed by flocks, fall after every season and restore to the earth the necessary materials for a future revival. The vegetation is at its best in the latter half of July and the first half of August.

It is difficult to give a very exact account of the Svanetian flora, botanical geography being in its infancy in the Caucasus, but its chief characteristics may be gathered from the researches of some Russian

explorers, Akinfiëff, Alboff, Dinnik, and others, published by the Caucasian section of the I. R. Geog. Society, and still better from those of Dr. Levier, a learned Swiss, who visited Svanetia four years ago, and published an excellent account of his journey in the *Bibliothèque Universelle*.¹ To begin with the forests, we find that Svanetia, in happy contrast to the eastern part of the Caucasus, is still rich in dendritic vegetation. The species of trees change naturally with the altitude, but the most widespread forests are of *Coniferae*. Between Lentekhi and Cholur, where the valley of the Tskhenis is contracted by a mountain spur which forces the river to turn at a sharp angle, the promontory is completely covered with pines as tall as are to be found anywhere, being more than 165 feet in height, or about as large as the celebrated Norfolk Island pines. These are Norway pines, which in other parts of the country give place to *Pinus orientalis*. The glades in the magnificent forest bordering the right bank of the Tskhenis abound in *Helianthus* (*Telekia*), and thick clumps of teasel (*Dipsacus strigosus*), as tall as a man, dispute the possession of the ground with the *Erigeron* of Canada. Gigantic male ferns (*Lastrea filix mas*) shoot up enormous rings of fronds to a height of 7 feet, recalling to mind the ferns of the Tropics. Here also grows in abundance *Paris incompleta*, a characteristic Caucasian plant belonging to the natural order *Trilliaceae*. Just above Cholur, on the ascent to the Tetnar, there is a zone of brushwood—rhododendron, eglantine, hazel, apple, buckthorn, and sorb-apple—after which come tall green forests, where willows, yoke-elm, and aspens are mingled in confusion with huge beeches festooned with white threads of *Usnea* or tree-moss. The finest forests grow in sheltered situations on the banks of the Mestia; here the common box-tree (*Buxus sempervirens*), ilex (*I. aquifolium*), walnut, etc., are seen. The birch, which attains its full natural height in the lower valleys, gradually shrinks at higher latitudes and becomes a dwarf bush. Norway pines appear at first isolated, and as the elevation of the ground rises collect into larger and larger groups. Two thousand feet above Cholur blue and white aconite, as high as a mounted man, grow in large patches in the glades among the pines, and great numbers of plants belonging to many different families shoot up between the straight stems, and struggle towards the light, sending up as high as possible their inflorescence, whether in the form of umbels, panicles, cymes, spikes, or corymbs. In other glades the ground is carpeted with a medley of forms, chiefly a species of groundsel (*Senecio platyphyllus*) and Alpine sorrel, while above them an ashy-blue campanula rears its bell, and a scabious, 10 feet high, its large yellow flowers.

The *Coniferae* predominate, in general, on the northern and eastern slopes, while trees with full leaves prefer southern and western aspects. The limits of all species are lower on the Asiatic side of the Central chain than on the northern side, the difference in the upper limits of vegetation being about 2000 feet; but this difference gradually disappears towards the eastern extremity of the range. Walnuts grow in Svanetia to an altitude of 5400 feet, vines and white mulberry to 3280 feet, the latter

¹ This account has been reprinted as a separate work under the title *A travers le Caucase*, with numerous illustrations, and is published by Attinger of Neuchâtel (1895).

attaining 40 or even 50 feet in height, with a diameter of 2 feet. Large limes and ash-trees grow at 4100 feet above sea-level. The upper limit of dendritic vegetation is considered to be about 7000 to 7500 feet; of shrubs, such as rhododendrons, 8500 feet; while pasture-lands extend up to 9000 feet.

The forests are exploited in the most wasteful and careless manner. Whenever a wood is found on a gentle slope leading down to a stream or river, wholesale destruction is at once commenced, the trees being felled and allowed to roll down into the current, which carries them to their destination. The first trunks are rolled down with some difficulty, but they soon plane down the declivity, and form a smooth slide, so that before long the ground is stripped of its covering. Some of the trunks naturally sink into the mud, where they are left to decay gradually, while others, swept aground by the current, are likewise left to perish. But all this waste is of no consequence in the eyes of the reckless Svanetian; he feels certain, if indeed he ever thinks about the matter at all, that there is enough wood for himself and his immediate descendants.

I have already mentioned some species of brush or underwood, of which there is such abundance in the forests, but before passing on to speak of the pastures, the principal source of wealth, as the country is eminently adapted for cattle-breeding, I should like to state that among the small plants are many representatives of the natural order of *Compositæ*, as *Carduus* (thistle) and *Mulgedium*; of *Vacciniaceæ*, as Caucasian tea; of *Grossulariaceæ*, as *Ribes rubrum*; of *Actæa*, as baneberry; of *Leguminosæ*, as *Psoralea acaulis*, etc.

Of the various herbaceous plants of Svanetia it may be interesting to record the following:—a variety of *Campanula latifolia* of a dark blue colour, and of larger size than the common species; a gentian, with a lilac corolla dotted with black spots; *Inula grandiflora*, somewhat like alder; *Pyrethrum*, or feverfew, with white umbels, as high above the ground as a man; a yellow lily (*Lilium monadelphum*), the bulbs of which are exported to England. These lilies are distributed over the whole Caucasus, and are seen on high pastures, of which they constitute the most charming ornaments. At higher elevations (6500 to 7000 feet) may be seen rose-coloured starwort, betony, lousewort (*Pedicularis*), the *Anthemis* of Bieberstein, stonecrops, and houseleeks of a hundred varieties, etc.

