

**THE RESOURCES
AND ATTRACTIONS
OF UTAH, PP. 1-73**

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The Resources and Attractions of Utah, pp. 1-73 by Various

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VARIOUS

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THE 415
RESOURCES
—AND—
ATTRACTIONS
—OF—
UTAH.

COMPLIMENTS OF
PASSENGER DEPARTMENT
—OF THE—
UNION PACIFIC RAILWAY.

OMAHA:
1888.

A COMPLETE AND COMPREHENSIVE DESCRIPTION
OF THE AGRICULTURAL, STOCK-RAISING
AND MINERAL RESOURCES
OF THE
TERRITORY;
ALSO STATISTICS IN REGARD TO ITS CLIMATE
ETC., COMPILED FROM THE
LATEST REPORTS OF
1887.

The Passenger Department of the Union Pacific Railway is indebted to MR. ROWE
E. STRAHORN, of Caldwell, Idaho, for the preparation of much of the original matter con-
tained in these pages.

OMAHA, MAY 1ST, 1888.

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INTRODUCTORY.

In many respects Utah is the most unique and inviting field open to the restless eastern world to-day. The wonderful gathering together in the great Salt Lake Basin of attractions in the way of climate, lakes, valleys, mountains, medicinal waters; the manifold advantages offered to hundreds of new industries; the wealth that waits in metal-ribbed hills and fertile vales—these are a few of nature's lavish gifts. It is believed that Utah is on the eve of a transfiguration. Something not unlike a "boom" is in the air. One by one those great natural divisions of the "New West" are being closed in upon by the resistless tide which has rolled westward since the birth of the world. Utah is almost the last. In fact, a mighty army has swept by, intent only on the Golden Gate, and its rear guard is now on the return march to attempt to gain a foothold in the before neglected interior region. All these strangers who are to come will find more clear days in the year than they ever saw before; they will find an atmosphere in which the very highest achievements of brawn or brain can be realized; they will find a natural sanitarium with every existing auxiliary known in nature; they will find mines as rich and varied as were ever opened to human eyes, and they will never know what a hot or a cold day, as understood in the east, is. So why should Utah not enter its new era of unexampled prosperity?

The Union Pacific Railway company wishes every patron a liberal share of all these good things in Utah. In attracting attention to the well-filled pages of this little work, it also desires to say that it is the result of much labor on the part of the very best authorities. Special acknowledgement is made to Hon. Caleb W. West, Governor of Utah, and Col. O. J. Hollister, for many years a leading citizen and writer of Salt Lake City, for the copious use of their valuable literary offerings.

THE RESOURCES AND ATTRACTIONS OF UTAH.

GENERAL VIEW.

Utah Territory is in the latitude of Virginia and Missouri, between the 37th and 42d parallels north, and about two-thirds of the way from St. Louis to San Francisco, between the 109th and 114th meridians west from Greenwich. Idaho Territory bounds it on the north, Colorado on the east, Arizona Territory on the South, and Nevada on the west. It has a maximum length of 325 miles by a breadth of 300 miles. Its land area is 84,970 square miles (52,601,600 acres), water area, 2,780 square miles (1,779,200 acres). Only that which can be artificially watered is really arable. The Wasatch Mountains bisect it from north to south, dividing it into two substantially equal parts. Of the part lying east of this range and drained by the Green and Colorado rivers and their tributaries, little use has yet been made. It is mountainous, its valleys are about a mile above tide-water, it has a little arable and considerable grazing land, with a great deal of coal on the slopes of the mountains where there has not been too much erosion.

The settled parts lie mainly along the western base of the Wasatch Mountains, between them and Salt Lake and Utah Lake, in Cache, Sanpete and other valleys; wherever, indeed, a stream flashed into the sunshine from the gloom of mountain gorge, is caught and trailed in a thousand rills upon the thirsty land. Salt Lake Basin extends 200 miles, from south of Nephi to Bear River Gates. It includes Salt Lake and Utah Lake, has the general altitude of the Alleghany Mountains, and is the paradise of the farmer, the horticulturist, and the fruit-grower. Cache Valley lies to the northeast, Sanpete Valley to the southeast of Salt Lake Valley. They are noted grain-producing sections, but having colder winters and shorter seasons are not so well adapted to fruit-growing as Salt Lake Basin. The Sevier River rises in Panguitch Lake, far south, and flows northward, finally breaking out of the mountains and losing itself in the sink of Sevier Lake. Its upper course is settled, wherever tributaries enter from the mountains on either hand.

