

DEPARTMENT OF THE INTERIOR.
UNITED STATES GEOLOGICAL SURVEY OF THE TERRITORIES.
F. V. HAYDEN, U. S. GEOLOGIST-IN-CHARGE.

MISCELLANEOUS PUBLICATIONS.—No. 1.

LISTS OF ELEVATIONS

PRINCIPALLY IN

THAT PORTION OF THE UNITED STATES WEST
OF THE MISSISSIPPI RIVER.

FOURTH EDITION.

COLLATED AND ARRANGED
BY
HENRY GANNETT, M. E.

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PREFATORY NOTE.

It is the intention of the Survey to continue the collection of geographical data concerning the relief of the country west of the Mississippi River. These collections of heights have been published from time to time, in successive editions, under the title of "Lists of Elevations"

The *first* edition, prepared by Professor Cyrus Thomas, was a 12mo pamphlet of 31 pages, which appeared in 1872 as an "unclassified publication" of the Survey. The next (or *second*) edition, by Mr. Gannett, was an 8vo pamphlet of 47 pages, which constituted No. 1 of the series entitled "Miscellaneous Publications" of the Survey. The *third* edition, also by Mr. Gannett, appeared in 1875. (See the catalogue of the publications of the Survey, 2nd ed., pp. 17 and 28.)

The present, being therefore the *fourth* edition, embodies the results of Mr. Gannett's continued labors in this field up to the present date, 1877, and represents a great amount of additional information on the subject, being about double the size of the third edition. It contains, among a variety of other matter, profiles of nearly all the railroads in the part of the United States above mentioned. The results given by these profiles have been made to accord, and the heights of several thousands of points on them have been determined with an approach to accuracy. This edition contains also the heights of many thousands of points determined approximately by means of the barometer. Elevations of many thousands of mountain-peaks are given, from which very correct ideas of the ruling heights of the principal ranges may be derived. The mean heights of the States and Territories and of the United States have been determined with an approach, at least, to correctness.

It contains also tables of the slopes of the principal streams of the West, which are of value in studying the important question of irrigation.

With these various lists of elevations there is given with this edition a map of the United States, in approximate contours of 1,000 feet of vertical intervals, which, in a measure, embodies all the results of this department. Toward the improvement and ultimate perfection of this map, this work is to be mainly directed in future.

This map not only indicates, in a rough way, the height of any part of the country, and the areas above certain heights, but the magnitude, elevation, and general slopes of the great plateau underlying the mount-

ain ranges of the West, the true *Sierra Madre*; the trends, mean heights, and geographical character of the ranges; and the areas covered by plains, plateaus, and mountains.

To express still more clearly the facts brought out by the map, it is the intention of the Survey to make shortly a relief model of the United States, on the basis of this map.

The importance of such a publication in a practical point of view is apparent. The materials have been collated and compared by Mr. Gannett with great industry and care, for which he deserves much credit.

F. V. HAYDEN,
U. S. Geologist.

INTRODUCTION.

The idea of making a compilation of elevations in the western country was first put in a practical form in this Survey.

In 1872 Prof. Cyrus Thomas, then attached to the Survey, prepared a small 12mo pamphlet of 31 pages, containing such heights as he had been able to collect. Shortly after it was published, Professor Thomas left the Survey, and the work was continued by me.

In 1873 a second edition, of 47 pages octavo, and in 1875 a third, enlarged to 72 pages octavo, were issued by the Survey. These editions being exhausted, and there being still a demand for them, Dr. Hayden has desired me to prepare a fourth edition, containing all the material which it is possible to gather, and present it in tabular form, from the reconnaissances and surveys of the West, from railroads, and other sources.

Profiles of nearly all the railroads west of the Mississippi River have been collected, and much is due to the engineers of these roads for their kindness in furnishing information. I have endeavored, with some degree of success, to reconcile differences between these profiles and to establish the heights of points on them. From these and other sources the lists of towns, &c., have been largely increased over former editions.

The list of mountain-peaks has been greatly enlarged. Most of the work under Lieut. G. M. Wheeler, and a portion of that of the survey of the 40th parallel under Mr. Clarence King, have become available and have been incorporated. The work of this Survey in Colorado has also added largely to this list.

All other tables have been largely increased.

The accompanying hypsometric map of the United States is a result which has long been in prospective. Its object is to give an approximate idea of the ruling heights, of the extent, area, slopes, and general character of the great western plateau, and of the trends, mean heights, and areas covered by the principal mountain-ranges. It is intended finally to be the embodiment of the whole work.

In this work, as in all others in which I am or have been engaged, I am greatly indebted for assistance of all kinds, both of material and of ideas, to Dr. Hayden.

HENRY GANNETT,
Topographer.

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LISTS OF ELEVATIONS.

SECTION I.

DISCUSSION AND CORRECTION OF RAILROAD PROFILES.

I have been actively engaged for some time in collecting the profiles of railroads in the States and Territories west of the Mississippi River. I have succeeded in getting together quite a large number, indeed, those of nearly all the important lines, and the larger proportion of the smaller ones. For this I am greatly indebted to the engineers of the roads, who have, in nearly all instances, promptly answered my inquiries, in many cases putting themselves to considerable trouble in my behalf.

The correction of these profiles, so as to obtain the best results possible from them, is a work of the greatest perplexity. It resembles nothing more than the adjustment of a very shaky system of triangulation, the errors of which may be due not only to poor observing, but to mistakes in recording.

The work done in this direction by Mr. James T. Gardner, the results of which are published in the annual report of the survey for 1873, has furnished the elevations of a number of principal points with a close approximation to accuracy. To carry our simile still further, the points determined by him serve as primary points, by which the determinations of the secondary and tertiary points may be corrected. In this way they are of the greatest service.

In the correction of these profiles and the establishment of the heights of points on them I have proceeded in general as follows: I have based the whole on Mr. Gardner's determinations. Except in a very few cases, I have found no occasion for making any changes. Then I have deduced the heights of two or three important points, in addition, by the mean of several lines; these are: the mean level of Lake Superior and high and low water at Saint Paul. The elevation of the different datum points at Omaha and Council Bluffs, and of other points depending directly on them, I have found it necessary to revise. This I have been enabled to do, as I have a greater number of, and more reliable profiles bearing on this point than were available to Mr. Gardner. The changes made in the results are but slight.

These points having been settled, I have taken up those profiles, both ends of which are determined, and if they agree, I have corrected the road throughout accordingly, and assumed that all points on them are finally established, unless there is good reason for the contrary belief. There are very few cases where there are discrepancies between profiles thus corrected.

This work increased very much the number of checks on the remaining profiles. Still other checks were found at all junctions and crossings.

The errors of each road, as indicated by these checks, were distributed roughly in proportion to the distances, unless I had information concerning the road which led to a different method of distribution. Large errors are often introduced by incorrect junctions of the profiles of different divisions of the road. At these points of junction, whenever they could be ascertained, I have made the correction, believing it more likely to be there than distributed along the road in the leveling.

In the following tables the details of the corrections of each profile are appended to it. The profiles are arranged, as far as possible, in the order in which they were corrected, one road depending more or less on others for its corrections. The first column of figures gives the height as received from the office of the road, or whatever the source may be; the second column contains the corrected height.

Elevations of points determined by Mr. James T. Gardner, and used in the correction of the profiles following.

		Elevation.
		<i>Feet.</i>
Atchison, high water, Missouri River, (supposed to be 1844)....	Kans	809.88
Atchison, low water, Missouri River.....	.....	784.88
Burlington, high water, 1851, Mississippi River.....	Iowa	529.32
Burlington, low water, Mississippi River.....	.....	511.89
Cedar Rapids, ^a Chicago and Northwestern Railroad station.....	Iowa	741.15
Cedar Rapids, ^a low water, Cedar River.....	.....	717.85
Cheyenne, Union Pacific Railroad Station.....	Wyo.	6,075.28
Chicago, city directrix.....	Ill.	587.15
Chicago, mean surface Lake Michigan.....	.....	589.15
Clinton, bridge over Mississippi River.....	Iowa	611.15
Clinton, high water, 1864, Mississippi River.....	.....	593.15
Colorado Springs, track.....	Colo.	5,985.58
Council Bluffs, ^a Union Depot, track.....	Iowa	999.70
Davenport, high water, Mississippi River.....	Iowa	569.88
Davenport, low water, Mississippi River.....	.....	553.22
Denver, Kansas Pacific Railroad, track at station.....	Colo.	5,196.58
Denver, Denver and Rio Grande Railroad, track at station.....	.....	5,197.58
Dubuque, low water, Mississippi River.....	Iowa	599.15
Fair Play, door-sill of Sentinel office before fire of 1873.....	Colo.	9,964.49
Fremont, ^a Union Pacific Railroad station.....	Nebr.	1,213.90
Golden City, directrix.....	Colo.	5,728.98
Hannibal, high water, 1851, Mississippi River.....	Mo.	485.10
Kansas City, high water, 1844, Missouri River.....	Mo.	770.77
Kansas City, track of Kansas Pacific Railroad at State line.....	.....	763.52
Kearney Junction, ^a depot.....	Nebr.	2,156.90
Keokuk, high water, 1851, Mississippi River.....	Iowa	502.55
Keokuk, low water, extreme, Mississippi River.....	.....	481.83
Lawrence, Kansas Pacific Railroad, at Lawrence and Leavenworth Junction.....	Kans	831.52
Lawrence, Kansas Pacific Railroad depot.....	.....	845.52
Leavenworth, low water, 1867, Missouri River.....	Kans	763.89
Leavenworth, high water, 1844, Missouri River.....	.....	788.89
Lake Michigan.....	.....	589.15
Lake Huron.....	.....	589.15
Missouri Valley Junction ^a	Iowa	1,019.70
Ogden.....	Utah	4,303.30
Omaha, ^a low water, Missouri River.....	Nebr.	977.90
Omaha, ^a high water, Missouri River.....	.....	996.90
Omaha, ^a bed of river.....	.....	964.10
Omaha, ^a bench heretofore called 966 feet above sea.....	.....	997.90
Omaha, ^a track at station Union Pacific Railroad.....	.....	1,060.40
Omaha, ^a top east and west abutments railroad bridge.....	.....	1,049.40
Prairie du Chien, low water, Mississippi River.....	Wis.	613.00
Quincy, low water, 1854, Mississippi River.....	Ill.	472.39
Quincy, high water, 1851, Mississippi River.....	.....	493.11
Rock Island, Chicago, Rock Island and Pacific depot.....	Ill.	568.68
Rock Island, high water, 1852, Mississippi River.....	.....	566.68
Rock Island, city base.....	.....	546.68
Sioux City, railroad track on levee.....	Iowa	1,123.35
Sioux City, low water, Missouri River.....	.....	1,104.00
Saint Joseph, high water, Missouri River.....	Mo.	820.11
Saint Louis, city directrix.....	Mo.	426.29
Saint Louis, high water, 1844, Mississippi River.....	.....	435.87
Saint Louis, high water, 1858, Mississippi River.....	.....	431.57
Saint Louis, high water, 1851, Mississippi River.....	.....	431.17
Saint Louis, low water, extreme, Mississippi River.....	.....	394.48

^aThe heights have been slightly changed.

Elevation of Lake Superior.

	<i>Feet.</i>	Above sea.
From the report of the geological survey of Canada, 1849 : Lake Superior above Huron	21. 41	<i>Feet.</i>
From the report of Mr. Noble, engineer of Sault Ste. Marie canal, of line of levels run in 1876 : Lake Superior above Huron	20. 20	
By the Chicago and Northwestern Railroad levels : Lake Superior above Michigan	20. 50	
By levels of United States lake survey : Lake Superior above Michigan	20. 25	
Lakes Michigan and Huron are at the same level. I adopt the last result in preference to the mean of all, as the work was done by a scientific organization. The next most reliable result, that by Mr. Noble, is practically identical.		
Lake Michigan (or Huron) above sea		589. 15
Lake Superior above sea		609. 40

Elevation of Saint Paul.

First determination : Lake Superior		609. 4
Saint Paul, low water, above Lake Superior, via Lake Superior and Mississippi Railroad	76	685. 4
Second determination : Brainerd, above Lake Superior, via Northern Pacific Railroad ..	605	1, 214. 4
Saint Paul, low water, below Brainerd, via Saint Paul and Pacific Railroad, preliminary line	525	689. 4
Third determination : Glyndon, above Lake Superior, by Northern Pacific Railroad ...	323	932. 4
Saint Paul, low water, below Glyndon, via Saint Paul and Pacific Railroad	247	685. 4
Fourth determination : Winona, low water, by Chicago and Northwestern Railroad, above Lake Michigan	55. 7	644. 85
Saint Paul, low water, above Winona, low water, by levels of United States Engineer Corps	45. 5	690. 35
Summation :	<i>Weights.</i>	
First determination	1	685. 40
Second determination	0	689. 40
Third determination	1	685. 40
Fourth determination	0	690. 35
Final result, low water, at Saint Paul		685. 40

The second result is thrown out, as it is from a preliminary line merely. The fourth on account of the uncertainty at Winona, as explained in connection with the Chicago and Northwestern Railroad.

Elevation of Omaha.

From the more recent and reliable profiles of roads centering on Omaha, which I have received, I have been able to obtain a better determination than Mr. Gardner's of the height of this point, and of other places in its neighborhood.

	<i>Feet.</i>	Above sea. <i>Feet.</i>
First determination :		
Hannibal, Missouri, high water, Missouri River, (assuming Mr. Gardner's height to be correct).....		820. 11
Kearney Junction, above Hannibal, high water, via Saint Joseph and Denver City Railroad.....	1, 343	2, 163. 11
Omaha, low water, Missouri River, below Kearney Junction, via Union Pacific Railroad, <i>vide</i> Gardner's report.....	1, 179	984. 11
Second determination :		
Pacific Junction, Iowa, above Kansas City, high water, Missouri River.....		770 77
Kansas City, high water, via Kansas City, Saint Joseph and Council Bluffs Railroad.....	207. 12	977. 89
Kearney Junction, above Pacific Junction, via Burlington and Missouri Railroad, in Nebraska.....	1, 185	2, 162. 89
Omaha, low water, below Kearney Junction, via Union Pacific Railroad.....	1, 179	983. 89
Third determination :		
Kansas City, high water, Missouri River.....		770. 77
Union Pacific Transfer Depot, above Kansas City, high water, via Kansas City, Saint Joseph and Council Bluffs Railroad.....	230. 12	1, 000. 89
Omaha, low water, below Transfer Depot.....	21. 80	979. 09
Fourth determination :		
Clinton, high water.....		594
Missouri Valley Junction, above Clinton, high water, via Chicago and Northwestern Railroad.....	435	1, 029
Sioux City, on levee.....		1, 123. 35
Missouri Valley Junction, below Sioux City levee, via Sioux City and Pacific Railroad.....	99. 5	1, 023. 85
Missouri Valley Junction, assumed.....		1, 027
Council Bluffs Station, below Missouri Valley Junction, via Chicago and Northwestern Railroad.....	20	1, 007
Omaha, low water, below Council Bluffs Station.....	21. 8	985. 2
Fifth determination :		
Missouri Valley Junction.....		1, 027
Fremont, junction with Union Pacific Railroad below Missouri Valley Junction, via Sioux City and Pacific Railroad.....	193	1, 220
Omaha, low water, below Fremont, via Union and Pacific Railroad.....	236	984
Summation :		
First determination.....		984. 11
Second determination.....		983. 89
Third determination.....		979. 09
Fourth determination.....		985. 20
Fifth determination.....		984
Adopted result, Omaha, low water.....		983. 26

Mr. Gardner's result is 977.90, 5.36 feet lower. The accordance among the results is very much better, it will be noticed, by this discussion than by his.

In Mr. Gardner's discussion, he made use of an old profile of the Chicago, Burlington and Quincy Railroad from the collection in the Geological Report of Iowa, White. This profile is checked at Pacific Junction by the Kansas City, Saint Joe and Council Bluffs Railroad, which shows it to be in error 22 feet at this point.

The profile of the Chicago, Rock Island and Pacific Railroad, which he used, was an old profile and was probably from the same source. The records of this road were burned in the Chicago fire, and therefore a more reliable profile cannot be obtained.

DETERMINATIONS OF ELEVATIONS.

This change in the height of Omaha necessitates several changes in its vicinity, as follows:

		Above sea.	Gardner's result above
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Fremont, above Omaha, low water, by Union Pacific Railroad	236	1,219.26	1,213.90
Kearney Junction, above Omaha, low water, by Union Pacific Railroad.....	1,179	2,162.26	2,156.90
Missouri Valley Junction, Chicago and Northwestern Railroad.....		1,027	1,019.70
Cedar Rapids, Chicago and Northwestern Railroad.....		751	741.15
Cedar Rapids, low water, Chicago and Northwestern Railroad.....		739	717.85

(See profile of Chicago and Northwestern Railroad.)

RAILROAD PROFILES.

Houston and Texas Central Railroad (from the chief engineer).

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Houston	37	37	Richland	377	378
Eureka	76	76	Angus	447	448
Gum Island	95	95	Corsicana	427	428
Thompson	121	121	Rice	474	475
Cypress	157	157	Ennis	547	548
Hockley	225	225	Palmer	471	472
Waller	252	252	Ferris	476	477
Hempstead	245	245	Hutchins	470	471
Howth	281	281	Miller	426	427
Courtney	191	191	Dallas, crossing Texas		
Navasota	219	219	Pacific Railroad on		
Millican	300	300	grade	467	468
Wellborn	322	322	Richardson	637	638
Bryan	371	371	Plano	667	668
Benchley	306	306	Allen	664	665
Sutton	383	383	McKinney	618	619
Hearne, crossing I. &			Melissa	692	693
Great N. R. R. on grade.	308	309.4	Van Alstyne	803	804
Calvert	338	339	Howe	859	860
Hammond	412	413	Sherman, crossing Texas		
Bremond	460	461	Pacific Railroad	746	747
Kosse	503	504	Dennison, connect with		
Thornton	496	497	Missouri, Kansas and		
Groesbeck	481	482	Texas Railroad	739	740
Mexia	537	538	Dennison, low water in		
Wortham	483	484	Red River	522	523

Western branch.

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Hearne	308	310.7	Paige	573	576
Chappell Hill	334	337	McDade	565	568
Brenham	356	359	Elgin	590	593
Burton	436	439	Manor	533	536
Ledbetter	465	468	Austin	573	576
Giddings	536	539			

Waco and Northwestern branch.

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Bremond	460	462	Harrison	467	469
Reagan	375	377	Waco	395	397
Marlin	393	395	Cleburne	774	776
Perry	483	485	Weatherford	1,014	1,016

All crossings and junctions are at grade.

At Hearne this road is 2.7 feet lower than the International and Great Northern Railroad. I have adopted the mean of the two results, 309.4 feet. At Dallas, 14 feet

lower than the Texas Pacific Railroad, and at Dennison, carrying on the connection at Hearne, it checks with the Missouri, Kansas and Texas Railroad. The discrepancy at Dallas, I have concluded, is in the Texas Pacific Railroad, as the profile is an old published one.

International and Great Northern Railroad (from the office of the road).

	Above sea.		Above sea.
	<i>Feet.</i>		<i>Feet.</i>
Columbia	33	Hearne, junction with Houston and Texas Central Railroad, same grade.	309
Chenango	46	Englewood	420
Sandy Point	57	Lake	315
Arcola	66	Marquez	409
Pierce Junction	58	Jewett	497
Houston	55	Keechie	282
Prairie	87	Oakwoods	280
Westfield	114	Bed of Trinity River	175
Spring	126	Douglas	310
Willis	381	Palestine	490
Waverly	365	Palestine	490
Phelps Junction, same grade	378	Neches	410
Dodge	400	Bed of Neches River	275
Riverside	165	Jacksonville	525
Riverside, bed of Trinity River ..	87	Reynolds	422
Trinity	234	Troupe Junction, same grade ..	470
Lovelady	300	Overton	510
Crockett	350	Kilgore	370
Grapeland	480	Bed Sabine River	230
Elkhart	390	Longview, crossing on grade ..	336
Palestine	490	Troupe, junction on grade	470
Austin	480	White House	428
Duval	795	Tyler	535
Round Rock	720	Lindale	547
Taylor	547	Bed of Sabine River	295
Rockdale	469	Mineola, approximate	420
Milano	475		
Bed of Brazos River	215		

All crossings are at grade.

At Hearne this road is 2.7 feet higher than the Houston and Texas Central Railroad. I have adopted the mean of the two results. At Longview the International and Great Northern Railroad is 6 feet lower than the Texas Pacific Railroad, but as the profile of the latter is an old published one, I have decided to put the discrepancy on that road. I have, therefore, left this road without correction.

Texas and Pacific Railroad (from published profile).

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Shreveport	204	204	Brooklyn	529	519
Marshall	451	448	Mesquite	395	383
Longview	342	336	Dallas	481	468
Silver Lake	350	342			

Crossings are at grade.

These heights are said to be above sea. At Longview this road is 6 feet above the International and Great Northern Railroad; at Dallas, 13 feet above the Houston and Texas Central. I have distributed the errors on this road, as the profiles of the others appear to be much more reliable.

LIST OF ELEVATIONS.

Texas and Pacific Railroad, preliminary surveys (from Mr. John E. Thorne, engineer).

These profiles are based on a barometric height of 3,800 feet for Fort Bliss. The work is instrumental.

	Elevation.
	<i>Fcet.</i>
El Paso	3,800
Rio Grandé crossing	3,863
Mesa, opposite La Mesilla	4,308
Florida Pass	4,750
Rio Mimbres crossing	4,683
Ojo de la Vaca	5,152
Continental divide, point of Burro Mountains	4,936
Point of Pyramid Mountains	4,375
Vallé de las Playas	4,300
Peloncillo Pass, Peloncillo Mountains	4,446
Vallé del Saux (San Domingo Valley)	3,658
Railroad Pass, Chiricahui Mountains	4,490
Puerto del Dado, Chiricahui Mountains	4,826
Head of Rio Arivaypa	4,555
Old Camp Grant	2,267
Nugent's Pass, Dragoon Mountains	4,820
Tres Alamos, San Pedro Valley	3,430
Tucson	2,520
Saccaton	1,494
Gila River, Mouth of the San Pedro	1,960
Pimas villages (Maricopa Wells)	1,291
<i>Another line—</i>	
Santa Cruz, mouth of the Sonoita	3,420
Camp Chittenden	4,851
Summit of mountain, four miles east of the camp	4,905
Crossing of the San Pedro	3,993
Summit of the Dragoon Mountains	4,555
Vallé de los Pimos	4,056
Summit of the Chiricahui Mountains	4,651
Valley east of the Chiricahui Mountains	4,091
Divide between north and south drainage	4,637
Summit of the Peloncillo Mountains	4,417
Vallé de las Playas	4,300

As the true height of Fort Bliss has never been determined instrumentally, this road cannot be corrected.

Kansas City, Saint Joseph and Council Bluffs Railroad (from chief engineer).

	Elevation.
	<i>Fcet.</i>
Kansas City, high-water mark on south pier of bridge	770.77
Kansas City, union depot	765.69
Kansas City, track on bridge	786.09
Harlem, semaphore	767.19
Harlem, depot	763.89
Parkville	770.69
Waldron	775.49
East Leavenworth, depot	781.69
Beverly	786.69
Beverly crossing of Chicago, Rock Island and Pacific Railroad	786.69
Weston	790.99
Iatan	806.99

Kansas City, Saint Joseph and Council Bluffs Railroad—Continued.

	Eleva- tion.
	<i>Feet.</i>
Sugar Lake	811. 79
Winthrop, junction	807. 29
Winthrop, depot	806. 59
Top of rail, C. and A. bridge	815. 87
Top of rail, Chicago, Rock Island and Pacific crossing	806. 49
Rushville	815. 89
Hall	820. 89
Lake Station, side-track	844. 09
Crossing of Hannibal and Saint Joe Railroad	846. 69
Saint Joseph, bridge-crossing	843. 79
Saint Joseph, Francis street	842. 49
Amazonia	850. 69
Nodaway, side-track	847. 89
Forbes	865. 79
Forest City	877. 09
Bigelow	878. 89
Craig	888. 89
Corning	893. 79
Nishnabotna, side-track	896. 89
Phelps	913. 09
Watson	922. 29
Hamburg	930. 09
Hamburg, semaphore, Burlington and Missouri Railroad junction	929. 89
East Nebraska City, junction	944. 19
East Nebraska City, depot	945. 89
Percival	950. 89
McPaul	957. 89
Bartlett	966. 69
Haynie's, side-track	972. 59
Pacific Junction, Chicago, Burlington and Quincy crossing	977. 89
Pacific Junction, depot	979. 19
Pacific Junction, city side-track	980. 39
Trader's Point	991. 69
Council Bluffs, depot	1, 005. 00
Union Pacific Railroad, transfer-depot	1, 005. 06
Union Pacific Railroad, bridge-rail	1, 055. 84
Omaha, passenger-depot	1, 056. 26

This road checks so nearly at the ends as to make corrections unnecessary, except slight changes at Council Bluffs and Omaha. All crossings are at grade.

Hopkins branch.

	Eleva- tion.
	<i>Feet.</i>
Amazonia	850. 69
Savannah, new station	1, 118. 24
Savannah, old station	1, 040. 64
Rosendale	941. 34
Bolekow	947. 74
Barnard	961. 24
Marysville	1, 054. 84
Pickering	1, 041. 09
Hopkins	1, 065. 99
State line, on Chicago, Burlington and Quincy Railroad	1, 068. 19

These require no correction.

Saint Louis, Kansas City and Northern Railroad (from S. T. Emerson, chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Saint Louis, city directrix	403	428. 29
Saint Louis, high water, 1844	410. 6	435. 87
Ferguson	495	520
Saint Charles, highest point of track on bridge.....	494	519
Saint Charles, bottom Missouri River.....	396	421
Saint Charles, ordinary water	411	436
Saint Charles, high water, 1844	441	466
Dardenne, or Saint Peter's, high water, Mississippi River.....	428	453
Warrenton	848	873
Pendleton	905	930
Mexico, crossing of branch of Chicago and Alton Railroad.....	803	928
Centralia, junction with branch to Columbia	869	894
Moberly, crossing of Missouri, Kansas and Texas Railroad.....	857	882. 66
Salisbury Junction	711	736
Keytesville, Chariton River, bottom.....	625	650
Grand River Bridge	632	657
Grand River, bottom, $\frac{1}{2}$ mile above mouth	639	664
Brunswick, junction of Chillicothe branch	635	660
Camden, Missouri River, water a little above ordinary stage.....	714	739
Liberty Landing	725	750
Liberty Landing, ordinary water, Missouri River.....	712	737
North Missouri, junction with Hannibal and Saint Joseph Railroad..	731	754

Base is Saint Louis city directrix. At North Missouri Junction the road checks within two feet.

Saint Joseph division.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Lexington Junction	689	714
One mile south of Vibbard.....	1, 063	1, 088
Converse	1, 066	1, 091
Lathrop, crossing branch of Hannibal and Saint Joseph Railroad ..	1, 054	1, 079
Plattsburg, crossing branch Chicago, Rock Island and Pacific Rail- road	938	963
Bottom Platte River.....	785	810
Matrux Summit.....	1, 017	1, 042
Saint Joseph.....	813	836

Assuming Lexington Junction as given by the main line, the road checks at Saint Joseph within two feet.

Northern division.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Moberly	857	882. 66
Macon, track Saint Louis, Kansas City and Northern Railroad.....	875	900. 66
Macon, track Hannibal and Saint Joseph Railroad	854	879
Kirksville, Quincy, Missouri and Pacific Railroad crossing.....	965	990
Glenwood, Missouri, Iowa and Nebraska Railroad crossing	983	1, 008
Queen City.....	994	1, 019
State line, Missouri and Iowa.....	982	1, 007

All junctions and crossings are at grade, except the Hannibal and Saint Joseph at Macon.

Assuming Moberly as given by the main line, this branch checks at Glenwood with the Missouri, Iowa and Nebraska Railroad within one foot.

Missouri Pacific Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Saint Louis directrix	406	428. 29
Franklin	458	480
Gasconade River, low water	474	496
Osage River, low water	499	521
Jefferson City	534	556
Sedalia	867	889
Warrensburg	852	874
Holden	832	854
Lee's Summit	1, 032	1, 054
Independence, fair-grounds	1, 012	1, 034
Big Blue River, low water	696	718
Kansas City, levee	741	766

There is a discrepancy of 2.71 feet between the ends of this road.
The correction is indicated by the true height of the Saint Louis directrix.

Hannibal and Saint Joseph Railroad (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
High water in Mississippi River at Hannibal	459. 5	485. 10
Hannibal, depot	460. 3	485. 9
Palmyra Junction	638. 8	664
Woodland	667	692
Munroe	724. 5	750
Hunnnewell	745	770
Lakenan	719	744
Shelbina	769	794
Leutner	780. 5	806
Clarence	814. 5	840
Macon (crossing of Saint Louis, Kansas City and Northern Rail- road, whose grade is 22.5 feet higher)	854. 5	879
Macon, depot	857. 5	883
Bevier	770. 5	796
Callao	802	827
New Cambria	811. 5	836
Bucklin	776	800
Saint Catharine	787. 5	811. 5
Brookfield	746. 8	770
La Clede (crossing of Burlington and Southwestern Railroad, at grade)	776. 8	800
Meadville	719. 5	742. 5
Wheeling	730	753
Crossing of Brunswick, Chillicothe and Omaha Railroad	737. 5	760. 5
Chillicothe	754. 5	777
Utica	729. 5	751. 5
Mooreville	911	932
Breckenridge	916. 5	937
Nettleton	948. 5	968. 5
Hamilton	977	996
Kidder	1, 007. 5	1, 026
Cameron Junction	1, 016. 5	1, 034. 5
Cameron Junction (crossing of Chicago, Rock Island and Pa- cific Railroad, at grade)	1, 018. 2	1, 036. 2
Osborne	1, 026	1, 044
Stewartsville	948. 2	966. 2
Easton	902	920
Saint Joseph	815	833. 11
Saint Joseph, high water in Missouri River	802	820. 11
Saint Joseph (crossing of Saint Louis, Kansas City and North- ern Railroad, at grade)	817. 3	835. 4
Saint Joseph (crossing of Kansas City, Saint Joseph and Coun- cil Bluffs Railroad, at grade)	829	847. 1

Cameron branch, Hannibal and Saint Joseph Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Turney	1,038.5	1,056.5
Lathrop	1,059	1,077
Crossing of Saint Louis, Kansas City and Northern Railroad, at grade	1,060.3	1,079.3
Holt	851	869
Kearney	817	835
Liberty	836	854
North Missouri Junction	736	754
Harlem	725	743
Junction Kansas City, Saint Joseph and Council Bluffs Railroad	737.5	755.5
Grade on Kansas City bridge	758.5	786.77
Kansas City, high water, 1844	742.5	770.77
Kansas City, depot	738.3	766.57

Atchison branch, Hannibal and Saint Joseph Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Rushville	795.5	815.5
Crossing of Kansas City, Saint Joseph and Council Bluffs Railroad, near Winthrop	787.5	807.29
Crossing of Chicago, Rock Island and Pacific Railroad, near Winthrop	787.5	807.5
Winthrop	790.9	811
Grade, on Atchison bridge	797	816
Atchison, high water in Missouri River	783.4	809.88
West Quincy, high water in Mississippi River	466.7	493.11
West Quincy, grade	473.5	499.5
Missouri Valley Railroad Junction	466.5	492.5

A comparison of this road with the Saint Louis, Kansas City and Northern and the Kansas City, Saint Joseph and Council Bluffs Railroads, both of which are quite well established, shows the following agreements and discrepancies:

	Correction. <i>Feet.</i>
Hannibal, station	+ 25.6
Hannibal, high water Missouri River (Mr. Gardner's determination)	+ 25.6
Macon, junction with a branch Saint Louis, Kansas City and Northern Railroad	+ 24.5
Saint Joseph, station	+ 18.1
Saint Joseph, high water Missouri River (Mr. Gardner's determination)	+ 18.1
Saint Joseph, track Saint Louis, Kansas City and Northern Railroad	+ 18.1
Saint Joseph, track Kansas City, Saint Joseph and Council Bluffs Railroad	+ 18.1
Winthrop, track Kansas City, Saint Joseph and Council Bluffs Railroad	+ 19.79
Atchison, high water Missouri River (Mr. Gardner's determination)	+ 26.92
Lathrop, track Saint Louis, Kansas City and Northern Railroad	+ 18.7
North Missouri, junction with Saint Louis, Kansas City and Northern Railroad (Mr. Gardner's determination)	+ 18
Kansas City, high water Missouri River, 1844 (Mr. Gardner's determination)	+ 26.27
West Quincy, high water Mississippi River (Mr. Gardner's determination)	+ 26.4

In other words, starting at Hannibal, the line checks within 1.1 feet as far as Macon. At Saint Joseph it is 7.5 feet too high; at Winthrop, 5.8 feet; at Atchison, 1.3 feet too low. At Lathrop it is too high by 6.9 feet; at North Missouri Junction, 7.6 feet; while at Kansas City it is too low by 2.7 feet.

This profile is different from that which Mr. Gardner used in the determination of Saint Joseph, &c., and does not appear to be as correct. For example, the difference

in height between Kansas City, high water, 1844, and North Missouri Junction is given as 6.5 feet. Mr. Gardner had this leveled expressly for his purposes, with a result of 18.54 feet. The two roads with which this intersects, the Kansas City, Saint Joseph and Council Bluffs, and the Saint Louis, Kansas City and Northern, check with Mr. Gardner's determinations and with one another in every case, and therefore I have put all the corrections on the Hannibal and Saint Joseph Railroad, distributing them as follows:

From Hannibal to Macon I have added 25 feet; at Cameron Junction, 18 feet; and from Macon to Cameron the difference is distributed. From Cameron to Saint Joseph, 18 feet have been added; on the Atchison branch, 20 feet; on the Cameron branch, 18 feet; and on the Quincy branch, 26 feet.

Kansas Pacific Railroad (from the office of the road).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
State Line, Kansas,			Blackwolf.....	1,467	1,583
Missouri.....	648	763.52	Wilson.....	1,586	1,702
Armstrong.....	657	773	Bunker Hill.....	1,766	1,882
Muncy Siding.....	669	785	Fossil.....	1,734	1,850
Secondine.....	693	809	Walker.....	1,846	1,962
Edouardsville.....	685	801	North Fork Bend....	1,830	1,946
Tiblow.....	695	811	Hays.....	1,893	2,009
Lenape.....	683	799	Ellis.....	2,019	2,135
Stranger.....	691	807	Ogallah.....	2,269	2,385
Fall Leaf.....	711	827	Park's Fort.....	2,347	2,463
Lawrence and Leav-			Coyote.....	2,492	2,608
enworth Junction..	716	831.52	Buffalo.....	2,657	2,773
Lawrence.....	730	845.52	Grinnell.....	2,806	2,922
Buck Creek.....	748	864	Carlyle.....	2,948	3,064
Williamsville.....	753	869	Monument.....	3,083	3,199
Perryville.....	754	870	Gopher.....	3,220	3,336
Medina.....	755	871	Sheridan.....	3,005	3,121
Newman.....	763	879	Wallace.....	3,203	3,319
Grantville.....	779	895	Pond Creek.....	3,175	3,291
Topeka.....	788	904	Eagle Tail.....	3,336	3,452
Silver Lake.....	817	933	Monotony.....	3,676	3,792
Rossville.....	835	951	Arapaho.....	3,908	4,024
Saint Mary's.....	857	973	Cheyenne Wells.....	4,179	4,295
Vermillion Tank.....	873	989	First View.....	4,479	4,595
Wamego.....	902	1,018	Eureka.....	4,147	4,263
Saint George.....	902	1,018	Kit Carson.....	4,191	4,307
Manhattan.....	926	1,042	Wild Horse.....	4,340	4,456
Ogden.....	962	1,078	Aroya.....	4,550	4,666
Fort Riley.....	974	1,090	Mirage.....	4,743	4,859
Junction City.....	984	1,100	Hugo.....	4,952	5,068
Chapman Creek.....	1,016	1,132	Lake.....	5,203	5,319
Detroit.....	1,037	1,153	River Bend.....	5,395	5,511
Abilene.....	1,057	1,173	Cedar Point.....	5,614	5,730
Sand Spring Tank.....	1,048	1,164	Godfrey.....	5,505	5,621
Solomon.....	1,077	1,193	Agate.....	5,360	5,476
Salina.....	1,127	1,243	Deer Trail.....	5,087	5,203
Bavaria.....	1,173	1,289	Bijou.....	5,105	5,221
Brookville.....	1,250	1,366	Kiowa.....	5,398	5,514
Rock Spring.....	1,343	1,459	Box Elder.....	5,430	5,546
Elm Creek.....	1,470	1,586	Schuyler.....	5,238	5,354
Summit Siding.....	1,556	1,672	Denver Pacific Junc-		
Fort Harker.....	1,484	1,600	tion.....	5,095	5,212
Ellsworth.....	1,440	1,556	Denver.....		5,196.58

This road checks at the ends within 1.5 feet.

Leavenworth branch of the Kansas Pacific Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Junction	716	831.52
Valley of Stranger's Creek	702	818
Plateau summit	857	973
Missouri River	697	813
Junction with Missouri Pacific Railroad	662	778
Leavenworth	667	783

Height of Junction is from the main line.

Arkansas Valley branch of the Kansas Pacific Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Kit Carson	4,003	4,307
Arkansas crossing, low water	3,581	3,885
Las Animas	3,695	3,909
La Junta	3,772	4,076
Trinidad	5,701	6,005
Trinidad, top of monument erected by Lieut. G. M. Wheeler	5,727.91	6,032

Height of Kit Carson is from the main line.
The same correction is used throughout.

Preliminary surveys for extension of the Kansas Pacific Railroad (from published profiles).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Sheridan, end of track, 1868	2,957	3,121
Fort Wallace	3,056	3,220
Pond Creek	3,126	3,290
Big Sandy	4,192	4,356
Fort Lyon, water in Arkansas River	3,725	3,889
Mouth of the Chequaco	4,266	4,430
Cimarron Pass, Raton Mountains	6,166	6,330
Red River	5,634	5,798
Las Vegas	6,233	6,397
Pecos River, near Anton Chico	5,406	5,570
Cañon Blanco Pass	6,917	7,081
San Felipe, water in Rio Grande	5,042	5,206
Isleta, water in Rio Grande	4,803	4,967
Fort Craig	4,319	6,483
Mouth of Santa Barbara Cañon	3,896	4,060
Summit west of Rio Grande	4,853	5,017
Summit of Cook's Mountain	4,876	5,040
North end of Sierra Redonto	4,716	4,880
Arroyo Miembres	4,472	4,636
Ojo de la Vaca	4,849	5,013
Point of Burro Mountains	4,944	5,108
Burro Mountains	3,992	4,156
Runk's Pass	4,148	4,312
Railroad Pass	4,192	4,356

Preliminary surveys for the extension Kansas Pacific Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Nugent's Pass	4,522	4,686
Fort Grant	1,985	2,149
Mouth of the San Pedro	1,692	1,856
Head of the cañon of the Gila	1,594	1,758
White's Ranch	1,202	1,366
Saccaton	1,066	1,230

Sheridan is given by the profile of the constructed line of the Kansas Pacific. This gives a correction which has been applied throughout.

Missouri, Kansas and Texas Railroad (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Hannibal, junction with Hannibal and Saint Joseph, Burlington and Missouri River, and Toledo, Wabash and Western Railroads.	609.44	485.9
Rensalier	873.44	750
Hassard	882.44	758
Monroe	868.49	744
Clapper	891	767
Stoutsville	745	621
Austin	888	663
Paris	791.24	666
Halliday	912	787
Madison	912	787
Evansville	871	746
Moberly, junction with Saint Louis, Kansas City and Northern Railroad	975	882.66
Higbee	987	862
Russell	870	745
Burton	782	656
Fayette	767	641
Talbott	730	604
Estill	772	646
Franklin	701	575
Boonville	717	591
Prairie Lick	805	679
Pilot Grove	942	816
Harris	963	836
Pleasant Green	885	758
Clifton	831	704
Beaman	875	748
Sedalia, junction Missouri Pacific, and Saint Louis and Lexington Railroads	1,017	889
Camp Branch	1,013	.....
Green Ridge	1,013	.....
Windsor	985	.....
Calhoun	884	.....
Lewis	895	.....
Clinton	917	.....
Ladue	855	.....
Montrose	934	.....
Appleton	978	.....
Rockville	881	.....
Schell City	864	.....
Walker's	966	.....
Nevada	930	.....

Missouri, Kansas and Texas Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Deerfield.....	901	.....
Fort Scott, junction with Missouri River, Fort Scott and Gulf Railroad.....	912	.....
Marmaton.....	1,027	.....
Hiattville.....	1,113	.....
Hepler.....	1,112	.....
Walnut.....	1,041	.....
Osage Mission.....	1,000	.....
South Mound.....	1,103	.....
Parsons, junction Neosho division.....	921	920
Labette.....	883	882
Oswego.....	914	913
Chetopa.....	851	850
Russell Creek.....	883	882
Blue Jacket.....	798	797
Vinita, junction with Saint Louis and Santa Fé Railroad.....	717	716
Adair.....	703	702
Prior Creek.....	649	648
Choteau.....	643	642
Lilietta.....	611	610
Gibson.....	552	551
Muskogee.....	618	617
Oaktaha.....	609	608
Checota.....	606	605
Eufala.....	636	635
South Canadian.....	676	675
Reams.....	628	627
McAlister.....	703	702
Perryville.....	727	726
Limestone Gap.....	664	663
Stringham.....	644	643
Atoka.....	575	574
Caney.....	549	548
Caddo.....	724	723
Durant.....	658	657
Colbert.....	677	676
Dennison, junction Houston and Texas Central Railroad.....	741	740

Neosho division.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Parsons.....	921	920
Ladore.....	928	927
Galesburg.....	998	997
Urbana.....	950	949
Chanute, junction Leavenworth, Lawrence and Galveston Railroad.....	933	932
Humboldt.....	954	953
Neosho Falls.....	999	998
Le Roy.....	1,013	1,012
Burlington.....	1,056	1,055
Strawn.....	1,066	1,065
Hartford.....	1,106	1,105
Neosho Rapids.....	1,095	1,094
Emporia, junction with Atchison, Topeka and Santa Fé Railroad.....	1,161	1,160
Americus.....	1,177	1,176
Rock Creek.....	1,212	1,211
Big John.....	1,237	1,236

Neosho Division—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Council Grove.....	1,257	1,256
Parkersville.....	1,366	1,365
White City.....	1,495	1,494
Skiddy.....	1,245	1,244
Junction City, junction with Kansas Pacific Railroad.....	1,101	1,100

All crossings and junctions are at grade.

At Junction City, the terminus of the Neosho division, there is a correction of — 1 foot to reduce it to the height given by the Kansas Pacific Railroad. Following this branch and then the main line to Dennison, the junction with the Houston and Texas Central Railroad, this correction is found to hold good, and this part of the road is corrected accordingly.

Taking the Houston and Texas Central, without the correction introduced at Hearne by the International and Great Northern, and we have a continuous line from Kansas City, practically to the Texas coast, via Kansas Pacific, Missouri, Kansas and Texas, and Houston and Texas Central Railroads, giving an error of but 1 foot.

The main line, between Hannibal and Parsons, shows the following discrepancies in the corrections indicated by roads crossing:

	Correction.
	<i>Feet.</i>
Hannibal.....	— 122.5
Monroe.....	— 118.5
Moberly.....	— 92
Sedalia.....	— 123
Parsons.....	— 1

At Monroe, probably the point given is not the crossing. I have assumed that it is not. At Moberly there is a great discrepancy, for which I am unable to account, except on the supposition that there is a mistake in the figures on one of the roads. I have decided to ignore this, and have distributed the discrepancy between Hannibal and Sedalia, on the road between these points.

The great discrepancy between Sedalia and Parsons, 127 feet, is evidently one of figures in making up the profile, and, as I have nothing to indicate where it has taken place, I am unable to use this part of the road.

Denver and Rio Grande Railroad (from the chief engineer).

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Denver.....	5,143.6	5,197.58	Borst's.....	6,759	6,813
Shops.....	5,189	5,243	Husted's.....	6,547	6,601
Littleton.....	5,309	5,363	Monument.....	6,302	6,356
Acequia.....	5,477	5,531	Colorado Springs..	5,931.6	5,985.58
Plum.....	5,782	5,836	Widefield.....	5,660	5,714
Citadel.....	6,070	6,124	Fountain.....	5,510	5,564
Douglass.....	6,272	6,326	Little Buttes.....	5,313	5,372
Larkspur.....	6,613	6,667	Piñon.....	4,985	5,039
Greenland.....	6,875	6,929	North Pueblo.....	4,659	4,713
Divide.....	7,156	7,210	South Pueblo.....	4,622	4,676
Henry's.....	6,931	6,985			

The elevation of Denver track, at station, is 5,197.58, being a correction of 54 feet. As there is no check on this, I have used it as a constant correction.

Denver and Rio Grande Railroad—Continued.

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
South Pueblo.....	4,645	4,676	Cucharas.....	5,895	5,956
Saint Charles.....	4,879	4,940	Santa Clara.....	6,147	6,208
Greenhorn.....	5,045	5,096	Apishpa.....	6,106	6,167
Graneros.....	5,750	5,811	El Mora.....	5,825	5,886
Huerfano.....	5,589	5,659			

The height of South Pueblo given above indicates the correction for this part of the road.

Cañon City branch of Denver and Rio Grande Railroad.

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
South Pueblo.....	4,622	4,676	Beaver Creek.....	4,947	5,001
Goodnight.....	4,677	4,731	Labran.....	5,130	5,184
Meadows.....	4,749	4,803	Coal Banks.....	5,304	5,358
Swallow's Nest.....	4,808	4,862	Oil Creek.....	5,225	5,279
Carlisle Springs.....	4,900	4,954			

The height of South Pueblo given above indicates the correction for this branch.

Colorado Central Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Golden Junction.....	5,186.4	5,615.4
Ralston.....	5,177	5,606
Ralston Creek, water.....	5,150	5,579
Church Station.....	5,010	5,439
Rock Creek.....	4,880	5,309
Coal Creek.....	4,980	5,329
Coal Creek, siding.....	4,920.7	5,350
Davidson.....	4,980	5,409
Lakeside.....	4,823	5,252
South Boulder Creek.....	4,807	5,236
North Boulder Creek.....	4,805	5,234
Crossing Boulder Valley Railroad.....	4,849	5,278
Ni Wot.....	4,689	5,118
Longmont.....	4,527	4,957

Golden Junction, the height of which was determined by Mr. Gardner, is base. I have no check on this road.

Preliminary line up Clear Creek to Boulder Pass, Colorado.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Golden directrix.....	3,629	5,728.96
Clear Creek Forks.....	2,635	6,893
Soda Creek.....	3,273	7,531
Head of Rayne's Bar.....	3,335	7,593

Preliminary line up Clear Creek to Boulder Pass, Colorado—Cont'd.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Fall River	3,461	7,719
Downieville	3,760	8,018
Forks of Creek	4,023	8,286
Georgetown	4,256	8,514
Foot of Pass	5,357	9,615
Summit of Pass	7,055	11,313

Golden directrix, whose height has been determined by Mr. Gardner, is base. There is no check.

Denver and South Park Railroad (preliminary line).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i> ^{cor}
Foot Platte Cañon, water	5,698	5,487
Mouth North Fork	6,248	6,037
Point Lookout	6,350	6,139
Mouth Buffalo Creek	6,370	6,159
Elk Creek	6,475	6,264
Mouth Deer Creek	7,295	7,084
Trout Creek	7,705	7,494
Bailey's Ranch	7,880	7,659
Slaght's Ranch	8,175	7,964
Hepburn's Park	8,375	8,164
Grant	8,725	8,514
Godfrey's Ranch	9,120	8,909
Kenosha House	9,840	9,629
Kenosha Summit	10,139	9,928
In South Park	9,754	9,543
Jefferson Creek	9,730	9,519
Michigan Creek	9,640	9,429
Tarryall Creek	9,987	9,776
McLaughlin's Ranch	9,900	9,689
Trout Creek	9,845	9,634
Beaver Creek	10,132	9,921
Fairplay	10,175	9,964.49
Dudley	10,573	10,362
South Platte	9,957	9,746
Ten-Mile Creek	9,778	9,567
Little Platte	9,074	8,863
Upper Granite Road	9,330	9,119
Trout Creek Pass	9,620	9,409
Trout Creek	8,571	8,360

Another preliminary line in South Park.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Jefferson Creek	9,640	9,429
Michigan Creek	9,485	9,274
Tarryall Creek	9,451	9,240
Tarryall and Park Gulch divide	9,465	9,254
Platte River, Garaud's Ranch	9,325	9,114
South limit Fairplay	10,000	9,789
Salt-works	9,128	8,917

Fairplay, whose height has been determined by Mr. Gardner, has furnished a correction for both lines.

Atchison, Topeka and Santa Fé Railroad (from the chief engineer, Mr. A. A. Robinson).

	Elevation.	
	Feet.	Feet.
Atchison, water in Missouri River ^a	735	803
Parnell, junction with Central Branch Union Pacific Railroad.....	1,008	1,076
Mortonville	1,122	1,190
Valley Falls.....	871	939
Meriden	927	995
Topeka, crossing Kansas Pacific Railroad	836	904
Carbondale	1,047	1,081
Burlingame.....	1,016	1,050
Osage City	1,048	1,082
Reading	1,040	1,074
Emporia, crossing Missouri, Kansas and Texas Railroad	1,127	1,161
Cottonwood.....	1,150	1,183
Florence	1,245	1,277
Peabody	1,325	1,256
Newton	1,403	1,433
Newton Junction (with Wichita and Southwestern Railroad).....	1,390	1,419
Halstead.....	1,293	1,320
Burrton.....	1,385	1,410
Hutchinson	1,458	1,482
Sterling.....	1,571	1,494
Raymond	1,657	1,679
Ellinwood	1,717	1,738
Great Bend	1,834	1,854
Larned	1,993	2,011
Kinsley	2,182	2,200
Dodge City	2,474	2,492
Lakin.....	2,995	3,013
Colorado and Kansas State line.....	3,111	3,129
Grenada, $\frac{1}{2}$ mile east of crossing Arkansas River.....	3,278	3,296
Las Animas	3,934	3,952
Crossing of branch of Kansas Pacific Railroad, 106 miles west of Las Animas	3,985	4,003
La Junta	4,119	4,137
Napesta.....	4,377	4,395
Crossing of Denver and Rio Grande Railroad near Pueblo.....	4,706	4,724
North Pueblo.....	4,695	4,713

^a Neither low nor high water, but a medium stage. See the Central Branch Union Pacific Railroad, which has the same base.