It should be noticed that many herbaceous plants of known species, as, for instance, groundsel, aconite, *Mulgedium*, *Cephaelis*, etc., attain in Svanetia, as well as in Abkhazia and some other parts on the eastern shore of the Black Sea, an inordinate size. They might be all classified under a new genus called *Macroflora*. This unusual size must be considered, according to Dr. Levier, a heritage from very remote times, a reminiscence, as it were, of the Carboniferous age. A certain number of types characteristic of the large ancient flora have survived in the Caucasus, thanks to exceptionally favourable conditions of climate and soil, while the rest of their genera have perished. It would certainly be interesting if one could determine exactly how far this characteristic flora has remained unmodified, and could distinguish between its essential elements and those which are merely accidental or foreign to it.

In the upland pastures, where these large plants are especially abundant, we found, among others, the following interesting species:—speedwell, with blue flowers and *Telephium* leaves; lady's mantle (*Alchemilla sericea*), which here takes the place of the *Cerastium* of the Alps; *Centaurea macrocephala*, *Primula grandis*, and an unknown species of primrose. This is a very beautiful plant; out of a cluster of green leaves, resembling those of the barren strawberry, shoot up straight stems, 30 inches long, crowned with umbels composed of 30 to 40 pedicels. At an altitude of 9000 to 9300 feet grow *Corydalis*, with beautiful violet flowers issuing from a long conical tube, the *Potentilla* of Ruprecht, *Cerastium* of many species, *Ranunculus Svanetica*, and a very curious speedwell with *Telephium* leaves.

Rocks and clefts have a vegetation of their own; here flourish, among other plants, *Saxifraga cartilaginea*, *Umbilicus oppositifolius*—a rare species—*Valeriana saxicola*, *Atropa Circea*, or enchanter's nightshade, and other peculiar varieties of low vegetation. To the above may be added numerous cryptogams, very abundant also in the forests—ferns, mosses, and fungi. The green cryptogamic flora of Svanetia, as, indeed, of the whole Caucasus, is more closely connected with that of European woods than with that of the Mediterranean region. Here, however, it is more luxuriant and more brilliant in colour, though, as far as can be judged from very incomplete observation, it contains fewer species. Dr. Levier, who has paid particular attention to cryptogams, calculates that about 400 species of moss grow in the Caucasus. Among cryptogamic plants there is a peculiar fungus, *Exobasidium*, which grows in huge reddish-yellow masses on rhododendrons and other shrubs, glueing together the extremities of the leaves and twigs, and bending down the branches with its weight. Of mosses, the *Neckera*, with its glossy leaves, and a liverwort, called *Porella*, are worthy of notice.

From among plants that thrive best near glaciers, we may select the willow herb of Dodoens, with silvery leaves when young, yellow crocus (*Scharojani*), yellow clover (*T. rytidosemium*), a pink vetch, *Rosa glutinosa*, the Caucasian honeysuckle, a glandular and glabrous brier, the fly-trap with its round-bellied calyx, wolf's claw with juniper leaves (*annotinum*), etc. Of phanerogamic plants, of which there are supposed to be about 4000 species in the Caucasus, I may mention a bitter vetch (*Orobis*), with orange-coloured flowers, *Aristolochia* or birthwort, with neither flowers nor fruit and singularly large leaves similar to those of the cyclamen of Naples. A new species of *Veronica* (*V. Svanetica*) of large growth and with sessile flowers, a globe-flower (*Trollius patulus*) white orchis, wild orange poppy, dark fritillary and white *Ornithogalum* have also been found.

It only remains now to say a few words concerning the cultivated plants. The chief cereals are wheat, rye, oats, and barley. The last is most esteemed, and is made into bread, with an admixture of beans, cheese, and wheat. The rye is chiefly used for the distillation of a very unwholesome arrack. Millet, tobacco, and a rare species of flax (*L. hypericifolium*), with large flowers three feet and a half above the ground, are also grown. Svanetians are great smokers, but their tobacco is of inferior

quality, and its consumption is further restricted by the rather heavy duty imposed by Government. There is little to be said about Svanetian husbandry, for it is of a very primitive description, and notwithstanding the sparsity of population and the extraordinary richness of the soil, famine consequent on a failure of the crops is of frequent occurrence. There is no rotation of crops, and the fields are never allowed to lie fallow; most of the ground is reserved for pasture. According to official statistics, which must, however, be accepted with caution, in eleven communes of Svanetia only 177 tons of grain are sown annually, which, taking the return as ninefold, will yield 324 pounds per head of population.

Animal World.—While the phytological geography of the Caucasus has been very inadequately studied, still less can be said of the progress of zoological geography. Science there is under official control, to the exclusion of private competition, and small results and a mere semblance of knowledge are apt to be accepted as satisfactory progress. The men who are commissioned by the government to prosecute scientific research have, it is true, in the majority of cases, passed through the regular courses of study and obtained their diplomas, but the knowledge obtained from school manuals is exclusively theoretical and often very superficial; and as no university or other learned body controls and verifies the official reports, these often contain a quantity of incongruous matter, erudite in appearance and bristling with obtruse scientific terms, but conveying no solid information on the subject.

There is probably no essential difference between the fauna of Svanetia and that of the higher Alps, as only in the South-Eastern Caucasus are distinctly Asiatic representatives of the animal world to be found, such as the tiger and panther. The mouflon (*Ovis musimon*), argali (*Ovis Ammon*), and aurochs (*Bos urus*) dwell here, as well as the chamois (*Antilope rupicapra*), roebuck (*Capreolus caprea*), a goat very like *Capra agagrus*, wild boars, beavers, and weasels, quail, grouse, moor-hen and blackcock (*Megaloperdix Caucasica*). Other birds worth mentioning are the yellow-hammer and ortolan (*Emberiza citrinella* and *hortulana*), the butcher-bird (*Lanius collurio*), finches (*Fringilla coelebs*, *nivalis* and *spinus*), the swallow and house-martin (*Hirundo rustica* and *urbica*), the grey wag-tail (*Motacilla alba*), the shore lark (*Alauda alpestris*), a warbler (*Accentor alpinus*), the thrush and bullfinch (*Pyrrhula erythina* and *rubicilla*). The number of birds of prey, such as eagle, vulture, hawk, kite, buzzard, and owl, is considerable.

