

The Apalachian chain may thus extend about 900 geographical miles, a length unrivalled by any European mountains, except the Norwegian alps. In no chain perhaps are the collateral ridges more distinct; and a naturalist would at once pronounce that the central, or highest, must be granitic, the next schistose, and the exterior belts calcareous. The granite seems commonly to consist of white felspar, bluish or rather pellucid quartz, and black mica. The schistose band, generally metalliferous in other regions, here presents copper ore; and in Canada lead and silver are said to have been discovered. The limestone contains, as usual, many petrifications, particularly the cornu ammonis, a small scallop shell, and several sorts of corals.—The height of the chief summits does not appear to be precisely ascertained, but probably does not exceed 3000 feet above the sea; and they are often clothed with forests. Mr. Weld conjectures that the Peaks of Otter, the highest of what are called the Blue Mountains, are little more than 2000 feet in height; and at any rate much inferior to that of Snowdon.

The late travels of the duke de Rochefoucault in North America, present some valuable information concerning the orology. The primitive calcareous rock is mingled, in veins or banks, with the granitic, and is evidently contemporary. Near Philadelphia large pieces of talc appear, instead of mica. There are also veins of hornblende, quartz, and marble, in the position of metallic veins. It is a remarkable feature in the mineralogy that the granitic mountains approach nearest to the sea, while at a greater distance the rocks are calcareous; and the red primitive limestone is sometimes covered with breccia, and argillaceous schistus. The lakes of Upper Canada are surrounded with calcareous rocks; while in Lower Canada, from Montreal to the sea, the granite predominates. At the isle of St. Helen this substance is apparent, and at the mountain of Beloeil displays much black schorl. The black slate of our traveller is the black schistose limestone of Kalm. The rock of Quebec is said to consist of grey granite, mingled with schorls; and was called the rock of diamonds, because quartz crystals were found. In the vicinity blocks of granite are mingled with limestone, and the bank of Newfoundland is supposed to be a mass of granite, covered with sand. Towards New York and Boston the rocks are of a soft granite in-

terspersed with limestone and schistus; but towards Carolina and Florida the granitic mountains are at a considerable distance from the sea, which seems gradually to have retired. This observing traveller is of opinion that the highest mountains in North America do not exceed the elevation of the Vosges in France, that is perhaps 4 or 5000 feet.

But from the travels of Kalm, a far more skilful naturalist, it would appear that the rocks of North America often consist of a substance unknown to modern systems of mineralogy, and which may be termed *calcareous granite*, the absence of the felspar being supplied by primitive limestone. The Swedish traveller minutely describes this substance, as consisting of grey limestone, purple, or garnet coloured quartz, and black mica. The limestone effervesces strongly with aqua-fortis; and there are some particles of felspar. Another mountain, near the river St. Lawrence, is composed of red felspar, black mica, white limestone, with grains of the purple or red quartz. Sometimes this calcareous granite is schistose, or assumes the form of gneiss. Part of the hills near the isle of Orleans is composed of grey quartz, reddish and grey limestone, and grains of sand. Near Fort St. Frederick, or Crown Point, Kalm observed fragments of granite mixed with schorl, without any calcareous addition; and he found ammonites about two feet in diameter. Towards the lake Champlain he observed quantities of red sand, which seemed to be decomposed or pounded garnets. The Apalachian mountains he does not appear to have examined; but he mentions the calcareous granite as frequent in Pennsylvania. The hatchets of the savages were frequently of fine basalt; their knives of quartz and petrosilex; their kettles of lapis olaris, grey or green; and their tobacco pipes of the same substance; but those of the chiefs, of beautiful red serpentine, from the west of the Mississippi.

The mountains in the Isthmus, as well as those in the western part of North America, are certainly of far superior elevation: and in most maritime divisions of the old and new continents the highest mountains are towards the west, as their most precipitous sides uniformly front the west and south. But of the Isthmus, the kingdom of Mexico, and California, the natural history and geography are far from being clearly illustrated. In the province of Darien the