All junctions and crossings are at grade.

The crossing of the Kansas Pacific at Topeka gives a correction of 68 feet, which checks at Parnell Junction with the Central Branch Union Pacific Railroad. The next check westward is at Emporia, by the Neosho Division of the Missouri, Kansas and Texas, which is checked at each end. This correction, + 34 feet, indicates an error of 34 feet, which, from information received from Mr. Robinson, I place between Topeka and Carbondale, using between Carbondale and Emporia the correction indicated at the latter point. The next check is at North Pueblo, by the Denver and Rio Grande. This correction, + 18 feet, differs 16 feet from the last. From information as to the character of the leveling, I have used this correction of 18 feet as far east as Kinsley, and thence to Emporia have distributed the error. On account of the character of the leveling between Topeka and Kinsley, this road is valueless as a check on the height of Denver.

Kansas Midland Railroad, branch Atchison, Topeka and Santa Fé Railroad (from the chief engineer).

	Elevation.	
	Feet.	Feet.
Topeka	836	904
Tecumseh	806	874
Lecompton	793	861
Lawrence, junction with Leavenworth and Gulf Railroad.....	772	840

The height of Topeka from the main line gives the correction.

Wichita and Southwestern Railroad, branch of Atchison, Topeka and Santa Fé Railroad (from the chief engineer).

	Elevation.	
	Feet.	Feet.
Newton Junction.....	1,390	1,419
Sedgwick	1,326	1,355
Wichita.....	1,256	1,285

The height of Newton Junction by the main line gives the correction.

Saint Louis and San Francisco Railroad (from printed report).

	Elevation.	
	Feet.	Feet.
Saint Louis directrix.....	406	428.29
Pacific	458	480
Moselle	933	955
Rolla	1,179	1,201
Gasconade River	629	651
Dixon	1,146	1,168
Marshfield	1,499	1,521
Springfield	1,360	1,382
Pierce City	1,203	1,225
Granby	1,041	1,063
Seneca	861	883
Missouri State line.....	780	802
The following are from preliminary surveys, whether barometric or instrumental I have no knowledge:		
Arkansas River.....	574	
Kingfisher Creek	950	
North Fork	1,428	
Canadian River Junction	1,519	
Texas boundary	2,020	
New Mexico boundary.....	2,735	
Fort Bascom.....	3,726	
Anton Chico	5,690	
Cañon Blanco	6,960	
San Domingo (reach Rio Grande).....	5,100	
Albuquerque	4,836	
Isleta (leave Rio Grande)	4,768	
Campbell's Pass	7,152	
Fort Wingate	6,622	
Arizona boundary	5,890	
Sunset Crossing.....	4,760	

Saint Louis and San Francisco Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Tonto Pass	7,529	
Cedar Summit	6,908	
Partridge	5,506	
Beale's road	5,520	
Laja Summit	6,308	
Aubrey Valley	5,180	
Peacock Mountains	3,408	
Hualapais	3,440	
Mojave Gap	1,475	
Colorado River, at the Needles	355	
Piute Summit	2,579	
Perry Basin	725	
Agua Azul	1,999	
Crater Pass	2,300	
Mojave River	2,400	
Soledad Pass	3,215	
San Buenaventura	12	
Santa Barbara	10	
San Luis Summit	1,561	
Walsunville	28	
San Francisco	48	

The true height of Saint Louis directrix is 428.29 feet, indicating a correction of + 22 feet. I have applied this over the constructed portion of the road.

Missouri, Iowa and Nebraska Railroad (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Alexandria, Mo., grade	52	502.55
Alexandria, high water, 1851, Mississippi River	52	502.55
Alexandria, low water, 1872, Mississippi River	30	481.83
Cross Saint Louis, Kansas City and Northern at grade	52	504
Wayland	96	548
Clark City	259	711
Cahoka	262	714
Luray	302	754
Granger	324	776
Arbela	220	672
Memphis, county-seat	314	766
Memphis, town	352	804
Downing	434	886
Lancaster, county-seat	535	987
Glenwood Junction, Saint Louis, Kansas City and Northern Railroad at grade	555	1,008
Dean	390	842
Sedan, cross Burlington and Southwestern Railroad at grade	392	844
Centreville, cross Chicago, Rock Island and Pacific Railroad at grade	578	1,030
Following is merely located line :		
Corydon	657	1,109
Leon, cross-branch Burlington and Missouri River Railroad	590	1,042
Mount Ayr	801	1,253
Highest point between Mississippi and Missouri Rivers	865	1,317
Cloriuda	597	1,049
Lowland, Burlington and Missouri River Railroad station	527	979
Valley of the Missouri River	491	943

Missouri, Iowa and Nebraska Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Eastport	491	943
Eastport, rail Kansas City, Saint Joseph and Council Bluffs Railroad	494. 14	946
Eastport, water in Missouri River March 12, 1871	477. 08	929

Water in Mississippi at Alexandria is practically at the same height as at Keokuk ; hence low water is 481.83. Using this correction, at Glenwood there is a difference of 1 foot from the height by Saint Louis, Kansas City and Northern Railroad. This is the only check, and therefore a constant correction is applied throughout.

Central Branch Union Pacific Railroad (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Atchison depot	19	823
Parnell Junction (with Atchison, Topeka and Santa Fé Railroad) ..	272	1, 076
Farmington	252	1, 056
Monrovia	268	1, 072
Effingham	358	1, 162
Muscotah	187	991
Whiting	340	1, 144
Netawaka	375	1, 179
Wetmore	367	1, 171
Sother	393	1, 197
Corning	583	1, 387
Centralia	484	1, 288
Vermillion	412	1, 216
Frankfort	369	1, 173
Barrett's	356	1, 160
Irving	366	1, 170
Blue Rapids	412	1, 216
Waterville	397	1, 201
Barnes	570	1, 374
Greenleaf	676	1, 480
Washington	542	1, 346

Base is at the Missouri River at Atchison. This I find to be practically the same as for the Atchison, Topeka and Santa Fé Railroad, *i. e.*, a medium stage, with an elevation of 804 feet. The base of the Atchison, Topeka and Santa Fé Railroad is 803 feet. At Parnell Junction, this road agrees with the Atchison, Topeka and Santa Fé Railroad. I have applied a correction of + 804 feet throughout the road, as there is no check beyond Parnell Junction.

Saint Joseph and Denver City Railroad (from chief engineer of road).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Saint Joseph, low water in Missouri River	756	800
Saint Joseph, high water in Missouri River	776	820
Walthea	780	824
Troy	1, 055	1, 099
Atchison and Nebraska Junction	1, 073	1, 117
Norway	1, 005	1, 049

Saint Joseph and Denver City Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Ryan.....	856	900
Severance.....	866	910
Wolf River Crossing.....	863	907
North Robinson.....	913	957
Manville.....	936	980
Hiawatha.....	1,058	1,102
Hamlin.....	947	991
Labetha.....	1,272	1,316
Seneca.....	1,118	1,162
Axtell.....	1,327	1,371
Beattie.....	1,258	1,302
Marysville.....	1,120	1,164
Hanover.....	1,192	1,236
Hollenburg.....	1,223	1,267
Steele City.....	1,233	1,277
Fairbury.....	1,280	1,324
Alexandria.....	1,272	1,316
Belvidere.....	1,465	1,509
Carleton.....	1,518	1,562
Davenport.....	1,624	1,668
Eden.....	1,693	1,737
Fairfield.....	1,744	1,788
Georgetown.....	1,808	1,852
Hastings.....	1,900	1,944
Idaho.....	1,967	2,011
Jefferson.....	2,043	2,087
Fort Kearney.....	2,086	2,130
Kearney Junction.....	2,119	2,163

The corrections at the ends are the same, therefore the road is corrected uniformly throughout.

Preliminary surveys for a branch of the Saint Joseph and Denver City Railroad (from the chief engineer).

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Junction.....	1,080	1,124	Soldier Creek.....	1,104	1,166
Little Grasshopper Creek.....	932	979	Summit.....	1,356	1,422
Walnut Creek.....	930	980	Red Vermillion.....	1,010	1,078
Netawaka.....	1,104	1,158	Louisville.....	970	1,040
Circleville.....	1,080	1,138	Manhattan.....	970	1,042

The base is the same as for the main line of the Saint Joseph and Denver City Railroad, which supposes a correction of +44 feet. At Manhattan, however, supposing the grade to be the same as that of the Kansas Pacific Railroad, there is a discrepancy of 28 feet. This has been distributed along the line.

Preliminary survey for a branch of the Saint Joseph and Denver City Railroad (from the chief engineer).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Little Blue River...	1,190	1,234	Belleville	1,500	1,544
Washington	1,280	1,324	Republican River..	1,395	1,439
Mill Creek.....	1,240	1,284			

The base is the same as for the main line, which supposes a correction of +44 feet. There is no check; therefore this constant correction is made.

Burlington and Missouri River Railroad in Nebraska (from the chief engineer).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Plattsmouth.....	935	984	Crete	1,320	1,369
Omaha Junction...	952	1,001	Dorchester	1,453	1,502
Louisville	992	1,041	Fairmount	1,608	1,657
South Bend	953	1,002	Grafton	1,663	1,712
Ashland	1,053	1,102	Harvard	1,766	1,815
Greenwood	1,092	1,141	Inland	1,845	1,894
Waverly	1,088	1,137	Juniata	1,936	1,985
Newton	1,103	1,152	Kenesaw	2,015	2,064
Lincoln	1,115	1,164	Lowell	2,037	2,086
Denton	1,199	1,248	Kearney Junction..	2,114	2,163
Highland	1,380	1,429			

The base is low water at Burlington, which is assumed at 486 feet. This profile is continuous with that of the road in Iowa. The correction indicated by the Kansas City, Saint Joseph and Council Bluffs Railroad at Pacific being applied, makes the road check exactly at Kearney Junction with the Saint Joseph and Denver City Railroad from Atchison. Hence the road is corrected accordingly.

Nebraska Railroad (from the chief engineer).

	Elevation.	
	Feet.	Feet.
Brownville.....	0	919
Peru.....	10	929
Barney	20	939
Minersville	35	954
Nebraska City, track	45	964
Nebraska City, low water in Missouri River.....	0	919
Summit.....	280	1,199
Dunbar	150	1,069
Arlington	310	1,229
Syracuse.....	145	1,064
Unadilla	175	1,094
Palmyra	235	1,154
Bennett.....	235	1,154
Cheney's.....	525	1,444
State Prison	275	1,294

Nebraska Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Lincoln, crossing of Burlington and Missouri River and Atchison and Nebraska Railroads, at grade	245	1, 164
Woodlawn	275	1, 194
Malcomb	380	1, 299
Germantown	665	1, 584
Seward	530	1, 449

Lincoln is given by the Burlington and Missouri River Railroad as 1,164. This is assumed as base, and the road corrected accordingly. There is no check on it. Heights are evidently given only to the nearest 5 feet.

Atchison and Nebraska Railroad (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Atchison, high water Missouri River	688. 03	809. 88
Troy, junction with Saint Joseph and Denver Railroad	1, 025. 38	1, 117
Iowa Point	749	843
White Cloud	755	851
Falls City	806	904
Salem	817	917
Humboldt	887	989
Table Rock	932	1, 036
Tecumseh	1, 015	1, 120
Sterling	1, 087	1, 193
Summit	1, 268	1, 375
Lincoln	1, 056	1, 164

Troy Junction, by Saint Joseph and Denver Railroad, is 1,117; Lincoln, by Burlington and Missouri River Railroad, 1,164. This indicates a discrepancy of 16 feet, which is distributed along the road.

Chicago and Northwestern Railroad in Iowa (from chief engineer).

	Above L. Michigan.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Clinton, low water ^a Mississippi River	5	594
Clinton Station grounds	27	616
Low Moor	75	664
Dewitt (cross Davenport and Saint Paul Railroad)	117	706
Grand Mount	154	743
Calamus	139	728
Wheatland (cross Davenport and Saint Paul Railroad)	113	702. 15
London	151	740
Clarence	259	848
Stanwood	281	870
Mechanicsville	330	919
Lisbon	306	895
Mount Vernon	276	865

^a Probably this should be high water, as if it were low water there would be but 5 feet fall from Dubuque. An older profile of this road, which I have, gives this height as high water.

Chicago and Northwestern Railroad in Iowa (from chief engineer)—Continued.

	Above L. Michigan.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Bertram	151	740
Cedar Rapids	162	751 ^a
Cedar Rapids, low water in Cedar River	150	739
Fairfax	202	791
Norway	227	816
Blairstown	273	862
Belleplaine	258	847
Tama, valley of Iowa River	250	839
Montour, valley of Iowa River	286	875
Le Grand	371	960
Quarry	316	905
Marshall (cross of Central Railroad of Iowa)	316	905
State Center	504	1,093
Colo	477	1,066
Nevada	435	1,024
Ames	354	943
Boone	573	1,162
Moingona, bridge over Des Moines River	325	914
Moingona, low water Des Moines River	298	877
Ogden	527	1,116
Beaver	459	1,048
Grand Junction	473	1,062
New Jefferson	489	1,078
Crossing of Coon River	415	1,004
Carroll	658	1,247
Arcadia, on divide between Mississippi and Missouri Rivers	867	1,446
Divide, natural ground	879	1,468
Denison	610	1,199
Missouri Valley Junction (with Sioux City and Pacific Railroad)	440	1,027
Council Bluffs Station	420	1,007
Council Bluffs, low water ^b Missouri River	409	983

^a Gardner gives Cedar Rapids as 741.15, and Cedar River, low water in Cedar River, 717.85. These figures are probably deduced from an old profile of this road published in White's Geology of Iowa.

^b All reports of this road (and I have examined at least half a dozen) concur in this height of low water in Missouri River at Council Bluffs; *i. e.*, 11 feet below the station. It is, however, manifestly a mistake, and probably one of just 10 feet, as is indicated by the result of the levels run there for Mr. Gardner. These gave a difference in height between low water and the flat bottom-land near the river of 21.8 feet.

The base of this road is the mean level of Lake Michigan, determined by Mr. Gardner to be 589.15 feet above sea. Using this, Missouri Valley Junction is 1,029, while by the Illinois Central and Sioux City and Pacific Railroads it is 1,024. I give somewhat the greater weight to the former result, setting its height at 1,027. I have corrected the road by the constant addition of the height of Lake Michigan, 589 feet.

Sioux City and Pacific Railroad (from chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Sioux City levee	322.5	1,123.35
Junction with Dakota Southern Railroad	322.5	1,123.35
Junction with Sioux City and Saint Paul Railroad	321.5	1,122.35
Junction with Illinois Central Railroad	321.5	1,122.35
Sergeant's Bluff	315	1,116
Salix	304	1,105
Sloan	296	1,097

Sioux City and Pacific Railroad—Continued.

	Elevation.	
	Feet.	Feet.
Whitney	281	1, 082
Onawa	271	1, 072
Blencoe	263	1, 064
River Sioux	260	1, 061
Mondamin	245	1, 046
Modale	236	1, 037
California Junction	231	1, 032
Missouri Valley Junction	224	1, 025
Junction with Chicago and Northwestern Railroad	223	1, 027
Sioux City and Pacific Ferry, low water in Missouri River	209	1, 013
Crossing of Omaha and Northwestern Railroad at Blair	303. 5	1, 107
Blair	307	1, 111
Kenard	364	1, 168
Belle Creek	382	1, 186
Fremont	416	1, 220
Junction with Union Pacific Railroad	416	1, 220

The true height of Sioux City levee is given by Mr. Gardner. The correction indicated by this is used as far as Missouri Valley Junction. The mean result for this point from this road and the Chicago and Northwestern Railroad is 3 feet higher than that given by this road, and necessitates an increase in the correction thenceforward of this amount.

Fremont, Elkhorn and Missouri Valley Railroad, branch of Sioux City and Pacific Railroad (from the chief engineer).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Fremont	416	1, 220	Crowell	492	1, 296
Nickerson	418	1, 222	West Point	533	1, 337
Hooper	444	1, 248	Wisner	600	1, 404
Scribner	473	1, 277			

Base the same as for the Sioux City and Pacific Railroad. I have used the same correction as for the latter road between Missouri Valley and Fremont.

Dakota Southern Railroad (from the office of the road).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Sioux City	1, 154. 5	1, 123. 35	Burbank	1, 211	1, 180
McCook	1, 159	1, 128	Vermillion	1, 200	1, 169
Jefferson	1, 160	1, 129	Meckling	1, 208	1, 177
Davis Junction, (branch to Sioux Falls.)	1, 162	1, 131	Gayville	1, 219	1, 188
Elk Point	1, 179	1, 148	James River	1, 229	1, 198
			Yankton	1, 233	1, 202

Sioux City serves as base.

Keokuk and Des Moines Railroad (from Geological Report of Iowa, White).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Keokuk	32	514	Ottumwa	200	682
Sand Prairie	80	562	Comstock	242	724
Belfast	72	554	Eddyville	234	716
Croton	77	559	Given	255	737
Farmington	106	588	Oskaloosa	292	774
Bonaparte	98	577	Leighton	325	807
Bentonsport	122	604	Pella	434	916
Summit	247	729	Otley	451	933
Kilbourne	147	629	Munroe	480	962
Doud's	157	639	Prairie City	491	973
Independent	170	652	Woodville	505	987
Alpine	178	660	Des Moines	351	833

Base is low water in Mississippi River at Keokuk, 481.83 feet. The road is corrected uniformly throughout.

Des Moines and Fort Dodge Railroad (from the chief engineer).

	Elevation.	
	Feet.	Feet.
Des Moines	321	807
Des Moines, low water in Des Moines River	297.25	783
Valley Junction (with Chicago, Rock Island and Pacific Railroad)	334.48	816
Oshawa	409.93	892
Waukee	554.27	1,036
Dallas Center	590.10	1,072
Minburn	567.25	1,049
Perry	482.66	965
Rippey	585.25	1,067
Grand Junction (with Chicago and Northwestern Railroad, level grade)	556.87	1,039
Paton	621.35	1,103
Gowril	659.29	1,141
Kesho	672.38	1,154
Tara	664.23	1,147
Fort Dodge	519.60	1,002
Fort Dodge, low water in Des Moines River	487.25	969

Base is taken as low water at Keokuk. Using the correction indicated by this, Des Moines is 4 feet lower than is given by the Chicago, Rock Island and Pacific Railroad. Increasing the correction 4 feet, to correspond with this, this road agrees at Fort Dodge with the Illinois Central Railroad, as that is corrected, and I have therefore used this correction throughout. But at Grand Junction, by this road, the crossing of the Chicago and Northwestern Railroad is 23 feet lower than by the latter road, whereas they should be the same. This is a discrepancy for which I cannot account, and I have not attempted to reconcile it.

Preliminary surveys of the Keokuk Northern and Iowa Northern Central Railroad (from Geological Report of Iowa, White).

	Elevation.	
	Feet.	Feet.
Bonaparte	95	577
Summit, head of Cressup's Creek	264	746
Reed's Creek	189	672
Big Mound Summit	275	758

Preliminary surveys of the Keokuk Northern and Iowa Northern Central Railroad—Continued.

	Elevation.	
	Feet.	Feet.
Little Cedar Creek	190	673
Summit near Salem	250	734
Skunk River, low water, Oakland	90	574
Summit between Skunk River and Big Creek	231	715
Big Creek, low water	130	615
Burlington and Missouri River Railroad at Mount Pleasant	262	747
Summit between Big and Crooked Creeks	268	754
Crooked Creek, low water	165	651
Summit west of Crawfordsville	266	752
Washington	285	762
Davis Creek, water	202	690
Summit between Davis Creek and English River	299	786
English River, low water	134	621
Iowa River, one mile below Iowa City	152	639
Brown Summit	389	877
Cedar River	235	717
Chicago and Northwestern Railroad depot at Cedar Rapids	261	751

Base is low water at Keokuk. Using this there is a discrepancy of 8 feet at Cedar Rapids between this road and the Chicago and Northwestern Railroad. This error is distributed.

Burlington and Missouri River Railroad in Iowa (from the Geological Report of Iowa, White).

	Elevation.	
	Feet.	Feet.
Burlington, low water Mississippi River	0	511.89
Burlington, high water Mississippi River	18	529.32
Middletown	220	736
Danville	210	732
Mount Pleasant	220	747
Skunk River, low water	45	569
Chequaque	100	624
Glendale	240	765
Fairfield	262	787
Whitfield	172	698
Batavia	135	661
Agency	296	823
Ottumwa	125	652
Des Moines River	100	628
Chillicothe	140	668
Frederic	230	759
Albia	440	969
Cedar Creek	250	780
Tyrone	314	844
Melrose	348	878
Russell	512	1,042
Chariton	525	1,056
White Breast River	324	855
Osceola	618	1,149
Oakland	688	1,219
Grand River	500	1,032
Cromwell	715	1,247
Corning	622	1,154
Nodaway	575	1,107

Burlington and Missouri River Railroad, &c.—Continued.

	Elevation.	
	Feet.	Feet.
Vallisca.....	553	1,086
Red Oak.....	528	1,061
Walnut.....	535	1,068
Harmony.....	535	1,068
Silver Creek.....	452	986
Louden.....	700	1,234
Glenwood.....	474	1,007
Pacific, crossing Kansas City, Saint Joseph and Council Bluffs Railroad.....	444	978
Missouri River, high water.....	436	972
Missouri River, low water.....	421	955

Assuming the base given, *i. e.*, low water Mississippi River at Burlington, the road is in error at Pacific, by the Kansas City, Saint Joseph and Council Bluffs Railroad, 22 feet (too low). This error I have distributed along the road, with the larger part of it east of Mount Pleasant, as is indicated by the K. N. & I. N. C. Railroad.

Chicago, Rock Island and Pacific Railroad (from Geological Report of Iowa, White).

	Elevation.	
	Feet.	Feet.
Davenport.....	32	585
Walcott.....	187	740
Fulton.....	212	765
Durant.....	166	719
Wilton.....	126	679
Moscow.....	106	659
Cedar River, water.....	75	628
Cedar River, bridge.....	99	652
West Liberty.....	120	673
Downey.....	137	690
Iowa City.....	125	678
Iowa River, bottom.....	73	626
Oxford.....	174	727
Homestead.....	320	873
Victor.....	260	813
Brooklyn.....	290	843
Grinnell.....	465	1,018
Kellogg.....	293	846
Newton.....	412	965
Skunk River.....	225	778
Mitchellville.....	420	973
Des Moines.....	254	807
Des Moines River, water.....	230	783
De Soto.....	340	896
Earlham.....	560	1,119
Dexter.....	600	1,162
Guthrie.....	723	1,290
Casey.....	680	1,249
Beason's.....	710	1,280
Grove City.....	725	1,296
Council Bluffs, station-grounds.....	432	1,005

Base is low water in Mississippi River at Davenport, 553.22. As far as Des Moines, judging from the checks introduced by intersecting roads, the profile is correct, or nearly so. Between Des Moines and Council Bluffs an error amounting to about 20 feet has been introduced, as the bottom lands of the Missouri at Council Bluffs are at least 21.8 feet above low water, Missouri River, *i. e.*, 1,005 feet above sea, in place of 985 feet as indicated by this profile. This discrepancy of 20 feet I have distributed between Des Moines and Council Bluffs.

Dubuque and Minnesota Railroad (from the Geological Report of Iowa, White).

	Above base.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Mouth of Turkey Creek	18	617
Elkadar, water above mill-dam	136.5	736
Mouth of Crane Creek, water	401	1,000
Summit between Crane Creek and Wapsipinicon River	809.5	1,409
Wapsipinicon River, high water	660	1,259
Summit between Wapsipinicon and Little Cedar Rivers	707.5	1,307
Little Cedar River, high water	610	1,209
Cedar River, high water	561	1,160
Summit between Cedar River and Deer Creek	633	1,232
Deer Creek, high water	605	1,204
Summit between Deer Creek and Shell-Rock River	653	1,252
Shell-Rock River, high water	619	1,218
Summit between Shell-Rock River and Elk Creek	708	1,307
Elk Creek	666	1,265
Summit between Elk and Lime Creeks	751.5	1,351
Lime Creek	657	1,256
Summit between Lime and Rice Creeks	676	1,275
Rice Creek	423	1,027
Summit between Rice and Blue Earth Creeks	469	1,069
Blue Earth River, high water	399.5	999
Blue Earth River, bottom	371	970

Base is low water in Mississippi River at Dubuque, which, by Mr. Gardner's determination, is 599.15 feet. There is no check, therefore I have simply added the height of the base.

Central Railroad of Iowa (from the Geological Report of Iowa, White).

	Above base.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Iowa River, water, mean stage	-14	891
Albion, station	+38	943
Albion, village	63	968
Liscomb, station	107	1,012
Liscomb, village	117	1,022
Iowa River, low water	29	934
Union, station	45	950
Union, village	45	950
South Fork of Iowa River, low water	35	940
Eldora, station	114	1,019
Eldora, village	144	1,049
Steamboat Rock, station	116	1,021
Steamboat Rock, village	150	1,055
Steamboat Rock, Iowa River, water	100	1,005
Ackley	236	1,141

Base is Chicago and Northwestern Railroad track at Marshallton, which is 905 feet above sea. There is no check, therefore I have added this throughout the line.

Davenport and Saint Paul Railroad (from the Geological Report of Iowa, White).

	Above base.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Wheatland, crossing Chicago and Northwestern Railroad at grade.....	105	702.15
Toronto, Wapsipinicon River, water.....	111	708
Canton, South Fork Maquoketa, water.....	136	733
Cascade.....	207	804
Sand Springs, cross Dubuque Southwestern Railroad at grade.....	375	972
Hopkinton, water.....	262	860
Delaware Center, cross Illinois Central Railroad at grade.....	520	1,117
Strawberry Point.....	655	1,252
Volga River, water.....	427	1,024
Turkey River.....	580	1,177
Cresco.....	736	1,333
Cresco, cross McGregor and Saint Paul Railroad on grade.....	737	1,334

Base is given as high water Mississippi River at Davenport, which is 569.88; but the Chicago and Northwestern Railroad at Wheatland, 702.15, does not agree with this. I assume the last as correct, and use the correction indicated throughout the road, as I have no check.

Illinois Central Railroad, Iowa division (from the Geological Report of Iowa, White).

	Above base.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Farley Junction.....	531	1,131
Dyersville.....	345	947
Summit between the Forks of the Maquoketa.....	497	1,100
Manchester.....	327	933
Summit between South Fork of the Maquoketa and Buffalo Creek ..	521	1,129
Buffalo Creek.....	406	1,015
Winthrop.....	469	1,080
Independence.....	313	924
Summit between Wapsipinicon and Cedar Rivers.....	417	1,028
Waterloo, Cedar River.....	253	864
Summit between Cedar and Iowa Rivers.....	610	1,221
Iowa Falls, Iowa River.....	460	1,071
Summit between Iowa River and South Fork of Iowa River.....	593	1,204
South Fork of Iowa River.....	548	1,159
Summit between South Fork of Iowa and Boone Rivers.....	649	1,260
Webster City.....	428	1,039
Summit between Boone and Des Moines Rivers.....	560	1,171
Fort Dodge.....	390	1,001
Summit between Des Moines and Coon Rivers.....	719	1,330
Coon River.....	668	1,279
Summit between Coon and Little Sioux Rivers.....	908	1,519
Cherokee, Little Sioux River.....	565	1,176
Summit between Little Sioux and Floyd Rivers.....	877	1,488
Floyd River.....	555	1,166

Base is low water in Mississippi River at Dubuque, given by Mr. Gardner at 599.15. A more recent profile of this road, which I have not been able to obtain, gives Independence 924 feet, 12 feet higher than this gives. Fort Dodge, by the Des Moines and Fort Dodge Railroad, is 1,001, 11 feet higher than this profile, and corresponding with Independence within a foot. Therefore I have corrected this profile by distributing this discrepancy of 12 feet east of Independence, using the correction indicated at Independence between this point and Fort Dodge, and west of Fort Dodge the correction indicated at the latter place.

Cedar Falls and Minnesota Railroad (from Geological Report of Iowa, White).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Water in Cedar River at Cedar Falls	267	866
Junction	282	881
Janesville	300	899
Waverly	350	949
Plainfield	354	953
Nashua	383	982
Summit Station	492	1,091
Charles City	427	1,026
Floyd	515	1,114
Osage	586	1,185
Mitchell	610	1,209
Saint Ausgar	587	1,186
North line of Iowa	600	1,199

Base is low water in Mississippi River at Dubuque, given by Mr. Gardner at 599.15. This agrees with the Iowa Central Railroad at Cedar Falls and with the Chicago, Milwaukee and Saint Paul Railroad at north line of Iowa, and the road is corrected accordingly.

Preliminary surveys for a railroad from Janesville up the valley of Shell Rock River, via Rock Grove, Mary's Ford, &c. (from the Geological Report of Iowa, White).

	Above base.	Above sea.
	<i>Feet.</i>	<i>Feet.</i>
Janesville	300	899
Shell Rock	328	927
Clarksville	350	949
Elm Springs	373	972
Marble Rock	440	1,039
Rockford	445	1,044
Rock Grove	540	1,139
Mary's Ford, Cedar River, water	538	1,137
North boundary of State	600	1,199

Base is low water in Mississippi River at Dubuque, 599.15 feet. Janesville agrees with the Cedar Falls and Minnesota Railroad. I have used this correction throughout the road.

Preliminary surveys for a road from Waukee to Sioux City, Iowa (from the chief engineer).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Waukee	554.27	1,036
Adel	406.30	888
Redfield	473.37	955
Panora	578.87	1,061
The following have not been checked:		
Carrollton	724.97	1,210
Chicago and Northwestern Railroad crossing	731.77	1,217
Carroll	761.99	1,247
Mount Carmel	829.57	1,318
Divide between Mississippi and Missouri rivers	743.47	1,234

Preliminary surveys for a road from Waukee to Sioux City—Continued.

	Elevation.	
	Feet.	Feet.
Ida Grove	735. 77	1, 231
Correctionville	643. 47	1, 143
Valley of Little Sioux River, high water	629. 48	1, 132
Floyd River, high water	615. 99	1, 126
Illinois Central Railroad at Sioux City	615. 45	1, 122. 35

Waukee, the starting-point for this survey, was determined by the Des Moines and Fort Dodge Railroad to be 1,036 feet above sea. The Illinois Central Railroad track at Sioux City is 1,122.35 feet, indicating a discrepancy between the ends of this line of about 25 feet. This I have distributed over the portion of the line which has not been checked, using the Waukee correction over the first part.

Iowa Central Railroad (from Geological Report of Iowa, White).

	Elevation.	
	Feet.	Feet.
South line of Iowa	377	1, 007
Moravia	385	1, 015
Albia	346	976
Burlington and Missouri River Railroad crossing	329	959
Des Moines River at Eddyville	35	665
Eddyville	60	690
Keokuk and Des Moines Railroad crossing	83	713
Oskaloosa	231	-----
Grinnell, crossing of Chicago, Rock Island and Pacific Railroad	401	1, 018
Iowa River water	200	817
Crossing of Chicago and Northwestern Railroad	209	826
Toledo	235	852
Summit between Iowa and Cedar Rivers	377	994
Cedar Falls	258	875
Cedar Falls, Cedar River, high water	249	866

Base, 35 feet below low water in Des Moines River at Eddyville. A branch of the Saint Louis, Kansas City and Northern Railroad connecting at State line, gives this point as 1,007; with this, the Keokuk and Des Moines Railroad agrees within 3 feet (higher) at Keokuk and Des Moines Railroad crossing. Between this last point and Grinnell there appears to be a discrepancy of 13 feet, and the new correction, indicated by the height of Grinnell, by the Chicago, Rock Island and Pacific Railroad, makes the road check at Cedar Falls with the Cedar Falls and Minnesota Railroad.

Low-water slope of the Mississippi River from Saint Paul to La Crosse, by levels made for the United States Engineer Corps (from the report of the Chief of Engineers).

	Elevation.			Elevation.	
	Feet.	Feet.		Feet.	Feet.
Saint Paul	480. 10	685. 40	Wabasha	456. 7	662
Newport	473	678. 3	Alma	451. 8	657. 1
Nininger	466. 2	671. 5	Minneiska	445. 2	650. 5
Hastings	465. 2	670. 5	Fountain City	437. 9	643. 2
Prescott	464. 7	670	Winona	434. 6	639. 9
Red Wing	460. 4	665. 7	Trempealeau	430. 5	635. 8
Wacouta	459. 5	664. 8	Dresbach	424. 4	629. 7
Lake City	458. 9	664. 2	La Crosse	421	626. 3
Reed's Landing	458. 4	663. 7			

Low water at Saint Paul, as shown heretofore, is 685.40. The profile has been corrected accordingly.

Low-water slope of the Minnesota River, by levels by United States Engineer Corps (from the report of the Chief of Engineers, 1875).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Mouth	0	704.4
Little Rapids	0.4	704.8
Crest of Little Rapids	1.6	706
Belle Plaine	5.4	709.8
Faxon	9	713.4
Henderson	19	723.4
East Henderson	20.4	724.8
Le Sueur	24.8	729.2
Ottawa	31.6	736
Saint Peter	39	743.4
Winona and Saint Peter Railroad bridge (Chicago and North-western Railroad)	41.6	746
Mankato	61.3	765.7
Mouth of Blue Earth River	64.5	768.9
South Bend	64.8	769.2
Judson	69.38	773.78
Mouth of Big Cottonwood River	91.52	795.92
Fort Ridgely	102.99	807.39
Mouth of Red Wood River	127.27	831.67
Mouth of Yellow Medicine River	170.72	875.12
Foot of Minnesota Falls	178.74	883.14
Mouth of Chippewa River	235.44	939.84
Lac qui Parle	249.64	954.04
Mouth of Pomme de Terre Creek	258.28	962.68
Big Stone Lake	288.40	992.80
Lac Traverse	296.11	1,000.51

In connection with this profile, it is stated that the mouth of Minnesota River is 95 feet above Lake Superior. The latter is 609.4, making the mouth of the Minnesota 704.4 feet above sea.

Lake Superior and Mississippi Railroad (from the report of the State survey of Minnesota, 1872).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Lake Superior at Duluth	600	609.4
Duluth	605	614
Thomson, Dalles of the Saint Louis River	1,027	1,036
Highest point on line	1,166	1,075
Moose Lake, depot	1,052	1,061
Kettle River, depot	1,112	1,121
Hinckley	1,023	1,032
Pine City	944	953
Rush City	908.5	918
Goose Lake	886	895
North Branch	883	892
Wyoming	897	906
Forest Lake, depot	904	913
Rice Creek	916	925
Centreville	927	936
Junction at White Bear Lake	926	929
Saint Paul, low water in Mississippi River	676	685.4
Saint Paul, high water in Mississippi River	697	706.4

This road checks at the ends. (See discussion of the height of Saint Paul.)

Northern Pacific Railroad (from the office of the road).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Lake Superior at Duluth.....	600	609.40
Fond du Lac.....	606	615
Thomson.....	1,036	1,045
Junction with Lake Superior and Mississippi Railroad.....	1,080	1,089
Norman.....	1,285	1,294
Island Lake.....	1,305	1,314
Sicottes.....	1,280	1,289
Kimberley.....	1,231	1,240
Aiken.....	1,202	1,211
Withington.....	1,270	1,279
Brainerd.....	1,205	1,214
Mississippi River, banks of.....	1,204	1,213
Pillager.....	1,195	1,204
Motley.....	1,220	1,229
Aldrich.....	1,326	1,335
Wadena.....	1,349	1,358
Frazeo.....	1,409	1,418
Perham.....	1,366	1,375
Hobart.....	1,384	1,393
Detroit.....	1,362	1,371
Oak Lake.....	1,367	1,376
Audubon.....	1,308	1,317
Lake Side.....	1,333	1,342
Hawley.....	1,150	1,159
Muskoda.....	1,083	1,092
Glyndon.....	923	932
Moorhead, east bank Red River.....	904	913
Red River, high water.....	876	885
Red River, low water.....	842	851
Fargo.....	903	912
Maple River.....	906	915
Goose Creek.....	933	942
Cheyenne River.....	1,228	1,237
Cheyenne River, water.....	1,198	1,207
Lake Eckelson.....	1,445	1,454
Lake Eckelson, water.....	1,430	1,439
Jamestown.....	1,406	1,415
James River.....	1,391	1,400
Apple Creek Valley.....	1,709	1,718
Apple Creek Valley, old bottom of Missouri River.....	1,632	1,641
Bismarek, Missouri River, water.....	1,640	1,649
The following are from preliminary surveys merely:		
First crossing of Little Missouri River.....	2,270	2,279
Mouth of Andrews Creek.....	2,250	2,259
Summit.....	2,790	2,799
Inman's Fork.....	2,630	2,639
Glendive's Creek divide.....	2,815	2,824
Yellowstone River.....	2,013	2,022

The correction given by the height of Lake Superior is used throughout.

Saint Paul and Sioux City Railroad (from the report of the State survey, 1872).

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Belle Plaine	781	790	Butterfield	1,163	1,172
Blakeley	785	794	Mountain Lake	1,277	1,286
East Henderson	791	800	Bingham Lake	1,397	1,406
Le Sueur.....	811	820	Windom	1,326	1,335
Ottawa	847	856	Wilder.....	1,423	1,432
Kasota	853	862	Heron Lake	1,394	1,403
Mankato	849	858	Hersey	1,465	1,474
South Bend.....	866	875	Worthington	1,563	1,572
Lake Crystal.....	1,053	1,062	Bigelow.....	1,603	1,612
Madelia.....	998	1,007	Sibley.....	1,485	1,494
Saint James.....	1,058	1,067	Lemars.....	1,196	1,205

This profile is based on an assumed height of Lake Superior at 600 feet. The true height of this being 609.4 feet, the profile is corrected by the addition of 9.4 feet throughout.

Saint Paul and Pacific Railroad (from the report of the State survey, 1872).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Saint Paul, low water in Mississippi River	676	685.4
Saint Paul, depot	629	692.4
Saint Paul, base of capitol	722	791.4
Junction at Saint Anthony.....	829	838
Saint Anthony, low water in Mississippi River.....	791	800
Minneapolis	821	830
Low water in Mississippi River, $\frac{1}{2}$ mile below Saint Anthony's Falls	711.5	721
Self's Lake, water	842	851
Wayzata	922	931
Lake Minnetonka, water.....	913	922
Long Lake, station	940	949
Crow River Crossing.....	914	923
Delano	914	923
Waverley	998	1,007
Twelve-Mile Creek.....	986	995
Howard Lake.....	1,040	1,049
Smith Lake.....	1,040	1,049
Cockato	1,013	1,022
Darwin	1,118	1,127
Litchfield.....	1,116	1,125
Swede Grove	1,177	1,186
Atwater Summit.....	1,198	1,207
Kandiyohi	1,207	1,216
Willmar	1,115	1,124
Saint John's	1,107	1,116
Kirkhoven.....	1,095	1,104
De Graff.....	1,047	1,056
Benson	1,033	1,042
Chippewa River, bridge-track	1,021	1,030
Chippewa River, water.....	1,012	1,021
Randall	1,036	1,045
Hancock	1,141	1,150
Pomme de Terre River, station	1,064	1,073
Pomme de Terre River, water.....	1,053	1,062
Morris.....	1,113	1,122

Saint Paul and Pacific Railroad—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Douglas	1,112	1,121
Herman	1,054	1,063
Gorton	1,008	1,017
Tintah	982	991
Rabbit Run	968	977
Campbell	968	977
Doran	959	968
Breckenridge	948	957

A correction of + 9 feet, indicated by the height of Saint Paul, is used throughout.

Branch of the Saint Paul and Pacific Railroad (preliminary line).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Junction at Saint Anthony	829	838
Manomin	833	842
Anoka	869	878
Rum River, water	831	840
Itaska	886	895
Elk River, station	894	903
Elk River, water	881	890
Big Lake Station	921	930
Becker	963	972
Clear Lake Station	984	993
Saint Cloud, east shore Mississippi River	1,011	1,020
Saint Cloud, west shore Mississippi River	1,025	1,034
Saint Cloud, low water in Mississippi River	953	962
Mississippi River at Sauk Rapids	982	991
Sauk Rapids	999	1,008
Watab	1,048	1,057
Little Rock River, track	1,015	1,024
Little Rock River, water	1,002	1,011
Langola	1,054	1,063
Platte River	1,064	1,073
Platte River, water	1,054	1,063
Bellevue	1,075	1,084
Little Falls	1,109	1,118
Belle Prairie	1,125	1,134
Fort Ripley	1,153	1,162
Nokay River, water	1,134	1,143
Crow Wing	1,181	1,190
Brainerd, junction with Northern Pacific Railroad	1,201	1,210

Base is the same as for the main line, which gives a correction of + 9 feet. There is, then, a discrepancy of 4 feet at Brainerd. This being a preliminary line, the height of Brainerd is taken from the Northern Pacific Railroad.

Saint Vincent branch of the Saint Paul and Pacific Railroad.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
East Saint Cloud Station	1, 011	1, 020
Saint Cloud, low water in Mississippi River.....	953	962
West Saint Cloud	1, 025	1, 034
Sank River.....	1, 034	1, 043
Sank River, water	1, 017	1, 026
Saint Joe	1, 074	1, 083
Summit.....	1, 136	1, 145
Avon	1, 116	1, 125
Two Rivers, water.....	1, 124	1, 133
Albany	1, 187	1, 196
Oakes.....	1, 228	1, 237
Sauk River, water.....	1, 157	1, 166
Melrose	1, 196	1, 205
Sauk River, water	1, 187	1, 196
Sauk River, water.....	1, 243	1, 252
Sauk Centre.....	1, 239	1, 248
West Union.....	1, 323	1, 332
Osakis	1, 328	1, 337
Victoria	1, 366	1, 375
Alexandria.....	1, 382	1, 391
Ida	1, 402	1, 411
Chippewa River.....	1, 360	1, 369
Chippewa River, water	1, 330	1, 339
Evansville	1, 345	1, 354
Christina	1, 219	1, 228
Saint Oloff.....	1, 335	1, 344
Pomme de Terre River	1, 230	1, 239
Pomme de Terre River, water	1, 196	1, 205
Tumuli	1, 196	1, 205
Red River.....	1, 062	1, 071
Red River Station	1, 122	1, 131
Glyndon	923	932
Buffalo River.....	919	928
Buffalo River, water.....	906	915
Averill.....	918	927
Felton	916	925
Borup.....	912	921
Wild Rice.....	910	919
Wild Rice River, water	901	910
Stanley	902	911
Rolette	894	903
Beltrami	903	912
Kittson	886	895
Red Lake River, bridge.....	848	857
Red Lake River, water.....	841	850
Snake Hill River, water	841	850
Middle River, water	834	843
Tamarack River, water	817	826
South branch Two Rivers, water.....	803	812
North branch Two Rivers, water.....	787	796
Saint Vincent, bank Red River.....	792	801
Saint Vincent, high water, 1866	787	796
Saint Vincent, usual water surface	758	767

Base is the same as for the main line. The correction is + 9 feet. It checks exactly at Glyndon.

Saint Paul, Stillwater and Taylor's Falls Railroad (from the report of the State survey, 1872).

	Elevation.	
	Feet.	Feet.
Saint Paul, low water	676	685. 4
Saint Paul, high water	697	706. 4
Junction with Saint Paul and Pacific Railroad	762	771
Crossing of Lake Superior and Mississippi Railroad	817	826
Crossing at Phalen's Creek	797	806
Grade of Lake Superior and Mississippi Railroad at this place	967	976
Oakdale	874	883
Lower Bass Lake	888	897
Upper Bass Lake	921	930
Weir's Station	911	920
Crossing of West Wisconsin Railroad	875	884
Stillwater	675	684
Stillwater, low water in Saint Croix Lake	655	664

The correction is, from the height of Saint Paul, + 9 feet. There is no check.

Chicago and Northwestern Railroad, Minnesota division (from chief engineer).

	Above Lake Michigan.	Above sea.
	Feet.	Feet.
Winona, low water in Mississippi River ^a	55. 7	639. 9
Winona, station	63. 5	652. 65
Stockton	166	755
Lewiston	622	1, 211
Utica	580. 5	1, 169. 5
Saint Charles	549	1, 138
Dover	548	1, 137
Eyota	647	1, 236
Chester	383	972
Rochester	401	990
Byron	660	1, 249
Kasson	662	1, 251
Dodge Centre	697	1, 286
Claremont	690	1, 279
Havanna	656	1, 245
Owatonna, crossing Chicago, Milwaukee and Saint Paul Railroad	558	1, 047. 15
Meriden	559	1, 148
Waseca	563	1, 152
Janesville	473	1, 082
Eagle Lake	422. 5	1, 011. 5
Mankato	190. 2	779
Kasota	248	837
Saint Peter	221	810. 15
Saint Peter, high water Minnesota River	165	754
Oshawa	391. 5	980. 5
Nicollet	389	978
New Ulm, high water Minnesota River	219	808
New Ulm, station	246	835
Sleepy Eye	443. 5	1, 032. 5
Marshall	584	1, 173
State line, Minnesota and Dakota	886	1, 475
22.1 miles west of State line	1, 410	1, 999
Lake Kampesta, lake level	1, 070	1, 659
Red Wood Falls	439	1, 028

^aWinona, low water, by levels of United States Engineer Corps from Saint Paul (see profile of Mississippi River, page 34), 639.9.

LISTS OF ELEVATIONS.

Base is level of Lake Michigan, 589.15 feet above sea. This gives Winona, low water, 644.85.

I accept the latter, as Saint Paul is well determined, and there can be no question about the excellence of the leveling by the Engineer Corps. Moreover, the height given by this road is but 7.8 feet below that given for Winona Station. If this were correct, the station would be overflowed to a considerable depth at the season of high water. The probability is that low water, as reported by the Chicago and North-western Railroad, is not the lowest stage.

At Saint Peter, high water agrees with the profile of the Minnesota River, as leveled by the Engineer Corps, within 1.6 feet; hence I have corrected the road, practically, without change.

Southern Minnesota Railroad (from the report of the State survey, 1872).

	Elevation.	
	Feet.	Feet.
La Crosse, low water in Mississippi River.....	0	626.3
Grand Crossing.....	12	638
Rushford.....	97	723
Lanesborough.....	217	843
Isinour's.....	274	900
Fountain.....	675	1,301
Grand Meadow.....	711	1,337
Ramsay.....	593	1,217
Hayward.....	626	1,250
Winnebago City.....	475	1,099
Blue-Earth River, one mile west of Winnebago City, water.....	390	1,074
Des Moines River, water.....	666	1,290
Heron Lake.....	747	1,371
Graham Lake.....	789	1,413

Base is La Crosse, low water, which is given by the profile of the Mississippi River by the Engineer Corps. Checks at Ramsay. (See Chicago, Milwaukee and Saint Paul Railroad.)

The following are from the report of the State survey, 1875 :

	Elevation.	
	Feet.	Feet.
Ramsay, grade Chicago, Milwaukee and Saint Paul Railroad...	1,233	1,217
Oakland.....	1,286	1,270
Big Marsh.....	1,265	1,249
Lake Albert Lea.....	1,221	1,205
Albert Lea Station.....	1,240	1,204
Alden.....	1,281	1,265
Wells.....	1,171	1,155

Base is taken at Ramsay as given above.

Chicago, Milwaukee and Saint Paul Railroad, Iowa and Minnesota division (report of the survey of Minnesota, 1875).

	Elevation.	
	Feet.	Feet.
State line, Lyle.....	1,099.5	1,199
Austin Junction, Y.....	1,094.5	1,194.5
Austin.....	1,097.1	1,197
Cedar River.....	1,100	1,200
Cedar River, bottom.....	1,080.1	1,181
Ramsay, crossing of Southern Minnesota Railroad at grade.....	1,114.86	1,217.1

Chicago, Milwaukee and Saint Paul Railroad, &c.—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Lansing.....	1, 124. 06	.....
Madison.....	1, 150. 06	.....
Blooming Prairie.....	1, 185. 76	.....
Aurora.....	1, 150. 66	.....
Owatonna.....	1, 041. 56	1, 047. 15
Owatonna, crossing Chicago and Northwestern at grade.....	1, 041. 56	1, 047. 15
Medford.....	997. 08	1, 003
Faribault.....	993. 06	1, 000
Cannon River.....	966. 71	974
Cannon River, bottom.....	948. 56	957
Bridgewater.....	1, 027. 56	1, 036
Dundas.....	945. 71	954
Northfield.....	905. 71	914
Castle Rock.....	925. 76	934
Farmington.....	894. 09	903. 4
Farmington, crossing Hastings and Dakota division at grade...	891. 31	900. 6
Vermillion River.....	888. 06	897
Vermillion River, bottom.....	879. 06	888
Rosemont.....	950. 06	959
Westcott.....	873. 06	882
Mendota, Saint Paul Junction.....	949. 90	959
Mendota, crossing Saint Paul and Sioux City Railroad.....	728. 40	737
Mendota Junction.....	712. 40	721
Fort Snelling, Minnesota River, grade.....	708. 48	717
Fort Snelling, Minnesota River, bottom.....	662. 60	672
Fort Snelling.....	712. 50	722
Minnehaha.....	802. 80	812
Minneapolis.....	816	825

No base is given on the profile. State line is given, by the Cedar Falls and Minnesota Railroad, as 1,199, indicating a correction of + 100 feet. Ramsay, by the Southern Minnesota Railroad, from La Crosse, is 1,217 feet, checking within a little over 2 feet. This part of the road is corrected accordingly.

At Owatonna, the Chicago and Northwestern crosses, indicating a correction of +5.6 feet, a discrepancy with Ramsay of 96.6 feet, undoubtedly an error in joining profiles of divisions. (See Southern Minnesota and Chicago and Northwestern Railroads.)

Farmington (see Hastings and Dakota division) is, by this road, using the Owatonna correction, 896.9 feet; by Hastings and Dakota division, 904.3. I have adopted the mean, 900.6 feet, and have used thenceforward the correction indicated, + 9 feet.

Chicago, Milwaukee and Saint Paul Railroad, river division (from the report of the survey of Minnesota, 1875).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Saint Paul, low water in Mississippi River.....	672. 34	685. 4
Saint Paul, grade of Lake Superior and Mississippi Railroad...	692. 84	706
Saint Paul, Dayton's Bluff.....	696. 34	709
Newport.....	737. 87	751
Langdon.....	799. 84	816
Hastings, junction with Hastings and Dakota division.....	696. 31	709. 4
Etter.....	677. 84	691
Red Wing.....	673. 84	687
Frontenac.....	707. 34	720
Lake City.....	691. 84	705
Reed's Landing.....	669. 34	682
Wabasha.....	699. 24	712
Kellogg.....	689. 09	702
Weaver.....	660. 84	674
Minneiska.....	659. 44	612

Chicago, Milwaukee and Saint Paul Railroad, river division—Continued.