The cold swift streams of Svanetia contain excellent trout (*Salmo trutta* and *fario*) and *Cyprinus mystaceus*.

The insect world is remarkably abundant, especially the order of *Coleoptera*. Specimens of the following genera and species have been observed:—*Prionidae*, *Hamotoceras*, *Buprestidae*, *Melolontha*, *Lucanus*, *Mordella*, *Cryptocephalus*, *Clythra*, *Nebria*, *Strangalia*, *Leptura*, *Cetonia* (*C. aurata*), *Cerambyx*, *Lampyrus*, *Orthoptera*, *Hister* and *Ontrophaga*. Flies and lice are innumerable, gadflies and mosquitoes being excessively troublesome. Among the butterflies are met with the famous *Apollo* and also members

of the genera and species *Argynnis*, *Doritis*, *Zygæne*, *Hipparchia*, *Geometridæ*, *Colias*. There are also several snakes, among them the viper, *Pelias berus*.

But of far greater interest are the domestic animals, especially those of the bovine order, for, as already stated, the Svanetians are eminently a pastoral people. Svanetian cattle are noted in Western Transcaucasia for their superior qualities. There are two principal breeds; one is small, but active and lively, firm on its feet, and able to climb the steepest paths; the other, strong and solid, with peculiar hair like a tiger's, has been introduced by Tartars from the Ukraine. Unfortunately both breeds are equally subject to frequent attacks of foot-and-mouth disease, pleuro-pneumonia, etc., which work terrible havoc among them, as also among the sheep, goats, and pigs. Svanetian sheep, all broad-tailed (*Ovis laticauda*), are also highly prized. The Svanetian is a great consumer of mutton. The horses are few, and are used only for riding; they are of light build and hardy. The mules and asses, also used to a great extent for riding, are considered as the best of Caucasian breeds.

While speaking of domestic animals, we must not forget the dogs, genuine sheep-dogs, useful and very faithful to their masters, but extremely ferocious to strangers; they are really dangerous to travellers in Svanetia, for they will furiously attack even horsemen, and are more feared than wolves and bears. The danger is the greater because the proprietors are strongly inclined to resent any serious injury to their dogs, even in legitimate self-defence. The Svanetian is terrible when roused to anger; but of this, as well as of his more amiable qualities, I shall speak in the next and concluding part of my article.

III. ETHNOGRAPHICAL SKETCH.

Origin and External Appearance of the People.—The Svanetians are of ancient origin, and were formerly a powerful people. Strabo, in his *Geography*, speaks of them as courageous and warlike, and as living near Dioscurias. They are far more powerful, he says, than the Phtirophagi, and also more unclean; "their courage is above that of all other peoples." Their territory in former times was certainly far more extensive than at present; they dwelt to the end of the fourteenth century principally in the upper valley of the Rion, whence they constantly menaced the more peaceful people of the plain. But most of old Svanetia was at last conquered by the Mingrelian princes, and the majority of the people had to seek refuge from Mingrelian oppression in the almost inaccessible regions of their present abode. The Svanetians of to-day are, therefore, mostly descendants of fugitives and malcontents from the upper valley of the Rion and other parts of Mingrelia and Georgia. Their relation to those kingdoms may have been approximately of the same nature as that of the Ukraine Cossacks to the Russian princes, when the latter began to establish order in their dominions. The Svanetians who established themselves in the upper Ingur valley were especially successful in their endeavour to keep themselves free from a foreign yoke; for, whilst the inhabitants of the upper Tskhenis-Tskhali submitted to the princely house

of the Dadiani, and those of the lower Ingur were forced to acknowledge the supremacy of the Dadishkaliani, they alone remained practically independent, and even now, though completely subjugated by Russia, they rejoice in the title of "Free" Svanetians.

The majority of the present inhabitants of Svanetia are, accordingly, of Kartvelian, or rather Mingrelian, origin, though the race has been mixed with a number of other nationalities; Jews and Tartars also live among them. On the whole, they are not prepossessing in appearance, having a somewhat short stature and irregular features. By some writers they are described as positively ugly and unkempt, with heads generally mesocephalic or brachycephalic, and small blinking eyes, and not unfrequently rendered still more hideous by several enormous folds of flesh produced by goitre, to which they are often victims. They have maintained their old reputation for uncleanness, and, in this respect, contrast strongly with their handsome Mingrelian neighbours. The women are usually plain, thin, dull, and apathetic, but they differ considerably according to the tribe, or even commune, to which they belong.

Language.—There is still much controversy about the Svanetian language. Caucasian philologists place it, with Georgian, Mingrelian, and Laza, among the Kartvelian or Iberian group, which with half-a-dozen other, mostly unwritten, idioms (Abkhasian, Ubykh, Cherkessian in the western, and Lesghian, Talysh, and Chechen in the eastern, part of the range) constitute the so-called Caucasian languages, apparently quite distinct from all other languages in the world. The relationship between the various languages of the Kartvelian group has not yet been accurately determined, for it is only quite recently that, thanks to the efforts of M. Yanofski, chief of the Caucasian Department of Public Instruction, the necessary material for investigation has begun to be gathered in. Even the classification of Svanetian in the Kartvelian group is far from being generally accepted, and there are eminent specialists, such as the historian Brosset, who positively deny its correctness. M. Zagarelli, Professor of Georgian at the University of St. Petersburg, after a comparative study of the Kartvelian languages, has come to the conclusion that the etymological forms of Svanetian have a very remote connection with those of other members of the group. Indeed the relationship of this group itself remains an enigma, some philologists including it in the Aryan family, others in the Semitic, while others again assign it some unknown source (perhaps Kushin¹). The Svanetians cannot understand Georgian, and certainly their language is nearer akin to Mingrelian, though it contains many words of a totally distinct origin. It is very guttural and has few labial sounds. Greatly to the credit of the people who speak it, the language contains hardly any terms of abuse, contrasting in this respect with Russian and English. Baron Usslar, who has rendered such signal service to the philology of most Caucasian vernacular languages,

