

lake of Lucerne. The calcareous beds of the Cuchivano and the neighbouring mountains keep pretty regularly the direction of N.N.E. and S.S.W. Their inclination is sometimes north and sometimes south; most commonly they seem to take a direction towards the valley of Cumanacoa; and it cannot be doubted that the valley has an influence\* on the inclination of the strata.

We had suffered great fatigue, and were quite drenched by frequently crossing the torrent, when we reached the caverns of the Cuchivano. A wall of rock there rises perpendicularly to the height of eight hundred toises. It is seldom that in a zone where the force of vegetation everywhere conceals the soil and the rocks, we behold a great mountain presenting naked strata in a perpendicular section. In the middle of this section, and in a position unfortunately inaccessible to man, two caverns open in the form of crevices. We were assured that they are inhabited by nocturnal birds, the same as those we were soon to become acquainted with in the *Cueva del Guacharo* of Caripe. Near these caverns we saw strata of schistose marl, and found, with great astonishment, rock-crystals encased in beds of alpine limestone. They were hexahedral prisms, terminated with pyramids, fourteen lines long and eight thick. The crystals, perfectly transparent, were solitary, and often three or four toises distant from each other. They were enclosed in the calcareous mass, as the quartz crystals of Burgtonna,† and the boracite of Lunebourg, are contained in gypsum. There was no crevice near, or any vestige of calcareous spar.‡

d'Arpenas in Savoy, and in the valley of Estaubée in the Pyrenees. Another transition rock, the *grauwakke* of the Germans (very near the English *killas*), exhibits the same phenomenon in Scotland.

\* The same observation may apply to the lake of Gemunden in Styria, which I visited with M. von Buch, and which is one of the most picturesque situations in Europe.

† In the duchy of Gotha.

‡ This phenomenon reminds us of another equally rare, the quartz crystals found by M. Freiesleben in Saxony, near Burgörner, in the county of Mansfeld, in the middle of a rock of porous limestone (*rauchwakke*), lying immediately on the alpine limestone. The rock crystals, which are pretty common in the primitive limestone of Carrara, line the insides of cavities in the rocks, without being enveloped by the rock itself.