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Minnesota City.....	664. 44	677
Saint Peter, junction with Chicago and Northwestern Railroad .	662. 92	676
Winona.....	649. 44	662
Homer.....	650. 54	665
La Moille.....	647. 44	660
Richmond.....	660. 94	674
Dakota.....	644. 44	657
Dresbach.....	663. 44	676
La Crescent Limekiln.....	637. 44	650

The correction indicated by Saint Paul, low water, is used throughout.

Chicago, Milwaukee and Saint Paul Railroad, Hastings and Dakota division (report of survey of Minnesota, 1875).

	Elevation.	
	<i>Feet.</i>	<i>Feet.</i>
Hastings Junction (with river division).....	696. 3	709. 4
Auburn.....	848. 8	861. 9
Empire.....	876. 3	889. 4
Farmington, crossing of the Iowa and Minnesota division.....	891. 3	900. 6
Fairfield.....	930. 3	942
Prior Lake, station.....	936. 3	954
Prior Lake, water.....	896. 3	914
Shakopee, crossing of Saint Paul and Sioux City Railroad.....	742. 8	768
Shakopee, low water Minnesota River.....	679. 3	704. 5
Shakopee, high water Minnesota River.....	706. 4	731
Chaska.....	715. 2	740
Chaska, crossing Minneapolis and Saint Louis Railroad.....	716. 8	742
Carver.....	802. 1	827
Dahlgren.....	968. 8	994
Burton.....	934. 3	959
Young America.....	977. 3	1,002
Tiger Lake, water.....	968. 3	991
Glencoe.....	990	1,015
Following is from preliminary surveys:		
East Fork Beaver Creek.....	1,036	.....
Hawk Creek.....	970	.....
Chippewa River.....	913	.....
Pomme de Terre River.....	960	.....
Big Stone Lake.....	938. 5	992. 8

On this branch the following points have been determined: Hastings Junction (see river division) is 709.4; correction, + 13.1. Farmington (see Iowa and Minnesota division), 9.006; correction, 9.3. Shakopee, low water Minnesota River, is, by the levels of the United States Engineer Corps, between 704.4 and 704.8, say 704.5; correction, + 25.3, as it is between the mouth of the river and Little Rapids; and, finally, Big Stone Lake, 992.8; correction, + 54.5 (see profile Minnesota River). I have distributed the discrepancies between Hastings, Farmington, and Shakopee, and between Shakopee and Glencoe have used the Shakopee correction, as the profile beyond Glencoe is preliminary, and most, if not all, the discrepancy between Shakopee and Big Stone Lake must be in this part.

Union Pacific Railroad (from published profile).

	Elevations.			Elevations.	
	Feet.	Feet.		Feet.	Feet.
Omaha	966	1,003	Otto	6,724	6,754
Summit Siding.....	1,142	1,179	Granite Cañon.....	7,298	7,327
Gilmore	976	1,013	Buford	7,780	7,808
Papillion	972	1,009	Sherman	8,242	8,269
Elkhorn	1,150	1,187	Harney	7,857	7,882
Valley	1,120	1,157	Red Buttes	7,336	7,360
Fremont	1,176	1,220	Fort Sanders	7,163	7,186
North Bend	1,259	1,296	Laramie	7,123	7,143
Schuyler	1,335	1,372	Wyoming.....	7,068	7,086
Columbus.....	1,432	1,469	Cooper's Lake.....	7,044	7,061
Jackson	1,470	1,507	Lookout.....	7,169	7,184
Silver Creek	1,534	1,571	Miser.....	6,810	6,824
Clark's	1,610	1,647	Rock Creek.....	6,690	6,702
Lone Tree	1,686	1,723	Como	6,680	6,691
Chapman's.....	1,760	1,797	Medicine Bow.....	6,550	6,560
Grand Island.....	1,850	1,887	Carbon	6,750	6,758
Pawnee.....	1,907	1,944	Simpson	6,898	6,904
Wood River.....	1,974	2,011	Percy	6,950	6,955
Gibbon	2,046	2,083	Dana.....	6,875	6,878
Kearney	2,106	2,143	Saint Mary's.....	6,751	6,753
Stevenson.....	2,170	2,207	Fort Steele	6,840	6,841
Elm Creek	2,241	2,278	Grenville	6,560	6,560
Overton	2,305	2,342	Rawlins	6,732	6,730
Plum Creek.....	2,370	2,406	Separation.....	6,900	6,897
Coyote	2,440	2,476	Creston.....	7,030	7,026
Willow Island	2,511	2,547	Washakie.....	6,697	6,691
Warren	2,570	2,606	Red Desert	6,710	6,703
Brady Island	2,637	2,673	Table Rock	6,890	6,881
McPherson	2,695	2,731	Bitter Creek.....	6,685	6,675
North Platte.....	2,789	2,825	Black Buttes.....	6,600	6,588
Nichols.....	2,882	2,918	Point of Rocks.....	6,490	6,487
O'Fallon's	2,976	3,012	Salt Wells	6,360	6,346
Alkali	3,038	3,074	Rock Springs.....	6,280	6,265
Roscoe	3,105	3,140	Green River	6,140	6,124
Ogalalla.....	3,190	3,225	Bryan	6,340	6,323
Brulé	3,266	3,301	Granger	6,270	6,252
Big Spring.....	3,325	3,360	Church Buttes.....	6,317	6,298
Julesburg	3,500	3,535	Carter.....	6,550	6,530
Lodge Pole	3,800	3,835	Bridger.....	6,780	6,758
Sidney	4,073	4,108	Leroy	7,123	7,100
Potter	4,370	4,405	Piedmont.....	6,540	6,515
Antelope	4,712	4,747	Aspen	7,835	7,809
Bushnell	4,860	4,895	Wabsatch	6,879	6,851
Pine Bluffs	5,026	5,061	Castle Rock	6,290	6,260
Egbert	5,272	5,307	Echo	5,540	5,509
Hillsdale	5,591	5,626	Weber	5,130	5,096
Archer	6,000	6,035	Devil's Gate.....	4,870	4,835
Cheyenne.....	6,041	6,075. 28	Uinta	4,560	4,514
Hazard	6,325	6,357	Ogden	4,340	4,303

This profile is the only one which I have yet been able to obtain. It appears to be correct as far as Cheyenne, checking there, from Omaha, within 3 feet; but between Cheyenne and Ogden there is a discrepancy of seventy-one feet. This, in default of any information, I have been obliged to distribute along the road.

This is not the profile used by Mr. Gardner in the determination of Ogden.

Utah Central Railroad.

	Elevation.
	<i>Feet.</i>
Ogden	4,303
Kaysville	4,298
Farmington	4,260
Centreville	4,235
Wood's Crossing	4,299
Salt Lake City	4,261

Ogden is from the profile of the Central Pacific Railroad.

Utah Southern Railroad.

	Elevation.
	<i>Feet.</i>
Salt Lake City	4,261
Big Cottonwood	4,261
Little Cottonwood	4,288
Sandy	4,457
Draper	4,513
Divide, spur of mountain	4,808
Lehi	4,586
American Fork	4,608
Pleasant Grove	4,557
Provo	4,520
Utah Lake, mean stage of water	4,498.5
Springville	4,525
Spanish Fork	4,556
Payson	4,613
Santaquin	4,884
Summit	5,032
York	4,957

Salt Lake City is from the Utah Central Railroad.

Central Pacific Railroad, main line (from the chief engineer).

	Elevation.
	<i>Feet.</i>
San Francisco	0
Oakland wharf	14
Oakland	12
Melrose	18
San Leandro	48
Decoto	68
Niles, junction with San José branch	88
Pleasanton	353
Livermore	485
Altamont	740
Midway	356
Ellis	76
Bantas	30
Lathrop, junction with Visalia division	26
Stockton, junction with Stockton and Visalia and Stockton and Copperopolis Railroads	23

Central Pacific Railroad, main line—Continued.

	Eleva- tion.
	<i>Feet.</i>
Lodi.....	55
Galt, junction with Amador branch.....	49
Elk Grove.....	53
Brighton, crossing of Sacramento Valley Railroad.....	54
Sacramento, crossing of California Pacific Railroad.....	30
River bridge.....	52
Arcade.....	55
Antelope.....	154
Junction with Oregon branch.....	163
Rocklin.....	249
Paris.....	400
Newcastle.....	956
Auburn.....	1,360
Clipper Gap.....	1,759
Colfax, junction with Nevada Company's Railroad.....	2,422
Cape Horn Mills.....	2,676
Gold Run.....	3,220
Dutch Flat.....	3,395
Alta.....	3,607
Shady Run.....	4,136
Blue Cañon.....	4,693
Emigrant Gap.....	5,221
Cisco.....	5,934
Cascade.....	6,538
Summit.....	7,017
Strong's Cañon.....	6,317
Truckee.....	5,819
Boca.....	5,531
Verdi.....	4,895
Reno, junction with Virginia City and Truckee Railroad.....	4,497
Clark's.....	4,263
Wadsworth.....	4,077
Hot Springs.....	4,072
White Plains.....	3,894
Brown's.....	3,929
Lovelock's.....	3,977
Oreana.....	4,181
Rye Patch.....	4,257
Humboldt.....	4,236
Mill City.....	4,226
Raspberry.....	4,327
Rose Creek.....	4,322
Winnemucca.....	4,332
Golgonda.....	4,385
Iron Point.....	4,375
Stone House.....	4,422
Battle Mountain.....	4,511
Argenta.....	4,548
Shoshone.....	4,636
Beowawe.....	4,695
Palisade, junction with Eureka and Palisade Railroad.....	4,821
Carlin.....	4,897
Moleon.....	4,982
Elko.....	5,063
Peko.....	5,204
Halleck.....	5,230
Deeth.....	5,340
Wells.....	5,629
Moore.....	6,166
Independence.....	6,007
Pequop.....	6,184
Toano.....	5,973

Central Pacific Railroad, main line—Continued.

	Elevation.
	<i>Feet.</i>
Montello	5,010
Tecoma	4,812
Lucin	4,498
Bovine	4,347
Terrace	4,544
Matlin	4,597
Ambeý	4,721
Kelton	4,223
Monument	4,227
Promontory	4,905
Blue Creek	4,379
Corinne, junction with Utah Northern Railroad	4,232
Brigham	4,226
Ogden, junction with Union Pacific and Utah Central Railroads	4,301

There is a correction at Ogden of +2 feet, making its true height 4,303. The original height is 4,301 feet. All junctions and crossings, both on the main line and its branches, are on grade.

Oregon Division of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Sacramento	30	Chico	193
Junction	163	Nord	153
Lincoln	161	Tehama	222
Wheatland	84	Red Bluffs	308
Marysville	67	Redding	556
Biggs	124		

Stockton and Copperopolis and Visalia Railroads, branch of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Stockton	23	Peters	194
Central Pacific Railroad depot	23	Milton	446
Charleston	150	Farmington	210
Holden	170	Oakdale	251

San Francisco and San José Railroad, branch of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
San Francisco	0	Niles	88
Oakland wharf	14	Warm Springs	46
San Leandro	48	San José	91

Amador branch of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Sacramento	30	Carbondale	222
Galt	49	Ione	237
Cicero	90		

Virginia and Truckee Railroad, operated by Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Reno	4,497	Virginia City	6,205
Carson	4,630		

California Pacific Railroad, operated by Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
San Francisco	0	Dixon	64
South Vallejo	15	Davis, junction Knight's Land- ing branch	52
Napa Junction	79	Sacramento	30
Fairfield	12		
Elmira	79		

Napa Valley branch of Central Pacific Railroad.

	Elevation.			Elevation.	
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Napa Junction	8	79	Rutherford	168	239
Napa	24	95	Saint Helena	244	315
Yountville	97	168	Calistoga	331	402

Napa Junction, by California Pacific Railroad, indicates a correction of +71 feet, which has been applied.

Southern Pacific Railroad, operated by Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Goshen	278	Spadra	705
Tulare	282	Cucamonga	952
Tipton	267	Colton	965
Delano	313	San Geronio	2,560
Sumner	415	Seven Palms	1,126
Caliente	1,290	Indian Wells	—20
Mojave	2,751	Yuma	150
Sand Creek	2,315	Los Angeles	265
Alpine	2,822	Downey	112
Ravenna	2,347	Costa	83
Newhall	1,152	Anaheim	134
San Fernando	1,066	San Diego .....	.....
Los Angeles	265		

LISTS OF ELEVATIONS.

Knights Landing branch of Central Pacific Railroad.

	Elevation.
	<i>Feet.</i>
Davis	52
Woodland, junction Northern Railroad	61
Knights	45

Northern Railroad, branch of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Woodland	61	Arbuckle's	140
Black's	52	Berlin	99
Dunnigan	68	Williams	84

Visalia division of Central Pacific Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Lathrop	26	Fresno	292
Modesto	91	Goshen, junction with South- ern Pacific Railroad	278
Merced	171		

Sacramento Valley and Placerville and Sacramento Valley Railroad (from the chief engineer).

	Above sea.
	<i>Feet.</i>
Sacramento	29.85
Brighton, cross Western Pacific and Sacramento Valley Railroad at grade	53.92
Folsom	176.14
Latrobe	704.14
Shingle Springs	1,393.14

These require no correction. Crossings are at grade.

Oregon and California Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
East Portland	55	Rock Island	122
Machine-shops	88	Canby	183
Milwaukee	127	Aurora	164
Clackamas	148	Hubbard	214
Oregon City	109	Woodburn	214

Oregon and California Railroad—Continued.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Gervais.....	216	Eugene.....	457
Brooks.....	215	Goshen.....	532
Salem.....	195	Creswell.....	572
Turner.....	318	Latham.....	668
Marion.....	333	Divide.....	783
Jefferson.....	272	Comstock's (old station).....	478
Miller's.....	278	Comstock's (new station).....	385
Albany.....	245	Drains.....	327
Tangent.....	277	Yoncalla.....	388
Shedd's.....	295	Rice Hill.....	751
Halsey.....	314	Oakland.....	458
Harrisburg.....	341	Umpqua.....	498
Junction.....	356	Roseburg.....	488
Irving.....	403		

Base, mean low-tide at Astoria. There is no check on this road, therefore the heights are left as they are.

Oregon Central Railroad.

	Elevation.		Elevation.
	<i>Feet.</i>		<i>Feet.</i>
Portland.....	55	Cornelius.....	202
South Portland.....	175	Forest Grove.....	196
Summit.....	482	Dilley's.....	219
Beaverton.....	220	Gaston.....	207
Reedville.....	255	North Yamhill.....	206
Newton.....	202	Carlton.....	224
Hillsboro'.....	206	Saint Joseph.....	160

Base, mean low-tide at Astoria. There is no check on this road, therefore the heights are left as they stand.

SECTION II.

MISCELLANEOUS TABLES.

A few words of explanation in regard to the authorities and references cited in the following tables may be of use.

Authority or reference.

Coast Survey.—Heights have been determined by various means. These are specified in all cases, when known.

Dall.—Heights have been determined by sextant angles, from base-lines measured by astronomical latitudes and longitudes, from sea observations. Probable errors very large. (See Coast-Survey Report for 1875.)

De Lacy.—All heights were measured by aneroid. (Unpublished.)

Emory.—Report of explorations from Fort Leavenworth to San Diego, 1846 (Thirtieth Congress, first session, Senate Doc. No. 7). All heights are barometric.

Foster.—"Mississippi Valley." Heights are quoted from other sources, without reference.

Foster & Whitney.—Report on Lake Superior mining region. All elevations are barometric.

Fremont.—Capt. J. C. Frémont. Report of expedition to Kansas and Platte Rivers and South Pass, 1842, and to Oregon and Northern California, 1843-'44. All elevations are barometric, and, partly from want of a barometric base, are poor.

Freshfield.—Proceedings Royal Geographical Society, London.

Geological Survey of Vermont.—All elevations quoted from this source are barometric.

Goddard.—Preliminary railroad surveys.

Guyot.—Nine-tenths of the heights in the Appalachian system rest on this authority. Most of the measurements were made by him. All are barometric, or were based on barometric measurements. All the results are excellent for this class of work. (See American Journal Science and Arts.)

Hayden.—This includes all work done by the United States Geological Survey of the Territories. All these heights are barometric or trigonometric, depending on barometric bases. The work in Colorado was carefully planned to avoid the well-known periodical errors of barometric work. The bases were placed as nearly as possible at the same height as the country to be surveyed. The high peaks were connected by a system of trigonometric leveling, by which observations taken on them were reduced to common points, whence their mean was referred to corresponding observations taken on peaks of approximately the same height. The results are as nearly accurate as the present state of our knowledge will admit.

Hind.—Assiniboine and Saskatchewan Exploring Expedition, 1858.

India Survey.—Heights were taken from the maps of the India atlas. Most of them, if not all, were measured trigonometrically, and with considerable accuracy.

Ives.—Report of Colorado Exploring Expedition (Thirty-sixth Congress, first session, Senate Doc). All heights are barometric.

Jenney.—Heights were taken from the map of the Black Hills. All are barometric.

Jones.—Report on expedition to Northwestern Wyoming and the Yellowstone Park, 1873. All heights are barometric.

Keith Johnston.—Physical atlas.

King.—This includes the work done by the "Geological Exploration of the 40th Parallel," under Mr. Clarence King. All heights are barometric, or dependent on barometric work.

Lander.—Report on railroad route from Puget Sound to South Pass, 1854 (House Doc. No. 129). Heights are barometric.

Land-Office Reports.—Most heights given in these reports I have found more or less unreliable. I have quoted very few, and only those which seemed correct.

La Perouse.—Voyage to the northwest coast of America, 1786. Heights by trigonometric methods.

Ludlow.—"Black Hills of Dakota," 1874, and "Expedition to the head of the Yellowstone and the Judith Basin," 1875. Heights were measured by barometer.

Malespina.—Voyage to northwest coast of America. Heights were measured trigonometrically.

Medical Department U. S. A.—Medical Department, United States Army. In nearly all cases heights are barometric. They are not, however, very reliable.

Mexican Boundary Survey.—Elevations are barometric.

Mullan.—Explorations for a wagon-road from Walla Walla to Fort Benton, 1858-'62. All heights are barometric.

Nicollet.—Explorations in the Upper Mississippi region, 1836-'40. Heights are barometric.

Pacific Railroad Reports.—This includes all work done by the War Department between the years 1850 and 1855, for the purpose of finding a practicable railroad-route from the Missouri River to the Pacific. All the work is barometric, and is, taken as a whole, poor, owing mainly to the fact that, practically, there was no barometric base. The hypsometric work of the expeditions near the northern boundary, under Governor Stevens, was particularly bad. These remarks concerning the quality of the work apply equally well to all earlier expeditions to the West, owing doubtless to the same cause.

Paige.—Physical Geography; Advanced Text-book.

Palmer.—Heights were measured by barometer. (Unpublished.)

Parry.—Elevations are barometric, and referred to Saint Louis as a barometric base.

Petermann.—Map of the United States.

Railroads.—Where railroads are referred to as authority, the height given is that of the track at the station, unless otherwise stated.

Ruffner.—Reconnaissance in the Ute country, 1873. Elevations are barometric.

Simpson.—Reconnaissance in the Navajo country, 1849 (Thirty-first Congress, first session, Senate Doc. No. 6), and explorations in the Great Basin of Utah, 1859, published in 1876. Elevations are barometric.

Smithsonian Institution.—The elevations have been determined in various ways: by railroad levels, barometer, and by estimate. The latter have, of course, been avoided as far as possible. They are of all degrees of reliability.

State Geological Survey, New York. Elevations are barometric.

State Survey, New York. Survey of the Adirondack region. Elevations are barometric.

Stuart.—Elevations are barometric. (Unpublished.)

Toner.—Dictionary of Elevations. Compiled without authorities or references.

United States Signal Bureau.—Nearly all elevations are barometric.

Wallen.—Explorations for a wagon-road from the Dalles of the Columbia to Great Salt Lake, via Harney's Lake. Elevations are barometric.

Water-power of Maine.—Most of the heights are by level.

Wheeler.—This reference includes all hypsometric work done by the "Geographical Surveys west of the 100th Meridian." It is entirely barometric.

Whitney.—This reference includes work done by the geological survey of California, and that of a reconnaissance of South Park, Colorado, and vicinity. All heights are barometric.

Wilkes.—Voyage of exploration to the Pacific.

Williamson.—Elevations all barometric.

TABLE I.

ELEVATIONS OF TOWNS &C., ARRANGED ALPHABETICALLY BY STATES AND TERRITORIES.

Arizona.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Agua Prieta .....	.....	4, 017
Antelope Springs	Wheeler	8, 065
Anvil Rock	Wheeler	5, 354
Apache Spring	Wheeler	6, 124
Arch Spring .....	.....	6, 350
Aspen Spring	Toner	7, 381
Aubrey City .....	.....	398
Aubrey Valley	Toner	5, 156
Bear Springs .....	.....	4, 264
Big Cañon .....	.....	1, 426
Blue Spring .....	.....	7, 795
Camp Apache	Wheeler	5, 000
Camp Bowie	Wheeler	4, 872
Camp Date Creek	Toner	3, 726
Camp Goodwin (old)	Wheeler	2, 816
Camp Grant	Wheeler	4, 833
Camp Grant (old)	Wheeler	2, 118
Camp Hualapais	Wheeler	5, 321
Camp Lowell	Wheeler	2, 000
Camp McPherson	Medical Department, United States Army ..	3, 726
Camp Rawlings (old)	Wheeler	4, 666
Camp San Carlos	Wheeler	2, 456
Camp Skull Valley	Medical Department, United States Army ..	5, 000
Camp Verde	Wheeler	3, 160
Camp Willow Grove .....	.....	4, 170
Cañon Diablo	Toner	4, 765
Cave Spring	Wheeler	6, 031
Cedar Forest .....	.....	5, 868
Colorado Chiquito Bridge	Wheeler	5, 638
Cosnino Caves	Wheeler	6, 244
Cosnino Caves	Pacific Railroad Reports	6, 139
Cosnino Tanks	Pacific Railroad Reports	6, 244
Cottonwood Spring	Wheeler	4, 170
Deer Spring	Wheeler	5, 981
Desert Station	Wheeler	2, 135
Forest Lagoons .....	.....	6, 580
Fort Buchanan	Medical Department, United States Army ..	5, 330
Fort Canby	Medical Department, United States Army ..	6, 500
Fort Defiance	Medical Department, United States Army ..	6, 500
Fort Grant .....	.....	1, 985
Fort Mojave	Medical Department, United States Army ..	604
Fort Mojave	Pacific Railroad Reports	650
Fort Rock Spring .....	.....	4, 972
Fort Whipple	Pacific Railroad Reports	5, 335
Green Springs	Wheeler	4, 931
Hualapais Spring .....	.....	4, 258
Jacob's Well	Pacific Railroad Reports	5, 973
Jacob's Well	Wheeler	6, 065
Leroux Springs	Pacific Railroad Reports	7, 378
Limestone Spring .....	.....	5, 620
Limestone Water-pocket	Wheeler	5, 405
Lockwood Spring	Wheeler	5, 526

Arizona—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Los Nogales		3, 836
Maricopa Wells	Pacific Railroad Reports	1, 270
Mineral Spring	Wheeler	6, 670
Mooshaneh	Ives	5, 890
Mountain Spring		5, 500
Navajo Spring	Wheeler	5, 666
Navajo Spring	Pacific Railroad Reports	5, 626
Nelson Tanks	Wheeler	6, 216
New Year's Spring	Ives	6, 739
Ojo de San Luis		5, 044
Oraybe	Wheeler	4, 757
Oraybe	Ives	5, 816
Oraybe Gardens	Ives	6, 395
Pahghun-pahghun Springs		2, 282
Park Spring	Toner	7, 199
Peach Orchard Spring	Toner	6, 268
Peacock Spring	Toner	3, 174
Pearl Spring	Toner	5, 315
Picacho Spring		4, 870
Picacho Station	Wheeler	1, 750
Picket Post	Wheeler	2, 270
Pimas Villages		1, 440
Pimas Villages	Railroad	1, 193
Pine Tanks	Wheeler	5, 648
Playa de los Pimas	Toner	4, 149
Pottery Hill	Ives	5, 722
Prescott	Wheeler	5, 318
Prieto Crossing	Wheeler	5, 332
Pueblo Colorado	Wheeler	6, 401
Pueblo Viejo	Wheeler	2, 712
Quercus Cañon	Mexican Boundary Survey	4, 170
Relief Springs	Wheeler	5, 526
Russell's Tank	Toner	5, 285
Saccaton		1, 066
Safford	Wheeler	2, 711
Salt Spring	Wheeler	4, 747
San Francisco Spring	Pacific Railroad Reports	6, 666
Summit Spring	Wheeler	7, 867
Sunset Crossing	Wheeler	4, 891
Sunset Tanks	Wheeler	5, 797
Timah-kah Springs		4, 080
Truxton's Springs		3, 783
Truxton's Springs	Wheeler	3, 885
Tubac	Toner	3, 000
Tucson	Railroad	1, 898
Tule Spring	Wheeler	5, 924
Val de Chino	Pacific Railroad Reports	5, 754
Volunteer Spring	Wheeler	7, 106
Washi-pahghun Springs		4, 421
White's Ranch		1, 202
White Rock Spring		6, 516
Whitlock's Cienega		3, 485
Willow Spring		7, 195
Yampa Junction		5, 369

Arkansas.

Alicia	Toner	244
Arkadelphia	Toner	200
Austin	Toner	238
Baring Cross	Toner	246

Arkansas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Beebe	Toner	235
Benton	Toner	287
Bentonville	Toner	1,520
Bentonville	Smithsonian Institution	1,790
Bradford	Toner	232
Buckhorn	Smithsonian Institution	650
Cabot	Toner	279
Camden	Toner	123
Campbell	Toner	223
Carrollton	Toner	1,412
Corning	Toner	280
Delaphane	Toner	268
Fayetteville	Toner	1,350
Flippen's Barrens	Smithsonian Institution	1,000
Fort Smith	Medical Department, United States Army ..	460
Fulton	Toner	242
Gaines's Landing	Toner	149
Gainesville	Smithsonian Institution	500
Garner	Toner	211
Grand Glaise	Toner	212
Higginson	Toner	210
Holland	Toner	243
Hopefield	Toner	294
Hot Springs	Toner	718
Jacksonport	Toner	214
Jacksonville	Toner	273
Judsonia	Toner	209
Knobel	Toner	271
Krusett	Toner	216
La Honda	Pacific Railroad Reports	632
Little Rock	Railroad, Gardner's determination	309. 29
Lockhart's	Toner	242
McAlmont	Toner	263
McLean's Landing	Toner	360
Madison	Toner	283
Mineral Spring	Toner	600
Minturn Spring	Toner	251
Moark	Toner	287
Murta	Toner	261
Napoleon	Pacific Railroad Reports	142
Newport	Toner	218
O'Kean	Toner	261
Olyphant	Toner	215
Peach Orchard	Toner	276
Pittsburgh	Toner	418
Preston	Toner	790
Rockport	Toner	264
Russell	Toner	223
Spadra	Toner	408
Spring Hill	Smithsonian Institution	188
Ward	Toner	231
Washington	Smithsonian Institution	660

California.

Acampo	Emory	59
Agua Caliente	Emory	3,013
Alamo Mocho	Pacific Railroad Reports	—70
Algodones	Pacific Railroad Reports	46
Alpine	Southern Pacific Railroad	2,822
Alta	Central Pacific Railroad	3,607
Altamont	Central Pacific Railroad	740

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Anaheim	Southern Pacific Railroad	1,342
Anderson	Toner	433
Anita	Toner	161
Antelope	Central Pacific Railroad	154
Arbuckle	Northern Railroad	140
Arcade	Central Pacific Railroad	55
Auburn	Central Pacific Railroad	1,360
Auburn	Smithsonian Institution	1,176
Baker's Ranch	Toner	3,285
Bantas	Central Pacific Railroad	30
Battle Hill .....	.....	2,389
Benicia Barracks	Medical Department, United States Army	64
Bennett's Well	Wheeler	—6
Berenda	Toner	256
Berlin	Northern Railroad	99
Biggs	Oregon division Central Pacific Railroad	124
Big Logan	Toner	70
Big Trees, Calaveras County .....	.....	4,759
Black's	Northern Railroad	52
Blue Cañon	Central Pacific Railroad	4,693
Boca	Central Pacific Railroad	5,531
Borden	Toner	172
Box Elder .....	.....	1,430
Brandy City .....	.....	3,592
Brighton	Central Pacific Railroad	54
Bronco	Toner	5,341
Buena Vista Oil-Works .....	.....	790
Cahto	Smithsonian Institution	2,000
Cajon Rancho	Pacific Railroad	412
Caliente	Southern Pacific Railroad	1,290
Calistoga	California Pacific Railroad	402
Camp Babbitt	Williamson	384
Camp Bidwell	Smithsonian Institution	4,680
Camp Cady	Smithsonian Institution	3,000
Camp Far West	Medical Department, United States Army	175
Camp Independence	Smithsonian Institution	4,800
Camp Rock Spring	Petermann	4,696
Camptonville	Toner	2,388
Camp Union	Smithsonian Institution	54
Cape Horn Mills	Central Pacific Railroad	2,676
Capitan Grande	Pacific Railroad Reports	730
Carbondale	Amador branch Central Pacific Railroad	222
Carizzo .....	.....	431
Cartago .....	.....	3,589
Cascade	Central Pacific Railroad	6,538
Castroville	Toner	20
Cedar Point	Toner	5,614
Cerro Gordo Landing	Wheeler	3,656
Charleston	Stockton and Copperopolis and Visalia Rail- road	150
Chico	Central Pacific Railroad, Oregon division	193
Chico	Smithsonian Institution	150
Cicero	Central Pacific Railroad, Amador branch	90
Cisco	Central Pacific Railroad	5,934
Clayton	Smithsonian Institution	76
Clipper Gap	Central Pacific Railroad	1,759
Coco Mungo .....	.....	1,223
Cobuilla Village	Pacific Railroad Reports	85
Colfax	Central Pacific Railroad	2,422
Colona .....	.....	835
Colton	Southern Pacific Railroad	965
Columbia	Toner	2,314
Cook's Wells	Pacific Railroad Reports	—62

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Cordelia.....	Pacific Railroad Reports.....	69
Costa.....	Southern Pacific Railroad.....	83
Cottonwood.....	Toner.....	423
Crater Station.....	.....	1, 000
Crescent City.....	Smithsonian Institution.....	12
Cucamonga.....	Southern Pacific Railroad.....	952
Davis.....	California Pacific Railroad.....	52
De Coto.....	Central Pacific Railroad.....	68
Delano.....	Southern Pacific Railroad.....	313
Dixon.....	California Pacific Railroad.....	64
Downey.....	Southern Pacific Railroad.....	112
Downieville.....	Smithsonian Institution.....	2, 200
Dribblesby's Ferry.....	Pacific Railroad Reports.....	954
Drum Barracks.....	Medical Department, United States Army.....	32
Dunnigan.....	Northern Railroad.....	68
Dutch Flat.....	Central Pacific Railroad.....	3, 395
Elk Grove.....	Central Pacific Railroad.....	53
Elk Horn.....	Pacific Railroad Reports.....	89
Elk Valley.....	.....	3, 751
Ellis.....	Central Pacific Railroad.....	76
Elmira.....	California Pacific Railroad.....	79
Emigrant Gap.....	Central Pacific Railroad Reports.....	5, 221
Eureka.....	.....	5, 223
Fairfield.....	California Pacific Railroad.....	12
Farmington.....	Stockton, Copperopolis and Visalia Railroad.....	210
Fishpond Station.....	Toner.....	1, 900
Florin.....	Toner.....	42
Folsom City.....	Sacramento Valley and Placerville and Sacramento Valley Railroads.....	176
Fort Bidwell.....	Medical Department, United States Army.....	4, 680
Fort Crook.....	Medical Department, United States Army.....	3, 390
Fort Humboldt.....	Medical Department, United States Army.....	50
Fort Jones.....	Medical Department, United States Army.....	2, 570
Fort Lyon.....	Toner.....	4, 000
Fort Miller.....	Medical Department, United States Army.....	402
Fort Point.....	Coast Survey.....	27
Fort Reading.....	Pacific Railroad Reports.....	596
Fort Reading.....	Pacific Railroad Reports.....	675
Fort Reading.....	Pacific Railroad Reports.....	518
Fort Reading.....	Medical Department, United States Army.....	674
Fort Ross.....	Toner.....	50
Fort San Diego.....	Medical Department, United States Army.....	150
Fort Tejon.....	Medical Department, United States Army.....	3, 240
Fort Tejon.....	Wheeler.....	3, 245
Foster's Bar.....	Toner.....	1, 371
Fowler's, Napa Valley.....	.....	369
Fresno.....	Central Pacific Railroad, Visalia division.....	292
Galt.....	Central Pacific Railroad.....	49
Georgetown.....	Toner.....	2, 433
Gilroy.....	Toner.....	193
Glenville.....	Wheeler.....	3, 094
Goat Island.....	Toner.....	340
Gold Run.....	Central Pacific Railroad.....	3, 220
Goshen.....	Southern Pacific Railroad.....	278
Granite Wells.....	Wheeler.....	4, 015
Grass Valley.....	.....	2, 090
Gridley.....	Toner.....	97
Hamilton (near).....	Pacific Railroad Reports.....	260
Hermit Valley.....	.....	7, 259
Hill's Ranch.....	Pacific Railroad Reports.....	4, 131
Holden.....	Stockton, Copperopolis and Visalia Railroad.....	170
Hollister.....	Toner.....	284

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Fect.</i>
Hooker		543
Hope Valley	Williamson	7, 072
Hubertville	Toner	980
Hunter's Ranch	Wheeler	6, 274
Huntington's	Wheeler	2, 898
Illinoistown	Toner	2, 234
Independence		4, 800
Indian Valley	Toner	3, 280
Indian Wells	Southern Pacific Railroad	- 20
Ione	Central Pacific Railroad, Amador branch	287
Jackson	Toner	934
Jones's Mill, near Dutch Flat		3, 416
Junction	Central Pacific Railroad	163
Kernville	Wheeler	2, 708
Keysville		2, 558
Kingston	Petermann	1, 118
Knight's	California Pacific Railroad	45
La Motte's	Wheeler	6, 491
Lane's	Petermann	2, 664
Lathrop	Central Pacific Railroad	/ 26
Latrobe	Sacramento Valley and Placerville and Sacramento Valley Railroads	704
Lawrence	Toner	66
Lincoln	Central Pacific Railroad, Oregon division	161
Livermore	Central Pacific Railroad	485
Lodi	Central Pacific Railroad	55
Lone Pine	Wheeler	3, 810
Lone Pine		3, 917
Los Angeles	Wheeler	326
Los Angeles	Pacific Railroad Reports	250
Los Angeles	Southern Pacific Railroad	265
McCumber's Mill	Pacific Railroad Reports	3, 491
Macon	Toner	450
Mare Island		29
Marion	Toner	74
Marl Spring	Pacific Railroad Reports	3, 793
Martin's		1, 982
Marysville (opposite)	Pacific Railroad Reports	281
Marysville	Smithsonian Institution	80
Marysville	Central Pacific Railroad, Oregon branch	67
Mayfield	Toner	34
Meadow Valley	Smithsonian Institution	4, 000
Melrose	Central Pacific Railroad	18
Menatchey Valley	Wheeler	9, 503
Merced	Central Pacific Railroad, Visalia division	171
Mesquite Wells		3, 674
Midway	Central Pacific Railroad	356
Milton	Stockton, Copperopolis and Visalia Railroad	446
Mineral Bar	Toner	1, 121
Mitchell's	Toner	15
Modesto	Central Pacific Railroad, Visalia division	91
Mokelumne	Toner	5, 523
Mojave	Southern Pacific Railroad	2, 751
Monte	Toner	354
Monterey	Medical Department, United States Army	140
Moquelumne Hill	Smithsonian Institution	1, 502
Morongo Basin	Toner	1, 500
Murphy's		2, 201
Nadean's Station	Wheeler	2, 394
Napa	California Pacific Railroad	95
Napa Junction	California Pacific Railroad	79
Nelson	Toner	125

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Nevada	Toner	2, 573
Newcastle	Central Pacific Railroad	956
Newhall	Southern Pacific Railroad	1, 152
Nicholas (near)	Pacific Railroad Reports	289
Niles	Toner	143
Niles	Central Pacific Railroad	88
Nord	Central Pacific Railroad, Oregon division	153
Oakdale	Stockton, Copperopolis and Visalia Railroad	251
Oakland (wharf)	Central Pacific Railroad	14
Oakland (station)	Central Pacific Railroad	12
Oso Meadows	Wheeler	5, 982
Pajaro	Toner	22
Panola	Toner	48
Paradise	Toner	125
Penryn	Toner	624
Peters	Stockton, Copperopolis and Visalia Railroad	194
Pino	Central Pacific Railroad	400
Placerville	Toner	2, 109
Placerville	Williamson	1, 965
Plainsburg	Toner	209
Plasanton	Central Pacific Railroad	353
Porcupine Flat .....	.....	8, 173
Quincy .....	.....	3, 500
Quinalmingo	Toner	1, 084
Rancho del Chino y de Jurupa	Medical Department, United States Army	1, 000
Ravenna	Southern Pacific Railroad	2, 347
Rawson .....	.....	228
Red Bluff	Central Pacific Railroad, Oregon division	308
Red Bluff	Williamson	370
Redding	Central Pacific Railroad, Oregon division	556
Redwood City	Toner	10
Rincon	Toner	2, 050
River Bridge	Central Pacific Railroad	52
Roble	Toner	179
Rocklin	Central Pacific Railroad	249
Rock Spring	Pacific Railroad Reports	4, 898
Roop's Ranch	Pacific Railroad Reports	4, 181
Rutherford	California Pacific Railroad	239
Sackett's Wells	Toner	312
Sacramento	Central Pacific Railroad	30
Sacramento	Smithsonian Institution	82
Sacramento	Williamson	81
Saint Helena, Napa Valley .....	.....	215
Saint Helena	California Pacific Railroad	315
Salinas City .....	.....	42
Salt Wells	Wheeler	117
San Benito	Smithsonian Institution	140
San Bernardino	Pacific Railroad Reports	1, 118
San Bruno	Toner	16
San Buenaventura	Toner	12
Sand Creek	Southern Pacific Railroad	2, 315
San Diego	Emory	30
San Diego	Signal-Service	62
San Diego Mission	Pacific Railroad Reports	64
San Felipe	Pacific Railroad Reports	2, 176
San Felipe	Pacific Railroad Reports	2, 456
San Fernando	Southern Pacific Railroad	1, 066
San Fernando Mission .....	.....	1, 048
San Francisco	Smithsonian Institution	130
San Francisco	Signal-Service Bureau	60
San Francisco Presidio	Medical Department, United States Army	150
San Geronio	Toner	2, 693

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
San Gorgonio	Southern Pacific Railroad	2,560
San Isabel Rancho	Toner	2,957
San José	San Francisco and San José Railroad	91
San José	Pacific Railroad Reports	3,022
San Leandro	Central Pacific Railroad	48
San Lorenzo	Toner	35
San Luis Obispo	Toner	402
San Luis Rey	Medical Department, United States Army	20
San Mateo	Toner	23
San Miguel	Toner	616
San Pascual	Emory	716
San Pedro	Pacific Railroad Reports	30
San Raphael	Toner	0
Santa Barbara	Smithsonian Institution	20
Santa Catalene	Toner	3,000
Santa Clara	Smithsonian Institution	98
Santa Cruz	Toner	2,500
Santa Isabella .....	.....	3,050
Santa Isabella Rancho	Pacific Railroad Reports	2,957
Sayquita	Wheeler	5,553
Scheffer's Hot Springs .....	.....	4,094
Sesma	Toner	229
Seven Palms	Southern Pacific Railroad	1,126
Shady Run	Central Pacific Railroad	4,136
Shasta .....	.....	1,160
Shaw's Flat	Toner	2,270
Sheridan .....	.....	113
Shingle Springs	Sacramento Valley and Placerville and Sacramento Valley Railroads.	1,393
Silver Creek	Toner	3,700
Silver Mountain City .....	.....	6,516
Silver Springs	Wheeler	4,110
Silver Valley .....	.....	7,323
Soda Lake	Pacific Railroad Reports	1,002
Soledad	Toner	3,213
Sonora	Toner	1,971
Soto	Toner	186
South Vallejo	California Pacific Railroad	15
Spadra	Southern Pacific Railroad	705
Stockton	Central Pacific Railroad	23
Stony Point .....	.....	500
Strawberry Valley	Toner	3,567
Strawberry Valley	Williamson	5,707
Strong's Cañon	Central Pacific Railroad	6,317
Summit	Central Pacific Railroad	7,017
Summit Valley	Toner	6,765
Sumner	Southern Pacific Railroad	415
Sunoe	Toner	264
Sutler	Toner	919
Sycamore .....	.....	302
Tabòchaypi .....	.....	4,017
Tabòchaypi Valley	Wheeler	3,831
Tamarac .....	.....	6,209
Tassett .....	.....	83
Tehama	Central Pacific Railroad, Oregon division	222
Tipton	Southern Pacific Railroad	267
Trinidad .....	.....	5,820
Trout Meadows	Wheeler	5,998
Truckee	Central Pacific Railroad	5,819
Tulare	Southern Pacific Railroad	222
Tullock	Toner	106
Uhl's Ranch	Wheeler	2,662
Vacaville	Toner	175

California—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Vacaville (near)	Pacific Railroad Reports	304
Valla Citron	Emory	1,539
Vallecito	Toner	1,643
Vallejo	Toner	0
Vina .....	.....	211
Visalia	Williamson	384
Warm Springs	San Francisco and San José Railroad	46
Warner's Ranch	Pacific Railroad Reports	3,022
Watsonville .....	.....	45
Weldon	Wheeler	2,717
Wheatland	Central Pacific Railroad, Oregon division	84
Whitney	Wheeler	10,051
Whitney Meadows	Wheeler	9,371
Wild Rose Spring	Wheeler	4,683
Williams'	Northern Railroad	84
Willow Spring	Wheeler	2,531
Woodland	California Pacific Railroad	61
Yankee Jim's .....	.....	3,185
Yosemite Valley	Whitney	4,060
Yosemite Valley (cliffs and domes about it range from 7,000 to 9,000 feet above sea).	Williamson	3,935
Yountville .....	.....	168
Yreka	Williamson	2,731
Yuma	Southern Pacific Railroad	150

Colorado.

Acequia	Denver and Rio Grande Railroad	5,531
Ada Spring	King	9,279
Agate	Kansas Pacific Railroad	5,476
Alden's Junction	Wheeler	8,981
Allen's Park	Hayden	8,513
Alma	Wheeler	10,254
Animas City	Wheeler	6,622
Animas City	Hayden	6,850
Antelope Park	Hayden	6,433
Apishpa	Denver and Rio Grande Railroad	6,167
Arapahoe	Kansas Pacific Railroad	4,024
Arkansas Crossing	Arkansas Valley Railroad	3,885
Aroya	Kansas Pacific Railroad	4,666
Badito	Ruffner	6,530
Bailey's Ranch	South Park Railroad surveys	7,659
Baker's Mine	Whitney	11,956
Bakerville	Hayden	9,753
Bear Creek Station	Parry	7,198
Beaver Creek	Denver and Rio Grande Railroad	5,001
Bent's Ford	Arkansas Valley Railroad	4,039
Bergen's Park	Hayden	7,643
Bergen's Ranch	Parry	7,752
Bijou	Kansas Pacific Railroad	5,221
Blackhawk	Colorado Central Railroad	7,975
Blackhawk	Whitney	7,543
Boonville	Arkansas Valley Railroad	4,497
Borst's	Denver and Rio Grande Railroad	6,813
Boulder	Parry	5,536
Box Elder	Kansas Pacific Railroad	5,546
Bradford Junction	Parry	8,069

Colorado—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Breckenridge.....	Whitney	9, 674
Buffalo Springs, South Park.....	Whitney	8, 901
Burlington .....	.....	4, 976
Burroughs' Park	Wheeler	10, 878
Camp Loma	Ruffner	8, 069
Cañon City.....	.....	.....
Caribou .....	.....	9, 167
Caribou, Planters' Hotel	Hayden	9, 905
Carlisle Springs	Denver and Rio Grande Railroad	4, 954
Carr .....	.....	5, 869
Carr's	Wheeler	9, 889
Cedar Point	Kansas Pacific Railroad	5, 730
Central City	Parry	8, 300
Central City	Toner	8, 389
Centreville .....	.....	7, 800
Centreville	Wheeler	7, 727
Cheyenne Wells	Kansas Pacific Railroad	4, 295
Christlake	Toner	7, 186
Church Station.....	Colorado Central Railroad	5, 439
Citadel	Denver and Rio Grande Railroad	6, 124
Coal Banks	Denver and Rio Grande Railroad	5, 358
Coal Creek Station	Colorado Central Railroad	5, 329
Coal Creek Siding	Colorado Central Railroad	5, 350
Colorado City	Parry	6, 342
Colorado City	Hayden	6, 049
Colorado Springs	Denver and Rio Grande Railroad	5, 985. 6
Colorado Springs, hotel floor.....	Denver and Rio Grande Railroad	6, 023
Colorado Springs, signal-office.....	Signal-Service levels	6, 032
Conejos	Hayden	7, 880
Corliss Springs .....	.....	5, 985
Cucharas	Denver and Rio Grande Railroad	5, 956
Davidson	Colorado Central Railroad	5, 409
Dayton	Hayden	9, 441
Deer Trail	Kansas Pacific Railroad	5, 203
Del Norte	Hayden	7, 750
Denver Station	Kansas Pacific	5, 196. 58
Denver Station	Denver and Rio Grande Railroad	5, 197. 58
Denver, signal-office.....	Signal-Office (1873) level	5, 244
Denver shops	Denver and Rio Grande Railroad	5, 243
Denver Pacific Junction	Kansas Pacific Railroad	5, 212
Divide	Denver and Rio Grande Railroad	7, 210
Douglas	Denver and Rio Grande Railroad	6, 326
Downieville	Colorado Central Railroad	8, 018
El Mora	Denver and Rio Grande Railroad	5, 886
Empire	Parry	8, 583
Eureka	Kansas Pacific Railroad	4, 263
Evans	Hayden	4, 745
Evans	King	4, 775
Evans	King	7, 310
Fairplay, doorsill of Sentinel office before fire of 1873.....	South Park Railroad surveys	9, 964. 5
Fairplay	Wheeler	10, 054
Fairplay	Whitney	9, 946
Fall River	Whitney	7, 708
Fall River	Colorado Central Railroad	7, 719
Farnham's Ranch	Hayden	9, 548
First View	Kansas Pacific Railroad	4, 595
Fish Creek .....	.....	6, 889
Fishe's Ranch	Colorado Central Railroad	7, 675
Fort Collins	Toner	4, 815
Fort Garland	Denver and Rio Grande Railroad	7, 945
Fort Garland	Wheeler	7, 364
Fort Garland	Hayden	7, 996
Fort Garland	Smithsonian Institution	8, 365

Colorado—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Fect.</i>
Fort Lupton.....	.....	5, 027
Fort Lyon.....	.....	3, 725
Fort Morgan.....	Medical Department, United States Army.....	4, 500
Fort Reynolds.....	Wheeler.....	4, 300
Fort Saint Vrain.....	.....	5, 074
Fort Sedgwick.....	Smithsonian Institution.....	3, 600
Fountain.....	Denver and Rio Grande Railroad.....	5, 564
France's Coal Mine.....	Hayden.....	6, 693
Gardner.....	Hayden.....	7, 000
Garlick's Ranch.....	Parry.....	7, 105
Georgetown.....	Parry.....	8, 452
Georgetown, Barton House.....	Whitney.....	8, 594
Georgetown.....	Colorado Central Railroad.....	8, 514
Georgetown, Alpine street.....	Colorado Central Railroad.....	8, 530
Godfrey.....	Kansas Pacific Railroad.....	5, 621
Godfrey Ranch.....	South Park Railroad surveys.....	8, 909
Gold Hill.....	Hayden.....	8, 463
Gold Hill.....	Parry.....	8, 636
Golden City, city directrix.....	Colorado Central Railroad.....	5, 729
Golden City, depot.....	Colorado Central Railroad.....	5, 687
Golden Junction.....	Colorado Central Railroad.....	5, 615
Golden City.....	Whitney.....	5, 690
Goodnight.....	Denver and Rio Grande Railroad.....	4, 731
Graneros.....	Denver and Rio Grande Railroad.....	5, 811
Granite.....	Hayden.....	8, 883
Grant.....	Hayden.....	8, 587
Grant.....	South Park Railroad surveys.....	8, 514
Greeley.....	King.....	4, 779
Greenhorn.....	Denver and Rio Grande Railroad.....	5, 096
Greenland.....	Denver and Rio Grande Railroad.....	6, 929
Grenada.....	.....	3, 434
Gunnison.....	Hayden.....	7, 743
Hall's Ranch, San Luis Valley.....	Wheeler.....	7, 839
Hamilton.....	Hayden.....	9, 743
Hamilton.....	Whitney.....	9, 875
Hardscrabble Mines.....	.....	8, 800
Haydensville.....	.....	6, 382
Henderson's Ranch.....	Whitney.....	8, 257
Henry's.....	Denver and Rio Grande Railroad.....	6, 985
Hepburn's Park.....	South Park Railroad surveys.....	8, 164
Hermisillo.....	.....	4, 723
Hermosa.....	Wheeler.....	6, 618
Hot Springs.....	Parry.....	7, 725
Howardville.....	Hayden.....	9, 700
Howardville.....	Wheeler.....	9, 527
Huerfano.....	Denver and Rio Grande Railroad.....	5, 659
Huerfano Junction.....	.....	4, 563
Hughes.....	.....	5, 070
Hugo.....	Kansas Pacific Railroad.....	5, 068
Huntsville.....	.....	6, 770
Husted's.....	Denver and Rio Grande Railroad.....	6, 601
Idaho.....	Whitney.....	7, 512
Idaho.....	Parry.....	7, 800
Jamestown.....	Hayden.....	7, 123
Jefferson.....	Hayden.....	9, 868
Jefferson.....	Parry.....	9, 842
Jefferson.....	Wheeler.....	9, 862
Johnson.....	Toner.....	5, 000
Junction House.....	Hayden.....	8, 153
Kelso Cabin.....	Hayden.....	10, 893
Kenosha House.....	South Park Railroad surveys.....	9, 629
Kiowa.....	Kansas Pacific Railroad.....	5, 514

Colorado—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Fect.</i>
Kit Carson	Kansas Pacific Railroad	4, 307
Labran	Denver and Rio Grande Railroad	5, 184
La Junta	Arkansas Valley Railroad	4, 076
La Junta	Atchison, Topeka and Santa Fé Railroad	4, 137
Lake	Kansas Pacific Railroad	5, 319
Lake City	Hayden	8, 550
Lakeside	Colorado Central Railroad	5, 252
Lambert	Wheeler	6, 561
Laporte	King	5, 065
Larkspur	Denver and Rio Grande Railroad	6, 617
Las Animas	Atchison, Topeka and Santa Fé Railroad	3, 952
Las Animas	Arkansas Valley Railroad	3, 909
Latham .....	.....	4, 600
Lindstrom's Mill	Parry	8, 738
Little Buttes	Denver and Rio Grande Railroad	5, 372
Littleton	Denver and Rio Grande Railroad	5, 363
Longmont	Colorado Central Railroad	4, 957
Los Piños	Hayden	9, 290
Los Piños	Wheeler	9, 065
Machisett .....	.....	5, 520
McLaughlin's Ranch	South Park Railroad surveys	9, 689
Manitou	Hayden	6, 357
Manitou .....	.....	6, 181
Manitou, rock around Manitou Spring	Denver and Rio Grande Railroad surveys	6, 296. 9
Marshall .....	.....	5, 578
Masonville .....	.....	6, 960
Meadows	Denver and Rio Grande Railroad	4, 803
Merritt's Ranch	Hayden	7, 360
Middle Boulder .....	.....	8, 263
Mill City	Toner	7, 826
Mirage	Kansas Pacific Railroad	4, 859
Missouri City	Parry	9, 073
Montezuma	Whitney	10, 295
Montezuma	Wheeler	9, 652
Montgomery	Whitney	10, 783
Montgomery	Hayden	11, 181
Monument	Denver and Rio Grande Railroad	6, 356
Morgan's Trading Post .....	.....	6, 229
Mosca .....	.....	7, 950
Mount Vernon	Parry	6, 479
Namaqua .....	.....	5, 224
Napesta	Atchison, Topeka and Santa Fé Railroad	4, 395
Nederland	Hayden	8, 263
Nevada City .....	.....	8, 800
New York Ranch	Whitney	7, 170
Ni Wot Depot	Colorado Central Railroad	5, 118
Oil Creek	Denver and Rio Grande Railroad	5, 279
Old Oro	Hayden	10, 247
Oro	Hayden	10, 704
Ouray	Hayden	7, 640
Pagosa Springs	Hayden	7, 095
Pagosa Springs	Wheeler	7, 108
Parrott City	Hayden	8, 633
Pegasus Spring	Hayden	5, 650
Pierce .....	.....	5, 107
Piñon	Denver and Rio Grande Railroad	5, 039
Platteville .....	.....	4, 690
Plum	Denver and Rio Grande Railroad	5, 836
Pueblo, North	Denver and Rio Grande Railroad	4, 713
Pueblo, South	Denver and Rio Grande Railroad	4, 676
Ralston	Colorado Central Railroad	5, 606

Colorado—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Fect.</i>
Ralston, water in Ralston Creek.	Colorado Central Railroad.....	5, 579
River Bend.....	Kansas Pacific Railroad.....	5, 511
Riverside.....	Wheeler.....	8, 335
Rock Creek.....	Colorado Central Railroad.....	5, 309
Rocky Ford.....	Atchison, Topeka and Santa F6 Railroad....	4, 195
Rollinsville.....	Hayden.....	8, 323
Rosita.....	Hayden.....	8, 500
Saguache.....	Hayden.....	7, 745
Saguache.....	Wheeler.....	7, 723
Saint Charles.....	Denver and Rio Grande Railroad.....	4, 940
Saint John's.....	Whitney.....	10, 807
Saint Mary's.....	Hayden.....	6, 067
Saint Vrain's.....	Parry.....	5, 256
Salt Works.....	Whitney.....	9, 008
Salt Works.....	Hayden.....	8, 749
Salt Works.....	South Park Railroad surveys.....	8, 917
San Juan City.....	Wheeler.....	8, 900
Santa Clara.....	Denver and Rio Grande Railroad.....	6, 208
Schuyler.....	Kansas Pacific Railroad.....	5, 354
Silverton.....	Hayden.....	9, 400
Slaght's Ranch.....	South Park Railroad surveys.....	7, 964
Soda Springs, Animas Park..	Hayden.....	6, 853
Spring Valley.....	.....	6, 647
Stern's Ranch.....	.....	8, 941
Steven's Mine.....	Hayden.....	11, 943
Swallow's Nest.....	Denver and Rio Grande Railroad.....	4, 862
Tarryall.....	Whitney.....	10, 078
Tarryall.....	Hayden.....	10, 254
Tarryall.....	Parry.....	9, 932
Terrible Mine.....	Hayden.....	9, 243
Thompson's Park.....	Hayden.....	7, 530
Trinidad.....	Toner.....	5, 820
Trinidad.....	Arkansas Valley Railroad.....	6, 005
Trinidad, Lieutenant Wheeler's monument.	Arkansas Valley Railroad.....	6, 032
Uncompahgre Agency.....	Hayden.....	6, 400
Union Cross-Roads.....	.....	6, 287
Valley Station.....	.....	4, 500
White River Agency.....	Hayden.....	6, 491
Widefield.....	Denver and Rio Grande Railroad.....	5, 714
Wild Horse.....	Kansas Pacific Railroad.....	4, 456
Wild Horse Spring.....	Arkansas Valley Railroad.....	4, 330
Wood Valley.....	.....	5, 533

Dakota.