¹ There are reasons for believing that the Colchians were for long in intimate connection with the Georgians. These Colchians, who occupied large tracts on the southern shore of the Black Sea in pre-Hellenic times, are supposed to have been of Kushit or Turkmanian origin.

has made a transcription of Svanetian, which has no alphabet of its own, in Georgian characters, which he considers the best for literary purposes, and this transcription has since been transliterated into Russian, with the retention of some Georgian characters. In Svanetian 37 sounds are distinguished, of which 8 are vowels and 29 consonants. Among the latter are 7 hard guttural sounds, 3 dental, 3 sibilant, 3 labial, 1 labio-dental, 1 soft palatal, 1 aspirate, 2 liquids, 1 labio-nasal, 1 dento-nasal, and, lastly, 6 double consonants, such as *ts*, *ch*, *ds*. Among the vowels, besides the ordinary *a*, *e*, *i*, *o*, *u*, there are two modifications of *o* and a sound resembling the English *w*, but there is nothing to correspond with the Russian бИ (*y*).

To give some notion of the character of the language I here subjoin a dozen Svanetian names of common trees :—

<i>Ghoghib</i> ,	Pine.	<i>Baghura</i> ,	Willow.
<i>Ghunnar</i> ,	Fir.	<i>Tskumra</i> ,	Elm.
<i>Dshkheru</i> ,	Juniper.	<i>Bizikh</i> ,	Pear.
<i>Kvari</i> ,	Rose.	<i>Boelkoesk</i> ,	Alder.
<i>Tsipra</i> ,	Beech.	<i>Geokiora</i> ,	Birch.
<i>Shtukhund</i> ,	Hazel.	<i>Jigra</i> ,	Oak.
<i>Zhelkhura</i> ,	Aspen.	<i>Kwich</i> ,	Chestnut.

Religion.—Christianity was introduced into Svanetia at the same time as into Georgia, that is, in the middle of the fourth century; and during the long persecutions which the adherents of that creed endured at the hands of the disciples of Zoroaster, and afterwards of the Mohammedans, the glens and gorges of Svanetia served them for a place of refuge. Consequently a number of churches were constructed there, which are of deep archæological interest as showing the spirit which animated the ancestors of the present inhabitants of the country, whose religious zeal has considerably abated. Though Svanetians affirm that they have been baptized by Christ himself, they care little for Christianity, and much prefer the religious rites sprung from ignorance and an undefined dread of the powers of nature, which they have inherited from numerous other tribes. Though nominally members of the Greek or Orthodox Church, and though their spiritual needs are provided for by officially appointed Georgian popes, who chant the mass in their own language which is not understood by their flocks, the Svanetians do not as a rule baptize their children, do not frequent the churches or partake of the Holy Communion, save on their death-beds, nor keep in their churches sacred images like their orthodox brethren. These are replaced by a number of mouflon and argali horns. Other sacred objects contained in the churches are brazen trumpets, which formerly served the purpose of bells, but now are used only on solemn occasions. The religious edifices themselves are poor and small hexagonal or octagonal buildings, with a narrow lancet window-opening at the eastern end, and a low door in the opposite wall, and cannot hold more than a score of persons besides the priest. Perhaps the smallness of these chapels is the reason why women are rigidly excluded except at weddings. The Svanetian clergy are a poor and ignorant caste, whose sole privilege is exemption from the

terrible laws of vendetta. The Svanetians have preserved from pre-Christian times the practice of sacrificing to divers malevolent and benevolent spirits in order to bring about the success or failure of any particular enterprise; they venerate the Holy Virgin, and, in common with most Asiatic peoples, dread above all things the displeasure of the spirits of their deceased relations and friends. Naturally idle and improvident, owing to ignorance and the depressing effect of a cold climate, they are ready enough to observe the holidays sanctioned or enjoined by religions other than their own. They scrupulously abstain from work on Sundays, Mondays, Fridays and Saturdays, but, in spite of this, they do not keep on very good terms either with the Jews, who inhabit some communes in the Tskhenis valley, or with the Tartars on the northern slope of the main chain; with the latter, indeed, who perhaps have encroached on the Svanetian lands, they are in constant feud.

The Svanetians firmly believe in the existence of the soul after death. The soul is supposed to reside in the house of the deceased for at least a year after death, and to require during that time everything the body was accustomed to in life. Therefore the relations after every repast place some remnants of food in the darkest corner of the room, with a glass of brandy and a pipe of tobacco. These pious offerings are afterwards consumed by the children. In direct opposition to the views of many Christian peoples, the Svanetian believes that the greater material comforts a man has enjoyed on earth, the more agreeable will be his life in heaven, but, far from acting in accordance with this belief, he is perhaps, of all people the most negligent in providing for his own well-being, though most attentive to the wants of his departed relations. Funeral rites are of special importance, for it is generally believed that if the kindred of the deceased neglect their due observance, the spirit of the departed will wreak vengeance on them. Curious results follow from this fear of vengeance; distrustful old people arrange their own funeral ceremonies while alive, and, by thus representing themselves as dead before their time, they hope to secure peace to their souls when delivered from the body. The man whose funeral rites are to be performed invites his friends and relations, dons his best garment, and eats and drinks as much as he can, while the invited guests behave as in the presence of a corpse, howling, crying, and wailing with every outward sign of despair. Meanwhile the imaginary deceased observes attentively all that goes on, noting which of his relatives seems most sincerely grieved, that his soul may in the future repay him by promoting his welfare.

The Svanetians reverence the sun and the celestial bodies, and swear by them; they have also a superstitious respect for oxen and cats, and they exorcise the evil spirits which are supposed to cause disease.