The western one-third of Utah is mountain, desert, sink, and salt lake, with few oases of grazing or of possible arable land. In the northern part of the Territory the Wasatch is high and massive, there is great accumulation of snow in winter and the streams are correspondingly large and numerous. In the southern part, while the Range is not much lower or less in mass, it is warmer and there is little snow, smaller and fewer streams, and more desert in proportion. The isolated ranges in the Great Basin give rise to no streams of importance, and the valleys are largely desert. Many of them are underlaid, so to speak, with inexhaustible water, however, which will some day be reached by wells, and used to transform them into gardens. Nearly all of the mountains appear to be mineral-bearing, and enough water can usually be had for mining purposes.

UTAH.

GEOLOGY.

The greater part of the rock of the interior mountain area is a series of conformably stratified beds* reaching from the early Azoic to the late Jurassic times. In the latter these beds were raised—the Sierras, the Wasatch, and parallel ranges of the Great Basin were the consequence. In this upheaval important masses of granite broke through, accompanied by quartz, porphyries, felsite rocks and notably sientic granite with some granulite and gretsen occasionally. Then the Pacific Ocean on the west, and the ocean that filled the Mississippi Basin on the east, laid down a system of Cretaceous and Tertiary strata. These outlying shore beds, subsequently to the Miocene, were themselves raised and folded, forming the Pacific Coast range and the chains east of the Wasatch; volcanic rocks accompanying this upheaval as granite did the former one. Still later a final series of disturbances occurred, but these last had but small connection with the region under consideration.

There is a general parallelism of the mountain chains, and all the structural features of local geology, the ranges, strike of great areas of upturned strata, larger outbursts of gigantic rocks, etc., are nearly parallel with the meridian. So the precious metals arrange themselves in parallel longitudinal zones. There is a zone of quicksilver, tin, and chromic iron on the coast ranges; one of copper along the foot-hills of the Sierras; one of gold further up the Sierras—the gold veins and resultant placers extending far into Alaska; one of silver with comparatively little base metal, along the east base of the Sierras, stretching into Mexico; silver mines with complicated associations through Middle Mexico, Arizona, Middle Nevada, and Central Idaho; argentiferous galena through New Mexico, Utah, and Western Montana; and still further east, a continuous chain of gold deposits in New Mexico, Colorado, Wyoming and Montana. The Jurassic disturbance in all probability is the dating point of a large class of lodes: *a*, those wholly enclosed in the granites, and *b*, those in metamorphic beds of the series extending from the Azoic to the Jurassic. To this period may be referred the gold veins of California, those of the Humbolt mines and those of White Pine, all of class *b*; and the Reese River veins, partly *a*, and partly *b*. The Colorado lodes are somewhat unique, and in general belong to the ancient type. To the Tertiary period may be definitely assigned the mineral veins traversing the early volcanic rock; as the Comstock Lode and veins of the Owyhee District, Idaho. By far the greater number of metalliferous lodes occur in the stratified metamorphic rocks or the ancient eruptive rocks of the Jurassic upheaval; yet very important, and, perhaps, more wonderfully productive, have been those silver lodes which lie wholly in the recent volcanic formations.

CLIMATE.

The climate of a mountainous country like Utah will vary considerably with its varying altitudes and exposures. In the lower inhabited valleys it is agreeable and salubrious. The air is dry, elastic, transparent, and brace-

*Clarence King's Explorations 46th Parallel.

ing. The range of temperature and amount of precipitation can be studied from the following table, which is the result of the first twelve years observation made by the Fort Douglas Garrison, on the outskirts of Salt Lake City, and the succeeding seven years by the United States Signal Service officer at Salt Lake:

YEARS.	TEMPERATURE.				PRECIP'N
	Mean.	Max.	Min.	R'ge.	Inches.
1863.....	52.93	103	7	96	7.47
1864.....	52.22	97	-4	101	14.92
1865.....	50.11	100	6	94	15.51
1866.....	51.87	94	9	85	22.29
1867.....	52.71	95	0	95	26.14
1868.....	50.96	96	5	91	17.25
1869.....	53.61	97	7	90	22.32
1870.....	51.96	96	4	92	20.96
1871.....	53.09	104	8	96	23.12
1872.....	50.42	91	0	91	18.12
1873.....	49.26	98	-3	99	17.37
1874.....	50.19	97	8	89	19.55
1875.....	51.26	101	5	96	21.07
1876.....	50.64	97	7	90	18.31
1877.....	51.00	98	3	95	14.52
1878.....	51.29	97	5	92	17.96
1879.....	53.20	97	-10	107	13.11
1880.....	54.00	95	2	93	10.94
1881.....	51.54	100	13	87	15.88
Mean for Nineteen Years.....	51.54				15.72