Bismarck.....	Signal-Service.....	1, 677
Bismarck, Missouri River.....	Northern Pacific Railroad.....	1, 649
Bois des Sioux.....	Toner.....	1, 039
Burbank.....	Dakota Southern Railroad.....	1, 180
Davis Junction.....	Dakota Southern Railroad.....	1, 131
Elk Point.....	Dakota Southern Railroad.....	1, 148
Fargo.....	Northern Pacific Railroad.....	912
Fort Abraham Lincoln.....	.....	2, 211
Fort Berthold.....	.....	1, 873
Fort Buford.....	Smithsonian Institution.....	2, 017
Fort Clarke.....	Petermann.....	1, 827
Fort Pierre.....	Medical Department, United States Army....	1, 456
Fort Pierre.....	Petermann.....	1, 509

Dakota—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Fort Pierre.....	Toner.....	1,558
Fort Randall.....	Medical Department, United States Army...	1,245
Fort Ransom.....	.....	1,438
Fort Sully.....	Signal-Service.....	1,688
Fort Totten.....	Thorne.....	1,480
Fort Union.....	Toner.....	1,970
Fort Wadsworth.....	.....	1,896
Fort Wadsworth.....	Smithsonian Institution.....	1,650
Gayville.....	Dakota Southern Railroad.....	1,188
Greenwood.....	Smithsonian Institution.....	1,900
James River.....	Dakota Southern Railroad.....	1,198
Jamestown.....	Northern Pacific Railroad.....	1,415
Jefferson.....	Dakota Southern Railroad.....	1,129
McCook.....	Dakota Southern Railroad.....	1,128
Meckling.....	Dakota Southern Railroad.....	1,177
Oakwood Settlement.....	Nicollet.....	1,341
Pembina.....	Signal-Service.....	790
Richland.....	.....	1,247
Square House.....	.....	2,120
Vermillion.....	Dakota Southern Railroad.....	1,169
Vermillion.....	.....	1,200
Yankton.....	Signal-Service.....	1,296
Yankton.....	Dakota Southern Railroad.....	1,202
Yankton Agency.....	Smithsonian Institution.....	1,900

Indian Territory.

Adair.....	Missouri, Kansas and Texas Railroad.....	702
Atoka.....	Missouri, Kansas and Texas Railroad.....	574
Beaversville.....	Pacific Railroad Reports.....	1,083
Blue Jacket.....	Missouri, Kansas and Texas Railroad.....	797
Caddo.....	Missouri, Kansas and Texas Railroad.....	723
Caney.....	Missouri, Kansas and Texas Railroad.....	548
Checota.....	Missouri, Kansas and Texas Railroad.....	605
Choteau.....	Missouri, Kansas and Texas Railroad.....	642
Colbert.....	Missouri, Kansas and Texas Railroad.....	676
Durant.....	Missouri, Kansas and Texas Railroad.....	658
Eufala.....	Missouri, Kansas and Texas Railroad.....	635
Fort Arbuckle.....	Medical Department, United States Army...	1,000
Fort Gibson.....	Medical Department, United States Army...	560
Fort Gibson.....	Signal Bureau.....	511
Fort Towson.....	Medical Department, United States Army...	300
Fort Washita.....	Medical Department, United States Army...	645
Gibson.....	Missouri, Kansas and Texas Railroad.....	551
Honey Springs.....	Toner.....	568
Kingfisher.....	.....	950
Libiaetta.....	Missouri, Kansas and Texas Railroad.....	610
Limestone Gap.....	Missouri, Kansas and Texas Railroad.....	663
McAllister.....	Missouri, Kansas and Texas Railroad.....	702
Muskogee.....	Missouri, Kansas and Texas Railroad.....	617
Oaktaha.....	Missouri, Kansas and Texas Railroad.....	608
Perryville.....	Missouri, Kansas and Texas Railroad.....	726
Prior Creek.....	Missouri, Kansas and Texas Railroad.....	648
Ream's.....	Missouri, Kansas and Texas Railroad.....	627
Russell Creek.....	Missouri, Kansas and Texas Railroad.....	882
Shawnee Village.....	Pacific Railroad Reports.....	812
South Canadian.....	Missouri, Kansas and Texas Railroad.....	675
Stringtown.....	Missouri, Kansas and Texas Railroad.....	644
Verdigris.....	.....	480
Vinita Junction.....	Missouri, Kansas and Texas Railroad.....	716

Idaho.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
American Falls	Toner	4, 320
Bear River Bridge	Hayden	5, 744
Beer Springs	Hayden	5, 529
Beer Springs	Lander	5, 850
Bennington	Hayden	5, 798
Blackfoot Fork Bridge	Hayden	4, 456
Bloomington	Hayden	5, 985
Camas Creek Ranch	Hayden	4, 722
Cantonment Loring	Pacific Railroad Reports	4, 700
Carpenter's Station	Hayden	4, 666
Clifton	Hayden	4, 893
Cœur d'Alène Mission	Pacific Railroad Reports	2, 280
Desert Wells	Hayden	4, 816
Dry Creek Station	Hayden	5, 689
Fish Haven	Hayden	5, 932
Florence .....	.....	8, 000
Fort Boise .....	.....	1, 998
Fort Hall	Hayden	4, 754
Fort Hall (old) .....	.....	4, 500
Franklin	Hayden	4, 552
Halls	De Lacy	4, 996
Higham's Ranch	Hayden	4, 601
Junction Station	Hayden	6, 329
Keeney's Station	Hayden	4, 933
Lapway	De Lacy	2, 000
Lapway (at Craig's)	Pacific Railroad Reports	1, 240
Malade City	Hayden	4, 700
Market Lake	Hayden	4, 795
Montpelier	Hayden	5, 793
Mound Spring Station .....	.....	4, 429
Ovid	Hayden	5, 760
Oxford	Hayden	4, 862
Paris	Hayden	5, 836
Pleasant Valley Station	Hayden	6, 086
Pocatillo Station	Hayden	4, 512
Red Rock Ranch .....	.....	4, 711
Ross Fork Station .....	.....	4, 394
Saint Charles	Hayden	5, 932
Saint George	Hayden	5, 771
Salmon City	De Lacy	4, 030
Soda Springs (Beer Springs)	Hayden	5, 738
Stevenson's Junction, Limhi Valley	De Lacy	6, 084
Stoner's Station .....	.....	4, 621
Taylor's Bridge	Hayden	4, 627

Iowa.

Ackley	Central Railroad of Iowa	1, 141
Adel	Keokuk and Des Moines Railroad	1, 112
Afton	Toner	1, 223
Agency	Burlington and Missouri River Railroad	823
Albia	Burlington and Missouri River Railroad	969
Albia	Iowa Central Railroad	976
Albia, crossing of Burlington and Missouri River Railroad	Iowa Central Railroad	959

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Albion	Central Railroad of Iowa.....	943
Alden	Toner	1, 165
Algona	Smithsonian Institution	1, 500
Alpine	Keokuk and Des Moines Railroad	660
Alta	Toner	1, 512
Ames	Chicago and Northwestern Railroad	943
Arcadia	Chicago and Northwestern Railroad	1, 446
Auburn	Preliminary railroad-surveys.....	9, 710
Barnum	Toner	1, 173
Bartlett	Kansas City, Saint Joseph and Council Bluffs Railroad.	967
Batavia	Burlington and Missouri River Railroad	661
Beason's	Chicago, Rock Island and Pacific Railroad	1, 280
Beaver	Chicago and Northwestern Railroad	1, 048
Belfast	Keokuk and Des Moines Railroad	554
Belleplaine	Chicago and Northwestern Railroad	847
Bentonsport	Keokuk and Des Moines Railroad	604
Bertram .....	.....	740
Big Creek	Toner	590
Big Mound Summit	Railroad	745
Blairsburg	Toner	1, 230
Blairstown	Chicago and Northwestern Railroad	862
Blencoe	Sioux City and Pacific Railroad	1, 064
Bonaparte	Keokuk and Des Moines Railroad	577
Boone	Chicago and Northwestern Railroad	1, 162
Boonesborough	Toner	1, 160
Bowen's Prairie	Toner	800
Brainard	Railroad	926. 5
Brooklyn	Chicago, Rock Island and Pacific Railroad	843
Burlington, high water Mis- sissippi River, 1851.	Gardner, from railroad-levels	529. 32
Burlington, low water Mis- sissippi River, 1851.	Gardner, from railroad-levels	511. 89
Burlington, Mainstreet depot.	Gardner, from railroad-levels	531. 61
Calamus	Chicago and Northwestern Railroad	728
California Junction	Sioux City and Pacific Railroad	1, 032
Calmar	Railroad	1, 272. 7
Canton	Davenport and Saint Paul Railroad	733
Carroll	Chicago and Northwestern Railroad	1, 247
Carrollton	Preliminary railroad-surveys	1, 210
Cascade	Davenport and Saint Paul Railroad	804
Casey	Chicago, Rock Island and Pacific Railroad	1, 249
Cedar Creek	Toner	616
Cedar Falls	Iowa Central Railroad	875
Cedar Falls, high water Ce- dar River.	Iowa Central Railroad	866
Cedar Rapids	Chicago and Northwestern Railroad	751
Central City	Toner	986
Centreville	Missouri, Iowa and Nebraska Railroad	1, 030
Ceres	Toner	825
Chariton	Burlington and Missouri River Railroad	1, 056
Charles City	Cedar Falls and Minnesota Railroad	1, 026
Chelsea	Railroad (approximate)	798
Chequaque	Burlington and Missouri River Railroad	624
Cherokee	Toner	1, 204
Chillicothe	Burlington and Missouri River Railroad	668
Clarksville	Preliminary railroad-surveys	949
Clear Lake .....	.....	984
Clermont	Railroad	872. 7
Clintou, high water 1844, Mississippi River.	Chicago and Northwestern Railroad	593. 15

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Clinton, bridge over Mississippi River.	Chicago and Northwestern Railroad	611. 15
Clinton, station grounds	Chicago and Northwestern Railroad	616
Clorinda	Missouri, Iowa and Nebraska Railroad	1, 049
Colfax	Toner	753
Cole	Chicago and Northwestern Railroad	1, 066
Columbus Junction	Toner	543
Comstock	Keokuk and Des Moines Railroad	724
Coon River .....	.....	1, 017
Corning	Burlington and Missouri River Railroad	1, 154
Correctionville	Preliminary railroad-surveys	1, 143
Corydon	Missouri, Iowa and Nebraska Railroad	1, 109
Council Bluffs	Chicago and Northwestern Railroad	1, 007
Council Bluffs	Kansas City, Saint Joseph and Council Bluffs Railroad.	1, 005
Council Bluffs, Union Pacific transfer depot	Kansas City, Saint Joseph and Council Bluffs Railroad.	1, 005. 06
Council Bluffs, low water Missouri River.	Mean result by railroads	983
Crawfordsville	Toner	710
Crescent .....	.....	1, 209
Cresco	Davenport and Saint Paul Railroad	1, 333
Cromwell	Burlington and Missouri River Railroad	1, 247
Croton	Keokuk and Des Moines Railroad	559
Dallas Centre	Des Moines and Fort Dodge Railroad	1, 072
Danville	Burlington and Missouri River Railroad	732
Davenport, datum of Chicago, Rock Island and Pacific Railroad.	Gardner's determination	559. 88
Davenport, high water Mississippi River.	Gardner's determination	569. 88
Davenport, low water Mississippi River.	Gardner's determination	553. 22
Davenport, city base	Gardner's determination	547. 88
Davenport, old depot track, corner Fifth and Perry streets.	Gardner's determination	591. 81
Davenport, station	Chicago, Rock Island and Pacific Railroad ..	585
Davenport, signal-office	United States Signal-Service	603
Davis Creek	Toner	649
Dean	Missouri, Iowa and Nebraska Railroad	842
Decorah	Railroad	899. 5
Delassus	Toner	1, 068
Delavan	Toner	636
Delaware	Davenport and Saint Paul Railroad	1, 117
Dennison	Chicago and Northwestern Railroad	1, 199
Des Moines	Des Moines and Fort Dodge Railroad	803
Des Moines, low water Des Moines River.	Des Moines and Fort Dodge Railroad	779
Des Moines	Chicago, Rock Island and Pacific Railroad ..	807
Des Moines	Keokuk and Des Moines Railroad	833
De Soto	Chicago, Rock Island and Pacific Railroad ..	896
Dewitt	Chicago and Northwestern Railroad	706
Dexter	Chicago, Rock Island and Pacific Railroad ..	1, 162
Donnan	Railroad	1, 156. 7
Doud's	Keokuk and Des Moines Railroad	639
Downey	Chicago, Rock Island and Pacific Railroad ..	690
Dry Creek	Toner	1, 003
Dubuque, low water Mississippi River.	Gardner's determination	599. 15
Dubuque, signal-office	United States Signal-Service	665

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Duncombe.....	Toner.....	1, 111
Dunlap.....	Railroad (approximate).....	1, 109
Durant.....	Chicago, Rock Island and Pacific Railroad..	719
Dyersville.....	Illinois Central Railroad.....	947
Dysart.....	Toner.....	438
Earlham.....	Chicago, Rock Island and Pacific Railroad..	1, 119
East Nebraska City.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	946
East Nebraska Junction.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	944
East Orange.....	Toner.....	605
East Plattsmouth.....	Toner.....	924
Eastport.....	Missouri, Iowa and Nebraska Railroad.....	943
Eastport, rail Kansas City, Saint Joseph and Council Bluffs Railroad.	Missouri, Iowa and Nebraska Railroad.....	946
Eastport, high water Mis- souri River.	Missouri, Iowa and Nebraska Railroad.....	929
East Side.....		1, 390
Eddyville.....	Keokuk and Des Moines Railroad.....	714
Eddyville.....	Iowa Central Railroad.....	690
Eddyville, Des Moines River.	Iowa Central Railroad.....	665
Eddyville, Keokuk and Des Moines crossing.	Iowa Central Railroad.....	714
Eldora.....	Central Railroad of Iowa.....	1, 019
Eldorado.....	Preliminary railroad-surveys.....	946
Elgin.....	Railroad.....	847. 6
Elkadar.....	Preliminary railroad-surveys.....	744
Elkadar, water.....	Preliminary railroad-surveys.....	736
Elm Creek.....	Toner.....	1, 094
Elm Springs.....	Preliminary railroad-surveys.....	972
Fairbanks.....	Toner.....	1, 083
Fairfax.....	Chicago and Northwestern Railroad.....	791
Fairfield.....	Burlington and Missouri River Railroad....	787
Fairfield.....	Smithsonian Institution.....	940
Farley Junction.....	Illinois Central Railroad.....	1, 131
Farmington.....	Keokuk and Des Moines Railroad.....	588
Fayette Village.....	Smithsonian Institution.....	1, 000
Floyd's Bluffs.....	Railroad (approximate).....	1, 404
Floyd Station.....	Cedar Falls and Minnesota Railroad.....	1, 114
Fort Atkinson.....	Medical Department, United States Army...	700
Fort Des Moines.....	Medical Department, United States Army...	780
Fort Dodge.....	Illinois Central Railroad.....	1, 001
Fort Dodge, low water Des Moines River.	Des Moines and Fort Dodge Railroad.....	969
Frederick.....	Burlington and Missouri River Railroad....	759
Fredericksburg.....	Toner.....	1, 185
Fulton.....	Chicago, Rock Island and Pacific Railroad..	765
Given.....	Keokuk and Des Moines Railroad.....	737
Glendale.....	Burlington and Missouri River Railroad....	765
Glenwood.....	Burlington and Missouri River Railroad....	1, 007
Glidden.....	Railroad (approximate).....	1, 238
Gowril.....	Des Moines and Fort Dodge Railroad.....	1, 141
Grand Junction.....	Keokuk and Des Moines Railroad.....	1, 098
Grand Junction.....	Chicago and Northwestern Railroad.....	1, 062
Grand Junction.....	Des Moines and Fort Dodge Railroad.....	1, 039
Grand Mound.....	Chicago and Northwestern Railroad.....	743
Grinnell.....	Chicago, Rock Island and Pacific Railroad..	1, 018
Grove City.....	Chicago, Rock Island and Pacific Railroad..	1, 296
Guthrie.....	Chicago, Rock Island and Pacific Railroad..	1, 290
Guttenberg.....	Toner.....	690
Hagar.....	Railroad (approximate).....	1, 045

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
Hamburg	Kansas City, Saint Joseph and Council Bluffs Railroad.	<i>Feet.</i> 930
Hamburg, Burlington, and Missouri River Railroad Junction.	Kansas City, Saint Joseph and Council Bluffs Railroad.	930
Hardin's Creek	Toner	1, 026
Harmony	Burlington and Missouri River Railroad	1, 068
Harris Grove	Smithsonian Institution	900
Hazard	Toner	1, 405
Hesper	Smithsonian Institution	720
Highland	Railroad (approximate)	1, 311
Homestead	Chicago, Rock Island and Pacific Railroad ..	873
Honey Creek	Toner	1, 020
Hoosier Creek	Toner	685
Hopkinton	Davenport and Saint Paul Railroad	860
Ida Grove	Preliminary railroad-surveys	1, 231
Independence	Illinois Central Railroad	924
Independent	Keokuk and Des Moines Railroad	652
Iowa City	Chicago, Rock Island and Pacific Railroad ..	678
Iowa Falls	Illinois Central Railroad	1, 071
Janesville	Cedar Falls and Minnesota Railroad	899
Jesup	Toner	980
Julien	Toner	845
Junction	Cedar Falls and Minnesota Railroad	881
Kellogg	Chicago, Rock Island and Pacific Railroad ..	846
Keokuk, Burlington and Missouri Railroad depot.	Gardner's determination	508. 22
Keokuk, city base	Gardner's determination	487. 72
Keokuk, high water, 1851, Mississippi River.	Gardner's determination	502. 55
Keokuk, low water, extreme.	Gardner's determination	481. 83
Keokuk, Keokuk and Des Moines Railroad station.	Keokuk and Des Moines Railroad	514
Keokuk, signal-office	United States Signal-Service	584
Kesho	Des Moines and Fort Dodge Railroad	1, 154
Kilbourne	Chicago, Rock Island and Pacific Railroad ..	846
Le Grand	Chicago and Northwestern Railroad	960
Leighton	Keokuk and Des Moines Railroad	807
Le Mars .....	.....	1, 196
Leon	Missouri, Iowa and Nebraska Railroad	1, 042
Lisbon	Chicago and Northwestern Railroad	375
Liscomb	Central Railroad of Iowa	1, 012
Little Sioux	Railroad (approximate)	1, 042
Logan	Toner	928
London	Burlington and Missouri River Railroad	1, 234
Loudon	Chicago and Northwestern Railroad	740
Lowland	Missouri, Iowa and Nebraska Railroad	979
Lowmoor	Chicago and Northwestern Railroad	664
Luana	Railroad	1, 140. 7
Lucas	Toner	857
Lyons	Smithsonian Institution	401
Lyons City	Smithsonian Institution	630
McGregor, low water Mississippi River.	Railroad	615. 9
McPaul	Kansas City, Saint Joseph and Council Bluffs Railroad.	958
Madison .....	.....	600
Manchester	Smithsonian Institution	925
Manchester	Illinois Central Railroad	933
Marble Rock	Preliminary railroad-surveys	1, 039
Marshall	Chicago and Northwestern Railroad	905
Mary's Ford	Toner	1, 148

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Maynard	Railroad	1, 096. 7
Melrose	Burlington and Missouri River Railroad	878
Middletown	Toner	606
Middletown	Burlington and Missouri River Railroad	736
Minburn	Des Moines and Fort Dodge Railroad	1, 049
Missouri Valley Junction	Chicago and Northwestern Railroad	1, 027
Mitchell	Cedar Falls and Minnesota Railroad	1, 209
Mitchellville	Chicago, Rock Island and Pacific Railroad	973
Modale	Sioux City and Pacific Railroad	1, 037
Moingona Bridge	Chicago and Northwestern Railroad	914
Moingona, low water	Chicago and Northwestern Railroad	877
Mona	Toner	868
Mondamiu	Sioux City and Pacific Railroad	1, 046
Monona	Railroad	1, 227. 7
Monroe	Keokuk and Des Moines Railroad	962
Monticello (near)	Smithsonian Institution	800
Montour	Chicago and Northwestern Railroad	875
Moravia	Iowa Central Railroad	1, 015
Moscow	Chicago, Rock Island and Pacific Railroad	659
Mount Ayr	Missouri, Iowa and Nebraska Railroad	1, 253
Mount Carmel	Des Moines and Fort Dodge Railroad	1, 318
Mount Pleasant	Burlington and Missouri River Railroad	747
Mount Vernon	Chicago and Northwestern Railroad	865
Murray	Toner	1, 183
Muscatine	Smithsonian Institution	586
Nashua	Cedar Falls and Minnesota Railroad	982
Nevada	Chicago and Northwestern Railroad	1, 024
New Hampton	Toner	1, 269
New Jefferson	Chicago and Northwestern Railroad	1, 078
Newton	Chicago, Rock Island and Pacific Railroad	965
Nishnabotany	Toner	1, 151
Nodaway	Burlington and Missouri River Railroad	1, 107
North Union	Toner	1, 250
Norway	Chicago and Northwestern Railroad	816
Oakland	Burlington and Missouri River Railroad	1, 219
Oelwein	Railroad	1, 049. 7
Ogden	Chicago and Northwestern Railroad	1, 116
Onawa City	Sioux City and Pacific Railroad	1, 072
Orford	Chicago, Rock Island and Pacific Railroad	727
Osage	Cedar Falls and Minnesota Railroad	1, 185
Osceola	Burlington and Missouri River Railroad	1, 149
Oshawa	Des Moines and Fort Dodge Railroad	892
Oskaloosa	Keokuk and Des Moines Railroad	774
Ossian	Railroad	1, 284. 3
Ottey	Keokuk and Des Moines Railroad	933
Ottumwa	Keokuk and Des Moines Railroad	682
Ottumwa	Burlington and Missouri River Railroad	652
Oxford	Toner	702
Pacific Junction, depot	Kansas City, Saint Joseph and Council Bluffs Railroad.	979
Pacific Junction City, side- track.	Kansas City, Saint Joseph and Council Bluffs Railroad.	980
Panora	Preliminary railroad surveys	1, 061
Paradise	Railroad (approximate)	1, 146
Parkersburg	Toner	953
Paton	Des Moines and Fort Dodge Railroad	1, 103
Pella	Keokuk and Des Moines Railroad	916
Percival	Kansas City, Saint Joseph and Council Bluffs Railroad.	951
Perry	Des Moines and Fort Dodge Railroad	965
Perry	Keokuk and Des Moines Railroad	1, 004
Plainfield	Cedar Falls and Minnesota Railroad	953

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Plattsmouth (east), low water Missouri River.	Burlington and Missouri River Railroad	955
Plattsmouth (east), high water Missouri River.	Burlington and Missouri River Railroad	972
Pleasant Plain.....	Smithsonian Institution.....	950
Pomeroy.....	Toner.....	1,244
Postville.....	Railroad.....	1,213.6
Poultney.....	Toner.....	800
Prairie City.....	Keokuk and Des Moines Railroad.....	973
Prairie Creek.....	Toner.....	699
Quarry.....	Chicago and Northwestern Railroad.....	905
Quasqueton.....	Smithsonian Institution.....	888
Randalia.....	Railroad.....	1,107.7
Redfield.....	Preliminary railroad-surveys.....	955
Red Oak.....	Burlington and Missouri River Railroad.....	1,061
Remsen.....	Toner.....	1,335
Rippey.....	Des Moines and Fort Dodge Railroad.....	1,067
River Sioux.....	Sioux City and Pacific Railroad.....	1,061
Rockford.....	Preliminary railroad-surveys.....	1,044
Rock Grove.....	Preliminary railroad-surveys.....	1,139
Rolfe.....	Smithsonian Institution.....	1,000
Rossville.....	Smithsonian Institution.....	1,400
Russell.....	Burlington and Missouri River Railroad.....	1,042
Sac City.....	Toner.....	900
Saint Augusta.....	.....	1,197
Saint Ansgar.....	Cedar Falls and Minnesota Railroad.....	1,186
Saint Mary's.....	Smithsonian Institution.....	1,200
Salem.....	Toner.....	694
Salix.....	Sioux City and Pacific Railroad.....	1,105
Salt Creek.....	Toner.....	792
Sand Prairie.....	Keokuk and Des Moines Railroad.....	562
Sand Springs.....	Davenport and Saint Paul Railroad.....	972
Scranton.....	Railroad (approximate).....	1,089
Sedan.....	Missouri, Iowa and Nebraska Railroad.....	844
Sergeant's Bluffs.....	Sioux City and Pacific Railroad.....	1,116
Sheldon.....	Toner.....	706
Shell Rock.....	Preliminary railroad-surveys.....	927
Sibley.....	Toner.....	1,485
Silver Creek.....	Burlington and Missouri River Railroad.....	986
Sioux City, levee.....	Illinois Central Railroad.....	1,123.35
Sioux City, bed of Missouri River.	Illinois Central Railroad.....	1,094
Sioux City, low water Missouri River.	Illinois Central Railroad.....	1,104
Sioux City, junction with Dakota Southern Railroad.	Sioux City and Pacific Railroad.....	1,123.35
Sioux City, junction with Sioux City and Saint Paul Railroad.	Sioux City and Pacific Railroad.....	1,122.35
Sioux City, junction with Illinois Central Railroad.	Sioux City and Pacific Railroad.....	1,122.35
Sioux City and Pacific Ferry, low water in Missouri River.	Sioux City and Pacific Railroad.....	1,013
Skunk River.....	.....	905
Sloan.....	Sioux City and Pacific Railroad.....	1,097
Spring Valley.....	Toner.....	1,218
Squaw Fork.....	Toner.....	915
Stanton.....	Toner.....	1,004
Stanwood.....	Chicago and Northwestern Railroad.....	870
State Centre.....	Chicago and Northwestern Railroad.....	1,093
Steamboat Rock.....	Central Railroad of Iowa.....	1,021
Strawberry Point.....	Davenport and Saint Paul Railroad.....	1,252
Summit.....	Cedar Falls and Minnesota Railroad.....	1,031

Iowa—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Summit	Keokuk and Des Moines Railroad	729
Tama	Chicago and Northwestern Railroad	839
Tara	Des Moines and Fort Dodge Railroad	1, 147
Thayer	Toner	1, 002
Tiptop	Railroad (approximate)	1, 437
Toledo	Iowa Central Railroad	852
Toronto	Davenport and Saint Paul Railroad	708
Traders' Point	Kansas City, Saint Joseph and Council Bluffs Railroad.	992
Tyrone	Burlington and Missouri River Railroad	847
Union	Central Railroad of Iowa	950
Vail	Railroad (approximate)	1, 272
Valley Junction	Des Moines and Fort Dodge Railroad	816
Vallisca	Burlington and Missouri River Railroad	1, 086
Vawter's Grove	Smithsonian Institution	1, 500
Victor	Chicago, Rock Island and Pacific Railroad	813
Victoria	Toner	788
Vinton	Smithsonian Institution	607
Walcott	Chicago, Rock Island and Pacific Railroad	740
Walnut	Burlington and Missouri River Railroad	1, 068
Washington	Keokuk Northern Railroad	762
Waterloo	Illinois Central Railroad	864
Waubeck	Toner	988
Waukee	Des Moines and Fort Dodge Railroad	1, 036
Waverly	Cedar Falls and Minnesota Railroad	949
Webster City	Illinois Central Railroad	1, 039
West Liberty	Chicago, Rock Island and Pacific Railroad	673
West Nishnabotany	Toner	938
West Side	Railroad (approximate)	1, 339
West Union, water-table of court-house.	Railroad	1, 211. 4
West Union, grade at station.	Railroad	1, 116. 7
Wheatland	Chicago and Northwestern Railroad	702
Whitfield	Burlington and Missouri River Railroad	698
Whitney	Sioux City and Pacific Railroad	1, 082
Wilton	Railroad	679
Winthrop	Illinois Central Railroad	1, 080
Woodbine	Railroad (approximate)	1, 070
Woodville	Keokuk and Des Moines Railroad	987

Kansas.

Abilene	Kansas Pacific Railroad	1, 173
Americus	Missouri, Kansas and Texas Railroad	1, 177
Ames	Toner	790
Armstrong	Kansas Pacific Railroad	773
Atchison, high-water, 1844, Missouri River.	Gardner	809. 88
Atchison, low-water Missouri River.	Gardner	784. 88
Atchison, base of Atchison, Topeka and Santa Fé Rail- road.	Atchison, Topeka and Santa Fé Railroad	803
Aubrey	Toner	3, 135
Avon	Smithsonian Institution	775
Axtel	Saint Joseph and Denver Railroad	1, 371
Baldwin City	Toner	947
Barnard	Toner	687
Barnes	Central Branch Union Pacific Railroad	1, 374
Barrett's	Central Branch Union Pacific Railroad	1, 160

Kansas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Bavaria	Kansas Pacific Railroad	1, 289
Baxter Springs	Toner	817
Beattie	Saint Joseph and Denver Railroad	1, 302
Belleville	Preliminary railroad-surveys	1, 554
Belvoir	Toner	777
Big John	Missouri, Kansas and Texas Railroad	1, 236
Black Wolf	Kansas Pacific Railroad	1, 583
Blue Rapids	Central Branch Union Pacific Railroad	1, 216
Brookville	Kansas Pacific Railroad	1, 366
Buck Creek	Kansas Pacific Railroad	864
Buffalo	Kansas Pacific Railroad	2, 773
Buffalo Creek	Toner	1, 000
Bunker Hill	Kansas Pacific Railroad	1, 882
Burlingame	Atchison, Topeka and Santa Fé Railroad	1, 050
Burlington	Missouri, Kansas and Texas Railroad	1, 055
Burrton	Atchison, Topeka and Santa Fé Railroad	1, 410
Camp Cirley	Toner	2, 106
Carbondale	Atchison, Topeka and Santa Fé Railroad	1, 081
Carlyle	Kansas Pacific Railroad	3, 064
Centralia	Central Branch Union Pacific Railroad	1, 288
Chanute	Missouri, Kansas and Texas Railroad	932
Chapman Creek	Kansas Pacific Railroad	1, 132
Chetopa	Missouri, Kansas and Texas Railroad	850
Cheyenne Wells	Kansas Pacific Railroad	4, 179
Cimarron	Toner	2, 655
Circleville	Saint Joseph and Denver (preliminary line)	1, 138
Clinton	Toner	762
Coruing	Central Branch Union Pacific Railroad	1, 387
Cottonwood	Atchison, Topeka and Santa Fé Railroad	1, 183
Council Grove	Missouri, Kansas and Texas Railroad	1, 256
Coyote	Kansas Pacific Railroad	2, 608
Cummings	Toner	1, 015
Detroit	Kansas Pacific Railroad	1, 153
Dodge City	Atchison, Topeka and Santa Fé Railroad	2, 492
Dodge City	Signal-Bureau	2, 482
Eagle Tail	Kansas Pacific Railroad	3, 452
Edonardsville	Kansas Pacific Railroad	801
Effingham	Central Branch Union Pacific Railroad	1, 162
Ellinwood	Atchison, Topeka and Santa Fé Railroad	1, 738
Ellis	Kansas Pacific Railroad	2, 135
Ellsworth	Kansas Pacific Railroad	1, 556
Elm Creek	Kansas Pacific Railroad	1, 586
Elwood	Toner	775
Emporia	Atchison, Topeka and Santa Fé Railroad	1, 160
Fairbury .....	.....	1, 324
Fairfield	Toner	1, 744
Fall Leaf	Kansas Pacific Railroad	827
Farmington	Central Branch Union Pacific Railroad	1, 056
Florence	Atchison, Topeka and Santa Fé Railroad	1, 277
Fort Atkinson	Medical Department, United States Army	2, 330
Fort Harker	Kansas Pacific Railroad	1, 600
Fort Hays .....	.....	2, 019
Fort Larned	Medical Department, United States Army	1, 932
Fort Leavenworth	Medical Department, United States Army	896
Fort Riley	Kansas Pacific Railroad	1, 090
Fort Scott	Medical Department, United States Army	1, 000
Fort Wallace	Toner	3, 203
Fort Zarah .....	.....	1, 870
Fossil	Kansas Pacific Railroad	1, 850
Frankfort	Central Branch Union Pacific Railroad	1, 173
Galesburgh	Missouri, Kansas and Texas Railroad	997
Gardner	Smithsonian Institution	800

Kansas—Continued.

Towns, &c.	Authority or reference.	Elevation.
Garnet	Toner	<i>Fect.</i> 970
Godfrey .....	.....	5,505
Gopher	Kansas Pacific Railroad	3,336
Grantville	Kansas Pacific Railroad	895
Grasshopper	Toner	908
Great Bend	Atchison, Topeka and Santa Fé Railroad	1,854
Green Leaf	Central Branch Union Pacific Railroad	1,480
Green Ridge	Toner	1,013
Grinnell	Kansas Pacific Railroad	2,922
Halstead	Atchison, Topeka and Santa Fé Railroad	1,320
Hamlin	Saint Joseph and Denver Railroad	991
Hanover	Saint Joseph and Denver Railroad	1,236
Hartford	Missouri, Kansas and Texas Railroad	1,105
Hays	Kansas Pacific Railroad	2,009
Hepler	Toner	1,112
Hiawatha	Saint Joseph and Denver Railroad	1,102
Hollenburg	Saint Joseph and Denver Railroad	1,267
Holton .....	.....	1,172
Horton	Toner	1,204
Hugo	Toner	4,937
Humboldt	Missouri, Kansas and Texas Railroad	953
Hutchinson	Atchison, Topeka and Santa Fé Railroad	1,482
Iola	Toner	854
Iowa Point	Atchison, Topeka and Santa Fé Railroad	843
Irving	Central Branch Union Pacific Railroad	1,170
Junction City	Kansas Pacific Railroad	1,100
Kinsley	Atchison, Topeka and Santa Fé Railroad	2,200
Labette	Missouri, Kansas and Texas Railroad	882
La Cygne	Toner	725
Ladore	Missouri, Kansas and Texas Railroad	927
Lakin	Atchison, Topeka and Santa Fé Railroad	3,013
Larned	Atchison, Topeka and Santa Fé Railroad	2,011
Lawrence	Kansas Pacific Railroad	845.52
Lawrence, Lawrence and Leavenworth Junction.	Kansas Pacific Railroad	831.52
Lawrence Junction	Atchison, Topeka and Santa Fé Railroad	840
Leavenworth, high water, 1844, Missouri River.	Gardner	788.89
Leavenworth, low water, 1867, Missouri River.	Gardner	768.89
Leavenworth, signal-office ..	Signal-Bureau	813
Lecompton	Smithsonian Institution	825
Lecompton	Atchison, Topeka and Santa Fé Railroad	861
Lenape	Kansas Pacific Railroad	799
Leroy .....	.....	1,012
Manhattan	Kansas Pacific Railroad	1,042
Manville	Saint Joseph and Denver Railroad	980
Marysville	Saint Joseph and Denver Railroad	1,164
Medina	Kansas Pacific Railroad	871
Meriden	Atchison, Topeka and Santa Fé Railroad	995
Monotony	Kansas Pacific Railroad	3,792
Monrovia	Central Branch Union Pacific Railroad	1,072
Monument	Kansas Pacific Railroad	3,792
Mortonville	Atchison, Topeka and Santa Fé Railroad	1,190
Muncy Siding	Kansas Pacific Railroad	785
Muscotah	Central Branch Union Pacific Railroad	991
Neosho Falls	Missouri, Kansas and Texas Railroad	998
Neosho Rapids	Missouri, Kansas and Texas Railroad	1,094
Netawaka	Central Branch Union Pacific Railroad	1,179
Netawaka	Saint Joseph and Denver Railroad (preliminary).	1,150
New Chicago	Missouri, Kansas and Texas Railroad	932

Kansas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Newman	Kansas Pacific Railroad	879
Newton	Atchison, Topeka and Santa Fé Railroad	1,433
Newton Junction	Atchison, Topeka and Santa Fé Railroad	1,419
North Fork Bend	Kansas Pacific Railroad	1,946
North Robinson	Saint Joseph and Denver Railroad	957
Norway	Saint Joseph and Denver Railroad	1,049
Ogallah	Kansas Pacific Railroad	2,385
Ogden	Kansas Pacific Railroad	1,078
Olathe	Toner	947
Osage City	Atchison, Topeka and Santa Fé Railroad	1,082
Osage Mission	Toner	1,000
Oswego	Missouri, Kansas and Texas Railroad	913
Paola	Toner	875
Pardee	Toner	1,155
Parkersville	Missouri, Kansas and Texas Railroad	1,365
Parker	Toner	921
Park's Fort	Kansas Pacific Railroad	2,463
Parnell Junction	Atchison, Topeka and Santa Fé Railroad	1,076
Parsons	Missouri, Kansas and Texas Railroad	920
Pawnee Rock	Toner	1,986
Peabody	Atchison, Topeka and Santa Fé Railroad	1,356
Peace	Toner	1,613
Perryville	Kansas Pacific Railroad	870
Petersburg	Toner	2,224
Pierceville	Toner	2,800
Pond Creek	Kansas Pacific Railroad	3,291
Raymond	Atchison, Topeka and Santa Fé Railroad	1,679
Reading	Atchison, Topeka and Santa Fé Railroad	1,074
Red Vermillion	Saint Joseph and Denver Railroad (preliminary)	1,054
Richland	Toner	807
Ridgway	Toner	903
Rock Creek	Missouri, Kansas and Texas Railroad	1,212
Rock Spring	Kansas Pacific Railroad	1,459
Rossville	Kansas Pacific Railroad	951
Russell	Toner	1,734
Ryan	Saint Joseph and Denver Railroad	900
Sabetha	Saint Joseph and Denver Railroad	1,316
Saint Francis	Toner	906
Saint George	Kansas Pacific Railroad	1,018
Saint Mary's	Kansas Pacific Railroad	973
Salina	Kansas Pacific Railroad	1,243
Sand Spring Tank	Kansas Pacific Railroad	1,164
Sargent	Toner	3,425
Secordine	Kansas Pacific Railroad	809
Sedgwick	Atchison, Topeka and Santa Fé Railroad	1,355
Seneca	Saint Joseph and Denver Railroad	1,162
Severance	Saint Joseph and Denver Railroad	910
Sheridan	Kansas Pacific Railroad	3,121
Sherlock .....	.....	2,925
Sigel .....	.....	753
Silver Lake	Kansas Pacific Railroad	933
Skiddy	Missouri, Kansas and Texas Railroad	1,244
Solomon City	Kansas Pacific Railroad	1,193
Sother	Central Branch Union Pacific Railroad	1,197
Spearville	Toner	2,478
State Line	Kansas Pacific Railroad	764
Steele City .....	.....	1,277
Sterling	Atchison, Topeka and Santa Fé Railroad	1,494
Stranger	Kansas Pacific Railroad	807
Strawn	Missouri, Kansas and Texas Railroad	1,065
Summit Siding	Kansas Pacific Railroad	1,672

Kansas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Syracuse	Toner	3, 247
Tecumseh	Atchison, Topeka and Santa Fé Railroad	874
Tiblow	Kansas Pacific Railroad	811
Topeka	Kansas Pacific Railroad	904
Troy	Saint Joseph and Denver Railroad	1, 099
Troy, crossing of Atchison and Nebraska Railroad.	Saint Joseph and Denver Railroad	1, 117
Urbana	Missouri, Kansas and Texas Railroad	949
Valley Falls	Atchison, Topeka and Santa Fé Railroad	939
Vermillion	Central Branch, Union Pacific Railroad	1, 216
Vermillion, tank	Kansas Pacific Railroad	989
Wakarusa	Toner	930
Walker	Kansas Pacific Railroad	1, 962
Wallace	Kansas Pacific Railroad	3, 319
Walnut	Toner	1, 041
Walthena	Saint Joseph and Denver Railroad	824
Wamego	Kansas Pacific Railroad	1, 018
Washington	Central Branch Union Pacific Railroad	1, 346
Washington	Saint Joseph and Denver Railroad (prelimi- nary)	1, 324
Waterville	Central Branch Union Pacific Railroad	1, 201
Wetmore	Central Branch Union Pacific Railroad	1, 171
White City	Missouri, Kansas and Texas Railroad	1, 494
White Cloud	Atchison, Topeka and Santa Fé Railroad	851
Whiting	Central Branch Union Pacific Railroad	1, 144
Wichita	Atchison, Topeka and Santa Fé Railroad	1, 285
Wild Horse	Kansas Pacific Railroad	4, 340
Williamstown	Toner	915
Williamsville	Kansas Pacific Railroad	869
Wilson	Kansas Pacific Railroad	1, 702
Wyandotte	Smithsonian Institution	707

Minnesota.

Afton	Toner	950
Aiken	Northern Pacific Railroad	1, 211
Albany	Saint Paul and Pacific Railroad	1, 196
Albert Lea	Southern Minnesota Railroad	1, 204
Alden	Southern Minnesota Railroad	1, 265
Aldrich	Northern Pacific Railroad	1, 335
Alexandria	Saint Paul and Pacific Railroad	1, 391
Alma, low water Mississippi River.	United States Engineer Corps levels	657. 1
Anoka	Saint Paul and Pacific Railroad	878
Atwater Summit	Saint Paul and Pacific Railroad	1, 207
Auburn	Chicago, Milwaukee and Saint Paul Railroad	862
Audubon	Northern Pacific Railroad	1, 317
Austin	Chicago, Milwaukee and Saint Paul Railroad	1, 197
Austin Junction, Y.	Chicago, Milwaukee and Saint Paul Railroad	1, 194
Averill	Saint Paul and Pacific Railroad	927
Avon	Saint Paul and Pacific Railroad	1, 125
Bass Lake	Saint Paul, Stillwater and Taylor's Falls Railroad.	930
Beaver	Toner	1, 600
Beaver Bay	Smithsonian Institution	1, 270
Becker	Saint Paul and Pacific Railroad	972
Belleplaine	Saint Paul and Pacific Railroad	790
Belleplaine, low water Min- nesota River.	United States Engineer Corps levels	709. 8
Belleprairie	Saint Paul and Pacific Railroad	1, 134

Minnesota—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Bellevue	Saint Paul and Pacific Railroad	1, 084
Beltrami	Saint Paul and Pacific Railroad	912
Benson	Saint Paul and Pacific Railroad	1, 042
Benton	Chicago, Milwaukee and Saint Paul Railroad	959
Bigelow	Saint Paul and Sioux City Railroad	1, 612
Big Lake	Saint Paul and Pacific Railroad	930
Big Marsh	Southern Minnesota Railroad	1, 249
Bingham Lake	Saint Paul and Sioux City Railroad	1, 406
Blakeley	Saint Paul and Sioux City Railroad	794
Bois Fraces	Toner	1, 238
Borup	Saint Paul and Pacific Railroad	921
Brainard	Northern Pacific Railroad	1, 214
Brainard	Saint Paul and Pacific Railroad	1, 210 ^a
Breckenridge	Saint Paul and Pacific Railroad	957
Breckenridge	Signal-Service	966
Bridgewater	Chicago, Milwaukee and Saint Paul Railroad	1, 036
Buchanan	Toner	600
Buffalo River	Saint Paul and Pacific Railroad	928
Burlington	Smithsonian Institution	645
Butterfield	Saint Paul and Sioux City Railroad	1, 172
Byron	Chicago and Northwestern Railroad	1, 249
Campbell	Saint Paul and Pacific Railroad	977
Camp Davis	Pacific Railroad Reports	994
Camp Pierce	Pacific Railroad Reports	828
Cannon River	Chicago, Milwaukee and Saint Paul Railroad	974
Carver	Chicago, Milwaukee and Saint Paul Railroad	827
Castle Rock	Chicago, Milwaukee and Saint Paul Railroad	934
Cedar River	Chicago, Milwaukee and Saint Paul Railroad	1, 200
Centreville	Lake Superior and Mississippi Railroad	936
Chaska, crossing Minneap- olis and Saint Louis Rail- road	Chicago, Milwaukee and Saint Paul Railroad	742
Chatfield	Smithsonian Institution	900
Chester	Chicago and Northwestern Railroad	972
Christina	Saint Paul and Pacific Railroad	1, 228
Claremont	Chicago and Northwestern Railroad	1, 279
Clear Lake	Saint Paul and Pacific Railroad	993
Clearwater	Toner	975
Cockato	Saint Paul and Pacific Railroad	1, 022
Crookston .....	.....	881
Crow River Crossing	Saint Paul and Pacific Railroad	923
Crow Wing	Saint Paul and Pacific Railroad	1, 190
Dahlgren	Chicago, Milwaukee and Saint Paul Railroad	994
Dakota	Chicago, Milwaukee and Saint Paul Railroad	657
Darwin	Saint Paul and Pacific Railroad	1, 127
De Graff	Saint Paul and Pacific Railroad	1, 056
Delano	Saint Paul and Pacific Railroad	923
Detroit	Northern Pacific Railroad	1, 371
Dodge Centre	Chicago and Northwestern Railroad	1, 286
Doran	Saint Paul and Pacific Railroad	968
Douglass	Saint Paul and Pacific Railroad	1, 121
Dover	Chicago and Northwestern Railroad	1, 137
Dresbach	Chicago, Milwaukee and Saint Paul Railroad	676
Dresbach, low water Missis- sippi	United States Engineer Corps level	629. 7
Duluth	Signal-Service	643
Duluth	Northern Pacific Railroad	614
Eagle Lake	Chicago and Northwestern Railroad	1, 012
East Henderson	Saint Paul and Sioux City Railroad	800
East Henderson, low water Minnesota River	United States Engineer Corps levels	724. 8

^a This may or may not be the same point.