Culture and Industrial Arts.—In general culture and in arts the people are very backward. There are no schools, and all that a poor Svanetian can learn comes to him from his own experience in life and his limited knowledge of his surroundings. Most of the villages (*aul*) are situated in such narrow and profound gorges that, looked at from an eminence, they appear quite inaccessible. Even in summer, with a clear

sky, the sun illumines these abodes only for a few short hours, while in the long severe winter there is little light, except what is reflected from the white snow, by which the poor Svanetians can work in their hovels. There is hardly any communication between these isolated *auls*. They are arranged in polygons, with thick walls without and narrow passages within, and are fortified, those at high elevations more strongly than those lower down. Outwardly these *auls* have a very picturesque appearance. The chief feature in their fortification are old, half-ruined towers. The upper parts of these towers are covered with a slightly sloping roof, and project over the lower parts, which they command by means of four loopholes. They have a height on an average of about 70 feet, and are fairly strongly built of rough stones bound together by cement. But these strong erections are vestiges of a former art of masonry unknown to the present generation. Now only miserable stone hovels are set up in a far less skilful manner, without cement and almost without tools. An irregular quadrilateral, with small apertures in lieu of windows, and divided into a ground floor and a garret, is piled up against the face of a tower and roofed with slates or slabs of stone. Within, these hovels are exceedingly repulsive, filthy, dark, and bare; few have any furniture properly so called, containing only vessels and other utensils, horns, wooden cups, and plates, hollowed tree trunks, etc. Dark and squalid dens are these dwellings, full of heaps of rags, dirt, and disorder, swarming with all kinds of vermin, which were always the companions of man in prehistoric times, and without which a true Svanetian would feel quite uncomfortable. Life in these dens during a long and rigorous winter must be terrible indeed, and goes far to explain the general abuse of arrack, the prevalence of goitre and idiocy, and the manifest degeneration of the inhabitants of this poor forgotten and forsaken corner of the world. The Svanetian house or *khos* has no chimney; a hearth is built of slates in an excavation in the middle of the house, and serves as a bread oven. Cattle, children, men and women are all huddled together on the ground floor during winter, while in summer the cattle are driven off to the pastures, and the family live somewhat more comfortably in the garret or *darbas*, into which light and air can penetrate freely through the numerous interstices of the roof. In winter the garret is used as a store-room for fodder and adds much to the risk of fire.

Agriculture of a primitive kind, cattle-breeding, hunting, and apiculture to a small extent, are the only industries. In this respect the natives of Svanetia are far behind many negro tribes of Central Africa, for they do not manufacture even earthenware, and they are unacquainted with many tools employed in primitive times. Their intellectual powers are of a low order. A Russian traveller once had to pay through the medium of his interpreter a sum of money to a number of Svanetians in compensation for services rendered by them in common to himself and his companions, and he relates the difficulties that arose in apportioning this money between the partners to the satisfaction of all. The dispute which ensued was only settled by recurring to the customary method of calculation by means of pebbles. It has also been stated that Svanetians

demand the same price whatever may be the size of the article offered for sale, asking, for instance, the same sum for a fowl and a chicken, for a sheep and a lamb; and they always hold out for a price they have once obtained, though the circumstances of the market may have changed completely. Trade, indeed, is not much further advanced than industries. There are no shops or warehouses in the country, no commercial classes, no money; only barter. A man wanting to buy or sell anything transacts his business without the intervention of a middleman, betaking himself to the place where he expects to make the best bargain. A Svanetian will cross rocky mountains, snow-fields, and crevassed glaciers in the worst season to barter a handful of pears or apples for meat and grain with the Karachai Tartars on the other side of the main range. Traveling is always difficult. In summer riding is the most common mode of progression; in winter the natives mount the hills on foot and descend on light sledges or toboggan on their sheepskins or felt mantles (*burka*). Sledges consisting of a small basket mounted on a pair of runners are also used in summer.

Dress and Food.—The Svanetians have no distinct national costume. Their want of cleanliness, on which I have already remarked, is such that they do not care to wash their under-garments, when they have any, and a shirt, once put on, is never replaced as long as threads enough remain to hang together. The men wear the usual Caucasian costume—a long close tunic (*beskmet*), an upper coat (*cherkesska* or *phsar*) with cartridge cases arranged on both breasts, and narrow trousers (*shalbar*) ending in pointed moccasins (*khabury*) made of undressed hide, with soles, and stuffed with grass. The head is covered with a rough, undyed felt cap of a very simple pattern. Both in winter and in summer the dirty *kish* or sheepskin is almost always on their shoulders. In contrast to the other Caucasian highlanders who, while caring little for home comforts, compensate themselves by attention to their personal appearance, and are fond of good and handsome dress, the Svanetians are quite indifferent to their attire. The women also dress very simply, some like the peasants of Little Russia, others, according to Georgian fashion, in a loose black gown, full behind and very open in front and sometimes embroidered or laced. At home a long chemise and a handkerchief is the women's usual costume. The poor (and they are almost all poor) strip off everything at night, and, as they have no bed-clothes, keep themselves warm by sleeping in sacks filled with chopped straw.

Mutton, coarse meal, and sour milk are the chief articles of diet among the well-to-do, but the true national food is simply bread and bad cheese, washed down with as much arrack as there are means to procure.

Morality.—We do not pretend to know the Svanetians well enough to judge their morals fairly. Certainly they habitually commit with a quiet conscience acts which we consider immoral—perjury, larceny, and retaliation; but, as morality consists in acting according to one's notions of right and wrong, it may be that the standard of morals is higher than in far more civilised countries, that is, the laws of morality may be not so often

consciously transgressed. In the absence of criminal statistics it is impossible to decide the question, but it is certain that the Svanetians faithfully obey the behests handed down from their ancestors and upheld by the elders of the community. They show much zeal in the commemoration of departed spirits, and in the observance of all other prescribed customs, especially with regard to exacting vengeance for manslaughter. There is no great purity in the intercourse of the sexes, especially between brothers- and sisters-in-law, but, according to many testimonies, the Svanetian may, on the whole, be called a respectable character.

