*The Cordilleran System.*

For convenient description, this system may be divided into the following six regions:—I. the Rocky Mountains; II. the Great Basin and the Basin ranges; III. the Northern or Columbian plateau; IV. the Southern or Colorado plateau; V. the Sierra Nevada and Cascade ranges; VI. the Pacific Coast ranges.

I. The Rocky Mountains form the eastern border of the Cordil- leran region, —a border made up of many subordinate ranges. They may be divided into two parts—the north and south trending por­tion, and the north-west and south-east trending portion. Between these two subdivisions there is a marked orographic break, in the form of a high plateau region, over which the Union Pacific Rail­road passes at an elevation of about 8000 feet. On the north of this plateau are the Sweetwater and the much higher Wind River Mountains, which latter form the culminating region of the con­tinent, since in them head the three great river-systems of the country,—the Missouri, the Columbia, and the Colorado.

(A) The southern or north and south trending division is about 600 miles in length from north to south, and about 300 in breadth. Its eastern edge is extremely well marked, the ranges rising abruptly from a very gently sloping plateau. Looking at this division in the most general way, we find on its eastern edge a double range of mountains, quite distinctly marked in Colorado, or between the parallels of 36° and 41°, where they enclose a system of high plateau-like valleys, known as the North, Middle, South, and San Luis Parks, which have an elevation of from 6000 to 10,000 feet, the enclosing ranges rising 3000 to 4000 feet higher. These so- called parks are drained by the head waters of the Platte, Colorado, and Arkansas, with the exception of the San Luis Park or Valley, in which lies the upper course of the Rio Grande, whence it finds its way southward, through New Mexico, having a pretty well marked and lofty range on its eastern side, and more broken ones on the west, the two representing the Front and Park ranges of Colorado.

The Front or Colorado range proper, beginning as a junction at the south of the Medicine Bow range and the Laramie Hills, which are low inconspicuous ranges closing in the plateau above noticed as separating the two divisions of the Rocky Mountain system, is a broad, lofty mass, continuous from about 41° N. lat. as far as Pike’s Peak, about lat. 38° 45', when it runs out into the plain. The best known points in the Rocky Mountains—Long’s Peak (14,271 feet) and Pike’s Peak (14,147 feet)—are in this range; both are visible from the plains, and are conspicuous landmarks. Gray’s Peak (14,341 feet) is the highest point in this range ; but, although on the continental divide, it is too far west to be visible from the plains. This divide, which separates the Atlantic waters from those of the Pacific, follows the Front range as far as Gray’s Peak, where it is deflected westward for 20 miles to the Sawatch range, which it follows for about 75 miles. In this deflexion the divide passes between Middle and South Parks, the lowest pass in this part being that called the Tennessee (10,418 feet), which leads from the head of the Arkansas to the Grand river branch of the Colorado.

The Sawatch range is one of the highest and best-marked chains in the Rocky Mountains. It lies west of the head of the Arkansas ; and its dominating peaks, along the whole range, exceed 14,000 feet. The most northerly of these, the mountain of the Holy Cross (14,176 feet), was so named on account of the existence on its eastern flank of a large snow-field lying in two ravines which intersect each other at right angles, in the form of a cross, and which in summer is conspicuously visible from a great distance. The highest point is Mount Harvard (14,375 feet), and the passes range from 12,000 to 13,000 feet. The continental divide follows the Sawatch range to its southern end, in lat. 38° 20', and then runs in a south-westerly direction for about 75 miles, over a high region without any distinctly marked range. Here it turns, and, running south-easterly, follows the crest of the San Juan range, which at many points rises above 13,000 feet. This range forms the western border of the San Luis Park, and, from its north­western end, in going either north, north-west, or west the explorer finds a very elevated and exceedingly broken country, which finally merges in the plateau or “mesa” region of western Colorado. Uncompahgre Peak (14,235 feet), a magnificent isolated summit of volcanic materials, is the culminating point.

West of the Sawatch range is that of the Elk Mountains, a vol­canic mass of sharp pinnacles, the culminating point of which— Castle Peak—is over 14,000 feet. Between the Elk Mountains and the Uncompahgre rise the various branches which unite to form the Gunnison nver.

The entire western portion of Colorado is a high plateau region of sedimentary rocks, of late geological age, cut deeply into by numerous streams, giving rise to canons or ravines alternating with mesas or plateaus, the whole forming a labyrinthine succession of depressions and elevations. The mesas are sometimes so nearly eroded away that the remaining portion of the flat surface is hardly wide enough for a bridle path, while at other times there is a broad area of nearly level surface, bordered on each side by tre­mendous precipices. The small valleys on the streams, where there is an area of level land large enough to be a feature in the topo­graphy, are called “parks” or “holes.” The area occupied by these, in Colorado, west of the continental divide, is extremely small as compared with the whole area of the region.