Minnesota—Continued.

Towns, &c.	Authority or reference.	Elevation.
Elk River	Saint Paul and Pacific Railroad	<i>Feet.</i> 903
Ellea	Toner	1, 600
Empire	Chicago, Milwaukee and Saint Paul Railroad	889
Etter	Chicago, Milwaukee and Saint Paul Railroad	691
Evansville	Saint Paul and Pacific Railroad	1, 354
Eyota	Chicago and Northwestern Railroad	1, 236
Fairfield	Chicago, Milwaukee and Saint Paul Railroad	942
Faribault	Chicago, Milwaukee and Saint Paul Railroad	1, 000
Farmington	Chicago, Milwaukee and Saint Paul Railroad	903. 4
Farmington, crossing of Has- tings and Dakota branch.	Chicago, Milwaukee and Saint Paul Railroad	900. 6
Faxon, low water Minnesota River.	United States Engineer Corps levels	713. 4
Felton	Saint Paul and Pacific Railroad	925
Fond du Lac	Northern Pacific Railroad	615
Forest Lake	Lake Superior and Mississippi Railroad	913
Fort Ridgely	Medical Department, United States Army	1, 230
Fort Ridgely, low water Minnesota River.	United States Engineer Corps level	807. 4
Fort Ripley	Medical Department, United States Army	1, 130
Fort Ripley	Saint Paul and Pacific Railroad	1, 162
Fort Snelling	Medical Department, United States Army	820
Fort Snelling	Chicago, Milwaukee and Saint Paul Railroad	722
Fountain	Southern Minnesota Railroad	1, 301
Fountain City, low water Mississippi River.	United States Engineer Corps levels	643. 2
Frazee	Northern Pacific Railroad	1, 418
Frontenac	Chicago, Milwaukee and Saint Paul Railroad	720
Glencoe	Chicago, Milwaukee and Saint Paul Railroad	1, 015
Glyndon	Northern Pacific Railroad	932
Goose Lake	Lake Superior and Mississippi Railroad	895
Gorton	Saint Paul and Pacific Railroad	1, 017
Grand Crossing	Southern Minnesota Railroad	638
Grand Meadows	Southern Minnesota Railroad	1, 337
Hancock	Saint Paul and Pacific Railroad	1, 150
Hastings	Chicago, Milwaukee and Saint Paul Railroad	709. 4
Hastings, low water Missis- sippi River.	United States Engineer Corps levels	670. 5
Havanna	Chicago and Northwestern Railroad	1, 245
Hawley	Northern Pacific Railroad	1, 159
Hayward	Southern Minnesota Railroad	1, 250
Henderson, low water Min- nesota River.	United States Engineer Corps level	723. 4
Herman	Saint Paul and Pacific Railroad	1, 063
Heron Lake	Saint Paul and Sioux City Railroad	1, 403
Hersey	Saint Paul and Sioux City Railroad	1, 474
Hinckley	Lake Superior and Mississippi Railroad	1, 032
Hobart	Northern Pacific Railroad	1, 393
Homer	Chicago, Milwaukee and Saint Paul Railroad	665
Hospers	Toner	1, 438
Hutchison	Toner	1, 050
Ida	Saint Paul and Pacific Railroad	1, 411
Isinour	Southern Minnesota Railroad	900
Island Lake	Northern Pacific Railroad	1, 314
Itasca	Saint Paul and Pacific Railroad	895
Janesville	Chicago and Northwestern Railroad	1, 082
Junction at White Bear Lake.	Lake Superior and Mississippi Railroad	929
Junction with Lake Superior and Mississippi Railroad.	Northern Pacific Railroad	1, 059
Junction with Saint Paul and Pacific Railroad.	Saint Paul, Stillwater and Taylor's Falls Railroad.	771
Judson, low water Minnesota River.	United States Engineer Corps level	773. 8

Minnesota—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Kandiyohi	Saint Paul and Pacific Railroad	1,216
Kasota	Chicago and Northwestern Railroad	837
Kasota	Saint Paul and Sioux City Railroad	862
Kasson	Chicago and Northwestern Railroad	1,251
Kellogg	Chicago, Milwaukee and Saint Paul Railroad	702
Kettle River	Lake Superior and Mississippi Railroad	1,121
Kimberley	Northern Pacific Railroad	1,240
Kirkhoven	Saint Paul and Pacific Railroad	1,104
Kittson	Saint Paul and Pacific Railroad	895
La Crescent .....	.....	742
La Crescent, limekiln	Chicago, Milwaukee and Saint Paul Railroad	650
La Crosse, low water Mississippi River.	United States Engineer Corps levels	626.3
Lake City	Chicago, Milwaukee and Saint Paul Railroad	705
Lake City, low water Mississippi River.	United States Engineer Corps levels	664.2
Lake Crystal	Saint Paul and Sioux City Railroad	1,062
Lakeside .....	.....	1,342
La Moille	Chicago, Milwaukee and Saint Paul Railroad	660
Langdon	Chicago, Milwaukee and Saint Paul Railroad	816
Lanesborough	Southern Minnesota Railroad	843
Langola	Saint Paul and Pacific Railroad	1,063
Lapham	Smithsonian Institution	850
Le Mars	Saint Paul and Sioux City Railroad	1,205
Le Sueur	Saint Paul and Sioux City Railroad	820
Le Sueur, low water Minnesota River.	United States Engineer Corps levels	664.2
Lewiston	Chicago and Northwestern Railroad	1,211
Litchfield	Saint Paul and Pacific Railroad	1,125
Little Falls	Saint Paul and Pacific Railroad	1,118
Long Lake	Saint Paul and Pacific Railroad	949
Lyle	Chicago, Milwaukee and Saint Paul Railroad	1,199
Madelia	Saint Paul and Sioux City Railroad	1,007
Mankato	Saint Paul and Sioux City Railroad	858
Mankato	Chicago and Northwestern Railroad	779
Mankato, low water Minnesota River.	United States Engineer Corps levels	765.7
Manomin	Saint Paul and Pacific Railroad	842
Marion	Toner	1,200
Marshall	Chicago and Northwestern Railroad	1,173
Medford	Chicago, Milwaukee and Saint Paul Railroad	1,003
Melrose	Saint Paul and Pacific Railroad	1,205
Mendota, Saint Paul Junction.	Chicago, Milwaukee and Saint Paul Railroad	959
Mendota, cross Saint Paul and Sioux City.	Chicago, Milwaukee and Saint Paul Railroad	737
Mendota Junction	Chicago, Milwaukee and Saint Paul Railroad	721
Meriden	Chicago and Northwestern Railroad	1,148
Mininger, low water Mississippi River.	United States Engineer Corps levels	671.5
Minneapolis	Saint Paul and Pacific Railroad	830
Minneapolis, low water Mississippi River.	Saint Paul and Pacific Railroad	720.9
Minneapolis	Chicago, Milwaukee and Saint Paul Railroad	825
Minnehaha	Chicago, Milwaukee and Saint Paul Railroad	812
Minneiska	Chicago, Milwaukee and Saint Paul Railroad	610
Minneiska, low water Mississippi River.	United States Engineer Corps levels	650.5
Minnesota City	Chicago, Milwaukee and Saint Paul Railroad	677
Moorhead	Northern Pacific Railroad	913
Moosehead	Toner	803
Moose Lake	Lake Superior and Mississippi Railroad	1,061
Morris	Saint Paul and Pacific Railroad	1,122

Minnesota—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Motley	Northern Pacific Railroad	1,229
Mountain Lake	Saint Paul and Sioux City Railroad	1,286
Newport	Chicago, Milwaukee and Saint Paul Railroad	751
Newport, low water Mississippi River	United States Engineer Corps levels	678.3
New Ulm	Smithsonian Institution	1,500
New Ulm	Chicago and Northwestern Railroad	835
New Ulm, high water Minnesota River.	Chicago and Northwestern Railroad	808
Nicollet .....	.....	978
Norman	Northern Pacific Railroad	1,294
North Branch	Lake Superior and Mississippi Railroad	892
Northfield	Chicago, Milwaukee and Saint Paul Railroad	914
Oakdale	Saint Paul, Stillwater and Taylor's Falls Railroad.	976
Oakes	Saint Paul and Pacific Railroad	1,237
Oaklake	Northern Pacific Railroad	1,376
Oakland	Southern Minnesota Railroad	1,270
Osakis	Saint Paul and Pacific Railroad	1,337
Oshawa	Chicago and Northwestern Railroad	981
Ottawa	Saint Paul and Sioux City Railroad	856
Ottawa, low water Minnesota River.	United States Engineer Corps levels	736
Owatonna	Chicago, Milwaukee and Saint Paul Railroad	1,047.15
Owatonna, crossing Chicago and Northwestern Rail'd.	Chicago, Milwaukee and Saint Paul Railroad	1,047.15
Pembina	Toner	900
Perham	Northern Pacific Railroad	1,375
Pillager	Northern Pacific Railroad	1,204
Pine City	Lake Superior and Mississippi Railroad	953
Prescott, low water Mississippi River.	United States Engineer Corps levels	670
Prior	Chicago, Milwaukee and Saint Paul Railroad	954
Rabbit Run	Saint Paul and Pacific Railroad	977
Ramsey	Southern Minnesota Railroad	1,217
Randall	Saint Paul and Pacific Railroad	1,045
Red River Station	Saint Paul and Pacific Railroad	1,131
Red Wing	Chicago, Milwaukee and Saint Paul Railroad	687
Red Wing, low water Mississippi River.	United States Engineer Corps levels	665.7
Reed's Landing	Chicago, Milwaukee and Saint Paul Railroad	682
Reed's Landing, low water Mississippi River.	United States Engineer Corps levels	663.7
Reinvillies' Trading-House .....	.....	946
Rice Creek	Lake Superior and Mississippi Railroad	925
Richmond	Chicago, Milwaukee and Saint Paul Railroad	674
Rochester	Chicago and Northwestern Railroad	990
Rolette	Saint Paul and Pacific Railroad	903
Rosemont	Chicago, Milwaukee and Saint Paul Railroad	959
Rush City	Lake Superior and Mississippi Railroad	918
Rushford	Southern Minnesota Railroad	723
Saint Anthony's Falls	Smithsonian Institution	820
Saint Anthony's Junction	Saint Paul and Pacific Railroad	838
Saint Anthony's Junction, low water Mississippi River.	Saint Paul and Pacific Railroad	800
Saint Charles	Chicago and Northwestern Railroad	1,138
Saint Charles	Toner	1,975
Saint Cloud, west side Mississippi River.	Saint Paul and Pacific Railroad	1,034
Saint Cloud, east side Mississippi River.	Saint Paul and Pacific Railroad	1,020
Saint Cloud, low water Mississippi River.	Saint Paul and Pacific Railroad	962

Minnesota—Continued.

Towns, & c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Saint James.....	Saint Paul and Sioux City Railroad.....	1,067
Saint John's.....	Saint Paul and Pacific Railroad.....	1,116
Saint Joseph.....	Saint Paul and Pacific Railroad.....	1,083
Saint Oloff.....	Saint Paul and Pacific Railroad.....	1,344
Saint Paul, low water Mis- sissippi River.	Lake Superior and Mississippi Railroad.....	685.4
Saint Paul, high water Mis- sissippi River.	Lake Superior and Mississippi Railroad.....	706.4
Saint Paul, depot.....	Saint Paul and Pacific Railroad.....	698.4
Saint Paul, base of capitol...	Saint Paul and Pacific Railroad.....	791.4
Saint Paul, grade Lake Super- rior and Mississippi River.	Chicago, Milwaukee and Saint Paul Railroad.	706
Saint Paul, Dayton's Bluff...	Chicago, Milwaukee and Saint Paul Railroad.	709
Saint Paul.....	Signal-Service.....	795
Saint Peter.....	Chicago and Northwestern Railroad.....	810
Saint Peter, high water Min- nesota River.	Chicago and Northwestern Railroad.....	754
Saint Peter, low water Min- nesota River.	United States Engineer Corps levels.....	743.4
Saint Peter.....	Toner.....	793
Saint Peter Junction.....	Chicago, Milwaukee and Saint Paul Railroad.	676
Saint Vincent, bank Red River.	Saint Paul and Pacific Railroad.....	801
Saint Vincent, high water Red River, 1866.	Saint Paul and Pacific Railroad.....	796
Sauk Centre.....	Saint Paul and Pacific Railroad.....	1,248
Sauk Rapids.....	Saint Paul and Pacific Railroad.....	1,008
Sauk Rapids, low water in Mississippi.	Saint Paul and Pacific Railroad.....	991
Sauk River, station.....	Saint Paul and Pacific Railroad.....	1,043
Sauk River, water.....	Saint Paul and Pacific Railroad.....	1,026
Shakopee.....	Toner.....	845
Shakopee, crossing Saint Paul and Sioux City Railroad.	Chicago, Milwaukee and Saint Paul Railroad.	768
Shakopee, Minnesota River, low water.	Chicago, Milwaukee and Saint Paul Railroad.	704.5
Shakopee, Minnesota River, high water.	Chicago, Milwaukee and Saint Paul Railroad.	731
Sibley.....	Saint Paul and Sioux City Railroad.....	1,494
Sicottes.....	Northern Pacific Railroad.....	1,289
Sleepy Eye.....	Chicago and Northwestern Railroad.....	1,033
Smith Lake.....	Saint Paul and Pacific Railroad.....	1,049
South Bend.....	Saint Paul and Sioux City Railroad.....	875
South Bend, low water Min- nesota River.	United States Engineer Corps levels.....	769.2
Stanley.....	Saint Paul and Pacific Railroad.....	911
Stockton.....	Chicago and Northwestern Railroad.....	755
Stockton.....	Toner.....	849
Swede Grove.....	Saint Paul and Pacific Railroad.....	1,186
Thomson.....	Lake Superior and Mississippi Railroad.....	1,036
Thomson.....	Northern Pacific Railroad.....	1,045
Tintah.....	Saint Paul and Pacific Railroad.....	999
Trempealeau, low water Mis- sissippi River.	United States Engineer Corps levels.....	635.8
Tumuli.....	Saint Paul and Pacific Railroad.....	1,205
Twelve-Mile Creek.....	Saint Paul and Pacific Railroad.....	995
Two Rivers.....	Saint Paul and Pacific Railroad.....	1,133
Utica.....	Chicago and Northwestern Railroad.....	1,170
Vermillion River.....	Chicago, Milwaukee and Saint Paul Railroad.	897
Victoria.....	Saint Paul and Pacific Railroad.....	1,375
Wabasha.....	Smithsonian Institution.....	850
Wabasha.....	Chicago, Milwaukee and Saint Paul Railroad.	712

Minnesota—Continued.

Towns, &c.	Authority or reference.	Elevation.
Wabasha, low water Mississippi River.	United States Engineer Corps levels.....	<i>Feet.</i> 662
Wacouta, low water Mississippi River.	United States Engineer Corps levels.....	664.8
Wadena.....	Northern Pacific Railroad.....	1,358
Waseca.....	Chicago and Northwestern Railroad.....	1,152
Watab.....	Saint Paul and Pacific Railroad.....	1,057
Waverly.....	Saint Paul and Pacific Railroad.....	1,007
Wayzata.....	Saint Paul and Pacific Railroad.....	931
Weaver.....	Chicago, Milwaukee and Saint Paul Railroad.	674
Weir.....	Saint Paul, Stillwater and Taylor's Falls Railroad.	920
Wells.....	Southern Minnesota Railroad.....	1,155
Westcott.....	Chicago, Milwaukee and Saint Paul Railroad.	882
West Union.....	Saint Paul and Pacific Railroad.....	1,332
White-Earth.....	Toner.....	1,670
Wilder.....	Saint Paul and Sioux City Railroad.....	1,432
Wild Rice.....	Saint Paul and Pacific Railroad.....	919
Willmar.....	Saint Paul and Pacific Railroad.....	1,124
Windom.....	Saint Paul and Sioux City Railroad.....	1,335
Winnebago City.....	Southern Minnesota Railroad.....	1,099
Winona.....	Chicago, Milwaukee and Saint Paul Railroad.	662
Winona.....	Chicago and Northwestern Railroad.....	652.65
Winona, low water Mississippi River.	United States Engineer Corps levels.....	639.9
Withington.....	Northern Pacific Railroad.....	1,279
Worthington.....	Saint Paul and Sioux City Railroad.....	1,572
Wyoming.....	Lake Superior and Mississippi Railroad....	906
Young America.....	Chicago, Milwaukee and Saint Paul Railroad.	1,002

Missouri.

Alexandria.....	Missouri, Iowa and Nebraska Railroad.....	502.55
Alexandria, high water, 1851.	Missouri, Iowa and Nebraska Railroad.....	502.55
Alexandria, low water, 1872.	Missouri, Iowa and Nebraska Railroad.....	481.83
Allentown (near).....	Smithsonian Institution.....	482
Amazonia.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	851
Annapolis.....	Toner.....	628
Appleton.....	Toner.....	978
Arbela.....	Missouri, Iowa and Nebraska Railroad.....	672
Athens.....	Toner.....	482
Atlanta.....	Toner.....	875
Augusta.....	Smithsonian Institution.....	780
Aurora.....	Missouri, Kansas and Texas Railroad.....	1,350
Austin.....	Missouri, Kansas and Texas Railroad.....	663
Barnard.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	961
Barrel's Station.....	Toner.....	512
Barrett's.....	Toner.....	506
Beaman.....	Missouri, Kansas and Texas Railroad.....	748
Belmont.....	Saint Louis and Iron Mountain Railroad....	328
Benton.....	Toner.....	470
Berger.....	Toner.....	515
Bertrand.....	Toner.....	317
Bessville.....	Toner.....	535
Bevier.....	Hannibal and Saint Joseph Railroad.....	796
Beverly.....	Kansas City, Saint Joseph and Council Bluffs Railroad..	787

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
Beverly, crossing of Chicago, Rock Island and Pacific Railroad.	Kansas City, Saint Joseph and Council Bluffs Railroad.	<i>Feet.</i> 787
Bigelow	Kansas City, Saint Joseph and Council Bluffs Railroad.	879
Billings	Toner	1, 375
Bismarck	Toner	1, 017
Blackwell	Toner	583
Bolckow	Kansas City, Saint Joseph and Council Bluffs Railroad.	948
Bolivar	Toner	1, 000
Bonnot's Mills	Toner	542
Boone Creek	Toner	949
Booneville	Missouri, Kansas and Texas Railroad	591
Bottsville	Toner	763
Bourbon	Toner	933
Breckenridge	Hannibal and Saint Joseph Railroad	937
Brookfield	Hannibal and Saint Joseph Railroad	770
Brookline	Toner	1, 281
Brunswick	Saint Louis, Kansas City and Northern Railroad.	660
Buckland	Toner	889
Bucklin	Hannibal and Saint Joseph Railroad	800
Burton	Missouri, Kansas and Texas Railroad	656
Cadet	Toner	805
Cahoka	Missouri, Iowa and Nebraska Railroad	714
Calhoun	Toner	884
California	Toner	864
Callao	Hannibal and Saint Joseph Railroad	827
Camden	Saint Louis, Kansas City and Northern Railroad.	739
Cameron	Hannibal and Saint Joseph Railroad	1, 034. 5
Cameron, crossing of Chicago, Rock Island and Pacific Railroad.	Hannibal and Saint Joseph Railroad	1, 036. 2
Carbon .....	.....	867
Cassville	Smithsonian Institution	3, 000
Centralia	Saint Louis, Kansas City and Northern Railroad.	894
Centretown	Toner	856
Centreview	Toner	875
Chamois	Toner	531
Charleston	Toner	319
Chillicothe	Hannibal and Saint Joseph Railroad	777
Chiltenham	Toner	458
Clarence	Hannibal and Saint Joseph Railroad	840
Clark City	Missouri, Iowa and Nebraska	711
Clapper	Missouri, Kansas and Texas Railroad	767
Clifton	Missouri, Kansas and Texas Railroad	704
Clinton	Toner	917
Converse	Saint Louis, Kansas City and Northern Railroad.	1, 091
Corning	Kansas City, Saint Joseph and Council Bluffs Railroad.	894
Cote Ronde	Toner	732
Craig	Kansas City, Saint Joseph and Council Bluffs Railroad.	889
Dardenne, high water Mississippi River.	Saint Louis, Kansas City and Northern Railroad.	453
Darley	Toner	1, 627
Deem's Branch	Toner	1, 205
Deerfield	Toner	901
De Soto	Toner	494

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Dixon.....	Saint Louis and San Francisco Railroad.....	1,168
Dorchester.....	.....	1,275
Doren.....	Toner.....	870
Downing.....	Missouri, Iowa and Nebraska Railroad.....	886
Dozier.....	Toner.....	455
Dundee.....	Smithsonian Institution.....	536
East Leavenworth.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	781.69
Easton.....	.....	920
Elston.....	Toner.....	715
Ely.....	.....	731
Estill.....	Missouri, Kansas and Texas Railroad.....	646
Evansville.....	Missouri, Kansas and Texas Railroad.....	746
Fairfield.....	.....	977
Fairview.....	Toner.....	977
Farmer's City.....	Toner.....	885
Fayette.....	Missouri, Kansas and Texas Railroad.....	641
Ferguson.....	Saint Louis, Kansas City and Northern Railroad.	520
Forbes.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	866
Forest City.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	877
Franklin.....	Missouri Pacific Railroad.....	480
Franklin.....	Missouri, Kansas and Texas Railroad.....	575
Fredericktown.....	Toner.....	756
Gadshill.....	Toner.....	840
Gallagher.....	.....	785
Gasconade.....	Toner.....	483
Glenallen.....	Toner.....	452
Glendale.....	Toner.....	568
Glenwood.....	Saint Louis, Kansas City and Northern Railroad.	1,008
Granby City.....	Saint Louis, Kansas City and Northern Railroad.	1,063
Granger.....	Missouri, Iowa and Nebraska Railroad.....	776
Greenfield.....	Smithsonian Institution.....	1,800
Greenfield's Landing.....	Toner.....	320
Greenwood.....	Toner.....	907
Grey's Creek.....	Toner.....	531
Hall.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	821
Halliday.....	Missouri, Kansas and Texas Railroad.....	787
Hamilton.....	Hannibal and Saint Joseph Railroad.....	996
Hancock.....	Toner.....	1,104
Hannewell.....	Hannibal and Saint Joseph Railroad.....	770
Hannibal, high water, 1851, Mississippi River.	Mr. Gardner's determination.....	485.10
Hannibal, depot.....	Hannibal and Saint Joseph Railroad.....	485.90
Harlem.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	763.89
Harlem, semaphore.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	767.19
Harris.....	Missouri, Kansas and Texas Railroad.....	836
Hassard.....	Missouri, Kansas and Texas Railroad.....	758
Hematite.....	.....	475
Hermann.....	Smithsonian Institution.....	598
Hermitage.....	Toner.....	1,037
Hibernia.....	Toner.....	400
Higbee.....	Missouri, Kansas and Texas Railroad.....	862
Holden.....	Missouri Pacific Railroad.....	854
Holt.....	Hannibal and Saint Joseph Railroad.....	869

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
Hopkins	Kansas City, Saint Joseph and Council Bluffs Railroad.	<i>Feet.</i> 1,066
Iatan	Kansas City, Saint Joseph and Council Bluffs Railroad.	807
Independence	Missouri Pacific Railroad	1,034
Ironton	Toner	912
Jefferson Barracks	Medical Department, United States Army ..	472
Jefferson City	Missouri Pacific Railroad	556
Kansas City, level	Missouri Pacific Railroad	766
Kansas City, union depot ..	Kansas City, Saint Joseph and Council Bluffs Railroad.	765.69
Kansas City, grade on bridge.	Hannibal and Saint Joseph Railroad	786.77
Kansas City, high water 1844.	Gardner	770.77
Kansas City (State line)	Gardner	763.52
Kearney	Hannibal and Saint Joseph Railroad	835
Keytesville	Saint Louis, Kansas City and Northern Railroad.	650
Kidder	Hannibal and Saint Joseph Railroad	1,026
Kingsville	Toner	924
Kirksville	Saint Louis, Kansas City and Northern Railroad.	990
Kirkwood	Toner	636
Knob Lick	Toner	922
Knobnoster	Toner	822
Labadie	Toner	486
Laclede	Hannibal and Saint Joseph Railroad	800
Ladue	Toner	855
Lake, side-track	Kansas City, Saint Joseph and Council Bluffs Railroad.	844
Lakeman	Hannibal and Saint Joseph Railroad	744
La Monte	Toner	878
Lancaster	Missouri, Iowa and Nebraska Railroad	987
La Plata	Toner	898
Lathrop	Saint Louis, Kansas City and Northern Railroad.	1,079
Lathrop, station of Hannibal and Saint Joseph Railroad.	Saint Louis, Kansas City and Northern Railroad.	1,077
Leasburg	Toner	1,022
Lebanon	Toner	1,259
Lee's Summit	Missouri Pacific Railroad	1,054
Leutner	Hannibal and Saint Joseph Railroad	806
Lewis	Toner	895
Lexington Junction	Saint Louis, Kansas City and Northern Railroad.	714
Liberty	Hannibal and Saint Joseph Railroad	854
Liberty Landing	Saint Louis, Kansas City and Northern Railroad.	750
Liberty Landing, ordinary water in Missouri River.	Saint Louis, Kansas City and Northern Railroad.	737
Louisiana	Toner	460
Luray	Missouri, Iowa and Nebraska Railroad	754
Macon	Saint Louis, Kansas City and Northern Railroad.	900.66
Macon	Hannibal and Saint Joseph Railroad	879
Madison	Missouri, Kansas and Texas Railroad	787
Marble Hill	Toner	411
Marquand	Toner	564
Marshfield	Saint Louis and San Francisco Railroad	1,521
Marysville	Kansas City, Saint Joseph and Council Bluffs Railroad.	1,055
McQuirk's	Toner	585

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Meadville	Hannibal and Saint Joseph Railroad	742. 5
Memphis	Missouri, Iowa and Nebraska Railroad	766
Meramac	Toner	435
Mercenae	Toner	419
Mexico	Saint Louis, Kansas City and Northern Rail- road.	828
Middlebrook	Toner	1, 144
Miller's Landing	Toner	508
Mineral Point	Toner	855
Mississippi Valley Junction	Hannibal and Saint Joseph Railroad	492. 5
Moberly Junction	Saint Louis, Kansas City and Northern Rail- road.	882. 66
Moberly	Missouri, Kansas and Texas Railroad	850
Monetau	Toner	904
Monroe	Hannibal and Saint Joseph Railroad	750
Monroe	Missouri, Kansas and Texas Railroad	744
Montrose	Toner	934
Mooreville	Hannibal and Saint Joseph Railroad	932
Morison	Toner	522
Morley	Toner	338
Moselle	Saint Louis and San Francisco Railroad	955
Neelysville	Toner	298
Neosho City		1, 015
Nettleton	Hannibal and Saint Joseph Railroad	968. 5
Nevada	Toner	850
New Bourbon	Toner	641
New Cambria	Hannibal and Saint Joseph Railroad	836
New Madrid	Toner	530
Newport	Toner	482
New Springfield	Toner	1, 532
Niangua	Toner	1, 420
Nishnabotna (side-track)	Kansas City, Saint Joseph and Council Bluffs Railroad.	897
Nodaway (side-track)	Kansas City, Saint Joseph and Council Bluffs Railroad.	848
North Missouri Junction	Saint Louis, Kansas City and Northern Rail- road.	754
Oakland	Toner	611
Ogden	Toner	500
Ohio City	Toner	505
Oregon	Toner	1, 100
Osage City	Toner	541
Osborn	Hannibal and Saint Joseph Railroad	1, 044
Otterville	Toner	695
Pacific	Saint Louis and San Francisco Railroad	480
Palmyra	Hannibal and Saint Joseph Railroad	664
Parkville	Kansas City, Saint Joseph and Council Bluffs Railroad.	770. 69
Paris (near)	Smithsonian Institution	704
Paris	Missouri, Kansas and Texas Railroad	666
Pendleton	Saint Louis, Kansas City and Northern Rail- road.	930
Pevely	Toner	430
Phelps	Kansas City, Saint Joseph and Council Bluffs Railroad.	913
Pickering	Kansas City, Saint Joseph and Council Bluffs Railroad.	1, 041
Piedmont	Toner	495
Pierce City	Saint Louis and San Francisco Railroad	1, 225
Pilot Grove	Missouri, Kansas and Texas Railroad	816
Plattsburg	Saint Louis, Kansas City and Northern Rail- road.	963

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Pleasant Green	Missouri, Kansas and Texas Railroad	758
Plymouth .....	.....	1,356
Poplar Bluff	Toner	345
Prairie City .....	.....	771
Prairie Lick	Missouri, Kansas and Texas Railroad	679
Queen City	Saint Louis, Kansas City and Northern Railroad.	1,019
Reelsville .....	.....	599
Reeves	Toner	372
Renselier	Missouri, Kansas and Texas Railroad	750
Rhineland	Smithsonian Institution	800
Ritchville .....	.....	1,060
Rockville	Toner	811
Rolla	Saint Louis and San Francisco Railroad	1,201
Rosehill	Toner	595
Rosendale	Kansas City, Saint Joseph and Council Bluffs Railroad.	941
Rushville	Kansas City, Saint Joseph and Council Bluffs Railroad.	816
Russell	Missouri, Kansas and Texas Railroad	745
Saint Aubert	Toner	527
Saint Catharine	Hannibal and Saint Joseph Railroad	811.5
Saint Charles, track on bridge	Saint Louis, Kansas City and Northern Railroad.	519
Saint Charles, bottom Missouri River.	Saint Louis, Kansas City and Northern Railroad.	421
Saint Charles, ordinary water, Missouri River.	Saint Louis, Kansas City and Northern Railroad.	436
Saint Charles, high water, 1844.	Saint Louis, Kansas City and Northern Railroad.	466
Saint Clair	Toner	751
Saint Genevieve	Toner	372
Saint Joseph	Hannibal and Saint Joseph Railroad	833.11
Saint Joseph, high water, Missouri River.	Hannibal and Saint Joseph Railroad	820.11
Saint Joseph, station Saint Louis, Kansas City and Northern Railroad.	Hannibal and Saint Joseph Railroad	835.4
Saint Joseph, station Kansas City, Saint Joseph and Council Bluffs Railroad.	Hannibal and Saint Joseph Railroad	842.49
Saint Joseph, bridge .....	.....	843.79
Saint Louis, city directrix	Gardner	428.29
Saint Louis, high water, 1844, Mississippi River.	Gardner	435.87
Saint Louis, high water, 1858, Mississippi River.	Gardner	431.57
Saint Louis, high water, 1851, Mississippi River.	Gardner	431.17
Saint Louis, low-water extreme, Mississippi River.	Gardner	394.48
Saint Louis, ordinary water, Mississippi River.	Gardner	408
Saint Louis, center of bridge on track.	Gardner	485.80
Saint Louis, center of bridge on wagon road.	Gardner	510.04
Saint Louis, College Hill	Signal-Bureau	475
Saint Paul	Toner	428
Salisbury	Saint Louis, Kansas City and Northern Railroad.	736

Missouri—Continued.

Towns, &c.	Authority or reference.	Elevation.
Savannah, new station.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	<i>Fet.</i> 1, 118
Savannah, old station.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	1, 041
Schell City	Toner	864
Scott's	Toner	622
Sedalia	Missouri Pacific Railroad	889
Seneca	Saint Louis and San Francisco Railroad.....	863
Shelbina	Hannibal and Saint Joseph Railroad.....	794
Sikeston	Toner	327
Sleeper .....	.....	1, 201
Smithton	Toner	888
South Point	Toner	510
Springfield	Saint Louis and San Francisco Railroad.....	1, 382
Stanton	Toner	1, 004
State Line	Kansas Pacific Railroad.....	763. 52
Stewartsville	Hannibal and Saint Joseph Railroad.....	966. 2
Stockton	Smithsonian Institution	800
Stockton	Toner	849
Stoutsville	Missouri, Kansas and Texas Railroad.....	621
Sugar Lake.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	812
Sullivan	Toner	959
Sutton	Toner	470
Sylvania	Toner	339
Syracuse	Toner	944
Talbot	Missouri, Kansas and Texas Railroad.....	604
Taylorville	Toner	470
Tipton	Toner	944
Tower Grove	Smithsonian Institution	500
Turney	Hannibal and Saint Joseph Railroad.....	1, 056. 5
Tuscumbia	Smithsonian Institution	600
Union	Smithsonian Institution	616
Utica	Hannibal and Saint Joseph Railroad.....	751. 5
Verona .....	.....	1, 250
Waldron	Kansas City, Saint Joseph and Council Bluffs Railroad.	745. 49
Walker's	Toner	966
Warrensburgh	Missouri Pacific Railroad.....	874
Warrenton	Saint Louis, Kansas City and Northern Railroad.	873
Warrenton	Smithsonian Institution	825
Washington	Toner	487
Watson	Kansas City, Saint Joseph and Council Bluffs Railroad.	923
Wayland	Missouri, Iowa and Nebraska Railroad.....	548
Webster .....	.....	525
Wellsburgh	Toner	778
Weston	Kansas City, Saint Joseph and Council Bluffs Railroad.	791
West Quincy	Hannibal and Saint Joseph Railroad.....	473. 5
West Quincy, high water Mississippi River.	Hannibal and Saint Joseph Railroad.....	466. 7
Williamsville	Toner	393.
Winthrop Junction	Kansas City, Saint Joseph and Council Bluffs Railroad.	807
Winthrop Depot.....	Kansas City, Saint Joseph and Council Bluffs Railroad.	807
Winthrop Station.....	Hannibal and Saint Joseph Railroad.....	811
Woodland	Hannibal and Saint Joseph Railroad.....	692
Yeatman	Toner	485

Montana.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Allen's Ranch.....	Hayden.....	4, 396
Argenta.....	De Lacy.....	6, 337
Bannack.....	De Lacy.....	5, 896
Barrett's Ranch.....	De Lacy.....	5, 665
Basin Station.....	De Lacy.....	5, 437
Beaverhead.....	Hayden.....	4, 464
Beaverhead River, first bridge.....	.....	4, 228
Beaverhead Station.....	De Lacy.....	4, 888
Beavertown.....	De Lacy.....	4, 942
Big Horn City.....	.....	2, 831
Bitter-root.....	.....	2, 480
Blackfoot Agency.....	.....	3, 169
Boteler's Ranch.....	Hayden.....	4, 825
Boteler's Ranch.....	Ludlow.....	4, 873
Bouldertown.....	De Lacy.....	5, 000
Bozeman.....	Hayden.....	4, 900
Brewer's Springs.....	Ludlow.....	4, 957
Camp Baker.....	Ludlow.....	4, 538
Camp Lewis.....	Ludlow.....	3, 890
Cantonment Jordan.....	.....	2, 990
Carroll.....	Ludlow.....	2, 247
Cook's Ranch.....	De Lacy.....	4, 995
Deer Lodge.....	.....	4, 654
Deer Lodge.....	Northern Pacific Railroad.....	4, 546
Deer Lodge.....	Stuart.....	4, 768
Fish Creek Station.....	Hayden.....	4, 134
Fort Benton.....	Toner.....	2, 780
Fort Benton.....	Mullan.....	2, 814
Fort Benton.....	Signal-Service.....	2, 674
Fort Ellis.....	Hayden.....	4, 935
Fort Ellis.....	Ludlow.....	4, 747
Fort Owen.....	Toner.....	3, 284
Fort Phil Kearney.....	Toner.....	6, 000
Fort Shaw.....	Smithsonian Institution.....	6, 000
Gaffney's Station.....	De Lacy.....	4, 838
Gallatin City.....	Hayden.....	4, 132
Hamilton.....	Hayden.....	4, 342
Hamilton's, Jeff. Davis Gulch.....	De Lacy.....	6, 536
Helena.....	Hayden.....	4, 266
Helena.....	Toner.....	4, 150
Helena.....	De Lacy.....	4, 296
Hellgate.....	Toner.....	3, 318
Hopley's Hole.....	Ludlow.....	4, 894
Jefferson Bridge.....	De Lacy.....	4, 672
Jefferson City.....	De Lacy.....	4, 776
Lorraine's.....	De Lacy.....	4, 992
Lovell's.....	De Lacy.....	5, 465
Missoula.....	Toner.....	3, 900
Montana City.....	De Lacy.....	4, 191
Moss Agate Springs.....	Ludlow.....	5, 106
Nevada City.....	Hayden.....	5, 548
Parson's Bridge, Jefferson River.....	Hayden.....	4, 083
Pomaine's.....	De Lacy.....	5, 826
Sheridan.....	De Lacy.....	5, 221
Sterrett's.....	De Lacy.....	5, 217
Ten-Mile Station.....	De Lacy.....	4, 244
Virginia City.....	Hayden.....	5, 824
Virginia City.....	Signal-Service.....	5, 512
Virginia City.....	De Lacy.....	5, 778
Whitehall.....	.....	4, 639

Nebraska.

Towns, &c.	Authority, or reference.	Elevation.
		<i>Feet.</i>
Alda	Toner	1, 907
Alkali	Union Pacific Railroad	3, 074
Alexandria	Saint Joseph and Denver Railroad	1, 316
Antelope	Union Pacific Railroad	4, 747
Arlington	Nebraska Railroad	1, 229
Ashland	Burlington and Missouri River Railroad	1, 102
Barney	Nebraska Railroad	939
Barton	Toner	3, 421
Belle Creek	Sioux City and Pacific Railroad	1, 186
Belvedere	Saint Joseph and Denver Railroad	1, 509
Bennett	Nebraska Railroad	1, 154
Big Spring	Union Pacific Railroad	3, 360
Blair	Sioux City and Pacific Railroad	1, 111
Blair, crossing of Omaha and Northwestern Railroad.	Sioux City and Pacific Railroad	1, 107. 5
Brady Island	Union Pacific Railroad	2, 675
Brownson	Toner	4, 200
Brownville	Nebraska Railroad	919
Brulé	Union Pacific Railroad	3, 300
Bushnell	Union Pacific Railroad	4, 895
Camp Mitchell .....	.....	3, 891
Carlton	Saint Joseph and Denver Railroad	1, 562
Cayote	Union Pacific Railroad	2, 476
Chapman's	Union Pacific Railroad	1, 797
Chappel .....	.....	5, 702
Cheney's	Nebraska Railroad	1, 444
Clark's	Union Pacific Railroad	1, 647
Coleraine	Toner	1, 518
Colton	Toner	4, 022
Columbus	Union Pacific Railroad	1, 469
Crete	Burlington and Missouri River Railroad	1, 368
Crowell	Fremont, Elkhorn and Missouri Valley Rail- road.	1, 296
Dakota	Toner	1, 090
Davenport	Saint Joseph and Denver Railroad	1, 668
Denton	Burlington and Missouri River Railroad	1, 248
De Soto	Toner	1, 100
Dewitt	Toner	1, 255
Dexter	Toner	3, 000
Dorchester	Burlington and Missouri River Railroad	1, 502
Dunbar	Nebraska Railroad	1, 069
Eden	Saint Joseph and Denver Railroad	1, 737
El Dorado	Toner	1, 693
Elkhorn	Union Pacific Railroad	1, 187
Elm Creek	Union Pacific Railroad	2, 278
Emerson	Toner	1, 300
Fairbury	Saint Joseph and Denver Railroad	1, 324
Fairfield	Saint Joseph and Denver Railroad	1, 788
Fairmount	Burlington and Missouri River Railroad	1, 657
Falls City	Atchison and Nebraska Railroad	904
Fontenelle	Smithsonian Institution	1, 000
Fort Calhoun	Toner	1, 327
Fort Clarke .....	.....	1, 876
Fort Grattan	Warren	3, 325
Fort Kearney	Saint Joseph and Denver Railroad	2, 130
Fort McPherson .....	.....	2, 695
Fort McPherson	Smithsonian Institution	3, 726
Fremont	Union Pacific Railroad	1, 220
Gannett .....	.....	2, 752
Georgetown	Saint Joseph and Denver Railroad	1, 852
Germantown	Nebraska Railroad	1, 584
Gibbon	Union Pacific Railroad	2, 083
Gilmore	Union Pacific Railroad	1, 013

Nebraska—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Fect.</i>
Glendale	Smithsonian Institution	1, 300
Grafton	Burlington and Missouri River Railroad	1, 712
Grand Island	Union Pacific Railroad	1, 887
Greenwood	Burlington and Missouri River Railroad	1, 141
Harvard	Burlington and Missouri River Railroad	1, 815
Hastings	Saint Joseph and Denver Railroad	1, 944
Herman	Toner	1, 067
Highland	Burlington and Missouri River Railroad	1, 429
Hoopers	Fremont, Elkhorn and Missouri Valley Railroad.	1, 248
Humboldt	Atchison and Nebraska Railroad	989
Idaho	Saint Joseph and Denver Railroad	2, 011
Inland	Burlington and Missouri River Railroad	1, 894
Ionia	Smithsonian Institution	3, 000
Jackson	Union Pacific Railroad	1, 507
Jefferson	Saint Joseph and Denver Railroad	2, 087
Julesburg	Union Pacific Railroad	3, 535
Juniata	Burlington and Missouri River Railroad	1, 985
Kanosha	Smithsonian Institution	1, 050
Kearney	Union Pacific Railroad	2, 143
Kearney Junction	Saint Joseph and Denver Railroad	2, 163
Kenesaw	Burlington and Missouri River Railroad	2, 064
Kennard	Sioux City and Pacific Railroad	1, 168
Ketcham	Toner	1, 272
Lincoln	Burlington and Missouri River Railroad	1, 164
Lockwood	Toner	1, 800
Lodgepole	Union Pacific Railroad	3, 835
Lone Tree	Union Pacific Railroad	1, 723
Louisville	Burlington and Missouri River Railroad	1, 041
Lowell	Burlington and Missouri River Railroad	2, 086
McPherson	Union Pacific Railroad	2, 371
Malcolm	Nebraska Railroad	1, 299
Minersville	Nebraska Railroad	954
Nebraska City	Smithsonian Institution	1, 005
Nebraska City	Nebraska Railroad	964
Nebraska City, low water Missouri River.	Nebraska Railroad	919
New Castle	Toner	800
Newton	Burlington and Missouri River Railroad	1, 152
Nichols .....	.....	2, 920
Nickerson	Fremont, Elkhorn and Missouri Valley Railroad.	1, 222
North Bend	Union Pacific Railroad	1, 296
North Platte	Union Pacific Railroad	2, 825
North Platte	Signal Bureau	2, 846
Nursery Hill	Smithsonian Institution	1, 266
O'Fallon's	Union Pacific Railroad	3, 012
Ogalalla	Union Pacific Railroad	3, 225
Omaha, depot	Union Pacific Railroad	1, 056. 26
Omaha, low water Missouri River.	Railroad	983. 26
Omaha, high water Missouri River.	Railroad	1, 002. 26
Omaha, bed of Missouri River	Railroad	969. 46
Omaha, datum of Union Pa- cific Railroad.	Railroad	983. 26
Omaha, top of east and west abutments of railroad- bridge.	Railroad	1, 054. 76
Omaha, track on bridge	Railroad	1, 055. 84
Omaha, signal-office	Signal Bureau	1, 046
Omaha Junction	Burlington and Missouri River Railroad	1, 001
Overton	Union Pacific Railroad	2, 343

Nebraska—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Palmyra	Nebraska Railroad	1, 154
Papillion	Union Pacific Railroad	1, 009
Pawnee	Union Pacific Railroad	1, 944
Peru	Nebraska Railroad	929
Pine Bluff	Union Pacific Railroad	5, 061
Pioneer Grove	Smithsonian Institution	1, 400
Plattsmouth	Burlington and Missouri River Railroad	984
Plum Creek	Union Pacific Railroad	2, 406
Potter	Union Pacific Railroad	4, 405
Red Cloud	Toner	1, 650
Richland	Toner	1, 350
Rock Bluffs	Smithsonian Institution	1, 100
Rogers	Toner	1, 359
Roscoe	Union Pacific Railroad	3, 140
Salem	Atchison and Nebraska Railroad	917
Schuyler	Union Pacific Railroad	1, 372
Scribner	Fremont, Elkhorn and Missouri Valley Railroad.	1, 277
Seward	Nebraska Railroad	1, 449
Sidney	Union Pacific Railroad	4, 108
Silver Creek	Union Pacific Railroad	1, 571
South Bend	Burlington and Missouri River Railroad	1, 002
State Prison	Nebraska Railroad	1, 294
Steele City	Saint Joseph and Denver Railroad	1, 277
Sterling	Atchison and Nebraska Railroad	1, 193
Stevenson	Union Pacific Railroad	2, 207
Summit	Nebraska Railroad	1, 199
Summit Siding	Union Pacific Railroad	1, 179
Syracuse	Nebraska Railroad	1, 064
Table Rock	Atchison and Nebraska Railroad	1, 036
Tecumseh	Atchison and Nebraska Railroad	1, 120
Unadilla	Nebraska Railroad	1, 094
Valley	Union Pacific Railroad	1, 057
Warren	Union Pacific Railroad	2, 606
Washington	Toner	1, 025
Waverly	Burlington and Missouri River Railroad	1, 137
West Point	Fremont, Elkhorn and Missouri Valley Railroad.	1, 337
Willow Island	Union Pacific Railroad	2, 547
Wisner	Fremont, Elkhorn and Missouri Valley Railroad.	1, 404
Woodlawn	Nebraska Railroad	1, 194
Wood River	Union Pacific Railroad	2, 011

Nevada.

Antelope Spring	Wheeler	7, 201
Antelope Valley	Simpson	5, 633
Antelope Valley	Simpson	5, 690
Argenta	Central Pacific Railroad	4, 548
Aurora	Williamson	7, 441
Austin	Williamson	6, 451
Battle Mountain	Central Pacific Railroad	4, 511
Beowawe	Central Pacific Railroad	4, 695
Bill Williams's Ranch .....	.....	3, 500
Bishop	Toner	5, 423
Black Rock Valley	Hayden	4, 900
Brown's	Central Pacific Railroad	3, 929
Buell Valley	Simpson	6, 000
Buffalo Spring .....	.....	4, 118

Nevada—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Butte Valley	Simpson	6, 268
Butte Valley	Simpson	6, 148
Butterfield Spring	Wheeler	5, 324
Camp Halleck	Smithsonian Institution	5, 600
Camp Halleck	Wheeler	5, 790
Camp McDermot	Medical Department, United States Army	4, 700
Camp McGarry	Medical Department, United States Army	6, 000
Camp Ruby (abandoned)	Wheeler	6, 153
Carlin	Central Pacific Railroad	4, 897
Carson	Virginia and Truckee Railroad	4, 630
Carson	Illiamson	4, 720
Cave Valley	Wheeler	6, 464
Cedar	Toner	5, 976
Cedar Valley	Wheeler	7, 073
Chinatown	Simpson	4, 360
Clark's	Central Pacific Railroad	4, 263
Clifton .....	.....	6, 339
Clover Valley	Wheeler	4, 902
Cluro	Toner	4, 785
Cold Spring	Wheeler	6, 173
Cottonwood Spring .....	.....	3, 449
Coyote .....	.....	2, 440
Coyote Spring .....	.....	2, 480
Crescent	Wheeler	5, 438
Crescent Mill	Wheeler	6, 100
Crosman Valley	Simpson	4, 814
Crystal Spring .....	.....	4, 718
Dayton	Foster, Mississippi Valley	4, 490
Deeth	Central Pacific Railroad	5, 340
Dodge Valley	Simpson	5, 486
Duck Valley	Wheeler	6, 065
Duck Valley	Wheeler	6, 929
Eagle Valley	Simpson	4, 587
Elko	Central Pacific Railroad	5, 063
Elko	Wheeler	5, 148
Fort Churchill	Medical Department, United States Army	4, 234
Fort Churchill	Williamson	4, 319
Fort Ruby	Medical Department, United States Army	5, 922
Franklin Valley	Pacific Railroad Reports	6, 248
Genoa	Simpson	4, 824
Golgonda	Central Pacific Railroad	4, 385
Grass Valley	Hayden	4, 800
Grouse Valley	Hayden	5, 600
Guide Valley	Pacific Railroad Reports	5, 368
Guide Valley	Pacific Railroad Reports	6, 139
Halleck	Central Pacific Railroad	5, 230
Hamilton	Wheeler	7, 600
Hiko	Wheeler	3, 831
Homor	Wheeler	5, 821
Hot Springs	Central Pacific Railroad	4, 072
Hot Springs, Walker's River .....	.....	7, 334
Humboldt	Central Pacific Railroad	4, 236
Huntington Valley	Wheeler	5, 300
		to
		6, 300
Independence	Central Pacific Railroad	6, 007
Indian Spring	Wheeler	3, 402
Iron Point	Central Pacific Railroad	4, 375
Ivanpah	Wheeler	4, 483
Kingston .....	.....	6, 247
King's Valley	Hayden	4, 850

Nevada—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Kobeh Valley.....	Simpson.....	6,000
		} to
Lassen's Meadows.....	Pacific Railroad Reports.....	6,600
Las Vegas.....	Wheeler.....	4,153
Long Valley.....	Wheeler.....	2,074
Long Valley.....	Wheeler.....	6,216
Loray.....	Simpson.....	6,195
Lovelock's.....	Central Pacific Railroad.....	5,400
Lyonsville.....	Central Pacific Railroad.....	3,977
Mill City.....	Wheeler.....	5,401
Moleen.....	Central Pacific Railroad.....	4,226
Monte Cristo Mill.....	Central Pacific Railroad.....	4,982
Montello.....	Wheeler.....	7,596
	Central Pacific Railroad.....	5,010
		} to
Mud Lakes Valley.....	Pacific Railroad Reports.....	4,000
		} to
Mud Spring.....	Wheeler.....	4,400
Nevada City.....	Wheeler.....	4,900
Oreana.....	Toner.....	6,205
Osino.....	Central Pacific Railroad.....	4,181
		5,100
		5,700
		} to
Pahrump Valley.....	Simpson.....	6,000
Palisade.....	Central Pacific Railroad.....	4,821
Panacea.....	Wheeler.....	4,718
Paradise Valley.....	Hayden.....	4,500
Peko.....	Central Pacific Railroad.....	5,204
Peko.....	Wheeler.....	5,180
Pequop.....	Central Pacific Railroad.....	6,184
Phelps Valley.....	Simpson.....	6,150
Piermont.....	Wheeler.....	5,581
Pioche.....	Wheeler.....	5,942
Pueblo Valley.....	Hayden.....	5,000
Queen's River Valley.....	Hayden.....	4,850
Raspberry.....	Central Pacific Railroad.....	4,327
Rattlesnake Spring.....	Wheeler.....	6,038
Reese River Valley.....	Simpson.....	5,600
Reno.....	Central Pacific Railroad.....	4,497
Rose Creek.....	Central Pacific Railroad.....	4,322
Rose Valley.....	Wheeler.....	5,401
Ruby Valley.....	Simpson.....	6,000
Rye Patch.....	Central Pacific Railroad.....	4,257
Sacramento.....		6,575
Saint Thomas.....	Wheeler.....	1,600
Salt Valley.....	Hayden.....	4,200
San Juan.....		8,075
Schafer Springs.....	Wheeler.....	6,186
Shermantown.....		4,445
Shoshone.....	Central Pacific Railroad.....	4,636
Simmond's Spring.....		5,000
Smoke Creek Depot.....		4,570
Spring Valley.....	Wheeler.....	6,102
Star City.....	Toner.....	7,500
		5,800
		} to
Steptoe Valley.....	Simpson.....	6,200
Stonehouse.....	Central Pacific Railroad.....	4,422
Tecoma.....	Central Pacific Railroad.....	4,812
Thousand Springs Valley.....	Hayden.....	5,951
Toano.....	Central Pacific Railroad.....	5,973

Nevada—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Truckee Valley	Hayden	4,000 to 5,100
Tulasco .....	.....	5,418
Tule	Toner	4,315
Tule Spring .....	.....	2,366
Union	Toner	6,160
Verdi	Central Pacific Railroad	4,895
Virginia City .....	.....	6,285
Virginia City	Foster, Mississippi Valley	6,205
Virginia City	Toner	6,200
Virginia City	Virginia and Truckee Railroad	6,205
Vista	Toner	4,400
Wadsworth	Central Pacific Railroad	4,077
Walker's Ranch	Wheeler	5,146
Walker's River Meadows .....	.....	6,500
Wanahonupe Valley	Simpson	5,543
Washoe Valley	Hayden	4,000
Water Cañon .....	.....	2,140
Wells	Central Pacific Railroad	5,429
West Point	Wheeler	1,755
White Pine Valley	Wheeler	6,000
White Plains	Central Pacific Railroad	3,894
Willow Spring .....	.....	5,859
Winnemucca	Central Pacific Railroad	4,322
Woodruff Valley	Simpson	6,000

New Mexico.

