Rocky Mountains. (On the subject of Climate, see Mel- lish, p. 59-77.)

So many local circumstances affect the annual depth of rain, that little reliance can be placed on general estimates. We find that it was forty-two inches at Charlestow n, on an average of some years, forty at Natchez, thirty at Phila­delphia, thirty-six at Cincinnati. The mean fall of rain for the inhabited part of the United States (latitude 41°) should be about thirty-four inches. The frequent failure of the streams, and the scarcity of verdure in the country near the Rocky Mountains, indicate a deficiency of atmospheric mois­ture in that region. Snow falls to the greatest depth on the borders of the great lakes. On the sea-coast it is rarely seen farther south than Northfolk, latitude 37° ; but in the interior it is found four or five degrees farther south. Compared with the middle countries of Europe, the United States occupying a more southern position, have rains more regular and heavy, and greater in absolute quantity, but a smaller number of wet days. Of the winds, the most re­markable are, 1. A moist and warm south or south-west wind, which is supposed to be a branch of the trade-wind, and is felt all over the Atlantic States as far as the Potow- mac, and occasionally in New England. 2. Another wind, possessing the same qualities, and believed also to be a branch of the trade-wind : it blows from the Mexican Gulf, up the course of the Mississippi, and seems to send off sub­ordinate branches, which ascend the courses of the Ohio and Missouri. In Louisiana and Arkansas, it is a south w ind ; at Council Bluffs, on the Missouri, it is a south-east ; and in Ohio and Kentucky, a south-west wind. It is the pre­vailing wind in all these districts. 3. The north-weft blows occasionally on the west side of the Alleghanies, but more frequently on the east side, and is most prevalent in New England. It everywhere produces intense cold, depressing the thermometer to—7° or —8° in Ohio, and sometimes to —20° in Massachusetts. 4. The north-east is a cold wind, which, transporting the fogs of the Newfoundland bank, occasions showers of snow. Various facts observed in the United States seem to show, what some meteorologists have doubted, that clearing and cultivation improve the climate, at least so far as regards the growth of the cerealia.@@1

If we draw a line from New York to the cast end of Lake Ontario, the peninsula lying north-eastward between the St Lawrence and the sea consists of primitive rocks, inter­spersed with some patches of secondary. From this line southward the country has a different geological character. A belt of alluvial soil, beginning at Long Island, extends along the shore of all the southern states to Natchez on the Mississippi, having an average breadth of a hundred miles, and probably including all Florida, except some high ground in the interior. It is everywhere penetrated by the tide-water in the rivers. On the west side of this is a re­gion of primitive rocks, from 100 to 200 miles broad, in which gneiss predominates. It embraces the eastern ridges of the Alleghanies, with the rolling country at their foot. On the west side of this, again, is a long narrow zone of transition rocks, including the western ridges of the Alle­ghanies, and extending from Lake Champlain to the north­west angle of Georgia. From this transition formation, which constitutes, as it were, the eastern edge of the basin of the Mississippi, immense beds of secondary limestone, sand­stone, and shale, cover the country to the Rocky Mountains, interrupted only by the alluvial formations on the banks of the rivers, and by the Ozark Mountains. Like the Alle­ghanies, these mountains present the same formations, dis­posed in the same order. The Rocky Mountains, so far as they have been explored, consist of primitive rocks, granite, gneiss, quartz rock, &c,, covered on the east side by an extensive formation of old red sandstone.@@2

That important mineral, coal, is found on both sides of the Alleghanies. The two principal formations on the east side are, 1. On the river Apomatox, above Richmond in Virginia, where a seam of excellent coal, which occupies a basin twenty miles long and ten broad, has been long worked, and employs 5000 persons: 2. At various spots along a narrow tract of country, from the sources of the Juniata and western Susquehannah to Providence Bay. At Lehigh, and other places within this district, the coal is worked. On the western side of the Alleghanies, an im­mense formation of coal, probably the largest in the world, extends from the head waters of the Ohio southward to those of the Tombigbee, and westward, with some inter­ruptions, beyond the Mississippi. A similar bed appears on the west side of the Ozarks, which is also traced far up the course of the Missouri ; and there is a third bed of unknown extent on the east side of the Rocky Mountains.@@’

Salt, another mineral of primary importance, is distributed in considerable abundance over the United States territory, especially those parts that are remote from the sea. A great formation of rock-salt (and gypsum), indicated by numerous salt springs, is believed to accompany the coal formation over a great part of the basin of the Mississippi. Salt springs are numerous at the foot of the Rocky Moun­tains, and extensive plains occur covered with salt, one of which, the Grand Saline, is thirty miles in circumference, and in hot weather is covered with a crust of clear white salt from two to six inches deep, and superior in quality to manufactured salt. On the cast side of the Alleghanies, salt is generally obtained from the ocean, or imported.

Iron is found in nearly all the states, and is worked to such an extent that, of 50,000 tons consumed, according to computation, in the country, only 10,000 are imported. (Morse, i. 236.) A bed of magnetic iron ore, from eight to twelve feet thick, in gneiss, and another from two to twenty feet, extend, with some interruptions, from the White Mountains on the one side, and from Lake Cham­plain on the other, to the northern limits of New Jersey. Iron ore, of various kinds, is also found in Maryland and Virginia. On the west side of the Alleghanies it is abun­dant, and is extensively worked at Pittsburg, and in Ken­tucky and Tennessee. The whole number of furnaces, forges, and bloomeries, in 1810, was 530. Ores of copper are smelted in New Jersey, and are found in various other parts of the Union. Native copper is said to exist in great quantities near the river St Croix, in the North- West Terri­tory ; but at present the United States are chiefly supplied with this metal from Mexico. Lead is found in Massa­chusetts and Pennsylvania, but it exists most abundantly in Missouri, at the north-east angle of the Ozark Mountains, where forty-five mines are worked, which yield three mil­lions of pounds annually. (Mellish, 366.) Gold is found in considerable abundance in Virginia, between the tide river, and the blue ridge in the Alleghany Mountains. A map has been published exhibiting a condensed view of this interesting region, which has been surveyed and ex­plored ; and the gold annually obtained is estimated, “ it is stated, in millions of dollars,'’ and it is rapidly increasing, though, comparatively speaking, only tl>e surface of the ground has been disturbed in obtaining this precious metal. Some of the Virginian ores were pounded in a mortar, and the sand being washed away, a large proportion of metallic gold appeared in numerous and beautiful grains, though no

@@@1 Warden, vol. i. p. 289. 355. Birkbeck’» Letters from Illinois, p. 37.

@@@S Maclure’s Observation on the Geology of ιbe United States *passim.* Major Long's Memoir ; and Engraved Section« in James's Expedition.

@@@3 James's Expedition, vol. iii. p. 96, 298, and Engraved Sections. Maclure, p. 35. Warden. Introduction, p. 32.