In the last seven years there were two months in the winters, five in the springs, eight in the falls, and ten in the summers when the monthly range exceeded 50°, twenty-five months out of eighty-four. The extreme daily variation is greatest in summer; spring, fall, and winter following as named. An abstract of the monthly mean of diurnal variation at Fort Douglas, on the bench about 500 feet above Salt Lake, shows the mean temperature of June to September inclusive, at 2 P. M., to be 79°; at 9 P. M., 57; difference, 22°; mean per centage of sick for these months, 24.63. For the other eight months, the mean at 2 P. M. was 47°; at 9 P. M., 36°; difference, 11°; mean percentage of sick for these months, 32.63. This seems to indicate that the months of greatest diurnal variation are the healthiest months; and it is believed that they are so, generally, in Utah, unless from some local cause, as bad water, or drainage, or exposure. Those who have to sweater through many nights in a season with the thermometer between 80° and 90°, will appreciate the significance of the mean temperature of the four hottest months at Fort Douglas being but 57° at 9 P. M.

ANNUAL AND SEASONAL MEANS.

SEASONS.	TEMPERATURE.				PRECIPITATION.		
	Mean of Season.	Mean of the Max. Temperatures.	Mean of the Min. Temperatures.	Mean Daily Variation.	Mean Relative Humidity.	Snow and Rainfall, Inches.	Days on which Snow or Rain fell.
Spring.....	50.2	60.0	39.5	20.5	41.9	6.91	30.5
Summer.....	71.4	85.0	60.5	24.5	28.5	1.55	14.0
Fall.....	51.7	61.8	41.7	21.1	39.8	4.37	22.0
Winter.....	31.9	39.7	24.9	15.3	60.9	4.46	34.0
Annual.....	51.8	61.6	41.6	20.0	42.8	17.29	108.5

The annual mean of Salt Lake City places it very near the isothermal line of 50°, which crosses nearly 15° of latitude on each continent, owing to the influences of oceans, winds and elevations, starting on Puget's Sound and passing near or through Salt Lake City, Santa Fe, Denver, Burlington, Pittsburgh, New Haven, Dublin, Brussels, Vienna, and Pekin. The summer and winter means describe the same undulations in traversing the continents, and they are more indicative of the climate in its relations to animal and vegetable life than the annual mean. The mean annual temperature of New York and Liverpool are the same, yet throughout England the heat of summer is insufficient to ripen Indian corn, while the ivy, which grows luxuriantly in England, can scarcely survive the severe winters of New York. In both the East and West Indies the mean temperature of the hottest month in the year differs very little (at Singapore 8½°) from that of the coldest. At Quebec, on the other hand, the difference is 60°, and at some places in Siberia, 100°. At Salt Lake City it is about 47°.

A summer mean of 73.4° may be thought high, but to the extremes of summer heat in nearly all parts of the United States the lower valleys of Utah offer no exception. The higher valleys and mountains are always at hand, however, and Great Salt Lake exercises a mollifying oceanic influence on the extremes of temperature. "Some travelers have imagined that on its shores is to be found the most unique and wonderful climate on the face of the globe, combining, as it does, the light, pure air of the neighboring snow-capped mountains with that of the briny lake itself; and it is fancied by many that at certain points one may inhale an atmosphere salty and marine, like that of the shores of the Atlantic, happily combined with a cool, fresh mountain air, like the breath of the Alps themselves. Owing to the absence of marine vegetation about the shores, however, there are none of the pleasant odors of the seashore."* At all events, the dry and absorbent character of the atmosphere relieves the oppression felt in humid climates at high temperatures.

HUMIDITY, RAINFALL.

The same may be said with reference to extremes of cold, although the average humidity in winter is more than twice as great as in summer. For the year it is 43; at Denver it is 46; at Philadelphia, 73. For spring, summer and fall, it is 37, while for summer it is 28.5. The rainfall averages 17.3 inches a year, 40 per cent. of which is in the spring, 9 in the summer, 25 in the fall, and 25 in the winter. In latitude 40° there should be on general principles 30 inches in a year. Fort Laramie, Sacramento, and Santa Fe have about the same as Salt Lake City; Denver, a little less; while over the entire area of the United States east of the 100th Meridian west from Greenwich, the average annual rainfall is 40 inches, † 60 per cent. of which is at once thrown off in the river drainage. Nothing in the meteorological register of the last seven years indicates that the climate of Utah is grow-

* Surgeon E. P. Vulliam, U. S. A.

† Blodget.