Abiquiu	Wheeler	5,930
Abiquiu .....	.....	5,897
Agua Azul .....	.....	6,852
Agua Fria	Pacific Railroad Reports	7,757
Alamo Gordo	Wheeler	4,863
Alamosa .....	.....	4,200
Albuquerque	Medical Department, United States Army	5,032
Albuquerque	Pacific Railroad Reports	5,026
Anton Chico .....	.....	5,414
Antou Chico	Pacific Railroad Reports	5,373
Arch Spring .....	.....	6,400
Arch Spring	Pacific Railroad Reports	6,350
Arch Spring	Wheeler	6,485
Aroyo Cuerbito .....	.....	4,848
Atrisco	Pacific Railroad Reports	5,033
Bacon Spring	Wheeler	7,189
Barney Station .....	.....	3,992
Ben's Cañon Ranch	Toner	4,820
Biendente	Toner	5,406
Camp Burgwin (old)	Wheeler	7,277
Camp Chase	Wheeler	5,374
Cañada Alamosa	Wheeler	6,540
Cañada de los Diegos	Toner	6,145
Cañon Blanco	Pacific Railroad Reports	6,320
Cañon de Chaco	Wheeler	5,839
Cañon Pajarito	Wheeler	5,099
Carrizalillo	Mexican Boundary	4,455
Carrizo Spring	Wheeler	7,477
Caseta	Wheeler	6,101
Cebolleta	Medical Department, United States Army	6,200

New Mexico—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Cerro Cuervo	Wheeler	4, 882
Cerro Cueva	Wheeler	5, 538
Chanisal	Wheeler	7, 527
Chili	Wheeler	5, 647
Cienega San Simeon	Wheeler	3, 855
Cimmaron	Wheeler	6, 419
Cooke's Spring	Mexican Boundary	4, 326
Copper Mines	Emory	6, 167
Covero	Pacific Railroad Reports	5, 880
Cow Spring	Wheeler	4, 954
Cuchilla	Wheeler	5, 680
Deer Spring	Wheeler	5, 982
Elizabethtown	Toner	8, 200
El Moro .....	.....	7, 238
El Moro	Wheeler	7, 414
El Paso	Mexican Boundary	3, 940
El Paso	Toner	3, 814
El Rito	Toner	5, 784
El Rito .....	.....	5, 535
El Rito	Wheeler	6, 792
Embuda	Wheeler	5, 891
Emory's Ranch	Toner	5, 680
Esteros	Wheeler	5, 320
Fort Bascom	Toner	3, 726
Fort Bayard	Medical Department, United States Army	4, 450
Fort Conrad	Medical Department, United States Army	4, 576
Fort Craig .....	.....	4, 361
Fort Craig	Medical Department, United States Army	4, 576
Fort Craig	Wheeler	4, 619
Fort Cummings .....	.....	5, 126
Fort Cummings	Wheeler	4, 778
Fort Defiance	Toner	6, 500
Fort Fillmore	Medical Department, United States Army	3, 937
Fort Marcy	Medical Department, United States Army	6, 846
Fort McRae	Medical Department, United States Army	4, 500
Fort Stanton	Toner	5, 000
Fort Taos	Toner	8, 000
Fort Thorn	Medical Department, United States Army	4, 500
Fort Tulerosa (old)	Wheeler	6, 740
Fort Union	Medical Department, United States Army	6, 670
Fort Webster	Medical Department, United States Army	6, 350
Fort Wingate .....	.....	6, 649
Fort Wingate	Toner	6, 622
Fort Wingate	Wheeler	6, 982
Fort Wingate (old) .....	.....	6, 375
Galisteo	Emory	5, 915
Gallo Spring	Wheeler	7, 925
Geyser Spring	Wheeler	5, 400
Inscription Rock	Pacific Railroad Reports	7, 238
Isleta .....	.....	4, 768
Isleta (river-bank)	Pacific Railroad Reports	4, 910
Isleta (top of bluffs)	Pacific Railroad Reports	5, 052
Jemez .....	.....	5, 629
Juan de Dios .....	.....	4, 820
La Bolsa	Wheeler	5, 829
La Cuesta .....	.....	5, 792
Lagoma .....	.....	6, 000
Laguna Colorado .....	.....	4, 587
Laguna de los Caballos .....	.....	7, 615
Laguna del Ojo Hediondo	Wheeler	7, 181
Laguna Junction .....	.....	5, 633
La Jara Valley	Wheeler	6, 988
La Joya	Wheeler	5, 651

New Mexico—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
La Mesilla		3,935
Largo Cañon	Wheeler	5,651
Las Playas		4,190
Las Vegas	Medical Department, United States Army	6,418
Leidendorfs Wells	Wheeler	6,401
Le Jarra		6,942
Llano	Wheeler	7,452
Loma		7,000
Loma Parda		6,393
Los Alamos		4,568
Los Cerritos		5,805
Los Cornudos		4,362
Mangos Spring	Wheeler	4,798
Monica Spring	Wheeler	7,735
Mora Cañon	Wheeler	6,528
Mule Spring	Wheeler	5,282
Nambe Pueblo	Wheeler	6,045
Neide's Spring	Mexican Boundary	4,310
Nutria	Wheeler	6,934
Oak Spring	Wheeler	7,946
Ojo Caliente	Wheeler	6,291
Ojo de Inez	Mexican Boundary	5,293
Ojo del Perro	Mexican Boundary	4,692
Ojo del Pescado	Pacific Railroad Reports	6,551
Ojo de Vaco	Mexican Boundary	4,989
Old Zuni		7,414
Pajarida		4,833
Payanda	Toner	4,833
Pecos Village	Emory	6,366
Peña Blanca		5,289
Pescado	Wheeler	6,546
Picuris Pueblo	Wheeler	7,108
Posos		6,162
Potrero	Wheeler	6,123
Queletes		5,193
Ralston	Wheeler	4,488
Rayado		6,946
Remances	Toner	6,185
Rinconada	Wheeler	5,829
Rock Spring	Wheeler	6,849
San Antonio	Pacific Railroad Reports	6,409
San Antonio	Wheeler	5,625
San Augustine	Wheeler	6,002
Sandia		5,056
San Domingo		5,190
San Felipe		5,171
San Geronimo	Wheeler	6,724
San Ildefonso	Wheeler	5,457
San José		5,556
San José	Wheeler	5,648
San Juan	Wheeler	5,601
San Lorenzo	Wheeler	6,107
San Lorenzo		6,251
San Miguel		6,346
Santa Clara		6,511
Santa Fé	Wheeler	7,047
Santa Fé	Signal-Service	6,862
Santa Rita del Cobre	Mexican Boundary	6,106
Servilleta	Wheeler	6,745
Sheep Springs	Toner	5,310
Silver City	Wheeler	5,946
Socorro	Medical Department, United States Army	4,560

New Mexico—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Stinking Spring	Wheeler	6, 690
Sweetwater Spring	Wheeler	6, 343
Taos	Toner	8, 000
Taos	Wheeler	6, 950
Taos Pueblos	Wheeler	7, 015
Tesuque	Wheeler	6, 668
Tesuque Pueblos	Wheeler	6, 244
Thompson's Spring	Wheeler	7, 607
Tierra Amarilla	Wheeler	7, 466
Trinidad .....	.....	5, 725
Truchas	Wheeler	7, 622
Tule Spring	Wheeler	5, 925
Vegas Village	Emory	6, 418
Vernal Springs	Emory	6, 299
Whetstone	Toner	6, 360
Zandia	Toner	5, 056
Zuni	Toner	6, 355

Oregon.

Albany (near)	Smithsonian Institution	600
Albany	Oregon and California Railroad	245
Astoria	Medical Department, United States Army	50
Auburn	Smithsonian Institution	3, 300
Aurora	Oregon and California Railroad	164
Beaverton	Oregon Central Railroad	220
Brooks	Oregon and California Railroad	215
Camp Logan	Smithsonian Institution	5, 600
Canby	Oregon and California Railroad	183
Cañonville	Pacific Railroad Reports	516
Carlton	Oregon Central Railroad	224
Clackamas	Oregon and California Railroad	148
Comstock's, old station	Oregon and California Railroad	478
Comstock's, new station	Oregon and California Railroad	385
Cornelius	Oregon Central Railroad	202
Creswell	Oregon and California Railroad	572
Curran's Ranch .....	.....	532
Dalles	Toner	200
Dilley's	Oregon Central Railroad	219
Divide	Oregon and California Railroad	783
Drain's	Oregon and California Railroad	327
East Portland	Oregon and California Railroad	55
East Portland, machine-shops	Oregon and California Railroad	88
Eola	Toner	500
Eugene	Oregon and California Railroad	457
Forest Grove	Oregon Central Railroad	196
Fort Dallas	Medical Department, United States Army	350
Fort Klamath	Toner	4, 200
Fort Lane	Toner	1, 200
Fort Okonagon	Toner	810
Fort Orford	Medical Department, United States Army	50
Fort Umpqua	Medical Department, United States Army	8
Gaston	Oregon Central Railroad	207
Gervais	Oregon and California Railroad	216
Goshen	Oregon and California Railroad	532
Halsey	Oregon and California Railroad	314
Harrisburg	Oregon and California Railroad	341
Harris's Ranch .....	.....	1, 187

Oregon—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Hillsborough	Oregon Central Railroad	206
Hubbard	Oregon and California Railroad	214
Irving	Oregon and California Railroad	403
Jefferson	Oregon and California Railroad	272
Junction	Oregon and California Railroad	356
Lapwai	Toner	1,000
Latham	Oregon and California Railroad	668
Marion	Oregon and California Railroad	333
Miller's	Oregon and California Railroad	278
Milwaukee	Oregon and California Railroad	127
Newton	Oregon Central Railroad	202
North Yamhill	Oregon Central Railroad	206
Oakland	Oregon and California Railroad	458
Oregon City	Oregon and California Railroad	109
Oregon City	Smithsonian Institution	200
Portland	Smithsonian Institution	150
Portland (opposite)	Pacific Railroad Reports	66
Portland	Signal-Service	100
Portland	Oregon Central Railroad	55
Reedville	Oregon Central Railroad	255
Rice Hill	Oregon and California Railroad	751
Rock Island	Oregon and California Railroad	122
Roseburg	Oregon and California Railroad	488
Saint Joseph	Oregon Central Railroad	160
Salem .....	.....	382
Salem	Oregon and California Railroad	195
Shedd's	Oregon and California Railroad	295
Six-Bits House .....	.....	1,151
South Portland	Oregon Central Railroad	175
Summit	Oregon Central Railroad	482
Tangent	Oregon and California Railroad	277
Turner	Oregon and California Railroad	318
Umpqua	Oregon and California Railroad	498
Vancouver (opposite)	Pacific Railroad Reports	105
Wallamet	Smithsonian Institution	120
Woodburn	Oregon and California Railroad	214
Yoncalla	Oregon and California Railroad	388

Texas.

Allen	Houston and Texas Central Railroad	665
Alleyton	Toner	222
Angus	Houston and Texas Central Railroad	448
Arcola	International and Great Northern Railroad	66
Arroyo Escondido	Toner	2,115
Austin	International and Great Northern Railroad	480
Austin	Houston and Texas Central Railroad	574
Austin	Smithsonian Institution	650
B Imont Farm	Toner	722
Benchley	Houston and Texas Central Railroad	306
Big Mineral .....	.....	1,228
Bluff	Toner	180
Bonham	Medical Department, United States Army	435
Boston	Smithsonian Institution	600
Bremond	Houston and Texas Central Railroad	461
Brenham	Houston and Texas Central Railroad	357
Briar Creek	Toner	378
Brooklyn	Texas and Pacific Railroad	519
Brownsville	Toner	50
Bryan	Houston and Texas Central Railroad	371

Texas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Buffalo Springs	Smithsonian Institution	1,800
Burton	Houston and Texas Central Railroad	437
Calvert	Houston and Texas Central Railroad	339
Camp Concordia	Smithsonian Institution	3,600
Camp Quitman	Smithsonian Institution	3,712
Camp Verde	Medical Department, United States Army	1,400
Castroville	Mexican-Boundary Survey	672
Cedar Grove	Toner	60
Chappel Hill	Houston and Texas Central Railroad	335
Chappel Hill	Smithsonian Institution	542
Chenango	International and Great Northern Railroad	46
Cleburne	Houston and Texas Central Railroad	775
Columbia	International and Great Northern Railroad	33
Columbus	Toner	250
Columbus	Smithsonian Institution	198
Comanche Spring	Toner	2,874
Corpus Christi	Medical Department, United States Army	20
Corsicana	Smithsonian Institution	447
Corsicana	Houston and Texas Central Railroad	428
Courtney	Houston and Texas Central Railroad	191
Crockett	International and Great Northern Railroad	350
Cross Roads	Smithsonian Institution	672
Cypress	Houston and Texas Central Railroad	157
Dallas	Houston and Texas Central Railroad	468
Deloraine	Toner	960
Dennison	Houston and Texas Central Railroad	740
Dodge .....	.....	400
Douglas	International and Great Northern Railroad	310
Duval	International and Great Northern Railroad	795
Eagle Spring	Mexican-Boundary Survey	4,536
Edinburg	Mexican-Boundary Survey	422
Elciario	Toner	3,607
Elgin	Houston and Texas Central Railroad	591
Elkhart	International and Great Northern Railroad	390
Englewood	International and Great Northern Railroad	420
Ennis	Houston and Texas Central Railroad	548
Escondido Spring	Mexican Boundary Survey	2,806
Eureka	Houston and Texas Central Railroad	76
Ferris	Houston and Texas Central Railroad	477
Fort Belknap	Medical Department, United States Army	1,600
Fort Bliss	Medical Department, United States Army	3,830
Fort Bliss	Preliminary railroad-surveys	3,732
Fort Brown	Mexican-Boundary Survey	165
Fort Chadbourne	Medical Department, United States Army	2,120
Fort Clark	Medical Department, United States Army	1,000
Fort Croghan	Medical Department, United States Army	1,000
Fort Davis	Medical Department, United States Army	4,700
Fort Duncan	Medical Department, United States Army	1,460
Fort Ewell	Medical Department, United States Army	200
Fort Gates	Toner	1,000
Fort Graham	Medical Department, United States Army	900
Fort Inge	Medical Department, United States Army	845
Fort Lancaster	Medical Department, United States Army	2,350
Fort Lincoln	Medical Department, United States Army	900
Fort McIntosh	Medical Department, United States Army	806
Fort McKavett	Medical Department, United States Army	2,060
Fort Martin Scott	Medical Department, United States Army	1,300
Fort Mason	Medical Department, United States Army	1,200
Fort Merrill	Medical Department, United States Army	150
Fort North	Toner	1,100
Fort Polk	Toner	15
Fort Quitman	Medical Department, United States Army	3,710

Texas—Continued.

Towns, &c.	Authority or reference.	Elevation
		<i>Feet.</i>
Fort Stockton	Toner	4,950
Fort Terrett	Medical Department, United States Army	1,320
Fort Worth	Toner	629
Frontera	Mexican-Boundary Survey	3,796
Fulton	Toner	242
Galveston	Signal Bureau	40
Giddings	Houston and Texas Central Railroad	537
Gilmer (near)	Smithsonian Institution	956
Gilmer	Smithsonian Institution	1,017
Goliad	Smithsonian Institution	50
Gonzales	Smithsonian Institution	150
Grapeland	International and Great Northern Railroad	440
Groesbeck	Houston and Texas Central Railroad	482
Gum Island	Houston and Texas Central Railroad	95
Hammond	Houston and Texas Central Railroad	413
Harrisburg	Toner	38
Harrison	Houston and Texas Central Railroad	488
Hearne	International and Great Northern Railroad	309.3
Helena	Smithsonian Institution	600
Hempstead	Houston and Texas Central Railroad	245
Hockley	Houston and Texas Central Railroad	225
Houston	Houston and Texas Central Railroad	37
Houston	International and Great Northern Railroad	55
Howard's Spring	Mexican-Boundary Survey	2,054
Howe	Houston and Texas Central Railroad	860
Howth	Houston and Texas Central Railroad	281
Hueco Tanks	Pacific Railroad Reports	3,935
Humboldt	Toner	887
Hutchins	Houston and Texas Central Railroad	471
Independence Spring .....	.....	4,778
Indianola	Signal Bureau	25
Jacksonville	International and Great Northern Railroad	525
Jefferson	Smithsonian Institution	65
Jewett	International and Great Northern Railroad	497
Keechie	International and Great Northern Railroad	282
Killgore	International and Great Northern Railroad	370
Krosse	Houston and Texas Central Railroad	504
Lake	International and Great Northern Railroad	315
Laredo	Toner	806
Larissa	Smithsonian Institution	755
Lavaca	Toner	17
Ledbetter	Houston and Texas Central Railroad	466
Leon Spring	Mexican-Boundary Survey	2,807
Lindale	International and Great Northern Railroad	547
Listerdale	Smithsonian Institution	1,000
Long Point	Toner	400
Long View	International and Great Northern Railroad	336
McDade	Houston and Texas Central Railroad	566
McKinney	Houston and Texas Central Railroad	619
McKavett	Toner	2,060
Manor	Houston and Texas Central Railroad	534
Marquez	International and Great Northern Railroad	409
Marshall	Texas and Pacific Railroad	448
Martin	Houston and Texas Central Railroad	394
Melissa	Houston and Texas Central Railroad	693
Mesquite	Texas and Pacific Railroad	383
Mexia	Houston and Texas Central Railroad	537
Milano	International and Great Northern Railroad	475
Miller	Houston and Texas Central Railroad	427
Millican	Houston and Texas Central Railroad	300
Mine Creek	Smithsonian Institution	600
Minneola	International and Great Northern Railroad	420
Molino	Pacific Railroad Reports	3,830

Texas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Mustang Springs	Toner	1,982
Navasoto	Houston and Texas Central Railroad	219
Neches	International and Great Northern Railroad	410
Neuwied	Toner	800
Nueces	Mexican-Boundary Survey	932
Oakwoods	International and Great Northern Railroad	280
Ojo del Cuerdo	Pacific Railroad Reports	3,893
Ojo Escondido	Toner	2,311
Overton	International and Great Northern Railroad	510
Paige	Houston and Texas Central Railroad	574
Painted Caves	Mexican-Boundary Survey	952
Palestine	Smithsonian Institution	480
Palestine	International and Great Northern Railroad	490
Palmer	Houston and Texas Central Railroad	472
Peach Creek	Toner	256
Pecos Spring		3,098
Perry	Houston and Texas Central Railroad	484
Phantom Hill	Medical Department, United States Army	2,300
Phelps	International and Great Northern Railroad	378
Piedro Punta	Toner	744
Pierce Junction	International and Great Northern Railroad	58
Plano	Houston and Texas Central Railroad	668
Prairie	International and Great Northern Railroad	87
Presidio del Norte		2,779
Preston	Pacific Railroad Reports	790
Quibi	Mexican-Boundary Survey	856
Random	Toner	147
Reagan	Houston and Texas Central Railroad	376
Red River City	Toner	572
Reynolds	International and Great Northern Railroad	422
Rice	Houston and Texas Central Railroad	475
Richardson	Houston and Texas Central Railroad	638
Richland	Houston and Texas Central Railroad	378
Ringgold Barracks	Medical Department, United States Army	521
Riverside	International and Great Northern Railroad	165
Riverside, bed of Trinity River	International and Great Northern Railroad	87
Rockdale	International and Great Northern Railroad	469
Round Rock	International and Great Northern Railroad	720
San Antonio	Medical Department, United States Army	600
Sandy Point	International and Great Northern Railroad	57
San Elciario	Mexican-Boundary Survey	3,607
San Felipe	Mexican-Boundary Survey	818
Seco	Toner	689
Sherman	Houston and Texas Central Railroad	747
Silver Lake	Texas and Pacific Railroad	342
Sisterdale	Smithsonian Institution	1,320
Spring	International and Great Northern Railroad	126
Springfield	Smithsonian Institution	4,500
Sutton	Houston and Texas Central Railroad	383
Taylor	International and Great Northern Railroad	547
Tehuacana	Toner	482
Thompson	Houston and Texas Central Railroad	121
Thornton	Houston and Texas Central Railroad	497
Tinge	Toner	892
Trinity	International and Great Northern Railroad	234
Troupe	International and Great Northern Railroad	470
Tyler	International and Great Northern Railroad	535
Union Hill	Medical Department, United States Army	542
Van Alstyne	Houston and Texas Central Railroad	804
Waco	Houston and Texas Central Railroad	396
Waller	Houston and Texas Central Railroad	252
Washington	Smithsonian Institution	360
Waverly	International and Great Northern Railroad	365

Texas—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Weatherford	Houston and Texas Central Railroad	1, 015
Web'erville, Parson's Seminary.	Smithsonian Institution	394
Wellborn	Houston and Texas Central Railroad	322
Westfield	International and Great Northern Railroad..	114
Wheelock	Smithsonian Institution	450
White Cloud	Toner	255
White House	International and Great Northern Railroad..	428
Willis	International and Great Northern Railroad..	381
Worthen	International and Great Northern Railroad..	484

Utah.

Adamsville	Wheeler	5, 600
Akanaquiu Spring	Pacific Railroad Reports	4, 457
American Fork	Utah Southern Railroad	4, 608
American Fork	Pacific Railroad Reports	4, 596
American Fork	Wheeler	4, 578
Antelope Spring	Wheeler	5, 850
Bear River bridge .....	.....	4, 543
Bear Valley	Wheeler	7, 071
Beaver	Wheeler	5, 927
Beaver .....	.....	6, 058
Big Cottonwood	Utah Southern Railroad	4, 261
Blue Creek	Central Pacific Railroad	4, 379
Bonneville .....	.....	4, 310
Bovine	Central Pacific Railroad	4, 347
Box Cañon Spring	Utah Southern Railroad	4, 261
Brigham City	Central Pacific Railroad	4, 226
Buckhorn Spring	Wheeler	5, 688
Camp Douglass	Medical Department, United States Army..	4, 200
Camp Douglass	Wheeler	5, 024
Camp Floyd	Medical Department, United States Army..	4, 860
Camp Floyd .....	.....	4, 867
Camp Stevenson .....	.....	5, 930
Castle Rock	Union Pacific Railroad	6, 260
Cedar City	Wheeler	5, 726
Cedar Spring	Wheeler	5, 100
Centreville	Utah Central Railroad	4, 235
Circleville	Wheeler	5, 624
Copenhagen	Hayden	4, 999
Corinne	Central Pacific Railroad	4, 232
Corinne, signal-office	United States Signal-Bureau	4, 249
Cottonwood .....	.....	4, 200
Cub-River Bridge .....	.....	4, 542
Deadman's Springs .....	.....	6, 782
Deep Creek	Wheeler	5, 237
Deseret City	Wheeler	4, 642
Desert Springs	Wheeler	5, 886
Devil's Gate	Union Pacific Railroad	4, 835
Diamond	Wheeler	6, 369
Dodoquiba Spring	Pacific Railroad Reports	4, 659
Draper	Utah Southern Railroad	4, 513
Draperville .....	.....	4, 409
Eclo	Union Pacific Railroad	5, 509
Ephraim	Wheeler	5, 633
Eureka City	Wheeler	6, 400
Fairfield	Wheeler	4, 866
Farmington	Utah Central Railroad	4, 260
Faust	Wheeler	5, 296
Fillmore	Wheeler	6, 025

Utah—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Fish Spring	Wheeler.....	4, 269
Fort Cameron	Wheeler.....	6, 058
Fort Crittenden	Toner.....	4, 860
Fountain Green.....	.....	5, 875
Gould's Ranch.....	Wheeler.....	4, 052
Grass Valley.....	Wheeler.....	6, 857
Gunnison.....	Wheeler.....	5, 144
Hanging Rock.....	Toner.....	5, 974
Hawawah Spring.....	Wheeler.....	5, 455
Hay Spring.....	Wheeler.....	5, 092
Hay Patch Spring.....	Wheeler.....	5, 590
Heber.....	Wheeler.....	5, 574
Hebron.....	Wheeler.....	5, 474
Hensell's Spring.....	.....	5, 373
Hyde Park.....	Hayden.....	4, 553
Indian Spring.....	Wheeler.....	5, 771
Iron City.....	Wheeler.....	6, 099
Joe's Valley.....	Wheeler.....	8, 420
Kansas.....	.....	6, 304
Kansas Prairie.....	Simpson.....	6, 242
Kansas Prairie.....	Wheeler.....	6, 225
Kanab.....	Wheeler.....	4, 909
Kanara.....	Wheeler.....	5, 419
Kaysville.....	Utah Central Railroad.....	4, 298
Kelton.....	Central Pacific Railroad.....	4, 223
Lake.....	.....	4, 223
Laketown.....	Hayden.....	6, 001
Lehi.....	Utah Central Railroad.....	4, 586
Little Cottonwood.....	Utah Central Railroad.....	4, 288
Logan.....	Hayden.....	4, 557
Lone Rock Valley.....	Pacific Railroad Reports.....	4, 400 to 5, 400
Lucin.....	Central Pacific Railroad.....	4, 498
Mammoth Mill.....	Wheeler.....	6, 947
Matlin.....	Central Pacific Railroad.....	4, 597
Meadow Creek.....	Wheeler.....	5, 992
Mill-Creek Station.....	Wheeler.....	6, 504
Mill Spring.....	.....	6, 504
Moutpelier.....	.....	5, 793
Monument.....	Central Pacific Railroad.....	4, 227
Mountain Meadow.....	Wheeler.....	5, 741
Mount Pleasant.....	Wheeler.....	6, 090
Nephi.....	Pacific Railroad Reports.....	4, 938
Nephi.....	Wheeler.....	4, 920
Oak Creek.....	Wheeler.....	5, 158
Oak Springs.....	.....	6, 790
Ogden.....	Central Pacific Railroad.....	4, 303. 3
Ombey.....	Central Pacific Railroad.....	4, 721
Panquitch.....	Wheeler.....	6, 273
Paragoonah.....	Wheeler.....	6, 222
Paria.....	Wheeler.....	4, 562
Parowan.....	Wheeler.....	5, 910
Payson.....	Utah Southern Railroad.....	4, 613
Payson.....	Pacific Railroad Reports.....	4, 541
Payson.....	Wheeler.....	4, 523
Phillip's Village.....	.....	4, 327
Pleasant Grove.....	Utah Southern Railroad.....	4, 557
Porteo Valley.....	Simpson.....	5, 590
Potato Valley.....	Wheeler.....	7, 331
Promontory.....	Central Pacific Railroad.....	4, 905
Provo.....	Utah Southern Railroad.....	4, 520

Utah—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Provo	Wheeler.....	4,567
Provo .....	.....	4,534
Rabbit Valley (foot of).....	Wheeler.....	6,821
Randolph	Hayden	6,442
Richfield	Wheeler.....	5,283
Richmond	Hayden	4,641
Round Prairie.....	Simpson.....	5,571
Rozel .....	.....	4,600
Rush Valley.....	Simpson.....	5,200
Rush Valley.....	Wheeler.....	5,234
Saint Mary's	Toner	6,200
Salt Lake City.....	Utah Central Railroad.....	4,261
Salt Lake City.....	Pacific Railroad Reports.....	4,531
Salt Lake City, signal-office.....	United States Signal-Bureau.....	4,350
Salt Lake City.....	Smithsonian Institution.....	4,320
Sandy	Utah Southern Railroad.....	4,457
San Francisco Spring.....	Wheeler.....	6,527
Santaquin	Utah Southern Railroad.....	4,884
Scipio	Wheeler.....	5,113
Session Settlement.....	Pacific Railroad Reports.....	4,183
Sévier Bridge.....	.....	4,765
Sévier Valley	Simpson.....	4,690
Silver City .....	.....	6,369
Skull Valley.....	Simpson.....	4,850
Skumpah	Wheeler.....	6,142
Smithfield .....	.....	4,616
Spanish Fork	Utah Southern Railroad.....	4,556
Springville.....	Utah Southern Railroad.....	4,525
Strawberry Valley.....	Wheeler.....	7,716
Sulphur Springs.....	Wheeler.....	5,400
Summit	Utah Southern Railroad.....	5,032
Terrace	Central Pacific Railroad.....	4,544
Tintic.....	Wheeler.....	4,833
Tuilla Valley.....	Pacific Railroad Reports.....	4,487
Uinta	Union Pacific Railroad.....	4,544
Uinta Agency.....	.....	6,133
Utah Lake Valley.....	Simpson.....	4,540
Wahsatch	Union Pacific Railroad.....	6,851
Wanship .....	.....	6,200
Washie-pah-ghun Spring.....	.....	4,421
Washington.....	.....	2,906
Weber	Union Pacific Railroad.....	5,096
Wellsville	Hayden	4,568
White Sulphur Spring.....	.....	5,201
White Valley.....	Simpson.....	4,360
White Valley.....	Wheeler.....	4,436
Willard City.....	Hayden	4,350
Willow Spring.....	Wheeler.....	4,421
Wood's Crossing.....	Utah Central Railroad.....	4,299
York	Utah Southern Railroad.....	4,947

Washington.

Camp Pickett.....	Toner.....	150
Camp Semiahmoo.....	Toner.....	11
Cantonment Stevens.....	Pacific Railroad Reports.....	3,412
Clunas	Pacific Railroad Reports.....	3,633
Fort Bellingham.....	Medical Department, United States Army...	88
Fort Cascades	Toner.....	50

Washington—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Fort Colville	Pacific Railroad Reports	1,215
Fort Colville	Smithsonian Institution	1,963
Fort George .....	.....	100
Fort Okinokane .....	.....	779
Fort Steilacoom	Medical Department, United States Army ..	300
Fort Taylor .....	.....	636
Fort Townsend	Toner	135
Fort Vancouver	Medical Department, United States Army ..	50
Fort Wallawalla .....	.....	1,396
Fort Wallawalla	Mullan	800
Fort Wallawalla	Toner	999
In-chats-chau .....	.....	2,750
Kalama	Toner	45
Olympia .....	.....	300
Simquel	Pacific Railroad Reports	3,327
Spokane House	Pacific Railroad Reports	1,200
Steilacoom .....	.....	1,300
Vancouver .....	.....	0
Wallawalla Mission .....	.....	2,100

Wyoming.

Archer	Union Pacific Railroad	6,035
Aspen	Union Pacific Railroad	7,809
Atlantic City	Toner	7,666
Barrel Spring	Toner	6,854
Baxter	Toner	6,300
Big Pond Stage Station	Toner	6,541
Bitter Creek	Union Pacific Railroad	6,675
Black Buttes	Union Pacific Railroad	6,548
Boleter	Toner	4,325
Bridger	Union Pacific Railroad	6,758
Bryan	Union Pacific Railroad	6,323
Buford	Union Pacific Railroad	7,808
Camp Brown (old)	Jones	5,447
Camp Brown	Jones	5,498
Camp Stambaugh	Jones	7,767
Camp Walbach	Petermann	6,449
Camp Walbach	Preliminary railroad-surveys	7,040
Carbon	Union Pacific Railroad	6,758
Carter	Union Pacific Railroad	6,530
Cheyenne	Union Pacific Railroad	6,075, 28
Cheyenne, signal-office	United States Signal-Bureau	6,058
Church Buttes	Union Pacific Railroad	6,298
Como	Union Pacific Railroad	6,691
Cooper's Lake	Union Pacific Railroad	7,061
Cre-ton	Union Pacific Railroad	7,026
Dana	Union Pacific Railroad	6,878
Deer Creek Agency	Smithsonian Institution	5,000
Devil's Gate	Petermann	6,028
Egbert	Union Pacific Railroad	5,307
Encampment Meadows	King	8,171
Evanston	Union Pacific Railroad	6,870
Evanston	Hayden	6,835
Fillmore	Toner	6,835
Fort Aspenhut	Lander	7,630
Fort Bridger .....	.....	6,753
Fort Bridger	Medical department, United States Army ..	6,656
Fort Fetterman	Petermann	4,973

Wyoming—Continued.

Towns, &c.	Authority or reference.	Elevation.
		<i>Feet.</i>
Fort Fetterman	Toner	5, 012
Fort Halleck	Toner	7, 800
Fort Laramie	Medical Department, United States Army	4, 519
Fort Laramie	Petermann	4, 470
Fort Phil Kearney	Medical Department, United States Army	6, 000
Fort Piney	Lander	7, 580
Fort Russell	Toner	6, 455
Fort Sanders	Union Pacific Railroad	7, 166
Fort Stambaugh	Toner	7, 684
Fort Steele	Union Pacific Railroad	6, 841
		6, 100
Gardner's River Springs	Hayden	} to 6, 500
Geyser Basin, lower	Hayden	7, 250
Geyser Basin, upper	Hayden	7, 400
Gilbert's Trading-Post	Smithsonian Institution	7, 400
Granite Canon	Union Pacific Railroad	7, 327
Granger	Union Pacific Railroad	6, 252
Green River	Union Pacific Railroad	6, 124
Greenville	Union Pacific Railroad	6, 560
Hallville	Toner	6, 590
Hampton	Toner	6, 500
Harney	Union Pacific Railroad	7, 882
Hazard	Union Pacific Railroad	6, 357
Hillsdale	Union Pacific Railroad	5, 626
Howell	Toner	7, 090
Independence Rock	Petermann	6, 187
Jackson's Hole	Raynolds	6, 000
Laramie	Union Pacific Railroad	7, 143
Latham	Toner	6, 900
Lawrence	Toner	6, 200
Leroy	Union Pacific Railroad	7, 100
Lookout	Union Pacific Railroad	7, 184
Marston	Toner	6, 245
Medicine Bow	Union Pacific Railroad	6, 560
Miller		5, 908
Millis	Toner	6, 790
Miser	Union Pacific Railroad	6, 824
Mud Volcanoes	Hayden	7, 712
Mud Volcanoes	Lndlow	7, 626
Otto	Union Pacific Railroad	6, 754
Pacific Springs	Toner	7, 144
Percy	Union Pacific Railroad	6, 955
Peshen's Store	King	6, 500
Piedmont	Union Pacific Railroad	6, 515
Pierre's Hole	Raynolds	6, 400
Pine Bluffs	Union Pacific Railroad	5, 061
Point of Rocks	Union Pacific Railroad	6, 477
Rawlins	Union Pacific Railroad	6, 730
Red Buttes	Union Pacific Railroad	7, 360
Red Desert	Union Pacific Railroad	6, 703
Rock Creek	Union Pacific Railroad	6, 702
Rock Springs	Union Pacific Railroad	6, 265
Saint Mary's	Union Pacific Railroad	6, 753
Salt Wells	Union Pacific Railroad	6, 346
Separation	Union Pacific Railroad	6, 897
Sherman	Union Pacific Railroad	8, 269
Simpson	Union Pacific Railroad	6, 904
South Pass City	Petermann	7, 857
Sulphur Springs, near Bridg- er's Pass	King	7, 008
Sweetwater Bridge	Smithsonian Institution	7, 000

Wyoming—Continued.

Towns, &c.	Authority or reference.	Elevation.
Table Rock.....	Union Pacific Railroad.....	<i>Feet.</i> 6,881
Three Crossings	Petermann	6,134
Walbach Spring	King.....	6,927
Walcott's		6,800
Washakie	Union Pacific Railroad.....	6,691
Wilcox.....	Toner	7,033
Wyoming City.....	Union Pacific Railroad.....	7,086

TABLE II.

APPALACHIAN MOUNTAIN SYSTEM.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas in ft.	Elevation. <i>Feet.</i>
Mount Abraham		Me	Geological Survey		3,388
Mount Adams	White M'tns	N. H	Toner		5,794
Mount Agamenticus		Me	Toner		673
Mount Alexander	Great Smoky	N. C	Guyot	b	6,447
Amos Plott's Balsam					6,278
Ampersand Mountain	Adirondacks	N. Y	Adirondack Surv	b	3,433
Andrew Mountain	Adirondacks	N. Y	Adirondack Surv	b	3,216
Mount Anthony	Green	Vt	Geological Survey	b	2,505
Mount Ascutney	Green	Vt	Geological Survey	b	3,320
Bald Mountain	Black M'tns	N. C	Guyot	b	5,550
Bald Mountain	Green M'tns	Vt	Geological Survey	b	3,124
Bald Peak	Adirondacks	N. Y	Geological Survey	b	2,065
Bald Peak		Mass	Guyot	b	2,624
Bald Mountain	Adirondacks	N. Y	Adirondack Surv	b	2,302
Bald Peak (Moriah)	Adirondacks	N. Y	Adirondack Surv	b	2,120
Baldface Mountain	Adirondacks	N. Y	Adirondack Surv	b	3,904
Balm of Gilead M'tn	Adirondacks	N. Y	Adirondack Surv	b	1,953
Balsam Cone	Black M'tns	N. C	Guyot	b	6,671
Barker's Mountain		Me	Toner		2,551
Bartlett Mountain	Adirondacks	N. Y	Adirondack Surv	b	3,715
Basin Mountain	Adirondacks	N. Y	Adirondack Surv	b	4,906
Big Craggy Mountain	Black M'tns	N. C	Guyot	b	6,090
Big Stone Mountain	Great Smoky	Tenn	Guyot	b	5,614
Bill Merrill's Mountain		Me	Toner		1,750
Black Brother	Black M'tns	N. C	Guyot	b	6,619
Black Rock	Great Balsam	N. C	Guyot	b	5,815
Blackstock Knob	Black M'tns	N. C	Guyot	b	6,380
Blue Mountain	Adirondacks	N. Y	Adirondack Surv	b	3,825
Blue Mountain		N. H	Guyot	b	4,370
Blue Mountain		Me	Petermann		2,700
Boreas Mountain	Adirondacks	N. Y	Geological Survey	b	3,726
Bowlen's Pyramid	Black M'tns	N. C	Guyot	b	6,348
Brick House	White	N. H	Guyot	b	3,850
Brother Plott	Great Balsam	N. C	Guyot	b	6,246
Mount Buckley	Great Smoky	N. C	Guyot	b	6,599
Bull's Head	Black M'tns	N. C	Guyot	b	5,935
Bulwagga Mountain	Adirondacks	N. Y	Geological Survey	b	1,260
Mount Burke		Vt	Petermann		3,500
Burnt Mountain	Adirondacks	N. Y	Adirondack Surv	b	2,122
Camel's-hump	Green	Vt	Guyot	b	4,088
Camel's-hump	Adirondacks	N. Y	Adirondack Surv	b	3,548
Cannon Mountain	White	N. H	Guyot	b	3,850
Carrigain	White	N. H	Guyot	b	4,678
Carr's Mountain	White	N. H	Guyot	b	3,480
Mount Carter	White	N. H	Guyot	b	4,830
Cat-tail Peak	Black M'tns	N. C	Guyot	b	6,611
Cherry Mountain		N. H	Guyot	b	3,670
Chicama	White	N. H	Guyot	b	3,540
Chilhowee Mountain	Great Smoky	Tenn	Guyot	b	2,452
Chimney Peak	Great Balsam	N. C	Guyot	b	6,234
Chinzy Knob	Great Smoky	Tenn	Guyot	b	5,588
Mount Clay	White	N. H	Guyot	b	5,553
Clingman's Dome	Great Smoky	Tenn	Guyot	b	6,660
Clingman's Mountain	Black	N. C	Guyot	b	6,707
Mount Clinton	White	N. H	Guyot	b	4,320
Cobble Hill	Adirondacks	N. Y	Adirondack Surv	b	1,936

Appalachian Mountain system—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'nt.	Elevation.
Cockscomb	Black	N. C.	Guyot	b	<i>Feet.</i> 5,426
Cold Mountain	Great Balsam	N. C.	Guyot	b	6,063
Mount Colden	Adirondacks	N. Y.	Adirondack Surv ..	b	4,753
Cold Spring Mountain	Great Balsam	N. C.	Guyot	b	5,915
Mount Collins	Great Smoky	Tenn	Guyot	b	6,188
Mount Colvin	Adirondacks	N. Y.	Adirondack Surv ..	b	4,142
Corner Knob	Great Smoky	Tenn	Guyot	b	5,246
Craggy Pinnacle	Black	N. C.	Guyot	b	5,945
Crain's Mountain	Adirondacks	N. Y.	Adirondack Surv ..	b	3,289
Crawford Mountain	White	N. H.	Guyot	b	3,134
Cross Knob	Great Smoky	Tenn	Guyot	b	5,931
Cumberland M'tns .....	.....	Tenn	Whitney	b	2,600
Mount Curtis	Great Smoky	Tenn	Guyot	b	6,568
Mount Deception	White	N. H.	Guyot	b	2,449
Deer Mountain	Black	N. C.	Guyot	b	6,233
Devil's Ear Mountain	Adirondacks	N. Y.	Adirondack Surv ..	b	3,904
Mount Discovery	Adirondacks	N. Y.	Adirondack Surv ..	b	1,583
Mount Discovery (little)	Adirondacks	N. Y.	Adirondack Surv ..	b	1,376
Dix's Peak	Adirondacks	N. Y.	Adirondack Surv ..	b	4,916
Dix's Peak	Adirondacks	N. Y.	Geological Survey ..	b	5,200
Eagle Cliff	White	N. H.	Guyot	b	3,446
Eagle Head	White	N. H.	Guyot	b	4,216
Eagle Top	Great Smoky	Tenn	Guyot	b	5,433
Echo Mountain .....	.....	N. H.	Guyot	b	3,170
Mount Eolus .....	.....	Vt	Geological Survey ..	b	3,148
Mount Emmons	Adirondacks	N. Y.	Geological Survey ..	b	4,000
Equinox Mountain .....	.....	Vt	Guyot	b	3,872
Fodder's Bald M't'n .....	.....	Ga	Guyot	b	4,821
Forney Ridge Peak	Great Smoky	Tenn	Guyot	b	5,087
Mount Franklin	White	N. H.	Guyot	b	4,904
Mount Gasford .....	.....	Me	Petermann	b	1,600
Giants of the Valley	Adirondacks	N. Y.	Adirondack Surv ..	b	4,530
Mount Gibbs	Black	N. C.	Guyot	b	6,591
Gilmanton Hill	White	N. H.	Guyot	b	1,329
Gothic Mountain	Adirondacks	N. Y.	Adirondack Surv ..	b	4,744
Grandfather Mountain	Black	N. C.	Guyot	b	5,897
Graves Mountain	Adirondacks	N. Y.	Adirondack Surv ..	b	2,345
Gray Peak	Adirondacks	N. Y.	Adirondack Surv ..	an	4,984
Graybeard	Black	N. C.	Guyot	b	5,448
Graylock .....	.....	Mass .....	.....	b	3,505
Great Bald Mountain	Great Smoky	Tenn	Guyot	b	4,922
Great Frog Mountain	Great Smoky	Tenn	Guyot	b	4,226
Great Hogback	Black	N. C.	Guyot	b	4,792
Great Pisgah	Great Balsam	N. C.	Guyot	b	5,757
Green's Cliff	White	N. H.	Guyot	b	1,329
Mount Guyot	Great Smoky	Tenn	Guyot	b	6,636
Hairy Bear	Black	N. C.	Guyot	b	6,610
Hallback	Black	N. C.	Guyot	b	6,403
Hangover	Great Smoky	Tenn	Guyot	±	5,600
Haystack Mountain	Adirondacks	N. Y.	Adirondack Surv ..	b	5,007
Haystack M't'n (little)	Adirondacks	N. Y.	Adirondack Surv ..	b	4,855
Mount Henry	Great Smoky	Tenn	Guyot	b	6,373
Herrick	Green	Vt	Guyot	b	2,692
Herrick	Green	Vt	Geological Survey ..	b	2,661
High Pinnacle	Black	N. C.	Guyot	b	5,690
High Pinnacle	Blue Ridge .....	.....	Guyot	b	5,701
Mount Hoffman	Adirondacks	N. Y.	Adirondack Surv ..	±	3,728
Hogback	Green	Vt	Guyot	b	3,648
Holmes Hill	Adirondacks	N. Y.	Adirondack Surv ..	b	2,122
Mount Holyoke .....	.....	Mass	Toner	b	1,120

Appalachian Mountain system—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas ^{mt} .	Elevation. <i>Feet.</i>
Mount Hoosac.....		Mass.....	Toner.....		2,510
Mount Houghton.....		Mich.....	Foster & Whitney.....	b	1,511
Huckleberry Knob.....	Great Balsam.....	N. C.....	Guyot.....	b	5,482
Hurricane Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	3,763
Jay Peak.....	Green.....	Vt.....	Geological Survey.....	b	4,018
Mount Jefferson.....	White.....	N. H.....	Guyot.....	b	5,714
Junaleska.....	Great Balsam.....	N. C.....	Guyot.....	b	6,223
Katabdin.....		Me.....	Eastman.....	b	5,200
Kearsarge.....	White.....	N. H.....	Eastman.....	b	2,726
Killington Peak.....		Vt.....	Guyot.....	b	4,221
Kinsman Mountain.....		N. H.....	Guyot.....	b	4,200
Mount Lafayette.....	White.....	N. H.....	Guyot.....	b	5,290
Laurel Peak.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,922
Laurentide Mountain (highest).....		N'r Lake Superior.....	Hind.....	b	1,950
Mount Leconte.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,612
Lewey Lake Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	3,904
Lickstone Mountain.....	Great Balsam.....	N. C.....	Guyot.....	b	5,707
Mount Lincoln.....	Green.....	Vt.....	Guyot.....	b	4,078
Little Munroe.....	White.....	N. H.....	Guyot.....	b	5,204
Lone Balsam.....	Great Balsam.....	N. C.....	Guyot.....	b	5,898
Long Pond Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	2,269
Long Tom.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	2,604
Mount Love.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,443
Luftee Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,232
Mount MacIntyre.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	5,202
Mount MacIntyre.....	Adirondacks.....	N. Y.....	Geological Survey.....	b	5,183
McKay's Mountain.....		Mich.....	Foster & Whitney.....	b	1,627
Mount McMartin.....	Adirondacks.....	N. Y.....	Geological Survey.....	b	5,000
Macomb's Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	4,371
Mount Madison.....	White.....	N. H.....	Geological Survey.....	b	5,365
Mad River Peak.....	White.....	N. H.....	Guyot.....	b	4,397
Mount Mansfield.....	Green.....	Vt.....	Guyot.....	b	4,430
Mount Marcy.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	5,403
Mount Marcy.....	Adirondacks.....	N. Y.....	Guyot.....	b	5,379
Master Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,013
Mount Maxham.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	2,511
Mount Mingus.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,694
Mount Mitchell.....		N. C.....	Guyot.....	b	6,582
Mount Monadnock.....	White.....	N. H.....	Guyot.....	b	3,718
Moose Hillock.....	White.....	N. H.....	Guyot.....	b	4,790
Mount Morijah.....	White.....	N. H.....	Guyot.....	b	4,653
Mud Creek Bald M't'n.....		Ga.....	Guyot.....	b	4,705
Mount Munroe.....	White.....	N. H.....	Toner.....	b	5,384
Neighbor.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,771
Nipple Top.....	Adirondacks.....	N. Y.....	Geological Survey.....	b	4,900
Nipple Top.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	4,684
North Bald Mountain.....	Great Smoky.....	Tenn.....	Guyot.....	b	4,711
North Beacon.....	Highlands.....	N. Y.....	Guyot.....	b	1,471
North River Mountain.....	Adirondacks.....	N. Y.....	Geological Survey.....	b	3,600
North River Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	3,759
Oona Mountain.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,135
Old Bald Mountain.....	Great Balsam.....	N. C.....	Guyot.....	b	5,786
Old Field Mountain.....	Great Balsam.....	N. C.....	Guyot.....	b	5,100
Otter, peaks of.....		Va.....	Guyot.....	b	3,993
Owl's Head.....		N. H.....	Guyot.....	b	2,950
Owl's Head.....	Adirondacks.....	N. Y.....	Adirondack Surv.....	b	2,825
Panther Knob.....	Great Balsam.....	N. C.....	Guyot.....	b	5,359
Peck's Peak.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,232
Fernigewasset Peak.....		N. H.....	Guyot.....	b	4,420

Appalachian Mountain system—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
Perry Knob.....	Great Balsam...	N. C.....	Guyot.....	b	<i>Feet.</i> 5,026
Pico Peak.....	Green.....	Vt.....	Guyot.....	b	3,954
Mount Pisgah.....	.....	.....	Guyot.....	b	5,757
Mount Pleasant.....	White.....	N. H.....	Guyot.....	b	4,764
Mount Pleasant.....	.....	Me.....	Guyot.....	b	2,021
Porcupine M'tns (highest).	.....	Mich.....	Foster and Whitney.	b	2,007
Potatoe Top.....	.....	.....	Guyot.....	b	6,393
Potatoe Hill.....	Green.....	Vt.....	Geological Survey.	b	3,986
Prospect Mountain.....	Green.....	Vt.....	Geological Survey.	b	2,690
Ragged Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,163
Raven Hill.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	1,982
Raven Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,230
Mount Redfield.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,688
Richland Balsam.....	Great Balsam.....	N. C.....	Guyot.....	b	6,425
Rift Hill.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	2,141
Roan Mountain.....	Black.....	N. C.....	Guyot.....	b	6,306
Rockstand Knob.....	Great Balsam.....	N. C.....	Guyot.....	b	6,002
Rocky Face.....	Great Balsam.....	N. C.....	Guyot.....	b	6,031
Rocky Knobs (south peak).	Black.....	N. C.....	Guyot.....	b	5,306
Rocky Trail Peak.....	Black.....	N. C.....	Guyot.....	b	6,488
Saddle Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,536
Saddleback.....	.....	Me.....	Petermann.....	.....	3,700
Mount Safford.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,535
Saltash Mountain.....	Green.....	Vt.....	Geological Survey.	b	2,850
Sandwich Dome.....	White.....	N. H.....	Guyot.....	b	3,969
Santanoni Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,644
Scroon Mountain.....	Adirondacks.....	N. Y.....	Geological Survey.	b	3,200
Mount Seward.....	Adirondacks.....	N. Y.....	Geological Survey.	.....	5,100
Mount Seward.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,385
Mount Seymour.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	3,929
Shrewsbury Peak.....	Green.....	Vt.....	Guyot.....	b	3,845
Silver Lake Mountain.	Adirondacks.....	N. Y.....	Adirondack Surv..	b	2,604
Mount Suiapee.....	.....	N. H.....	Petermann.....	.....	1,636
Skylight Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,978
Snake Mountain.....	Green.....	Vt.....	Geological Survey.	b	1,310
Snaky Mountain.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,195
Snowy Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	3,904
South Mountain (Balm of Gilead).	Adirondacks.....	N. Y.....	Adirondack Surv..	b	1,953
South McIntyre M't'n..	Adirondacks.....	N. Y.....	Adirondack Surv..	b	4,938
Speculator Mountain.....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	3,041
Spruce Ridge Top.....	Great Balsam.....	N. C.....	Guyot.....	b	6,076
Standing Indian.....	Nantihala.....	N. C.....	Guyot.....	b	5,518
Mount Sterling.....	Green.....	Vt.....	Geological Survey	b	3,700
Mount Sugarloaf.....	.....	.....	Guyot.....	b	76,403
Table Mountain.....	White.....	N. H.....	Guyot.....	b	3,305
Tahawus (Marcy).....	Adirondacks.....	N. Y.....	Adirondack Surv..	b	5,403
Taylor's Mountain.....	Adirondacks.....	N. Y.....	Geological Survey.	.....	4,500
Thermometer Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,157
Three Brothers (highest).	Great Smoky.....	Tenn.....	Guyot.....	b	5,907
Thunderhead.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,520
Thunder Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	5,682
Tray Mountain.....	.....	Ga.....	Guyot.....	b	4,426
Tremont.....	White.....	N. H.....	Guyot.....	b	3,393
Tricorner Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	6,188
Turkey Knob.....	Great Smoky.....	Tenn.....	Guyot.....	b	4,740
Twin Mountain.....	White.....	N. H.....	Guyot.....	b	4,930
Wachusett.....	.....	Mass.....	Guyot.....	b	2,018

Appalachian Mountain system—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
Wallface Mountain....	Adirondacks....	N. Y.	Adirondack Surv..	b	<i>Feet.</i> 3,893
Mount Washington....	White.....	N. H.	Guyot	b	6,288
Mount Washington....	White.....	N. H.	Railroad	l	
Westener Bald M't'n....	Great Balsam....	N. C.	Guyot	b	5,692
Whiteface	White.....	N. H.	Guyot	b	4,030
Whiteface	Adirondacks....	N. Y.	Geological Survey.	b	4,900
Whiteface	Adirondacks....	N. Y.	Adirondack Surv..	b	4,955
White Rock Ridge....	Great Balsam....	N. C.	Guyot	b	5,528
White Rocks.....	Green	Vt	Geological Survey.	b	2,532
White Side.....	Allegheny .....	.....	Guyot	b	4,931
White Top.....	Black	Va., N. C., & Tenn.	Guyot	b	5,530
Wild Cat Mountain ...	White.....	N. H.	Guyot	b	4,350
Mount Willey.....	White.....	N. H.	Guyot	b	4,300
Yeates's Knob.....	Black	N. C.	Guyot	b	5,975
Yellow Mountain.....	Black	N. C.	Guyot	b	5,108

"b" indicates that the measurement was made by barometer or depended on barometric measurements; "an," aneroid barometer; "l," level.

