

Shorak or Jorak (an. *Apasrus*) is another tolerably large river, running to the Black Sea, and the Koisu (an. *Cassius*), a still larger, falling into the Caspian. The torrents that run short courses to these seas from the flanks of the mountains in their neighbourhood are quite innumerable, as are the affluents of the principal streams which pour from the mountain sides in every direction, sometimes with respectable length of course, and always in immense volume. It may, indeed, be reasonably concluded that the store of moisture in the Caucasus cannot possibly be exceeded by that of any other country of like extent; and since, from the causes before named, it is prevented from spreading beyond the bounds of the mountains, it follows necessarily that no land can be more abundantly watered. Most of the streams are flooded by the melting of the winter snows; and their action on the substance of the mountains is at all times very violent, especially on the slate and limestone. The former is brought down in the form of a black glistening sand, the latter, in that of a soft white substance, so fine and so abundant, that it is used by the natives, in its natural state, for whitening their houses. (Klaproth, p. 386; Pallas, i. 365.)

There is, perhaps, no other mountain region in the world so destitute of lakes as Caucasus. The lake of Sevan or Goukcha, between the Kur and Araxes, is the only one of any size in the whole region, and it can hardly be regarded as belonging to the Caucasus. It is a salt lake, of the kind so common in Central Asia, without any outlet, and occupying nearly the whole extent of a small elevated plain about 48 m. long, by 12 m. in width, 5,300 ft. above the sea. (Pallas, i. 337, &c.; Klaproth, pp. 159, 241-407, &c.; Monteith, G. J., iii. 43, *et seq.*; Spencer, *pass.*)

*Climate.*—This, of course, varies with the elevation; but perhaps still more with the degree of shelter afforded by the neighbouring ranges from the different winds. Some of the N. valleys, notwithstanding their exposure to the bleak gusts from the Snowy Mountains, are so perfectly protected from the N. wind, that their winter is as mild as in the S. parts of the Crimea. (Pallas, i. 339.) They are subject, however, to sudden and fierce, though brief, vicissitudes; and the very shelter which they possess, by confining the air, makes them unhealthy. With the sharp ascent of the land, the temperature rapidly decreases, and a few hours serves to convey the traveller from the climate of the temperate zone to that of everlasting winter. The cold in the upper ranges is intense; but observations are wanting on which to found any conclusion as to its average; Mignan, at a comparatively low part of the range, found it, in Jan. 1830, a very cold winter, at 4° Fahr., or 28° below the freezing point, (i. 35.) A better idea may, perhaps, be formed on this point, from the quantity of snow deposited in the defiles: 1,400 men were employed a fortnight in cutting a road for the Persian embassy, which, after all, was scarcely passable. (Mignan, i. 40.) Notwithstanding this intensity of cold, the plague is very common on the mountains.

On the S., the countries on the Black Sea and Caspian may be described as warm; those of Iméria and Georgia as rather cold; but this, again, must be taken with considerable limitation, the N. parts of the two seas being subject to winter frosts. The melting of the ice in them frequently causes chilly summers on their shores, while, on the other hand, some of the higher valleys are among the ottest spots in the Caucasus. The abundance of running water, and the neighbourhood of the two bounding seas, cause a great accumulation of vapour; indeed, so extensive is the exhalation

constantly going on, that it may be said every wind, if long continued, brings with it a mist, which nothing can disperse except a storm. These last are, consequently, frequent and terrible. Luckily, however, the cause that produces them gives warning of their approach; the vapours, when grown too heavy for the atmosphere, collect themselves in dense masses round the sides and tops of the mountains; and the Caucasians, warned by this clothing of their Alps, prepare for the explosion, which they know, by long experience, will speedily follow. They wrap themselves in their *tehaoukas* (large cloaks made of wool and goat's hair, and perfectly waterproof), and under a low tent made of felt, expressly for such emergencies, or under the lee of a rock or tree, await, generally in safety, the passing of the tempest. (Spencer's W. Cauc., p. 129.) Sometimes, however, the falling of the cliff or tree destroys those who have sought its shelter; but these accidents are of rare occurrence, as it is not often that the natives are compelled, for want of their felt tents, to run such risks; but to strangers unprovided with the means of combating these storms, the effect is sure to be ultimately fatal. One or, at most, two years' exposure to the varying influence of a Caucasian climate, sends the Russian soldier either to his grave or to the hospital, with a constitution irrecoverably broken. The uncertain temperature and the humidity of the atmosphere appear indeed to make it very unhealthy to strangers, especially on the slopes and flats towards the sea. Intermittent and bilious fevers of a very grave kind are endemic, and exceedingly obstinate; and the plague, as before observed, is also very common. (For a singular statement connected with the climate of the Caucasus, see Herodotus, Clio, p. 105; Klaproth, p. 160.) The varying humidity, or some other cause, seems likewise to impress the air with very peculiar qualities; observations of altitude by the barometer, or the boiling point of water, give very inconsistent results at different times (see CASPIAN SEA), and the extent of horizontal vision is frequently quite startling. The Caspian Sea is sometimes seen from the summit of the Bechtag, 164 m. distant; and the Snowy Mountains from Sarepta, on the Volga, a length of 322 m. (Pallas, i. 370; Klaproth, p. 158.) The distance of the visible horizon, exclusive of refraction, would be in the first case about 944 m., in the second about 168½ m.; the amount of refraction is, therefore, equal to more than 1°, and nearly 2½° respectively; but, in ordinary states of the atmosphere, the maximum being only 33', the excess of 27' and 1° 57' indicates a variable density in the medium which is truly surprising. Some of the larger clefts are said, in the traditions of the natives, to have been caused by earthquakes; but there are no authenticated records of these phenomena. (Guldenstadt, i. 217-432; Pallas, i. 340, 358, 447, *et pass.*; Gmelin, iii. *pass.*; Klaproth, pp. 163, 165, 309, 333, &c.; Chardin, p. 165; Spencer, W. Cauc., p. 125, *et seq.*, 320, &c.; Circass., i. 286, &c.; Monteith, G. J., iii. 81, &c.)

*Productions.*—1. *Minerals.*—Except in its deficiency of lakes, the Caucasus has many points of resemblance to the Alps; among others, an apparent poverty of mineral treasures. It is true that this, in the case of the Caucasus, may be apparent only. The ancients unquestionably believed these mountains to be rich in the precious metals, but this they also believed of most other districts that were but slightly known to them; and the limited observations of scientific men in modern times tend to the opposite conclusion. A yellow mineral, called cat gold, is indeed found, which may,