When the “Parks” are spoken of in describing the Rocky Mountains, it is usually the more conspicuous ones—the North, Middle, South, and San Luis Parks—that are intended. The North Park is a tolerably level area, about 40 miles by 20, and quite walled in by high ranges rising at points above 12,000 feet. This park is a favourite resort for hunters. In it rises the North Fork of the Platte. Middle Park, which is drained by the branches of Grand river (not to be confounded with the Rio Grande), is much more broken by elevations than North Park. The continental divide surrounds it on every side excepting the west. There are but few points in this park under 7000 feet. South Park is about 40 miles in length and 15 to 20 in breadth ; it is more nearly level than the North or the Middle Park, and has a higher elevation than either (about 10,000 feet at its northern end, and declining gradually southward to about 8000). The San Luis Park, or Valley, is much larger than the more northern parks, and is closed in by high mountain ranges. On its north-eastern side it has as a boundary the Sangre de Cristo range, of which the culmin­ating point is Blanca Peak, the highest point in the Rocky Mountains (14,463 feet). The Sangre de Cristo range is almost a continuation of the Sawatch, having the same trend and similar geological characters, the two being separated by the broad depres­sion known as Poncho Pass (about 9000 feet). The north-western portion of the San Luis Valley is closed in by the Garita Hills, which are a part of the great irregular volcanic mass continued north-westerly by the Uncompahgre and south-westerly by the San Juan range. The San Luis Valley is traversed by the Rio Grande, which enters it from the west, rising in the above- mentioned volcanic region. In the northern and wider portion of the valley the mountain streams sink or are lost by evaporation before reaching the Rio Grande, and most of this portion of the valley is sandy, and unfit for cultivation except where it can be artificially irrigated.

Proceeding westward from the San Juan range, in lat. 38°, we soon enter the plateau region which extends to the Colorado. This plateau region is bounded on the north-east by the volcanic masses of the San Juan, Uncompahgre, and Elk Mountains, at the western base of which spread the great tables or mesas of Cretaceous and Tertiary rocks, often capped by volcanic materials, and which thus already begin to exhibit the characteristic features of the plateau region. Here the principal branches of Grand river and of the Gunnison have their sources. The Grand itself rises in the Front range on the western slope of Long’s Peak, while the Gunnison heads near Mount Harvard, the two uniting near the western boundary of Colorado, near 39° N. lat.

Directly west of North Park, and separated from it by the mass of the. Park range, and also by a broad belt of high mesa country, is the Uintah range, remarkable as having an east and west trend, and thus forming a sort of connecting link between the eastern edge of the Rocky Mountain system and its western border, of which the Wahsatch range is the most strongly marked division. Starting from the eastern side of the Wahsatch, where it inos­culates with it, it runs east for a distance of 150 miles, when it sinks and becomes lost in the Tertiary and Cretaceous mesas lying west of the Park range. It has the Bridger basin on the north—a continuation of the Laramie Plains,—the two together forming an important member of the orographic break between the north and south divisions of the Rocky Mountain system already indicated. The Bridger basin is underlain by rocks of Eocene age, and has an elevation of 6000 to 7000 feet, Fort Bridger itself being 6,753 feet above the sea. South of the Uintah range is the Uintah Valley, also underlain by Tertiary rocks, and forming the north-westernmost division of the Colorado plateau region. The Uintah range itself is of very simple geological structure, being a low flattened anticlinal, complicated by one or more faults on the northern edge. The Tertiary and Cretaceous strata have been so much eroded away on the higher portion of the flattened arch that the chief rock exposed in the body of the range is the underlying Carboniferous. The highest points, as given by the Fortieth Parallel Survey, are Gilbert’s Peak (13,687), Tokewanna (13,458), and Wilson’s Peak (13,235 feet). The southern slope of this range is drained by the affluents of Green river, which unites with the Grand, about 175 miles farther south, to form the Colorado.

The Wahsatch range is one of the most conspicuous of the Rocky Mountain system, and, as it borders the Great Basin on its eastern side, it may properly be considered as forming the western limit of the Rocky Mountain southern division of the Cordilleran system. This range has a nearly north and south trend, rising with a bold escarpment to a height of nearly 12,000 feet in the portion of the range just east of Salt Lake City, but falling off gradually towards the north and not being recognizable as a dis­tinct range beyond Bear river. This stream rises on the northern slope of the Uintah range, in nearly the same latitude as that of