TABLE III.
ROCKY MOUNTAINS.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas ^{nt} .	Elevation.
					<i>Feet.</i>
Abiquiu Peak.....		N. M.....	Wheeler.....	b.....	11,240
Mount Adams.....	Cascade.....		Vansant.....		13,258
Mount Adams.....	Cascade.....		Petermann.....		9,570
Adakh.....		Alaska.....	Coast Survey.....	*.....	5,678
Mount Aeolus.....	San Juan.....	Colo.....	Hayden.....	b.....	14,054
Agency Knob.....	San Juan.....	Colo.....	Wheeler.....	b.....	12,274
Akutan.....		Alaska.....	Coast Survey.....	*.....	3,888
Alameda Hills.....		Cal.....	Toner.....		800
Mount Anderson.....	Sierra Nevada.....	Cal.....	Whitney.....	b.....	9,000
Anita Peak.....	Park.....	Colo.....	King.....		10,661
Mount Antero.....	Sawatch.....	Colo.....	Wheeler.....		13,853
Mount Antero.....	Sawatch.....	Colo.....	Hayden.....	t.....	14,245
Arapahoe Peak.....	Front.....	Colo.....	Hayden.....	b.....	13,520
Arrow Peak.....	Laramie.....	Wyo.....	King.....		8,683
Atka.....		Alaska.....	Coast Survey.....	*.....	4,988
Avatanak.....		Alaska.....	Coast Survey.....	*.....	1,207
Mount Bache.....	Coast.....	Cal.....	Petermann.....		3,790
Mount Baker.....	Cascade.....	W. T.....	Coast Survey.....		10,719
Mount Baker.....	Cascade.....	W. T.....	Petermann.....		11,100
Bald Mountain.....	Wind River.....	Wyo.....	Jones.....	b.....	9,897
Bald Mountain.....	Front.....	Colo.....	Hayden.....	b.....	11,493
Baldy Peak.....	Sierra Blanca.....	Colo.....	Hayden.....	t.....	14,176
Baldy Peak.....		N. M.....	Wheeler.....	b.....	12,661
Baldy Peak.....		Utah.....	Wheeler.....		11,730
Mount Balley.....	Coast.....	Cal.....	Whitney.....		6,357
Basalt Peak.....		Colo.....	Wheeler.....	b.....	11,565
Bastion Mountain.....		Wyo.....	King.....		6,991
Battle Mountain.....		Wyo.....	King.....		8,991
Bear Peak.....		N. M.....	Wheeler.....		8,081
Bear Butte.....	Black Hills.....	Dak.....	Petermann.....		4,800
Lat. 38° 31' long. 113° 17'	Beaver Creek.....	Utah.....	Wheeler.....		9,248
Mount Bechler.....	Wahsatch.....	Utah.....	Hayden.....	b.....	9,716
Belknap Peak.....		Utah.....	Wheeler.....		11,894
Bellevue Peak.....	Park.....	Wyo.....	King.....		9,820
Bellevue Mountain.....	Elk.....	Colo.....	Hayden.....	b.....	12,350
Bergen Peak.....	Front.....	Colo.....	Hayden.....	b.....	9,555
Bergen's Mountain.....		Colo.....	Hayden.....	b.....	9,773
Bielowski.....	Coast.....	Cal.....	Whitney.....		3,269
Big Horn Mountains.....		Wyo.....	Raynolds.....		8-12,000
Bill William's Mount'n.....		Ariz.....	Ives.....		6,620
Mount Blackmore.....		Mont.....	Hayden.....	b.....	10,134
Lat. 44° 26' long. 10° 40'	Black Hills.....	Dak.....	Jenney.....		6,200
Lat. 44° 11' long. 103° 41'	Black Hills.....	Dak.....	Jenney.....		6,800
Lat. 43° 50' long. 103° 45'	Black Hills.....	Dak.....	Jenney.....		7,000
Black Butte.....		Wyo.....	King.....		8,176
Blaine's Peak.....	San Juan.....	Colo.....	Wheeler.....		13,905
Blanca Peak.....	Sierra Blanca.....	Colo.....	Hayden.....	b.....	14,464
Lat. 37° 25' long. 105° 10'	Sierra Blanca.....	Colo.....	Hayden.....		11,757
Lat. 37° 15' long. 105° 12'	Sierra Blanca.....	Colo.....	Hayden.....		13,719
Lat. 37° 0' long. 105° 15'	Sierra Blanca.....	Colo.....	Hayden.....		12,840
Lat. 36° 53' long. 105° 20'	Sierra Blanca.....	N. M.....	Hayden.....		12,684
	Blue Mountains.....	Oreg.....	Fremont.....		8-9,000
Bogosloff.....		Alaska.....	Coast Survey.....	*.....	844
Peak of Bouldys.....		Alaska.....	Coast Survey.....	*.....	1,145

* Sextant.
† Above base.
‡ Average height.
§ Highest peak.

a. Aneroid barometer.
b. Mercurial barometer.
l. Levels.
t. Trigonometrical measurement.

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
					<i>Feet.</i>
Bradley's Peak.....	Seminole M't'ns.	Wyo.....	.....	.....	9,500
Mount Brewer.....	Sierra Nevada..	Cal.....	Whitney.....	b.....	13,886
Bridger's Peak.....	.....	Mont.....	Hayden.....	b.....	9,002
Bristol Head.....	San Juan.....	Colo.....	Hayden.....	b.....	12,800
Mount Bross.....	Middle Park.....	Colo.....	Hayden.....	b.....	9,468
Mount Bross.....	Park.....	Colo.....	Hayden.....	t.....	.....
Buck Mountain.....	Park.....	Colo.....	King.....	.....	10,877
Buckskin Mountain...	Park.....	Colo.....	Hayden.....	b.....	14,296
Lat. 36° 16' long. 114° 10'	Buckskin M't'ns.	Nev.....	Wheeler.....	.....	4,800
Lat. 36° 9' long. 114° 14'	Buckskin M't'ns.	Nev.....	Wheeler.....	.....	3,800
Buffalo Peak.....	Park.....	Colo.....	Hayden.....	b.....	13,541
Buffalo Peak.....	Park.....	Colo.....	Wheeler.....	.....	13,328
Burro Peak.....	Unita.....	Utah.....	King.....	.....	12,834
Mount Byers.....	Middle Park.....	Colo.....	Hayden.....	b.....	12,778
Camel Peak.....	Park.....	Colo.....	King.....	.....	9,158
Mount Cameron.....	.....	Colo.....	.....	.....	14,000
Cameron's Cone.....	Front.....	Colo.....	Hayden.....	t.....	11,460
Mount Canby.....	San Juan.....	Colo.....	Hayden.....	b.....	13,274
Mount Canby.....	San Juan.....	Colo.....	Wheeler.....	.....	13,356
Capitol Mountain.....	Elk.....	Colo.....	Hayden.....	t.....	13,997
Cariso Mountain.....	.....	Ariz.....	Hayden.....	b.....	9,280
Mount Carlos.....	Coast.....	Cal.....	Whitney.....	b.....	4,977
Castle Peak.....	Sierra Nevada...	Cal.....	Petermann.....	.....	13,000
Castle Peak.....	Sierra Nevada...	Cal.....	Whitney.....	b.....	12,500
Castle Peak.....	Elk.....	Colo.....	Hayden.....	b.....	14,115
Cathedral Rock.....	Yosemite Valley.	Cal.....	Whitney.....	†.....	3,000
Charleston Peak.....	.....	Nev.....	Petermann.....	.....	10,874
Checolsum.....	Cascade.....	W. T.....	Petermann.....	.....	5,706
Cheyenne Mountain...	Front.....	Colo.....	Hayden.....	t.....	9,948
Chief.....	Front.....	Colo.....	Hayden.....	b.....	11,833
Chimney Peak.....	Laramie.....	Wyo.....	King.....	.....	8,168
Chimney Rock.....	Wind River.....	Wyo.....	Jones.....	.....	11,853
Chuchehum.....	Cascade.....	W. T.....	Petermann.....	.....	11,700
Chuqul.....	.....	Alaska.....	Coast Survey.....	*.....	3,109
Cinnamon Mountain...	Elk.....	Colo.....	Hayden.....	t.....	12,600
Clark's Peak.....	Front.....	Colo.....	King.....	.....	13,167
Clayton Cone.....	.....	Colo.....	Hayden.....	.....	9,500
Cloud Cone.....	.....	Mont.....	Petermann.....	.....	7,300
Coal Mountain.....	Uinta.....	Colo.....	King.....	.....	8,430
Cochetopa Dome.....	.....	Colo.....	Wheeler.....	b.....	11,673
Coffintop.....	Middle Park.....	Colo.....	Hayden.....	b.....	8,003
Comanche Peak.....	Front.....	Colo.....	King.....	b.....	11,929
Cone Peak.....	.....	N. M.....	Wheeler.....	b.....	12,690
Conical Butte.....	Middle Park.....	Colo.....	Hayden.....	b.....	9,848
Mount Constance.....	.....	W. T.....	Petermann.....	.....	7,777
Mount Cook.....	Cascade.....	Alaska.....	Dall.....	*.....	16,000
Cooper Range (crossed by Simpson).....	.....	Nev.....	.....	b.....	6,757
Corral Peak.....	Middle Park.....	Colo.....	Hayden.....	b.....	11,333
Corson Peak.....	Uinta.....	Utah.....	King.....	b.....	9,630
Costilla Peak.....	Blanca.....	N. M.....	Hayden.....	b.....	12,634
Mount Cowan.....	Yellowstone.....	Mont.....	Hayden.....	b.....	10,351
Cox Peak.....	Uinta.....	Utah.....	.....	.....	13,250
Crater Buttes, mouth Henry's Fork.....	.....	Idaho.....	Hayden.....	b {	E. 5,638 W. 5,425
Crescent Peak.....	Park.....	Colo.....	King.....	.....	10,255
Crested Butte.....	Elk.....	Colo.....	Hayden.....	b.....	12,052
Crestone.....	Sangre de Cristo	Colo.....	Hayden.....	b.....	14,233
Mount Crillon.....	Cascade.....	Alaska.....	Dall.....	*.....	15,900

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas ^{nt} .	Elevation.
					<i>Feet.</i>
Crook's Tower	Black Hills.	Dak.	Jenney .....	.....	7, 600
Cross Mountain .....	.....	Ariz.	Petermann .....	.....	5, 182
Culebra Peak	Blanca	Colo	Hayden	b	14, 069
Mount Daly	Elk	Colo	Hayden	b	13, 193
Mount Dana	Sierra Nevada ..	Cal	Whitney	b	13, 227
Datili Range, Western Peak.	.....	N. M.	Wheeler	b	9, 440
Mount Davidson .....	.....	Nev.	King	b	7, 827
Mount Dawes	Uinta	Utah	Petermann .....	.....	13, 300
Deer Mountain	Park	Wyo	King .....	.....	8, 377
Mount Delano	Yellowstone	Mont.	Hayden	b	10, 200
Delham Peak	Park	Wyo	King .....	.....	11, 524
Mount Derby	White R. Plateau ..	Colo	Hayden	b	12, 253
Mount Devastation .....	.....	Alaska ..	Coast Survey .....	.....	5, 525
Monte Diablo	Coast	Cal	Whitney	l	3, 856
Diamond Peak	Uinta	Colo	King	b	9, 925
Lat. 40°, long. 105° 50'	Diamond	Nev.	Wheeler	b	10, 628
Mount Doane	Yellowstone	Wyo	Hayden	b	10, 118
Donel	White R. Plateau ..	Colo	Hayden	b	12, 498
Donel	Yosemite Valley ..	Cal	Whitney	b	+4, 150
Double Mountain	Wichita	Texas	Petermann .....	.....	3, 824
Downieville Buttes	Sierra Nevada	Cal	Whitney .....	.....	8, 400
Dunn's Peak	San Juan	Colo	Wheeler	b	13, 502
Eagle Peak	Bitter Root	Idaho	Mullan .....	.....	7, 500
East Mountain	Uinta	Colo	King .....	.....	7, 588
Mount Edgcombe .....	.....	Alaska ..	Coast Survey .....	.....	2, 855
Egan Range .....	.....	Nev.	Wheeler	†	8, 000
Egan Range .....	.....	Nev.	Wheeler	§	11, 200
Mount Elbert	Sawatch	Colo	Hayden	t	14, 351
El Capitan	Yosemite Valley ..	Cal	Whitney .....	.....	+3, 300
Electric Peak .....	.....	Mont.	Hayden	b	10, 992
Elk Mountain	Medicine Bow	Wyo	King .....	.....	11, 511
Elk Mountains: ^a					
Latitude. Longitude.					
38 54 106 30	.....	Colo	Hayden .....	.....	12, 484
39 12 107 04	.....	Colo	Hayden .....	.....	12, 050
39 13 107 02	.....	Colo	Hayden .....	.....	12, 000
39 02 107 02	.....	Colo	Hayden .....	.....	12, 240
39 02 107	.....	Colo	Hayden .....	.....	13, 050
39 106 52	.....	Colo	Hayden .....	.....	13, 400
39 08 106 52	.....	Colo	Hayden .....	.....	12, 180
39 04 106 51	.....	Colo	Hayden .....	.....	12, 990
39 05 106 51	.....	Colo	Hayden .....	.....	12, 780
39 06 106 48	.....	Colo	Hayden .....	.....	11, 230
39 02 106 54	.....	Colo	Hayden .....	.....	13, 150
39 03 106 46	.....	Colo	Hayden .....	.....	12, 330
39 106 47	.....	Colo	Hayden .....	.....	13, 550
38 58 106 47	.....	Colo	Hayden .....	.....	12, 750
39 07 106 59	.....	Colo	Hayden .....	.....	13, 230
39 06 106 58	.....	Colo	Hayden .....	.....	12, 900
39 02 106 54	.....	Colo	Hayden .....	.....	13, 150
39 01 106 58	.....	Colo	Hayden .....	.....	13, 200
39 106 58	.....	Colo	Hayden .....	.....	13, 000
39 107 04	.....	Colo	Hayden .....	.....	12, 203
39 08 107 10	.....	Colo	Hayden .....	.....	12, 750
39 07 107 09	.....	Colo	Hayden .....	.....	12, 470

^a In the Elk Mountains of Colorado there are but two peaks, Castle Peak and Maroon Mountain, which exceed 14,000 feet; of those whose summits reach above 13,000 feet there are seventeen.

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
Elk Mountains—Cont'd					<i>Feet.</i>
Latitude. Longitude.					
39 06 107 06	.....	Colo	Hayden .....	.....	11, 682
38 48 107 02	.....	Colo	Hayden .....	.....	11, 972
38 50 106 59	.....	Colo	Hayden .....	.....	12, 399
38 44 107 25	.....	Colo	Hayden .....	.....	10, 877
38 47 107 28	.....	Colo	Hayden .....	.....	11, 713
38 47 107 29	.....	Colo	Hayden .....	.....	11, 613
38 49 106 59	.....	Colo	Hayden .....	.....	12, 319
38 49 106 58	.....	Colo	Hayden .....	.....	12, 259
38 49 106 57 30	.....	Colo	Hayden .....	.....	12, 092
38 48 106 57	.....	Colo	Hayden .....	.....	11, 547
38 55 107 07	.....	Colo	Hayden .....	.....	12, 969
39 02 107 15	.....	Colo	Hayden .....	.....	12, 481
39 04 107 17	.....	Colo	Hayden .....	.....	12, 613
39 02 107 17	.....	Colo	Hayden .....	.....	12, 578
39 09 107 10	.....	Colo	Hayden .....	.....	11, 582
38 53 107 03	.....	Colo	Hayden .....	.....	12, 220
38 53 107 02	.....	Colo	Hayden .....	.....	12, 230
38 52 107 16	.....	Colo	Hayden .....	.....	12, 176
38 51 107 15	.....	Colo	Hayden .....	.....	12, 003
35 51 107 14	.....	Colo	Hayden .....	.....	12, 312
38 51 107 13	.....	Colo	Hayden .....	.....	12, 250
38 50 107 12 30	.....	Colo	Hayden .....	.....	12, 238
38 43 107 12	.....	Colo	Hayden .....	.....	12, 920
38 42 107 11	.....	Colo	Hayden .....	.....	12, 841
38 43 107 13	.....	Colo	Hayden .....	.....	12, 861
38 43 107 09	.....	Colo	Hayden .....	.....	12, 468
38 45 107 12	.....	Colo	Hayden .....	.....	12, 746
38 43 107 23	.....	Colo	Hayden .....	.....	11, 749
38 44 107 22	.....	Colo	Hayden .....	.....	11, 715
38 49 107 23	.....	Colo	Hayden .....	.....	12, 688
38 46 107 33	.....	Colo	Hayden .....	.....	10, 634
38 48 107 31	.....	Colo	Hayden .....	.....	11, 337
38 45 107 24	.....	Colo	Hayden .....	.....	10, 838
El Laté		Colo	Hayden	b	9, 840
Mount Ellis		Mont	Hayden	b	8, 419
Lat. 38° 28' long. 114° 42'	Ely Mountains	Nev	Wheeler .....	.....	8, 575
Lat. 38° 18' long. 114° 40'	Ely Mountains	Nev	Wheeler .....	.....	9, 500
Emigrant Peak	Yellowstone	Mont	Hayden	a	10, 629
Mount Emma		Nev	King .....	.....	6, 546
Mount Emmons	Uinta	Utah	King .....	.....	13, 694
Engineer Mountain	San Juan	Colo	Hayden	b	12, 971
Engineer Mountain	San Juan	Colo	Wheeler	b	13, 076
Engle Peak		Mont	Petermann .....	.....	7, 500
Escudilla Peak		Ariz	Wheeler .....	.....	10, 691
Ethel Peak	Park	Colo	King .....	.....	11, 976
Mount Evans	Front	Colo	Hayden	t	14, 330
Mount Fairweather	Cascade	Alaska	Malespina .....	.....	14, 589
			Tebenkoff .....	.....	14, 000
			Vasilieff .....	.....	13, 946
			Russian hyd. chart .....	.....	14, 708
			English ad'y chart .....	.....	14, 708
			Tebenkoff, ch'rt vii .....	.....	13, 864
			Dall	*	15, 500
					± 150
Fisher's Peak	Raton	Colo	Hayden	b	9, 460
Flat Mountain		Wyo	Hayden	b	9, 704

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Elevation.
Mount Flora.....	Front.....	Colo.....	Parry.....	b.....	12,878
Mount Forbes.....		Brit. Am.....	Palliser.....		13,400
Fortification Mountain.		Colo.....	King.....		7,668
Lat. 38° 32' long. 114° 23'	Fortification.....	Nev.....	Wheeler.....		9,034
Lat. 38° 36' long. 114° 23'	Fortification.....	Nev.....	Wheeler.....		8,034
Lat. 38° 15' long. 114° 27'	Fortification.....	Nev.....	Wheeler.....		9,500
Lat. 38° 12' long. 114° 26'	Fortification.....	Nev.....	Wheeler.....		7,073
Fremont's Peak.....	Wind River.....	Wyo.....	Fremont.....	b.....	13,570
Frustum Mountain....	San Juan.....	Colo.....	Wheeler.....		13,893
Gallena Mountain.....	San Juan.....	Colo.....	Hayden.....	b.....	13,290
Gallinas Peak.....		N. Mex.....	Wheeler.....		9,798
Gareloi.....		Alaska.....	Coast Survey.....		5,334
Mount Garfield.....		Idaho.....	Hayden.....	b.....	9,704
Gass Mountain.....	Vegas.....	Nev.....	Petermann.....		6,200
Gavilaw Peak.....	Coast.....	Cal.....	Whitney.....	b.....	3,381
Geneva Peak.....		Nev.....	King.....		10,994
Gilbert's Peak.....	Uinta.....	Utah.....	King.....		13,687
Globe Mountain.....		Nev.....	King.....		11,237
Goryalaya.....		Alaska.....	Coast Survey.....		11,270
Gothic Mountain.....	Elk.....	Colo.....	Hayden.....	t.....	12,570
Grafton Peak.....		Nev.....	Wheeler.....		10,964
Mount Graham.....	Pinaleño.....	Ariz.....	Wheeler.....		10,516
Grand Encampment Mt.	Park.....	Wyo.....	King.....		11,003
Gray's Peak.....	Front.....	Colo.....	Hayden.....	t.....	14,341
Gray's Peak.....	Front.....	Colo.....	Whitney.....	b.....	14,319
Green Mountain.....		Colo.....	Hayden.....	b.....	7,993
Green's Peak.....		Ariz.....	Wheeler.....		10,093
Greenhorn Mountain..	Wet Mountains.....	Colo.....	Hayden.....	b.....	12,230
Griffith Mountain.....	Front.....	Colo.....	Hayden.....	b.....	11,273
Grizzly Peak.....	Sawatch.....	Colo.....	Hayden.....	b.....	13,956
Mount Gunnison.....	Elk.....	Colo.....	Hayden.....	b.....	12,688
Mount Guyot.....	Front.....	Colo.....	Hayden.....	b.....	13,565
Mount Guyot.....	Front.....	Colo.....	Parry.....	b.....	13,223
Hague's Peak.....	Front.....	Colo.....	King.....		13,632
Half Dome.....	Yosemite Valley.....	Cal.....	Whitney.....	b.....	14,737
Mount Hamilton.....	Coast.....	Cal.....	Whitney.....		4,440
Handie's Peak.....	San Juan.....	Colo.....	Hayden.....	b.....	13,997
Handie's Peak.....	San Juan.....	Colo.....	Wheeler.....	b.....	14,149
Hanz Peak.....	Park.....	Colo.....	King.....	b.....	10,906
Harney's Peak.....	Black Hills.....	Dak.....	Ludlow.....	b.....	9,700
Mount Harvard.....	Sawatch.....	Colo.....	Hayden.....	b.....	14,375
Mount Harvard.....	Sawatch.....	Colo.....	Whitney.....	b.....	14,452
Mount Harvard.....	Sawatch.....	Colo.....	Wheeler.....	b.....	14,151
Lat. 38° 27' long. 113° 35'	Hawawah.....	Utah.....	Wheeler.....		7,500
Lat. 38° 42' long. 113° 26'	Hawawah.....	Utah.....	Wheeler.....		8,123
Mount Hayden.....	Teton.....	Wyo.....	Hayden.....	t.....	13,858
Hayden Peak.....	Uinta.....	Utah.....	Petermann.....		13,500
Haystack Mountain....		Wyo.....	King.....		7,689
Mount Helena.....	Coast.....	Cal.....	Whitney.....	b.....	4,343
Helmet Peak.....	La Plata.....	Colo.....	Hayden.....	b.....	12,042
Mount Henry.....	Coast.....	Cal.....	Whitney.....	b.....	2,398
Hermano Peaks.....	El Laté.....	Colo.....	Hayden.....		9,014
Hesperis Mountain....	La Plata.....	Colo.....	Hayden.....	b.....	13,135
Mount Hodges.....	Uinta.....	Utah.....	King.....		13,500
Mount Hoffman.....	Sierra Nevada.....	Cal.....	Whitney.....	b.....	10,872
Holy Cross Mountain..	Sawatch.....	Colo.....	Hayden.....	t.....	14,176
Homestake Peak.....	Sawatch.....	Colo.....	Hayden.....	b.....	13,687
Mount Hood.....	Cascade.....	W. T.....	Williamson.....	b.....	11,225
Mount Hope.....		Ariz.....	Petermann.....		6,321

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas in 'nt.	Elevation.
					<i>Feet.</i>
Horseshoe Mountain...	Park	Colo	Whitney	b	13,988
Lat. 40°48' long. 115°16'	Humboldt	Nev	Wheeler		10,106
Lat. 40°37' long. 115°27'	Humboldt	Nev	Wheeler		12,430
Lat. 40°25' long. 115°32'	Humboldt	Nev	Wheeler		10,880
Lat. 40°13' long. 115°34'	Humboldt	Nev	Wheeler		11,842
Lat. 40° 7' long. 115°35'	Humboldt	Nev	Wheeler		10,318
Lat. 40° 3' long. 115°35'	Humboldt	Nev	Wheeler		7,754
Lat. 38°27' long. 115°35'	Humboldt	Nev	Wheeler		7,500
Lat. 38°42' long. 115°26'	Humboldt	Nev	Wheeler		8,123
Lat. 39°52' long. 113°23'	House	Utah	Wheeler		6,269
Lat. 39°35' long. 113°22'	House	Utah	Wheeler		9,916
Hunchback Mountain .	San Juan	Colo	Wheeler		13,755
Hunt's Peak ^a	Sangre de Cristo	Colo	Hayden	t	12,333
Hunt's Peak ^a	Sangre de Cristo	Colo	Wheeler		14,056
Crossed by Simpson at					6,674
Ike's Mountain	Cascade	W. T.	P. R. Reports	b	5,100
Illiaminsk		Alaska	Coast Survey		12,066
Iuyan Kara	Black Hills	Wyo	Jenny	b	6,700
Iuyan Kara	Black Hills	Wyo	Petermann		6,600
Iron Mountain		Wyo	King		6,903
Iron Island or chuqual.		Alaska	Coast Survey	†	3,100
Italian Peak	Elk	Colo	Hayden	b	13,359
James Peak	Trout	Colo	Hayden	b	13,283
Mount Jefferson	Cascade	W. T.	Humboldt	±	15,500
Mount Johns	Coast	Cal.	Petermann		8,000
Junction Peak	Uinta	Colo	King		7,868
Mount Kate		Nev	King		6,187
Kaweah Peak	Sierra Nevada	Cal.	Whitney		14,000
Mount Kendall	San Juan	Colo	Hayden		13,380
Mount Kendall	San Juan	Colo	Wheeler		13,542
Kioway Peak	Wichita	Tex	Petermann		2,895
Kishnehna		Mont.	Petermann		8,574
Kyska, North Peak		Alaska	Coast Survey		4,085
Lake Peak		N. M.	Wheeler		12,405
Mount Lamborn	Elk	Colo	Hayden	b	11,337
Land's End	Elk	Colo	Hayden	t	10,634
La Perouse Mountain .	Cascade	Alaska	Dall.	†	11,300
La Plata Mountain	Sawatch	Colo	Hayden	b	14,311
La Plata Peak	San Juan	Colo	Wheeler	b	13,316
Laramie Peak	Laramie	Wyo	L. O. Report, 1872		11,000
Laramie Peak	Laramie	Wyo	Petermann		10,000
Laramie Range		Wyo	L. O. Report, 1872.	}	7,000 to 9,000
Lassen's Butte	Sierra Nevada	Cal.	Whitney	b	10,577
Leon Peak		Colo	Hayden		10,954
Liberty Peak		Mont.	Hayden	b	9,162
Lillie's Mountain	Trout	Colo	Hayden	b	11,433
Mount Lincoln	Park	Colo	Hayden	l	14,297
Mount Lincoln	Park	Colo	Whitney	b	14,307
Little Missouri Buttes.	Black Hills	Dak	Jenny	b	5,500
Logan Peak	Uinta	Utah	Petermann		13,500
Lone Cove	San Juan	Colo	Hayden	b	12,761
Lone Peak		Utah	Petermann		10,713
Long's Peak	Tront	Colo	Hayden	b	14,271
Long's Peak	Trout	Colo	King	b	14,050
Long Valley Range :					
Lat. 39°52' long. 115°16'		Nev	Wheeler	b	8,802

^a Evidently these are not the same peak.

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
Long Valley, &c.—Continued. Lt. 39° 40', lg. 115° 18'		Nev	Wheeler	b	8,615
Lookout Range			Simpson	}	7,000 to 8,000
Mount Lyell	Sierra Nevada	Cal.	Whitney		b	13,217
McClellan Mountain	Trout	Colo	Hayden	t	13,423
McCloud's Peak	Main	Mont.	Mullan		7,500
Macomb's Peak	San Juan	Colo	Wheeler		13,151
Makushin		Alaska	Coast Survey	b	5,961
Mount Marcellina	Elk	Colo	Hayden	t	11,324
Mariposa Peak	Coast	Cal	Whitney	b	3,700
Marleston Peak		Nev	Wheeler		10,874
Maroon Mountain	Elk	Colo	Hayden	t	14,003
Marsh's Peak	Uinta	Utah	King		12,410
Martin Range		Nev	Cross'd by Simpson	b	7,135
Massive Mountain	Sawatch	Colo	Hayden	t	14,298
Mear's Peak	San Juan	Colo	Wheeler		13,008
Medicine Peak	Park	Wyo	King		12,231
					8,000
Medicine Bow M'tns		Wyo	L. O. Report, 1872.	}	to 12,000
Medicine Bow Range: Latitude. Longitude.					
41 12 105 59		Wyo	King		9,820
41 5 105 58		Wyo	King		9,753
41 27 106 31		Wyo	King		8,377
41 22 106 18		Wyo	King		12,231
41 33 106 13		Wyo	King		9,888
41 24 106 10		Wyo	King		10,596
Medicine Bow Range: Latitude. Longitude.					
40 37 105 55		Colo	King		13,167
40 37 105 42		Colo	King		11,929
40 29 105 38		Colo	King		13,832
40 31 105 30		Colo	King		11,452
					8,000
Mesa Verde (crest of)		Colo	Hayden	}	to 8,500
Mineral Range: Latitude. Longitude.					
38 35 112 50		Utah	Wheeler		7,442
38 33 112 49		Utah	Wheeler		7,851
38 28 112 46		Utah	Wheeler		9,087
38 23 112 50		Utah	Wheeler		9,600
Mill Peak	Park	Wyo	King		10,506
Monitor Peak	Front	Colo	King		11,270
Montin Range		Nev	Cross'd by Simpson		7,398
Mount Moran	Téton	Wyo	Hayden	t	12,800
Mormon Range (peak at south end), lat. 36° 53', long. 114° 25'.		Nev	Wheeler		9,395
Mount Morrison	Front	Colo	Hayden		7,900
Lt. 37° 24', lg. 114° 9'		Nev	Wheeler		5,795
Muddy Mountains, lat. 36° 24', long. 114° 27'.		Nev	Wheeler		4,000
Muddy Mountains	Park	Wyo	King		8,012
Mount Murchison		Brit. Am.	Palliser		13,500
Navesink Mountain		Colo	King		9,510

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Elevation. <i>Feet.</i>
Mount Nebo	Wasatch	Utah	Wheeler	b	11,992
Needle Range, lat. 38° 4', long. 114° 0'.	.....	Utah	Wheeler .....	.....	8,700
North Dome	Yosemite Valley	Cal	Whitney .....	.....	13,568
North Marn .....	.....	Colo	Hayden	b	11,973
Mount Observation	Coast	Cal	Petermann .....	.....	5,667
Ohio Peak	Elk	Colo	Hayden	b	11,972
Mount Olcott .....	.....	Nev	Wheeler .....	.....	7,974
Old Baldy .....	.....	Mont	Hayden	b	9,711
Mount Olympus	Elk	W. T	Wilkes .....	.....	8,138
Onjumi	Sierra Nevada	Cal	Whitney .....	.....	8,378
Ord Peak .....	.....	Ariz	Wheeler .....	.....	10,266
Mount Ornuo	White R. Plat'u.	Colo	Hayden	t	12,185
Mount Oso	San Juan	Colo	Hayden	b	13,640
Mount Oso	Coast	Cal	Whitney .....	.....	3,363
Mount Ouray	Sawatch	Colo	Hayden	b	14,043
Mount Owen	Elk	Colo	Hayden	b	12,969
Ozark Mountains .....	.....	Mo., Ark., and Ind Ter.	Appleton's Ency.	.....	1,500 to 2,000
Pacheco's Peak	Coast	Cal	Whitney .....	.....	2,845
Pagoda Peak	White R. Plat'u.	Colo	Hayden .....	.....	11,251
Pagosa Peak	San Juan	Colo	Hayden .....	.....	12,674
Pahranagut Range, lat. 37° 20', long. 115° 20'.	.....	Nev	Wheeler .....	.....	7,200
Park Cone	Elk	Colo	Hayden	b	12,021
Park View Mountain	Park	Colo	Hayden	b	12,433
Park Range:	.....	.....	.....	.....	.....
Lt. 39° 6', lg. 106° 11'.	.....	Colo	Hayden .....	.....	12,628
Lt. 39° 8', lg. 106° 10'.	.....	.....	.....	.....	13,569
Lt. 40° 58', lg. 107° 5'.	.....	.....	King .....	.....	9,138
Lt. 40° 53', lg. 107° 10'.	.....	.....	.....	.....	10,355
Lt. 40° 55', lg. 107° 27'.	.....	.....	.....	.....	9,510
Lt. 40° 47', lg. 107° 14'.	.....	.....	.....	.....	10,661
Lt. 40° 45', lg. 107° 0'.	.....	.....	.....	.....	10,817
Lt. 40° 50', lg. 106° 51'.	.....	.....	.....	.....	10,877
Lt. 40° 57', lg. 106° 43'.	.....	.....	.....	.....	11,001
Lt. 40° 48', lg. 106° 38'.	.....	.....	.....	.....	12,126
Lt. 40° 38', lg. 106° 40'.	.....	.....	.....	.....	11,976
Lt. 41° 12', lg. 107° 2'.	.....	Wyo	King .....	.....	11,063
Lt. 41° 2', lg. 106° 40'.	.....	Wyo	King .....	.....	11,524
Parry's Peak	Front	Colo	Parry	b	13,133
Mount Peale	Sierra la Sal	Utah	Hayden .....	.....	13,004
Pederal Peak .....	.....	N. Mex	Wheeler .....	.....	9,799
Pe-er-rea Mountain .....	.....	Nev	Cross'd by Simpson .....	.....	7,104
Pe-er-rea Mountains .....	.....	Nev	Cross'd by Simpson .....	.....	6,440
Pe-er-rea Mountains .....	.....	Nev	Cross'd by Simpson .....	.....	6,580
Pe-er-rea Mountains .....	.....	Nev	Cross'd by Simpson .....	.....	7,104
Pelado Peak .....	.....	N. Mex	Wheeler .....	.....	11,260
Phlox Mountain	Owl Creek	Wyo	Jones	b	9,136
Picacho Peak .....	.....	Ariz	Petermann .....	.....	4,754
Pidgeon's Peak	San Juan	Colo	Hayden	b	13,928
Pike's Peak	Front	Colo	Signal-Service	l	14,147
Pike's Peak	Front	Colo	Parry	b	14,216
Pilot Peak	Sierra Nevada	Cal	Whitney	b	7,605
Pine Bluffs .....	.....	Wyo	King .....	.....	8,878
Mount Pinos	Coast	Cal	Petermann .....	.....	9,500
Mount Pisgah	Front	Colo	Hayden .....	.....	10,322

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Elevation.
					<i>Feet.</i>
Platte Mountain.....	Front.....	Colo.....	Hayden.....	a.....	9,343
Point Carbon.....	Uinta.....	Utah.....	King.....	.....	11,443
Point of Rocks Peak.....	.....	Nev.....	King.....	.....	9,610
Pole Creek Mountain.....	San Juan.....	Colo.....	Wheeler.....	.....	13,400
Mount Powell.....	Park.....	Colo.....	Hayden.....	t.....	13,398
Mount Princeton.....	Sawatch.....	Colo.....	Hayden.....	b.....	14,196
Mount Princeton.....	Sawatch.....	Colo.....	Wheeler.....	.....	14,041
Mount Prometheus.....	.....	Nev.....	King.....	.....	8,256
Prospect Hill.....	Estes Park.....	Colo.....	Hayden.....	b.....	8,893
Mount Putnam.....	Portneuf.....	Idaho.....	Hayden.....	b.....	8,854
Pyramid Peak.....	Elk.....	Colo.....	Hayden.....	t.....	13,885
Pyramid Peak.....	White R. Plat'u.....	Colo.....	Hayden.....	.....	11,611
Pyramid Peak.....	Sierra Nevada.....	Cal.....	Whitney.....	.....	10,120
Quaking Aspen M't'n.....	Uinta.....	Wyo.....	King.....	.....	8,688
Quandary Peak.....	Park.....	Colo.....	Hayden.....	t.....	14,269
Quartz Mountain.....	.....	Nev.....	Wheeler.....	.....	8,700
Quien Hornet.....	Uinta.....	Wyo.....	King.....	.....	9,300
Rabbit Ears Mountain.....	Park.....	Colo.....	Hayden.....	.....	10,719
Railroad Range:					
Lt. 38° 57', lg. 114° 53'		Nev.....	Wheeler.....	.....	10,191
Lt. 38° 50', lg. 114° 55'		Nev.....	Wheeler.....	.....	8,440
Lt. 38° 45', lg. 114° 29'		Nev.....	Wheeler.....	.....	7,500
Lt. 38° 39', lg. 114° 57'		Nev.....	Wheeler.....	.....	9,886
Mount Rainier.....	Cascade.....	W. T.....	Coast Survey.....	b.....	14,444
Ralston Butte.....	.....	Colo.....	Hayden.....	b.....	10,593
Raw Hide Peak.....	.....	Wyo.....	Petermann.....	.....	6,370
Red Mountain.....	.....	Wyo.....	Hayden.....	.....	9,806
Red Mountain.....	Sawatch.....	Colo.....	Wheeler.....	.....	13,323
Red Cloud Peak.....	San Juan.....	Colo.....	Wheeler.....	.....	14,092
Red -late Peak.....	Sierra Nevada.....	Cal.....	Whitney.....	.....	13,400
Revelle Range, lat. 37° 57', long. 116° 7'.		Nev.....	Wheeler.....	.....	8,800
Rio Grande Pyramid.....	San Juan.....	Colo.....	Hayden.....	.....	13,773
Mount Ripley.....	.....	Cal.....	Petermann.....	.....	7,500
Mount Rito Alto.....	Sangre de Cristo.....	Colo.....	Hayden.....	.....	12,989
Mount Rito Alto.....	Sangre de Cristo.....	Colo.....	Wheeler.....	.....	12,863
River Butte.....	.....	Wyo.....	King.....	.....	7,872
Rock Mountain.....	.....	Wyo.....	King.....	.....	6,885
Mount Rosalie.....	Front.....	Colo.....	Hayden.....	t.....	14,340
Mount Rose.....	.....	Nev.....	King.....	.....	6,448
Mount Rowter.....	San Juan.....	Colo.....	Ruffner.....	b.....	13,750
Sailor Mountain.....	.....	Wyo.....	Jones.....	.....	10,046
Mount Saint Elias.....	Cascade.....	Alaska.....	Malespina.....	.....	17,854
Mount Saint Elias.....	Cascade.....	Alaska.....	Tebenkoff.....	.....	16,938
Mount Saint Elias.....	Cascade.....	Alaska.....	La Perouse.....	.....	12,661
Mount Saint Elias.....	Cascade.....	Alaska.....	English hydro. ch't.....	.....	14,970
Mount Saint Elias.....	Cascade.....	Alaska.....	Russian hydro. ch't.....	.....	17,854
Mount Saint Elias.....	Cascade.....	Alaska.....	Dall.....	*	19,500
Mount Saint Helens.....	Cascade.....	W. T.....	Humboldt.....	.....	15,500
Mount Saint Helens.....	Cascade.....	W. T.....	Petermann.....	.....	9,750
Saint Mary's Peak.....	.....	Wyo.....	King.....	.....	7,722
San Antonio Peak.....	San Luis Valley.....	N. Mex.....	Hayden.....	.....	10,833
San Antonio Peak.....	.....	Cal.....	Coast Survey.....	.....	9,931
San Bernardino M't'n.....	Sierra Nevada.....	Cal.....	Whitney.....	.....	11,600
San Carlos Peak.....	Coast.....	Cal.....	Whitney.....	b.....	4,977
Sanders Peak.....	Laramie.....	Wyo.....	King.....	.....	9,077
San Francisco Mount'n.....	.....	Ariz.....	P. R. R. Reports.....	b.....	12,052
San Gabriel Range.....	.....	Cal.....	Whitney.....	.....	4,500 to 6,500

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Elevation.
San Juan Mountains: ^a					
Latitude.	Longitude.				Feet.
37 45 32	107 33 30	Colo	Hayden	.....	12,897
37 46 00	107 36 8	Colo	Hayden	.....	13,390
37 47 15	107 42 2	Colo	Hayden	.....	13,366
37 47 22	107 36 51	Colo	Hayden	.....	13,380
37 47 41	107 37 30	Colo	Hayden	.....	13,300
37 47 45	107 38 20	Colo	Hayden	.....	13,030
37 47 57	107 35 47	Colo	Hayden	.....	13,400
37 48 2	107 32 32	Colo	Hayden	.....	13,450
37 50 2	107 34 8	Colo	Hayden	.....	13,290
37 51 30	107 37 10	Colo	Hayden	.....	13,541
37 51 37	107 39 8	Colo	Hayden	.....	13,480
37 51 44	107 35 48	Colo	Hayden	.....	13,360
37 52 21	107 41 58	Colo	Hayden	.....	12,589
37 53 27	107 31 49	Colo	Hayden	.....	13,770
37 53 57	107 31 18	Colo	Hayden	.....	13,830
37 54 7	107 41 10	Colo	Hayden	.....	12,882
37 54 33	107 36 24	Colo	Hayden	.....	13,390
37 54 39	107 44 52	Colo	Hayden	.....	13,630
37 54 50	107 30 4	Colo	Hayden	.....	13,997
37 54 55	107 37 6	Colo	Hayden	.....	13,440
37 56 42	107 33 20	Colo	Hayden	.....	13,675
37 56 57	107 32 3	Colo	Hayden	.....	13,720
37 57 2	107 32 48	Colo	Hayden	.....	13,770
37 57 24	107 41 58	Colo	Hayden	.....	13,206
37 57 50	107 29 35	Colo	Hayden	.....	13,480
37 58 12	107 41 11	Colo	Hayden	.....	13,120
37 58 27	107 35 11	Colo	Hayden	.....	13,290
37 59 30	107 44 48	Colo	Hayden	.....	13,787
37 59 40	107 35 39	Colo	Hayden	.....	13,143
37 59 47	107 30 20	Colo	Hayden	.....	13,250
38 00 12	107 44 23	Colo	Hayden	.....	13,420
38 1 16	107 37 5	Colo	Hayden	.....	13,120
38 1 17	107 44 6	Colo	Hayden	.....	13,490
38 1 46	107 43 49	Colo	Hayden	.....	13,080
38 3 42	107 30 30	Colo	Hayden	.....	13,970
38 4 52	107 31 52	Colo	Hayden	.....	13,010
37 44 54	107 51 51	Colo	Hayden	.....	13,120
37 45 27	107 51 31	Colo	Hayden	.....	13,740
37 46 00	107 49 23	Colo	Hayden	.....	13,697
37 46 6	107 47 18	Colo	Hayden	.....	13,377
37 46 15	107 46 58	Colo	Hayden	.....	13,420
37 46 47	107 52 7	Colo	Hayden	.....	13,730
37 47 42	107 52 54	Colo	Hayden	.....	13,180
37 48 2	107 49 31	Colo	Hayden	.....	13,897
37 49 28	107 48 18	Colo	Hayden	.....	13,760
37 49 33	107 46 6	Colo	Hayden	.....	13,170
37 49 34	107 47 3	Colo	Hayden	.....	13,400
37 50 13	107 56 51	Colo	Hayden	.....	13,160
37 50 13	107 56 51	Colo	Hayden	.....	12,868
37 50 16	107 47 12	Colo	Hayden	.....	13,400
37 50 23	107 59 18	Colo	Hayden	.....	14,280
37 50 25	108 00 7	Colo	Hayden	.....	14,195
37 51 40	107 58 54	Colo	Hayden	.....	14,050
37 51 50	107 46 31	Colo	Hayden	.....	13,650
37 52 27	107 48 22	Colo	Hayden	.....	13,690
37 52 46	107 49 41	Colo	Hayden	.....	13,480

^aThis list does not include all of this range, but only the northern two-thirds. Among these there are 9 peaks above 14,000 feet, and 122 above 13,000 feet.