"Free" Svanetians are rather rougher and more savage than their brethren in the Svanetian Principality; their beards and garments are, if possible, more neglected, their features are harder, and their dispositions more distrustful, the rude climate and the wild surroundings of their home being less favourable to the development of amiable qualities.

Social organisation.—Though they acknowledge the Russian Government and obey its commands on the rare occasions of its interference, principally connected with the levying of some light duties, the Svanetians are practically their own masters. The basis of their society is the self-governed commune, and the individual members are firmly linked together by the bond of strong tribal or communal feeling. The commune is of much greater importance than the family, and the obligation to perform the duties relating to it is much more binding on the conscience. To every family meeting or festivity most of the members of the commune are invited. This peculiarity, so strongly opposed to the family spirit and individual independence of Western civilisation, is alone almost a sufficient proof of the Asiatic origin of the race. The Svanetian community exhibits a thorough unity of purpose, traditions, and interests. The social authority is vested in the elders of the commune, just as that of the family is in its head. Members of the same commune consider themselves brothers, and embrace and kiss one another, even though of different sexes, when they meet on a journey or at some festivity. At funerals, baptisms, and indeed all events in which not the whole commune but a family or individual is immediately interested, all the members of the commune meet together as of the same kindred, while those of other communes are looked upon as strangers. Pasture lands are always grazed in common, but forest and arable lands are often divided among the families. Expenses incurred by a family in the exercise of hospitality are discharged by the community at large.

The population of Svanetia is estimated in round numbers at 15,000, distributed among eleven communes. Considering the exclusive spirit which animates each commune, it is no wonder that considerable variety in appearance and general bearing is observable among individuals of different communes; and, in fact, the difference is so marked, that an experienced eye can easily recognise a man from any particular community. In Usklul the men are tall, dark, slender, and graceful, while in Mestia they are fair and stout, with full beards and bright, restless eyes. In Mulakh, again, are individuals wonderfully like Little Russians—stern,

surly, cunning, heavy in gait, wearing long moustaches, and never seen without a pipe. In some communes, as Lakmul, the inhabitants have decidedly Jewish features; in others the Mongolian, the Gypsy, or the Georgian type is most marked. Ignorance, superstition, indolence, slovenliness, and an irascible, revengeful spirit are common to all, but a common physical type is not easily evolved out of this mixture of races.

Each commune consists of some villages and hamlets and isolated farms. The population is very unequally distributed. The most densely peopled district lies to the north of a small longitudinal chain which separates the wild valley of the Upper Ingur from the broad and cheerful basin of its eastern affluent, the Mulkhra or Mestia. Here is the commune of the same name, the richest of all. But, rich or poor, they are autonomous. All local affairs are debated in public meetings held in the open air, at which every adult member has an equal voice, and as in the Polish diet, and in certain small quasi-republics of Shinaki¹ (on both banks of the Indus below Bunji), all resolutions must be carried unanimously. But, while all business of general interest is transacted at communal meetings, personal disputes and assaults, even though they end in manslaughter, are left to be settled by private arrangement according to the ancient unwritten *lex talionis*. The Russian Government is steadily endeavouring to suppress this barbarous custom, but its efforts are paralysed by the absence of roads.

The Family and the Position of Women.—The ties of relationship in every degree are thoroughly respected by the Svanetians, strengthened as they are by the adoration of ancestors and the authority of the head and elders of the family. Possessing but very precarious means of subsistence, the Svanetians do not, however, care to have large families, and until quite recently—if, indeed, it is not continued at the present day, which is difficult to ascertain—the cruel practice was in vogue of killing superfluous children of the female sex. This is, perhaps, one of the reasons why there are about 10 per cent. fewer women than men. Svanetians marry very young—girls at the age of 12 or 13, boys at 16. Notwithstanding the scarcity of women, a widow seldom enters a second time into matrimony. As the family fortune goes after the death of the husband to the children, the widow has nothing to offer but herself, which in most cases is apparently not sufficient attraction. Marriage is confined almost exclusively to persons of the same commune, and to this, and abuse of arrack, the degeneration of the race is probably due. The bride is bought by the bridegroom from her parents, the price (*nachulash* or *kalyim*) being a cow, a horse, or a few sheep. The bride, on her part, is expected to bring to her new home some kitchen utensils or a quantity of manure.

The family still retains its patriarchal character, the head of the family being supreme, and all the other members owing him obedience, and not venturing even to leave home without his permission. Marriage contracts and all other important affairs are always discussed in a family council. The position of a woman, though inferior to that of the men, is on the whole tolerable; she is respected at home and abroad; she has

sometimes a voice at public meetings as proxy for her absent husband or brother, and goes about freely with her face uncovered.

Children are often betrothed in childhood, the parents of the bridegroom giving to those of the bride a small sum of money or a bull as a pledge for the fulfilment of the contract. Such engagements may be made by the parents even before the birth of the children. When the parties concerned have reached a marriageable age, the parents of the bride demand the *nachvlash*, that is, the cattle for which she is sold. Here, as in France, women are at the bottom of most of the quarrels, and these disputes are the more common owing to the dearth of women. Feuds, not infrequently terminating tragically, generally arise from one of the parties being deceived in its expectations or from reluctance to pay the *nachvlash*.

Customs.—I have already said that the Svanetians faithfully observe their ancient customs. These have reference to the commemoration of the dead, marriage, hunting, hospitality, and the avenging of blood. Drinking and brawling are inseparable accompaniments of all festivities.

