of the country, the surface of the lake rose, so that from an area of 1700 square miles in 1849 it had expanded in 1870 to about 2360. But in more recent years it has been slowly receding. Together with these general move­ments, slight oscillations with the changes of season are constantly going on. As Great Salt Lake has no outlet save evaporation, its water contains a large amount of saline matter in solution. The proportion varies inversely with the varying height of the water in the lake, ranging from 14∙8 to 22∙4 per cent. by weight. The only other bodies of water of considerable magnitude are Bear and Utah Lakes, both fresh and both tributary to Great Salt Lake. Besides the tributaries to Great Salt Lake, the only other stream of importance west of the Wahsatch is the Sevier, which, rising in the plateaus south of the Wahsatch, passes by a circuitous route into the deserts to the west, where it sinks. Formerly it flowed into Sevier Lake, whence its waters were evaporated, but the extensive use of the river for irrigation has caused the lake to disappear.

The Wahsatch Range is in general terms a great mono- clinal uplift, although in detail it is a complicated system of uplifts and faults. The general dip of the beds is to­wards the east, while the fractured edges face the Great Basin. The core of the range is composed of Archæan rocks, while sedimentary beds, as high as the Jurassic, are found upon its eastern flank. The Uintah Range is a broad anticlinal, surmounted by rocks of the Carboniferous age, with more recent formations lying upon its north and south flanks. The rocks of the plateau region are almost entirely sedimentary and lie horizontally, or nearly so. The ranges of the Great Basin are of diversified character, a large proportion of them being monoclinal uplifts, expos­ing the Archæan rocks, with sedimentaries tilted upon their slopes. The valleys have in all cases a floor of Quaternary deposits, which effectually cover the rock formations that underlie them.

The animal and vegetable life presents variety corre­sponding with that of the topography. Upon the moun­tains and high plateaus are forests of *Coniferæ,* with groves of aspen skirting them at their lower limit. Here are found bears of different species, the mule deer, and occa­sionally the elk (wapiti) and the antelope. Upon the lower plateaus and in the desert valleys of the Great Basin life is not abundant. Pinon pine and cedar, *Artemisia,* cacti, and yucca characterize the vegetation ; while of animals there are few except the coyote, prairie dog, rattle­snake, and scorpion.

The settled portion of Utah lies mainly along the western base of the Wahsatch and in the valleys of that range, particularly in the northern part of the Territory. There are also considerable settlements near the southern bound­ary, in the valleys of the Virgin river. The population numbered 143,963 in 1880, showing an increase of 65∙8 per cent. since 1870. The population is at present (1888) probably not far from 175,000. In 1850 the total was only 11,380 ; in 1860 it had risen to 40,273, and in 1870 to 86,786. Probably four-fifths of the population are adherents of the “Church of Jesus Christ of Latter Day Saints” or Mormons, as they are popularly designated (see Mormonism). This proportion is steadily diminish­ing as the mining industries, the manufactures, and trans­portation increase, thus bringing in a constantly-increasing “ Gentile ” element. Of the aggregate population males are decidedly in excess of females : in 1880 there were 100 of the former to 93 of the latter, showing that poly­gamy was not generally practised. The proportion of foreign-born inhabitants is exceptionally large : in 1880 there were 44 foreign-born to 100 natives, *i.e*., nearly one- third of the population were immigrants. Of this foreign element there came from England, 19,654; Denmark, 7791 ; Sweden, 3750; Scotland, 3201 ; Wales, 2390; Ireland, 1321; Norway, 1214; Switzerland, 1040; Ger­many, 885. Thus England supplies nearly one-half and Denmark nearly one-fifth, while Germany and Ireland, which furnish the great bulk of the immigrants to the United States at large, are but feebly represented among the Mormons.

Utah is divided into twenty-four counties, enumerated, with their population in 1880, in the subjoined table.

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| --- | --- | --- | --- | --- | --- |
| County. | Pop. | County. | Pop. | County. | Pop. |
| Beaver | 3,918 | Kane | 3,085 | Sevier | 4,457 |
| Box Elder .... | 6,761 | Millard | 3,727 | Summit | 4,921 |
| Cache | 12,562 | Morgan | 1,783 | Tooele | 4,497 |
| Davis ......... | 5,279 | Pi Ute | 1,651 | Uintah | 799 |
| Emery | 556 | Rich | 1,263 | Utah | 17,973 |
| Garfield@@1 |  | Salt Lake .... | 31,977 | Wahsatch .... | 2,927 |
| Iron | 4,013 | San Juan | 204 | Washington .. | 4,235 |
| Juab | 3,474 | San Pete | 11,557 | Weber | 12,344 |

The principal cities, with their populations in 1880, are, —Salt Lake City, the capital of the Territory, 20,768; Ogden, in the Salt Lake valley, at the confluence of the Ogden and Weber rivers, 6069 ; Provo, in the valley of Utah Lake, 3432 ; and Logan, in Cache valley, 3396. There are numerous other smaller places, making a large aggregate of city and village population. This is a result of the policy of the Mormon Church, which has favoured the grouping of the farming population in villages.

As everywhere throughout the western United States, with the altitude above the sea there is a gradation of climate with respect to aridity. Upon the higher mountains there is sufficient rainfall for the needs of vegetation. But upon the low country the precipitation is slight, so that irrigation is almost universally practised by the agricul­turist. The annual rainfall at Salt Lake City, which is very favourably situated, being south-east of Great Salt Lake and at the immediate base of the Wahsatch Moun­tains, is about 30 inches. In all other habitable parts of the Territory it is less, being not greater than 10 inches in the southern and western portions. Temperature, also, has a wide range in different parts of the Territory. The mean annual temperature at Salt Lake City, which may serve as an average of the habitable parts of Utah, is about 45°. The range of temperature between summer and winter and between day and night is very great, and the changes of temperature are often startling in their magni­tude and abruptness.

The principal industries of Utah are agriculture and mining. At Salt Lake City and Ogden some manufacturing is done, and in the remote parts of the Territory cattle and sheep raising is carried on to a limited extent. Agriculture is confined mainly to the Mormons, while mining enterprise is carried on almost ex­clusively by Gentiles. In 1880 the area of land in farms was 655,524 acres, or 1∙2 per cent. of the total area of the Territory. A little over two-thirds of this was classed as improved, and nearly all the available water in the Territory was used to cultivate it. The average size of the farms was 69 acres, which was less than in any other State or Territory. The total value of the annual agri­cultural produce was valued at $3,337,410. The number of manu­facturing establishments was 640 and the value of the product $4,324,992. The principal mineral products are silver and lead, which are found associated in the same ores. The mines are situated almost entirely in the Wahsatch Range, east and south­east of Salt Lake City. During 1885 silver to the value of $6,750,000 and 23,000 tons of lead were mined. Of the latter metal Utah, next to Colorado, produces the largest quantity of any State or Territory of the Union.

Utah is well supplied with railroads. The Union and Central Pacific Railroads cross it near the northern boundary, the junction of these two lines being at Ogden. From this place a branch of the Union Pacific runs northward to Montana and another south­ward to Salt Lake City and thence to the southern part of the Territory. The Denver and Rio Grande Western connects Salt Lake City with Pueblo, in Colorado. In addition to these, there are

@@@1 Formed since the census of 1880 was taken.