Funeral Obsequies.—Sick and dying persons are diligently tended by their relations and neighbours, who bring them strong spirits (arrack) and food. The excessive use of alcoholic drinks kills many sick persons who might otherwise recover. As soon as a man is dead, his friends flock together from all parts of the commune, and, surrounding the bed of the deceased, give expression to their grief by loud wailing, the men and women gathering together into separate groups and the latter making the greater noise. The virtues and good deeds of the deceased are enumerated in plaintive tones, as well as those of his forefathers, and the circumstances attending the fatal illness of the departed and his invincible fortitude under suffering are all recapitulated in minute detail. On the third day after death the corpse is placed in a bier, consisting of two halves of a hollow trunk, or is simply wrapped in a cloth, and is carried to the burial-ground preceded by a calf or a sheep, the fee of the officiating priest. After the body has been lowered into the grave, the mourners, kneeling reverently, intone an ancient formula in which each expresses his grief by cursing the day he was born. The ceremony over, all repair to the house of the deceased, where a copious repast awaits them, and often terminate their carouse with a serious scuffle. This custom of feasting at funerals entails heavy expenses on the bereaved family, and thus contributes to the general impoverishment.

Later on come the commemoration ceremonies, almost as costly as the funerals. The first takes place twelve months after the death, and the solemnities are renewed after a lapse of five and ten years. Eating, drinking, quarrelling and fighting are uniformly indulged in. All this is done in the belief that, the more lavish the expense, the greater will be the number of sins forgiven to the deceased, and the more the power of the departed spirit will be exerted in favour of his surviving relatives. Social gatherings and festivities also take place on the occasion of a wedding, a saint's day (particularly that of St. George), or to commemorate

any other important event, and are so many opportunities for undermining fortune and health by excessive drinking. Singing and dancing form part of these entertainments.

Singing and Dancing.—The Svanetians are fond of singing in chorus, and the result is a strange cacophony. Sometimes, indeed, amid a terrible dissonance and an appalling clamour of voices, one may perceive something recalling a not unfamiliar melody; but the charm is quickly dispelled by a vociferous noise, in which a major-third, a seventh, and a false fifth engage in mortal combat, while above the general din of this savage rhapsody a high falsetto bursts out like the yelling of witches burning at the stake. Sometimes a high shrieking voice starts a refrain, which is responded to by a chorus always ending abruptly in a wild roar. The instrumental music is more agreeable to the European ear than the vocal. It is not so noisy. The national instrument, the *chunir*, has a very slight resemblance to a violin. Its construction is simple; a dry ox bladder is tightly stretched over the hoop of a common sieve, and across it are strung hempen threads slightly smeared with pitch, which are set in vibration by a bow of horsehair. The tone of the instrument is sweet and melodious. It is used chiefly to accompany singing.

Dancing also is a favourite pastime, but as practised in Svanetia is very dull and tame. There are round and solo dances. In the execution of the former the men range themselves in a circle and move, not round, but only from side to side, tossing one foot after the other with wearisome monotony. In the solo dance, which is something like the renowned Lesghinka, without the gracefulness and the charming rapidity of motion that distinguish it in Georgia, both men and women take part alternately.

Superstitions.—Svanetians, still disposed, in spite of their nominal Christianity, to see in all manifestations of nature the work of as many independent and powerful spirits, benevolent or mischievous, are naturally addicted to many superstitious rites intended to conciliate the former and exorcise the latter. Sacrifices and ceremonies are performed with the object of increasing the number of the cattle, of procuring a good harvest, of curing a disease or warding off the attack of an enemy. Especial precautions are taken to ensure success in the chase, which is considered a hallowed enterprise. A hunter must be a man of unimpeachable character; before going to the chase, as before any other important enterprise, he must keep silent, must betake himself to the hunting-ground with the greatest secrecy, especially avoiding all communication with women, and on arriving there must, before all things, offer a sacrifice to the goddess of the chase, called "Dal" and represented like Diana in the form of a beautiful woman.

Sanitation.—It must be pretty evident from the preceding remarks that, mountain air and excellent water notwithstanding, the Svanetians do not live under favourable sanitary conditions, confinement in miserable hovels, bad food, insufficient protection from cold, and abuse of alcoholic drinks,

all conspiring to annihilate the good effects of a healthy climate. Even without the guidance of sanitary statistics, one must form a very unfavourable opinion of the sanitary state of the poor Svanetians. Malaria, anæmia, dyspepsia, rheumatism and many other common diseases are rife among them, and, unfortunately, there are, besides, some rarer and more terrible disorders, such as cretinism, and, according to some authorities, leprosy. Goitre is very prevalent, usually accompanying or producing cretinism. The swelling on the front of the neck not infrequently attains the size of a child's head. In the upper Tskhenis valley almost the whole population is afflicted with this revolting complaint. It springs from the abuse of arrack, according to Dr. Olderoga, who was commissioned by the Russian Government to inquire into the causes of this scourge, and also of cretinism. For my part, I should attribute it to poverty and the wretched existence of the people in general.

Folklore.—I will conclude this study of the Svanetians by a few words on their other principal solace, besides arrack, in their gloomy and uneventful life, one, moreover, which calls their imagination into play. In the absence of literature, folklore affords some useful indications of the character of a people. Valuable materials have been recently collected, under the auspices of the Educational Department of the Caucasus, by school teachers. Svanetian fairy tales, legends, proverbs, songs, and enigmas have been translated into Russian, and have thus been added to the rich stores already acquired in this branch of literature. In perusing these creations of Svanetian imagination, one is much struck with their resemblance to similar productions in other countries, European, Asiatic, and African. Here we find, as elsewhere, spirits or demons representing the forces of nature, national heroes lauded for their deeds of valour, the beauty of national heroines extolled, and the practice of virtue recommended as contributing to success in life. I cannot, indeed, enter into particulars on these subjects, but I should like in conclusion to relate the Svanetian account of the creation of the world and of the work of redemption.

"There was a time," says the legend, "when there was nothing but water, out of the midst of which rose a high rock, wherein God was confined. Disliking to remain buried in solitude, God burst the rock, rending it for a length of eight miles, and came out. The mingled water and earth round the base of the rock God divided into two parts, forming the heavens from the one and the habitable world from the other. But as yet there was no living being. Then God wept from weariness, and lo! the tear from the right eye became the angel Michael, and that from the left Gabriel. Many ages passed away, and then, at the command of God, animals and men were created, and God and His angels walked upon the earth. One day they met a young man and asked him 'Where are the men of thy tribe?' 'They have gone to pick a quarrel.' 'How?' 'They have gone to enclose a field, and as the fence is sure to be thrown down, a quarrel will follow. It would be better for us to leave the field as it is.' 'And where are thy women?' 'They have gone to earn tears.' 'What dost thou mean?' 'A neighbour has died, and they are

gone to bewail him, so that, if any one dies amongst us, the wives of our neighbours may come to bewail our lost kinsman.' Many other questions were put to the youth, all of which he answered very discreetly, and God was so pleased with him that he took him to Himself. The name of the youth was George. God and His angels travelled much over the world on their wonderful horses, and wherever they went dry land appeared. One day they perceived a big stone in the distance, white as snow, and God wished to go up to it, but His three companions led Him astray. He turned back and tried again to approach the stone, but the angels led Him astray a second time. Then said God to His angels, 'Ye have played me some trick, or we should certainly have found this white stone.' 'Well,' said the angels, 'we will lead thee to the stone, but we believe that evil and loss will befall us.' Then they rode up to the stone, and God smote it with His whip, and the stone was broken asunder, and Satan (*Samal*) came forth. Satan forthwith seized God's horse, and God cried for help. Then the angels surrounded Satan, and asked him who he was and what were his powers. Satan said to God, 'Thou and I have both been in the heart of the stone; we are both of the same origin; I am of the core of the stone as thou art, wherefore let me have part of the world.' God bid His angels consider the request of Satan. And then they divided everything into three parts, living men forming one part, the souls of the dead another, and animals and birds the third. God took the men and brutes, and Satan men's souls, but under certain conditions. The angels said to Satan, 'Be not overmuch puffed up. Thou shalt keep men's souls only till the time when a son shall be born to God, who will deliver them from thy dominion.' And Satan answered, 'All is well. It will be long ere God has a son, and in the meantime I shall have gathered in souls enough.' Then Satan built Hell, and surrounded it with a wall, leaving only one small aperture to admit souls, and in it dwelt a multitude of devils who, at the bidding of Satan, tormented the souls in all manner of ways. Ages rolled by, and at length the time arrived when a son should be born to God. God pitied the souls of men, and wished to fulfil the compact made with Satan at the division of the world. God then assembled His angels in council, and each gave his opinion, and one angel said that he knew an upright couple who had a daughter named Mary. Then God took an apple and blew His soul into it and gave it to the angels. And they took the apple and went to the house of Mary. Now there was in the country no girl so good as Mary. When the angels arrived at the house, Mary was absent; she was washing her linen at a fountain, and thither the angels followed her. The angel Gabriel threw the apple towards her without showing himself, and Mary took the apple and, having bitten it thrice, laid it in her bosom. Then Gabriel appeared unto her and declared that by the apple she should conceive and bear a son, and that she should be careful not to offend God in anywise. And his saying was accomplished, and Christ grew up quickly, and all marvelled at His understanding. He made the people to know the true God and His commandments. Twice He said in His discourse, 'We have to carry much sand.'¹ And one of His disciples answered, 'We do not

¹ That is, a Herculean task to perform.

understand the meaning of these words. Explain them, Master, and we will do as thou sayest.' Then Christ said, 'Follow Me.' All followed Him, and He brought them to Hell, and He destroyed it, letting out all the dead into Paradise, which God had made meanwhile. Thus Christ vanquished Satan and destroyed his kingdom."

THE BALTIC AND NORTH SEA CANAL.

THE great engineering work which will allow the largest vessels to pass directly from the North Sea to the harbour of Kiel, without making a long detour round the north of Denmark, is now completed, and will be formally opened on the 19th of this month. The saying that "there is nothing new under the sun" is true in this case. Vice-Admiral Batsch¹ considers the tradition that a plan for cutting through the Cimbrian peninsula was proposed in the fourteenth century as unworthy of credit, on the ground that Waldemar Atterdag of Denmark was not likely to permit his rival, the Great Gerd of Schleswig and Holstein, to thus avoid the necessity of passing through Danish waters; nor was his successor, Margaret, likely to show such favours to the dukes. The first work of this description was the Stecknitz canal, built at the end of the fourteenth century, to bring the capital of the Hanseatic league into immediate connection with Hamburg, but it was navigable only by vessels of small draught, and its projected enlargement was never executed; it is still in use. In later times, the control of the Sound and Belts held by Copenhagen was felt so keenly by other seafaring nations, that Cromwell turned his attention to the formation of a canal from Wismar through the lake of Schwerin into the Elbe, while the people of Lübeck, in conjunction with Holland, entertained a scheme of enlarging and prolonging the Stecknitz canal. These projects were abandoned owing to the death of the Protector and the interference of the King of Denmark.

Coming down to last century, we find the lines from Tondern to Flensburg and from Husum to Eckernförde proposed by Danish engineers. The latter route was advocated by a distinguished Dutch engineer, named Stieljes, who in 1866 adopted the original plan of a dyke inspector, Petersen, adding important modifications. At length, in 1784, under King Christian, the Eider, which flows into the North Sea, was connected with the Bay of Kiel by a small canal starting from Rendsburg. Though only 11½ feet deep, and therefore unavailable for large vessels, it has been of no small advantage to coasting vessels, of which 4000 have passed through it yearly. The numerous locks and the windings of the river Eider are also a drawback to its usefulness. In the sixties various plans were set forth for canals opening into the North Sea and Baltic at different places, and among them was one in which Kiel was selected as the eastern terminus and Brunsbüttel as the

¹ *Globus*, May 1895.