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
San Juan Mountains—Continued:					
Latitude.	Longitude.				<i>Feet.</i>
37 53 27	107 45 7	..... Colo	Hayden .....	.....	13,470
37 53 57	107 45 00	..... Colo	Hayden .....	.....	13,550
37 57 12	107 52 20	..... Colo	Hayden .....	.....	9,108
37 58 38	107 47 12	..... Colo	Hayden .....	.....	13,590
37 59 20	107 49 15	..... Colo	Hayden .....	.....	13,810
37 59 26	107 47 53	..... Colo	Hayden .....	.....	13,750
37 59 38	107 50 48	..... Colo	Hayden .....	.....	13,730
38 0 17	107 47 21	..... Colo	Hayden .....	.....	14,158
38 00 36	107 51 33	..... Colo	Hayden .....	.....	13,500
38 1 54	107 54 23	..... Colo	Hayden .....	.....	12,997
37 29 20	107 35 56	..... Colo	Hayden .....	.....	12,305
37 34 55	107 28 42	..... Colo	Hayden .....	.....	13,650
37 34 57	107 40 18	..... Colo	Hayden .....	.....	13,000
37 35 12	107 29 6	..... Colo	Hayden .....	.....	13,275
37 35 48	107 30 18	..... Colo	Hayden .....	.....	13,110
37 35 52	107 29 2	..... Colo	Hayden .....	.....	13,380
37 36 29	107 29 25	..... Colo	Hayden .....	.....	13,640
37 36 31	107 34 24	..... Colo	Hayden .....	.....	13,630
37 36 41	107 27 25	..... Colo	Hayden .....	.....	13,180
37 36 48	107 34 44	..... Colo	Hayden .....	.....	13,800
37 37 9	107 32 59	..... Colo	Hayden .....	.....	13,580
37 37 21	107 35 21	..... Colo	Hayden .....	.....	14,054
37 37 24	107 37 12	..... Colo	Hayden .....	.....	14,054
37 37 43	107 35 32	..... Colo	Hayden .....	.....	14,033
37 37 43	107 38 16	..... Colo	Hayden .....	.....	13,725
37 38 2	107 38 36	..... Colo	Hayden .....	.....	13,928
37 38 40	107 37 27	..... Colo	Hayden .....	.....	13,746
37 38 49	107 34 51	..... Colo	Hayden .....	.....	13,783
37 39 52	107 32 14	..... Colo	Hayden .....	.....	13,560
37 39 52	107 35 18	..... Colo	Hayden .....	.....	13,680
37 39 54	107 43 22	..... Colo	Hayden .....	.....	13,100
37 40 18	107 34 36	..... Colo	Hayden .....	.....	13,600
37 40 19	107 32 42	..... Colo	Hayden .....	.....	13,580
37 40 27	107 34 00	..... Colo	Hayden .....	.....	13,650
37 40 43	107 33 24	..... Colo	Hayden .....	.....	13,700
37 40 52	107 35 18	..... Colo	Hayden .....	.....	13,800
37 40 57	107 34 47	..... Colo	Hayden .....	.....	13,750
37 41 12	107 35 22	..... Colo	Hayden .....	.....	13,730
37 41 27	107 35 56	..... Colo	Hayden .....	.....	13,831
37 41 42	107 36 25	..... Colo	Hayden .....	.....	13,800
37 41 56	107 33 18	..... Colo	Hayden .....	.....	13,540
37 41 59	107 41 20	..... Colo	Hayden .....	.....	13,046
37 29 52	107 22 24	..... Colo	Hayden .....	.....	12,536
37 36 6	107 23 48	..... Colo	Hayden .....	.....	13,020
37 39 38	107 29 11	..... Colo	Hayden .....	.....	13,090
37 40 38	107 29 40	..... Colo	Hayden .....	.....	13,200
37 40 39	107 30 15	..... Colo	Hayden .....	.....	13,170
37 40 50	107 23 21	..... Colo	Hayden .....	.....	13,773
37 41 24	107 22 17	..... Colo	Hayden .....	.....	13,220
37 41 20	107 29 57	..... Colo	Hayden .....	.....	13,090
37 41 46	107 29 55	..... Colo	Hayden .....	.....	12,957
37 41 55	107 21 56	..... Colo	Hayden .....	.....	13,210
37 42 14	107 28 38	..... Colo	Hayden .....	.....	13,310
37 42 16	107 29 29	..... Colo	Hayden .....	.....	13,260
37 42 47	107 27 18	..... Colo	Hayden .....	.....	13,430
37 46 58	107 19 36	..... Colo	Hayden .....	.....	12,050
37 47 7	107 30 51	..... Colo	Hayden .....	.....	13,274
37 47 52	107 25 42	..... Colo	Hayden .....	.....	13,656

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
San Juan Mountains—Continued.					
Latitude. Longitude.					<i>Feet.</i>
37 48 54 107 26 36	.....	Colo	Hayden	.....	13,614
37 51 34 107 23 57	.....	Colo	Hayden	.....	13,530
37 51 58 107 27 54	.....	Colo	Hayden	.....	13,815
37 54 40 107 28 42	.....	Colo	Hayden	.....	13,747
37 55 27 107 28 15	.....	Colo	Hayden	.....	12,822
37 55 30 107 25 21	.....	Colo	Hayden	.....	13,967
37 56 36 107 25 6	.....	Colo	Hayden	.....	14,004
37 56 56 107 23 42	.....	Colo	Hayden	.....	13,780
37 57 17 107 25 00	.....	Colo	Hayden	.....	13,540
37 57 24 107 22 30	.....	Colo	Hayden	.....	13,700
37 57 52 107 25 10	.....	Colo	Hayden	.....	13,600
37 57 55 107 21 21	.....	Colo	Hayden	.....	13,620
37 58 28 107 26 18	.....	Colo	Hayden	.....	13,520
37 58 53 107 25 24	.....	Colo	Hayden	.....	13,660
38 1 34 107 17 36	.....	Colo	Hayden	.....	10,611
38 2 00 107 14 24	.....	Colo	Hayden	.....	12,737
38 3 16 107 22 18	.....	Colo	Hayden	.....	12,855
38 3 57 107 29 38	.....	Colo	Hayden	.....	13,510
38 4 21 107 27 32	.....	Colo	Hayden	.....	14,235
38 6 27 107 26 44	.....	Colo	Hayden	.....	13,670
38 7 21 107 27 18	.....	Colo	Hayden	.....	13,080
San Juan Peak	.....	Nev	King	.....	10,962
San Luis Peak	San Juan	Colo	Hayden	.....	14,100
Sawtelle's Peak	.....	Idaho	Hayden	t	9,070
Section Ridge	Uinta	Utah	King	.....	8,268
Seminole Mts. (highest).	.....	Wyo	L. O. Report	.....	10,500
Sentinel Rock (above valley).	Yosemite Valley	Cal	Whitney	±	3,000
Sevier Range:					
Lt. 38°36', lg. 111°57'	.....	Utah	Wheeler	.....	11,208
Lt. 38°23', lg. 111°58'	.....	Utah	Wheeler	.....	10,359
Mount Shasta	Sierra Nevada	Cal	Whitney	b	14,442
Mount Shavano	Sawatch	Colo	Hayden	b	14,239
Sheep Mountain	Park	Colo	Hayden	a	12,589
Sheep Mountain	Park	Wyo	King	.....	9,758
Sheep Butte	Medicine Bow	Wyo	King	.....	9,722
Shell Creek Range (mean height).	.....	Nev	Wheeler	.....	8,000
Shell Creek (highest peak).	.....	Nev	Wheeler	.....	11,200
Mount Sheridan	.....	Wyo	Hayden	b	10,420
Mount Sheridan	.....	Wyo	Jones	b	10,150
Shingled Mountain	White River Plateau.	Colo	Hayden	.....	12,072
Shishaldin	.....	Alaska	Coast Survey	.....	8,683
Mount Silliman	Sierra Nevada	Cal	Whitney	b	11,623
Silver Mountain	Sierra Nevada	Cal	Whitney	.....	10,934
Mount Silverheels	.....	Colo	Hayden	b	13,897
Mount Silverheels	.....	Colo	Whitney	b	13,832
Simpson's Peak	San Juan	Colo	Wheeler	.....	14,055
Skalahum	Cascade	W. T	Petermann	.....	7,400
Skiohah	.....	Mont	Mullan	.....	7,260
Skomegan	Cascade	W. T	Petermann	.....	8,400
Slate Mountain	Elk	Colo	Hayden	.....	12,891
Smith's Peak	Front	Colo	Hayden	.....	13,093
Snake Range, lat. 38° 47', long. 114° 15'.	.....	Nev	Wheeler	.....	10,200

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Elevation.
Mount Sneffels	San Juan	Colo	Hayden	b	<i>Feet.</i> 14,158
Snowmass Mountain...	Elk	Colo	Hayden	b	13,970
Snowpatch Mountain..	Bitter Root.....	W. T	Mullan .....	.....	6,000
Snowy Range:					
Lt. 39°39', lg. 111°15'		Utah	Wheeler .....	.....	10,030
Lt. 39°52', lg. 111°15'		Utah	Wheeler .....	.....	8,697
Sopri's Peak	Elk	Colo	Hayden	t	12,823
South Boulder Peak...	Front	Colo	Hayden	b	8,533
South Mann		Colo	Hayden	t	10,897
South River Peak	San Juan.....	Colo	Hayden .....	.....	13,160
Spanish Peaks.....	Sierra Blanca...	Colo	Hayden	t } E	W13,620 E12,720
Sphinx	Madison.....	Mont.....	Hayden	t	10,880
Split Mountain	Uinta	Utah	King .....	.....	8,865
Spring Mount'n Range, lt. 36° 11', lg. 115° 40'		Nev	Wheeler .....	.....	8,170
Squaw	Front	Colo	Hayden	b	11,733
Mount Stanford.....	Sierra Nevada	Cal	Whitney .....	.....	9,175
Mount Steele.....	Medicine Bow ..	Wyo	King .....	.....	7,771
Mount Stevens.....	Bitter Root.....	W. T	Mullan .....	.....	6,900
Mount Stevens.....	Bitter Root.....	Idaho	Petermann .....	.....	7,400
Stewart's Peak	San Juan.....	Colo	Hayden .....	.....	14,032
Striped Peak	Bitter Root.....	W. T	Mullan .....	.....	6,000
Sugar-Loaf		Nev	King .....	.....	6,164
Sullivan's Peak.....		Brit. Am.	Palliser .....	.....	7,858
Sulphur Peak	Coast	Cal	Coast Survey .....	.....	3,471
Sultan Mountain	San Juan.....	Colo	Hayden .....	.....	13,366
Sultan Mountain	San Juan.....	Colo	Wheeler .....	.....	13,501
Summit Peak	San Juan.....	Colo	Hayden .....	.....	13,323
Table Mountain (north)		Colo	Hayden	b	6,650
Table Mountain (south)		Colo	Hayden	b	6,167
Table Rock		Wyo	King .....	.....	7,551
Mount Tamalpais	Coast	Cal	Whitney .....	.....	2,597
Tanaga		Alaska ..	Coast Survey	*	7,108
Tank Peak	Uinta	Colo	King .....	.....	8,929
Tarryall Range, lat. 39° 8', long. 105° 24'		Colo	Hayden .....	.....	10,360
Tarryall Peak	Tarryall.....	Colo	Hayden	t	12,466
Mount Taylor.....		Ariz.....	Wheeler .....	.....	11,200
Tchopahk	Cascade	W. T	Petermann .....	.....	7,200
Teocalli Mountain	Elk	Colo	Hayden	t	13,113
Terry's Peak	Black Hills.....	Dak	Jenney .....	.....	7,200
Thomas Peak		Ariz.....	Wheeler .....	.....	11,496
Three Brothers	Yosemite Valley	Cal	Whitney .....	.....	14,000
Three Buttes (highest).		Mont.....	P. R. R. Reports.....	.....	6,700
Timpahute Mountain..		Nev	Wheeler .....	.....	8,600
Mount Tomasaki	Sierra la Sal ..	Utah	Hayden	b	12,271
Tokewanna Peak	Uinta	Utah	King .....	.....	13,458
Torrey's Peak	Trout	Colo	Hayden	t	14,336
Torrey's Peak	Trout	Colo	Whitney	b	14,375
Treasury Mountain	Elk	Colo	Hayden	t	13,200
Trinchara Peak	Sierra Blanca...	Colo	Hayden .....	.....	13,546
Trucha's Peak		N. Mex ..	Wheeler .....	.....	13,150
Mount Tukuhnikavatz.	Sierra la Sal ..	Utah	Hayden	b	10,815
Turnichi Dome		Colo	Hayden .....	.....	11,384
Mount Tyndall.....	Sierra Nevada ..	Cal	Whitney .....	.....	14,386
Twin Peaks	Sierra Nevada ..	Cal	Whitney .....	.....	8,925
Unalaska		Alaska ..	Coast Survey .....	.....	5,961
Uncompahgre Peak	San Juan.....	Colo	Hayden	b	14,235

Rocky Mountains—Continued.

Names.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Elevation.
Uncompahgre Peak	San Juan	Colo	Wheeler	b	7,500
Ungoweah Mountains		Nev	Simpson	}	to 8,000
Unimak		Alaska	Coast Survey			8,954
United States Mountain		N. M.	Wheeler		10,734
Ute Peak	Middle Park	Colo	Hayden	b	11,968
Ute Peak	San Luis Valley	Colo	Hayden	b	9,884
Mount Vancouver	Cascade		Dall	±	13,100
Vegas Range:					
Lt. 35° 57', lg. 114° 57'		Nev	Wheeler		4,800
Lt. 36° 37', lg. 115° 15'		Nev	Wheeler		8,100
Velie's Peak		Colo	Parry	b	13,456
Verstova		Alaska	Coast Survey	t	3,374
Vsevidoff		Alaska	Coast Survey	*	8,868
Mount Waas	Sierra la Sal	Utah	Hayden	b	12,561
Ward's Peak		Mont.	Hayden	b	10,371
Warren's Peak	Black Hills	Dak	Jenney		6,900
Washakie Mountain	Uinta	Wyo	King		7,984
Washakie Needles		Wyo	Jones		12,253
Mount Washburne		Wyo	Hayden	b	10,388
Mount Washburne		Wyo	Jones	b	10,105
Weahbah Range		Nev	Simpson	}	to 7,000
Wedge Mountain	Madison	Mont.	Hayden		t	8,000
West Elk Peak	Elk	Colo	Hayden		10,342
Wetterhorn	San Juan	Colo	Wheeler		12,920
Wheeler Peak	Snake	Nev	Wheeler	b	14,069
Whiteface	Middle Park	Colo	Hayden	t	13,036
Whitehead	Park	Colo	King		11,493
White Pine Range:					
Lt. 39° 55', lg. 115° 26'		Nev	Wheeler		8,700
Lt. 39° 48', lg. 115° 32'		Nev	Wheeler		9,975
Lt. 38° 50', lg. 115° 25'		Nev	Wheeler		8,700
Lt. 38° 32', lg. 115° 27'		Nev	Wheeler		10,260
Lt. 38° 18', lg. 115° 30'		Nev	Wheeler		9,420
Lt. 38° 12', lg. 115° 40'		Nev	Wheeler		7,320
Lt. 38° 9', lg. 115° 42'		Nev	Wheeler		8,700
Lt. 38° 0', lg. 115° 43'		Nev	Wheeler		13,357
White Rock Mountain	Elk	Colo	Hayden	b	14,898
Mount Whitney	Sierra Nevada	Cal	Whitney	b	6,000
Mount Wiessner		Idaho	Mullan		11,413
Mount Williams	Middle Park	Colo	Hayden	t	14,280
Mount Wilson	San Juan	Colo	Hayden	b	14,309
Mount Wilson	San Juan	Colo	Wheeler	b	13,235
Wilson's Peak	Uinta	Utah	King		10,552
Wood's Peak	Sierra Nevada	Cal	Whitney		8,400
Worthington Peak		Nev	Wheeler		11,800
Wright's Peak		Colo	Perry		14,187
Mount Yale	Sawatch	Colo	Hayden	t	14,263
Mount Yale	Sawatch	Colo	Whitney	b	14,121
Mount Yale	Sawatch	Colo	Wheeler	b	8,000
Yalloballey	Coast	Cal	Petermann		8,022
Yampa Peak	Uinta	Colo	King		9,000
Youg's Peak	Seminole	Wyo	L. O. Report, 1872.	±	9,297
Zenobia Peak	Uinta	Colo	King		12,126
Zirkel Mountain	Park	Colo	King		

TABLE IV.
MOUNTAINS IN FOREIGN COUNTRIES.

Name.	Range.	Country.	Authority or reference.	Elevation.
				<i>Feet.</i>
Abba Jarrat.....	Andes.....	Abyssinia.....	Paige.....	14,707
Aconagua.....	.....	Argentine Repub.	Petermann.....	23,910
Adai Khokh.....	Caucasus.....	.....	Freshfield.....	15,244
Adam's Peak.....	.....	Ceylon.....	Keith Johnston.....	7,420
Agridagh.....	.....	Asia Minor.....	Keith Johnston.....	17,212
Aqua Volcano.....	.....	Guatemala.....	Toner.....	13,758
Amaro.....	Apennines.....	.....	Toner.....	9,131
Ancohuma.....	Andes.....	.....	Toner.....	21,043
Angel Peak.....	Andes.....	Bolivia.....	Paige.....	20,115
Antisana.....	Andes.....	Ecuador.....	Keith Johnston.....	19,137
Antuco.....	Andes.....	Chili.....	Petermann.....	8,918
Aracena.....	Sierra Morena.....	.....	Paige.....	5,550
Ararat.....	.....	Asia Minor.....	Chodsko.....	16,958
Ararat.....	.....	Asia Minor.....	Federoff.....	17,125
Ararat.....	.....	Asia Minor.....	Perrot.....	17,318
Ararat.....	.....	Asia Minor.....	Paige.....	17,210
Arbin.....	Pyrenees.....	.....	Toner.....	8,344
Ardjuno.....	.....	Java.....	Keith Johnston.....	10,641
Arequipa.....	Andes.....	Peru.....	Keith Johnston.....	20,320
Argisch.....	Anti Taurus.....	.....	Paige.....	13,197
Atacazo.....	Andes.....	.....	North German Ex.	14,891
Mount Athos.....	Balkan.....	Greece.....	Paige.....	9,628
Atitlan.....	.....	Guatemala.....	Toner.....	12,506
Mount Atlas.....	.....	North Africa.....	Paige.....	11,400
Awatchinskaja.....	.....	Kamtschatka.....	Keith Johnston.....	9,055
Axusco.....	Andes.....	.....	Humboldt.....	12,052
Ballon de Gulbwiler.	Vosges.....	.....	Keith Johnston.....	4,690
Basardjusi.....	Caucasus.....	.....	Freshfield.....	14,772
Ben Nevis.....	.....	Scotland.....	Paige.....	4,368
Mont Blanc.....	Alps.....	.....	Toner.....	15,646
Mont Blanc.....	Alps.....	.....	Keith Johnston.....	15,744
Mount Brama.....	Himalayas.....	.....	India Survey.....	21,051
Mount Buckland.....	.....	Terra del Fuego.....	Keith Johnston.....	4,060
Bukit Tungul.....	.....	Java.....	Keith Johnston.....	7,800
Butschetze.....	Carpathian Alps.....	.....	Paige.....	7,528
Carquairazo.....	Andes.....	Quito.....	Keith Johnston.....	15,673
Carrigon.....	Pyrenees.....	.....	Keith Johnston.....	9,137
Chacacomani.....	Andes.....	Bolivia.....	Paige.....	20,355
Chagarri.....	Andes.....	Quito.....	Keith Johnston.....	16,138
Chaveani.....	Andes.....	Peru.....	Paige.....	19,708
Chimborazo.....	Andes.....	Ecuador.....	Petermann.....	21,440
Chipicani.....	Andes.....	Peru.....	Petermann.....	19,745
Chooanlari.....	Himalayas.....	.....	India Survey.....	23,944
Chorbat.....	Himalayas.....	.....	India Survey.....	16,696
Chuquibamba.....	Andes.....	Peru.....	Petermann.....	21,000
Chuquibauba.....	Audes.....	Chili.....	Petermann.....	5,584
Mount Como.....	Apennines.....	.....	Keith Johnston.....	10,114
Copiabo.....	Andes.....	Argentine Repub.	Petermann.....	6,000
Corazon.....	Andes.....	.....	North German Ex.	15,704
Cotopaxi.....	Andes.....	Ecuador.....	Petermann.....	18,875
Cotopaxi, S. E. pt.....	Audes.....	Ecuador.....	North German Ex.	16,272
Cotopaxi, N. W. pt.....	Andes.....	Ecuador.....	North German Ex.	16,291
Cotopaxi, N. point.....	Andes.....	Ecuador.....	North German Ex.	15,842
Coyambe.....	Andes.....	Ecuador.....	Petermann.....	19,535

Mountains in foreign countries—Continued.

Name.	Range.	Country.	Authority or reference.	Elevation.
				<i>Feet.</i>
Cumbal	Andes	Quito	Keith Johnston ..	15,620
Cundur qua Chana	Andes .....	.....	North German Ex.	15,254
Curilche	Andes .....	.....	North German Ex.	12,735
Cusin	Andes .....	.....	North German Ex.	13,162
Dandaldang	Himalayas .....	.....	India Survey	17,762
Mount Darwin .....	.....	Terra del Fuego ..	Keith Johnston ..	6,800
Dasar .....	.....	Java	Keith Johnston ..	7,034
Demavend	Himalayas .....	.....	India Survey	18,846
Dogabang	Himalayas .....	.....	India Survey	23,762
Doobunni	Himalayas .....	.....	India Survey	20,168
Dooraghant	Himalayas .....	.....	India Survey	17,750
Doratama	Himalayas .....	.....	India Survey	17,303
Dwalagiri	Himalayas .....	.....	India Survey	26,826
Dyamur	Himalayas .....	.....	India Survey	26,629
Eerin Piedes	Alps .....	.....	Keith Johnston ..	13,467
Elburz	Caucasus .....	.....	Keith Johnston ..	18,493
El Pico .....	.....	Island of Pico	Keith Johnston ..	7,808
Egmont .....	.....	New Zealand	Keith Johnston ..	8,840
Erebus .....	.....	South Victoria	Keith Johnston ..	12,400
Etna .....	.....	Sicily	Keith Johnston ..	10,874
Etna .....	.....	Sicily	Toner	10,936
Everest	Himalayas .....	.....	India Survey	29,002
Fagwara	Himalayas .....	.....	India Survey	16,930
Ferister Aar Horn	Alps .....	.....	Keith Johnston ..	14,026
Gangasuinor	Himalayas .....	.....	India Survey	17,140
Gauchen	Himalayas .....	.....	India Survey	21,204
Gedee .....	.....	Java	Keith Johnston ..	9,850
Googsu	Himalayas .....	.....	India Survey	17,894
Gross Glockner	Alps .....	.....	Keith Johnston ..	12,421
Guagua Pichincha	Andes .....	.....	North German Ex.	15,704
Gualatieri	Andes .....	.....	Keith Johnston ..	21,960
Mount Hecla .....	.....	Iceland	Keith Johnston ..	5,210
Hindoo Koosh (highest).	.....	.....	Humboldt	20,232
Hochspitze	Alps .....	.....	Keith Johnston ..	10,330
Himalayan Range* ..	.....	.....	.....	.....
Horeb	Lebanon	Asia Minor	Paige	8,593
Illinica	Andes .....	.....	Toner	17,380
Ilirnani	Andes	Bolivia	Petermann	21,149
Irasu	Andes	Guatemala	Keith Johnston ..	11,478
Irenel	Ural .....	.....	Keith Johnston ..	5,075
Itamba	Andes	Brazil	Keith Johnston ..	5,960
Iztaccituatl .....	.....	Mexico	Humboldt	15,708
Jorullo .....	.....	Mexico	Keith Johnston ..	4,265
Kamet	Himalayas .....	.....	India Survey	25,373
Kanchinjunga	Himalayas .....	.....	India Survey	28,156
Kazbek	Caucasus .....	.....	Freshfield	16,540
Klangpee	Himalayas .....	.....	India Survey	16,954
Kilaneah .....	.....	Hawaii	Keith Johnston ..	3,870
La Mesada	Andes .....	.....	Keith Johnston ..	19,356
Lawn .....	.....	Java	Keith Johnston ..	10,727
Luripigo	Himalayas .....	.....	India Survey	16,718
Machai	Himalayas .....	.....	India Survey	19,630
Malabar .....	.....	Java	Keith Johnston ..	7,556
Maladetta	Pyrennees	Spain	Keith Johnston ..	11,168
Marmolata	Alps	Austria	Keith Johnston ..	9,802
Mahun	Himalayas .....	.....	India Survey	17,331
Mauna Kea .....	.....	Hawaii	Petermann	13,953
Mauna Loa .....	.....	Hawaii	Petermann	13,760
Merapi .....	.....	Java	Keith Johnston ..	9,708

* Up to 1870, thirteen peaks, of elevations exceeding 25,000 feet, and fifty-nine, exceeding 20,000 feet, had been measured by the India Survey.

Mountains in foreign countries—Continued.

Name.	Range.	Country.	Authority or reference.	Elevation.
				<i>Feet.</i>
Merbabu		Java	Keith Johnston ..	10, 220
Mercedario	Andes	Chili	Petermann	6, 798
Mesada	Andes		Toner	19, 356
Molleson	Alps	France	Keith Johnston ..	6, 584
Mont Cenis		Savoy	Toner	6, 778
Monte Rosa	Alps		Toner	15, 208
Monte Rosa	Alps		Keith Johnston ..	15, 174
Moolbeckroong	Himalayas		India Survey	18, 026
Morne Garou		Antilles	Keith Johnston ..	5, 007
Mulahagen		Spain	Keith Johnston ..	11, 663
Naugma	Himalayas		India Survey	18, 360
Neilgherry Hills		India	Keith Johnston ..	8, 760
Olympus		Thessaly	Keith Johnston ..	9, 759
Orizaba		Mexico	Humboldt	17, 374
Ortler Spitz	Alps		Keith Johnston ..	12, 811
Parinucota	Andes	Bolivia	Pentland	22, 030
Pasto	Andes		Keith Johnston ..	13, 450
Pelvoux	Alps		Paige	14, 108
Perote	Andes	Bolivia	Humboldt	13, 514
Pichincha	Andes		Keith Johnston ..	15, 924
Pomerape	Andes	Bolivia	Pentland	21, 700
Popocatapetl		Mexico	Humboldt	17, 717
Purace	Andes		Keith Johnston ..	17, 035
Puno	Andes	Peru	Petermann	12, 870
Puy de Dome		France	Keith Johnston ..	6, 220
Rakipoosh	Himalayas		India Survey	25, 561
Monte Rotondo		Corsica	Paige	8, 767
Rucu Pichincha	Andes		North German Expedition.	15, 540
Sahama	Andes		Keith Johnston ..	22, 350
St. Gothard	Alps		Toner	6, 976
San José	Andes	Chili	Petermann	6, 096
Santa Martha		Colombia	Petermann	19, 000
Santa Merida		Colombia	Petermann	15, 626
Santiago	Andes	Chili	Keith Johnston ..	15, 100
Sapi	Himalayas		India Survey	19, 095
Schamalari	Himalayas		India Survey	23, 980
Schebulos	Caucasus		Freshfield	14, 781
Sinchulagua	Andes		Keith Johnston ..	16, 434
Siugui	Andes		Keith Johnston ..	16, 138
Sorato	Andes		Keith Johnston ..	21, 290
Stokes		Patagonia	Keith Johnston ..	6, 400
Stromboli			Keith Johnston ..	2, 957
Suskiang	Himalayas		India Survey	17, 263
Taganai	Ural		Keith Johnston ..	3, 592
Teneriffe			Keith Johnston ..	12, 182
Tolima	Andes		Keith Johnston ..	18, 020
Toluca		Mexico	Humboldt	15, 542
Tristan da Cunha			Keith Johnston ..	8, 236
Tungaraqua	Andes		Keith Johnston ..	16, 424
Tupungato	Andes	Chili	Petermann	22, 016
Ungarang		Java	Keith Johnston ..	7, 100
Vandama		Canary Islands	Keith Johnston ..	1, 835
Vesuvius		Italy	Keith Johnston ..	8, 479
Viejo	Andes	Peru	Paige	21, 500
Vilcañota	Andes		Keith Johnston ..	17, 535

TABLE V.
PASSES IN THE ROCKY MOUNTAINS.

Name.	Range.	State or Territory.	Authority or reference.	Method of meas'n't.	Height.
					<i>Feet.</i>
Abeyta	Sierra Blanca...	Colo.....	Hayden	b	9,300
Abeyta	Sierra Blanca...	Colo.....	D. and R. G. R. R.	l	9,399
Agate	Quartz	Nev.....	P. R. R. Reports...	b	7,615
Antelope .....	.....	Colo.....	Railroad surveys...	.....	8,050
Argentine.....	.....	Colo.....	.....	.....	13,100
Beale's .....	.....	Ariz.....	K. P. R. R. surveys.	l	5,127
Bear Creek	San Juan	Colo.....	Hayden	b	12,600
Beckwourth	Sierra Nevada	Cal.....	Railroad surveys..	l	4,682
Beckwourth	Sierra Nevada	Cal.....	Whitney .....	.....	5,327
Berthoud	Front	Colo.....	Parry	b	11,349
Berthoud	Front	Colo.....	U. P. R. R. surveys.	l	11,350
Big Creek .....	.....	Nev.....	King	b	8,922
Boulder	Front	Colo.....	Hayden	b	11,670
Boulder	Front	Colo.....	U. P. R. R. surveys.	l	11,900
Boundary .....	.....	Mont.....	P. R. R. Reports ..	b	6,030
Bow River .....	.....	Brit. Am.	Palliser	b	6,347
Breccia .....	.....	Cal.....	Goddard	l	10,150
Bridger's .....	.....	Wyo.....	U. P. R. R. surveys.	l	11,410
Bridger's .....	.....	Mont.....	Ludlow	b	6,147
British Kootaine	.....	Brit. Am.	Palliser	b	6,300
Cadottes .....	.....	Mont.....	P. R. R. Reports ..	b	6,044
Cady's	Cascade	W. T.....	N. P. R. R. surveys.	.....	6,147
Cajon	Sierra Nevada	Cal.....	P. R. R. Reports ..	b	4,676
Campbell's .....	.....	.....	A. & P. R. R. su'ys.	.....	7,152
Camp Floyd	Oquirrh	Utah.....	Simpson	b	5,234
Cañon Blanco .....	.....	N. Mex.....	K. P. R. R. surveys	l	7,081
Cañon de Terruco	.....	Cal.....	.....	.....	4,256
Carson	Sierra Nevada	Cal.....	Goddard	l	7,972
Carson	Sierra Nevada	Cal.....	Whitney .....	.....	8,759
Cedar Mountain .....	.....	Utah.....	P. R. R. Reports ..	b	6,364
Chemenevis .....	.....	Cal.....	K. P. R. R. surveys.	b	675
Cheyenne .....	.....	Wyo.....	King	b	8,791
Cheyenne .....	.....	Wyo.....	U. P. R. R. surveys.	l	8,656
Cimmaron	Raton	Colo.....	K. P. R. R. surveys.	l	6,330
Cochetopa .....	.....	Colo.....	P. R. R. Reports ..	b	10,032
Cochetopa .....	.....	Colo.....	Hayden	b	10,000
Costilla .....	.....	Colo.....	Palmer	b	9,520
Cowlitz	Cascade	W. T.....	N. P. R. R. surveys.	.....	4,210
Crater .....	.....	.....	A. & P. R. R. su'ys.	b	2,300
Cunningham	San Juan	Colo.....	Hayden	b	12,090
Daggett's	Sierra Nevada	Cal.....	Goddard	l	6,824
Deer Lodge .....	.....	Mont.....	N. P. R. R. surveys.	.....	5,808
Dorner	Sierra Nevada	Cal.....	C. P. R. R. surveys.	l	7,091
Dorner	Sierra Nevada	Cal.....	Whitney .....	.....	7,056
East River	Elk	Colo.....	Hayden	b	11,163
Ebbitt's	Sierra Nevada	Cal.....	P. R. R. Reports ..	b	8,793
Egan Range .....	.....	Nev.....	Wheeler	b	7,546
El Puerto del Dado .....	.....	Ariz.....	Petermann .....	.....	5,433
Evans .....	.....	Wyo.....	U. P. R. R. surveys.	l	8,424
Flathead	Main	Mont.....	P. R. R. Reports ..	b	5,459
Flathead	Bridger	Mont.....	Hayden	b	6,769
Florida .....	.....	N. Mex.....	P. R. R. Reports ..	b	4,600
Fremont's .....	.....	Cal.....	.....	.....	7,200
Georgetown	Sierra Nevada	Cal.....	C. P. R. R. surveys.	l	7,154
Georgetown	Sierra Nevada	Cal.....	Whitney .....	.....	7,119
Georgia	Front	Colo.....	Parry	b	11,487
Georgia	Front	Colo.....	Hayden	b	11,811
Gore's	Park	Colo.....	Hayden	b	9,590
Gosinte	Toano	Nev.....	U. P. R. R. surveys.	l	6,065

Passes in the Rocky Mountains—Continued.

Name.	Range.	State or Territory.	Authority or reference.	Method of meas'nt.	Height.
Guadalupe	Guadalupe	Texas	P. R. R. Reports	b	<i>Feet.</i> 5,717
Hamilton .....	.....	Col.	Ruffner	b	12,370
Hastings	Pequop	Nev.	U. P. R. R. surveys	l	6,220
Hastings	Pequop	Nev.	Simpson	b	6,580
Hastings	Humboldt	Nev.	P. R. R. Reports	b	6,848
Hayden	Sangre de Cristo	Colo.	Wheeler	b	10,780
Hennes	Sierra Nevada	Cal.	C. P. R. R. surveys	l	7,031
Hennes	Sierra Nevada	Cal.	Whitney	b	6,996
Hoosier	Park	Colo.	Whitney	b	11,546
Hoosier	Park	Colo.	U. P. R. R. surveys	b	11,500
Howe's .....	.....	Brit. Am.	Palliser	b	5,400
Hueco .....	.....	Texas	P. R. R. Reports	b	5,450
Hueco .....	.....	Texas	Railroad surveys	b	5,027
Humpahyamup .....	.....	Cal.	P. R. R. Reports	b	5,351
Hurd's	Guadalupe	Texas	Railroad surveys	b	4,419
Indian .....	.....	Nev.	King	b	9,057
Ives .....	.....	.....	P. R. R. Reports	b	6,076
Johnson's .....	.....	Cal.	Goddard	l	6,752
Johnson's	Sierra Nevada	Cal.	C. P. R. R. surveys	l	7,374
Johnson's	Sierra Nevada	Cal.	Simpson	b	7,222
Johnson's	Sierra Nevada	Cal.	Whitney	b	7,339
Johnson's	Guyot	Utah	Whitney	b	6,237
Kananaskie .....	.....	Brit. Am.	Palliser	b	5,985
Kicking Horse .....	.....	Brit. Am.	Palliser	b	5,210
Kutaine .....	.....	Brit. Am.	Palliser	b	6,030
Lake Creek	Sawatch	Colo.	Hayden	b	12,239
Lake Fork .....	.....	Colo.	Hayden	b	12,540
Lewis and Clarke .....	.....	Mont.	P. R. R. Reports	b	6,323
Lime	Ututa	Utah	King	b	10,740
Little Blackfoot .....	.....	Mont.	P. R. R. Reports	b	6,250
Livermore's .....	.....	Cal.	Whitney	b	636
Long's .....	.....	Colo.	Palmer	b	7,660
Lost Knife .....	.....	Colo.	Palmer	b	8,400
Lutber's	Sierra Nevada	Cal.	Goddard	l	7,122
Luther's	Sierra Nevada	Cal.	Simpson	b	7,505
McCabe's	Cedar	Nev.	U. P. R. R. surveys	l	5,019
Madelin	Sierra Nevada	Cal.	P. R. R. Reports	b	5,667
Madison .....	.....	Mont.	P. R. R. Reports	b	6,911
Marias .....	.....	Mont.	P. R. R. Reports	b	8,500
Marshall's	Sawatch	Colo.	Wheeler	b	10,852
Mechanics	Blue .....	.....	U. P. R. R. surveys	b	4,226
Mineral Creek	San Juan	Colo.	Hayden	b	11,098
Mojave Gap .....	.....	.....	A & P. R. R. surveys	b	1,475
Mono	Sierra Nevada	Cal.	Whitney	b	10,765
Mosca	Sangre de Cristo	Colo.	K. P. R. R. surveys	l	9,577
Mosca	Sangre de Cristo	Colo.	Hayden	b	9,713
Muddy Creek .....	.....	Colo.	Hayden	b	8,772
Mullan's .....	.....	Mont.	Mullan	b	5,980
Mnsquito .....	.....	Colo.	Hayden	b	.....
Natchess	Cascade	W. T.	P. R. R. Reports	b	4,890
Navajo .....	.....	.....	K. P. R. R. surveys	b	7,177
New	Sierra Nevada	Cal.	P. R. R. Reports	b	3,164
Noble's .....	.....	Cal.	Williamson	b	6,260
North	Toano	Nev.	C. P. R. R. surveys	l	5,964
Nugent's .....	.....	Ariz.	K. P. R. R. surveys	l	4,626
Nugents .....	.....	Ariz.	T. & P. R. R. surveys	l	4,820
Oak	Guyot	Utah	Simpson	l	7,200
Organ Mountains .....	.....	N. Mex.	P. R. R. Reports	b	5,467
Owl Creek Mountains .....	.....	Wyo.	Jones	b	7,836
Pacheco	Coast	Cal.	Whitney	b	1,470

Passes in the Rocky Mountains—Continued.

Name.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Height.
					<i>Feet.</i>
Paucho	Coast	Cal	Whitney	b	2,500
Peloncillo .....	.....	N. Mex	T. & P. R. R. sur'ys	l	4,446
Pequop	Pequop	Nev	U. P. R. R. sur'ys	.....	6,143
Pequop	Pequop	Nev	C. P. R. R. sur'ys	.....	6,180
Pipestone River .....	.....	Brit. Am	Palliser	b	7,200
Piute .....	.....	Cal	K. P. R. R. sur'ys	.....	2,579
Poncho .....	.....	Colo	Wheeler	b	8,945
Postoak .....	.....	Colo	Palmer	b	7,475
Railroad	Chiricahui	Ariz	Ives	b	3,764
Railroad	Chiricahui	Ariz	K. P. R. R. sur'ys	.....	4,356
Railroad	Chiricahui	Ariz	T. & P. R. R. sur'ys	.....	4,490
Raton	Raton	Colo	Petermann .....	.....	5,896
Rattlesnake .....	.....	.....	U. P. R. R. sur'ys	.....	7,560
Red Dome .....	.....	Nev	U. P. R. R. sur'ys	.....	4,720
Red Dome .....	.....	Nev	C. P. R. R. sur'ys	.....	4,821
Red Rock	Main	Wyo	Hayden	b	7,271
Reed's	Humboldt	Wyo	U. P. R. R. sur'ys	.....	5,850
Roubideau's .....	.....	Colo	P. R. R. Reports	b	9,772
Runk's .....	.....	Ariz	K. P. R. R. sur'ys	.....	4,312
Saint Vrain's .....	.....	Wyo	Petermann .....	.....	8,000
San Benito	Coast	Cal	K. P. R. R. sur'ys	.....	2,700
San Fernando	Coast	Cal	P. R. R. Reports	b	1,940
San Francisco .....	.....	Colo	Palmer	b	8,560
San Francisquito	Sierra Nevada	Cal	P. R. R. Reports	b	3,718
San Gorgonio	San Bernardino	Cal	P. R. R. Reports	b	2,800
San Gorgonio	San Bernardino	Cal	T. & P. R. R. sur'ys	.....	2,621
Sangre de Cristo	Sierra Blanca	Colo	U. P. R. R. sur'ys	.....	9,186
Sangre de Cristo	Sierra Blanca	Colo	Hayden	b	9,454
San Luis	Coast	Cal	P. R. R. Reports	b	1,556
Schenousky's	Pequop	Nev	U. P. R. R. sur'ys	.....	6,355
Semi .....	.....	Cal	P. R. R. Reports	b	1,577
Short Cut .....	.....	Utah	Simpson	b	5,347
Silver Mountains	Sierra Nevada	Cal	Whitney .....	.....	8,793
Sitgreaves	Black	Ariz	Ives	b	3,652
Skull Creek .....	.....	Colo	Hayden	b	7,797
Snoqualmoo	Cascade	W. T.	P. R. R. Reports	b	3,468
Snoqualmoo	Cascade	W. T.	N. P. R. R. sur'ys	.....	3,145
Sohon	Bitter Root	Idaho	Mullan	b	5,100
Soledad .....	.....	Cal	A. & P. R. R. sur'ys	.....	3,215
Sonora	Sierra Nevada	Cal	P. R. R. Reports	b	10,115
South .....	.....	Wyo	P. R. R. Reports	b	7,490
South .....	.....	Wyo	U. P. R. R. sur'ys	.....	7,470
South Nez Percé .....	.....	Mont	P. R. R. Reports	b	8,000
Sultan Mount, east of	San Juan	Colo	Hayden	b	10,460
Sultan Mount, west of	San Juan	Colo	Hayden	b	11,570
Summit	Cascade	Oregon	P. R. R. Reports	b	5,595
Sybelles .....	.....	Wyo	U. P. R. R. sur'ys	.....	7,020
Tahechaypah	Sierra Nevada	Cal	P. R. R. Reports	b	4,008
Tarryall .....	.....	Colo	Hayden	b	12,176
Tejon .....	.....	Cal	P. R. R. Reports	b	5,364
Tennessee .....	.....	Colo	Hayden	b	10,418
Teton	Teton	Wyo	Hayden	b	8,464
Thompson's .....	.....	Wyo	Engineer map	.....	8,950
Todos Santos	Coast	Cal	P. R. R. Reports	b	637
Togwotee .....	.....	Wyo	Jones	b	9,621
Tonto .....	.....	Ariz	A. & P. R. R. sur'ys	.....	7,529
Trinchera	Raton	Colo	K. P. R. R. sur'ys	.....	7,079
Trout Creek	Park	Colo	Whitney	b	.....
Trout Creek	Park	Colo	Hayden	b	9,346
Trout Creek	Park	Colo	Wheeler	b	9,612
Truckee	Sierra Nevada	Cal	P. R. R. Reports	b	7,200

Passes in the Rocky Mountains—Continued.

Name.	Range.	State or Territory.	Authority or reference.	Method of meas'm't.	Height.
					<i>Feet.</i>
Tyghee .....	.....	Wyo	Hayden	b	7,063
Uiyabi	Gosiute	Nev	P. R. R. Reports ..	b	6,233
Union	Bridger	Mont	Hayden	b	7,283
Vasquez	Front	Colo .....	.....	±	11,500
Vermillion .....	.....	Brit. Am	Palliser	b	4,944
Wasatch	Wasatch	Utah	P. R. R. Reports ..	b	7,820
Walker's	Sierra Nevada ..	Cal	P. R. R. Reports ..	b	5,302
Wallapi .....	.....	Ariz	K. P. R. R. sur'ys ..	.....	3,473
Warner's	Sierra Nevada ..	Cal	P. R. R. Reports ..	b	3,870
Weminuche	San Juan	Colo	Hayden	b	10,670
Whipple .....	.....	Ariz	K. P. R. R. sur'ys ..	.....	7,206
White Pine Range .....	.....	Nev	Wheeler	b	5,860
White Pine Range .....	.....	Nev	Wheeler	b	6,326
Wild Flax .....	.....	Colo	Palmer	b	8,900
Willow Creek .....	.....	Colo	Hayden	b	9,683
Yakima	Cascade	W. T.	P. R. R. Reports ..	b	3,468
Yakima	Cascade	W. T.	N. P. R. R. sur'ys ..	.....	4,147
Yampa .....	.....	.....	K. P. R. R. sur'ys ..	.....	5,241
Yellow Jacket .....	.....	Colo	Hayden	b	7,493
Yuba Gap	Sierra Nevada ..	Cal	Whitney .....	.....	6,642
Zuni .....	.....	N. Mex	K. P. R. R. sur'ys ..	.....	7,926

"b" indicates a barometric measurement.

"l" indicates a measurement by level.

TABLE VI.
PLATEAUS OF THE UNITED STATES.

	Elevation.
	<i>Fect.</i>
Aquarius Plateau, Utah	10,000 to 11,000
Carson River Basin, Nevada	3,800
Colorado Plateau, Arizona	6,000 to 8,000
Coteau des Prairies, Minnesota and Dakota	1,800 to 2,000
Coteau des Missouri, Dakota	1,800 to 2,000
Great plains of the Columbia, Washington	1,000 to 3,000
Great Sage Plain, Utah, mean	6,500
Grand Mesa, Colorado	10,000
Humboldt River Basin, Nevada	4,200
Kaibab, Arizona	8,000
Kanab, Utah	7,000
Laramie Plains, Wyoming, mean	7,000
Llano Esta Cado, New Mexico and Texas	3,200 to 4,700
Mesa Verde, Colorado	7,000 to 8,500
Middle Park, Colorado, mean	7,500
North Park, Colorado	8,000 to 9,000
Roan or Book, Colorado and Utah, crest	8,000 to 8,500
Salt Lake Valley, Utah	4,200 to 4,500
Salt Lake Desert, Utah	4,500 to 5,000
San Luis Valley, Colorado	7,000 to 8,000
Sevier Lake Basin, Utah	4,700
Shi-wits, Arizona	7,000
Snake River, Idaho	4,000 to 4,500
South Park, Colorado	8,000 to 10,000
Uncompahgre, Colorado, crest	9,000 to 10,000
Walker's River Basin, Nevada	4,100
White River	11,000 to 12,000

TABLE VII.
 PLATEAUX IN FOREIGN COUNTRIES.
 (*From Humboldt.*)

	Elevation.	
	<i>Feet.</i>	
Abyssinia, Africa.....	6,075	
Antisana, South America.....	13,451	
Auvergne, France.....	1,087	
Axim, Abyssinia.....	7,034	
Bavaria.....	1,663	
Caracas, South America.....	3,070	
Valley of Cashmir, India.....	5,346	
Castile, Spain.....	2,238	
Caxamarla, Peru.....	9,021	
Desert of Gobi.....	4,623	
Mexico.....	7,482	
Mysore.....	2,942	
Orange River, South Africa.....	6,395	
Popayan.....	5,755	
Potosi, South America.....	13,665	
Province de los Pastos.....	10,231	
Quito.....	9,528	
Thibet.....	Upper Thibet.....	9,592
	Middle Thibet.....	9,995
	Little Thibet.....	6,300
	Deotsuh.....	11,977
	Sacred Lakes.....	14,965
	Near Ladak.....	13,429
General elevation in Thibet between longitude 73° and 85°.....	11,500	
Santa Fé de Bogota, South America.....	8,413	
Near Lake Titicaca, South America.....	12,853	

TABLE VIII.
ELEVATIONS OF THE TIMBER-LINE.

	<i>Feet.</i>
Latitude 33° to 34°:	
On Sierra Blanca, Arizona	11, 100
Latitude 35° to 36°:	
San Francisco Mountain, Arizona	11, 547
Latitude 37° to 38°:	
Sierra Blanca, Colorado	10, 410
Hamilton Pass, Colorado	10, 840
Latitude 38° to 39°:	
Pike's Peak, Colorado	11, 720
Buffalo Peak, Park Range, Colorado	12, 041
Mount Harvard, Sawatch Range, Colorado	12, 117
Mount Princeton, Sawatch Range, Colorado	11, 500
Cunningham Pass, San Juan Mountains, Colorado	11, 500
Mount Wheeler, Nevada	11, 500
Latitude 39° to 40°:	
Mount Englemann, Front Range, Colorado	11, 578
Gray's Peak, Front, Colorado	11, 100
Berthoud Pass, Front, Colorado	11, 816
Mount Evans, Front, Colorado	11, 300
James Peak, Front, Colorado	11, 100
Mount Guyot, Front, Colorado	11, 811
Mount Powell, Park, Colorado	11, 600
Mount Byers, Middle Park, Colorado	11, 400
Mount Silverheels, Park, Colorado	11, 549
Mount Lincoln, Park, Colorado	12, 051
Massive Mountain, Sawatch, Colorado	11, 607
Mount Elbert, Sawatch, Colorado	11, 871
La Plata Mountain, Sawatch, Colorado	12, 080
Grizzly Peak, Sawatch, Colorado	11, 758
White Rock Mountain, Elk, Colorado	11, 919
Latitude 40° to 41°:	
Long's Peak, Front, Colorado	11, 100
Mount Audubon, Front, Colorado	11, 325
Bald Mountain, Front, Colorado	11, 100
Mount Lillie, Front, Colorado	11, 100
Arapahoe Peak, Front, Colorado	11, 100
Park View Peak, Front, Colorado	11, 100
Gilbert's Peak, Uinta, Utah	11, 100
Latitude 41° to 42°:	
Mount Shasta, Sierra Nevada, California	8, 000
Latitude 42° to 43°:	
Bald Mountain, Wind River Range, Wyoming	10, 760
Latitude 43° to 44°:	
Mount Hayden, Teton Range, Wyoming	11, 000
Wind River Mountains, Wyoming	10, 160
Washakie Needles, Wyoming	10, 683
Latitude 44° to 45°:	
Mount Washington, White Mountains, New Hampshire	4, 150
Mount Clinton, White Mountains, New Hampshire	4, 250
Mount Marcy, Adirondacks, New York	4, 851
Sailor Mountain, Wyoming	9, 746
Mount Washburn, Wyoming	9, 900
Electric Peak, Wyoming	9, 442
Cascade Range, Oregon	7, 000
Latitude 45° to 46°:	
Mount Delano, Montana	8, 784
Ward's Peak, Montana	9, 156
Mount Blackmore, Montana	9, 550

TABLE IX.

LAKES OF THE UNITED STATES.

Name.	State or Territory.	Authority or reference.	Elevation.
			<i>Feet.</i>
Albert Lea	Minn.....	Southern Minnesota Railroad	1,205
Alleguash	Me.....	Water-Power of Maine	950
Amperсанд Pond.....	N. Y.....	State Survey	2,079
Atteau	Me.....	Water-Power of Maine	1,094
Ausable Pond.....	N. Y.....	State Survey	2,065
Avalanch.....	N. Y.....	State Survey	2,856
Avalanch.....	N. Y.....	.....	2,900
Baskahegan	Me.....	Water-Power of Maine	400
Bass (lower).....	Minn.....	Saint Paul, Stillwater and Taylor's Falls Railroad.	883
Bass (upper).....	Minn.....	Saint Paul, Stillwater and Taylor's Falls Railroad.	817
Beach	N. Y.....	State Survey	1,914
Bear	Utah.....	Hayden	5,911
Bear	Utah.....	.....	5,931
Beaver	N. Y.....	Toner	1,409
Beaver Meadow Pond	N. Y.....	State Survey	2,194
Bennett's Pond	N. Y.....	State Survey	1,985
Big Stone	Minn.....	Petermann	1,070
Big Stone	Minn.....	Railroad Reports	952
Big Stone	Minn.....	Nicollet	966
Big Stone	Minn.....	United States Engineer Corps level	992.8
Blue Mountain	N. Y.....	State Survey	1,822
Bog Lake	N. Y.....	State Survey	1,755
Brigham	Minn.....	Saint Paul and Sioux City Railroad.	1,406
Brochel	Dak.....	Nicollet	1,860
Carson	Nev.....	Pacific Railroad Reports	3,840
Cass	Minn.....	.....	1,402
Cattaraugus	N. Y.....	Toner	1,655
Cauquogomoc	Me.....	Water-Power of Maine	930
Cayuga	N. Y.....	Toner	357
Cazenovia	N. Y.....	Toner	900
Cedar	N. Y.....	State Survey	2,530
Chamberlain	Me.....	Water-Power of Maine	926
Champlain	N. Y.....	Railroad Reports	101
Champlain	N. Y.....	Guyot	93
Charles	La.....	Toner	22
Chelan .....	.....	Pacific Railroad Reports	1,113
Chesuncook	Me.....	Water-Power of Maine	900
Chetauque.....	N. Y.....	Toner	1,291
Chicago	Colo.....	Hayden	11,500
Chiputneticook	Me.....	Water-Power of Maine	382
Chiputneticook, Grand	Me.....	Water-Power of Maine	449
Churchill	Me.....	Water-Power of Maine	914
Clear	N. Y.....	State Survey	2,006
Cœur d'Alène.....	W. T.....	Mullan	2,150
Cœur d'Alène.....	W. T.....	Pacific Railroad Reports	2,240
Colden	N. Y.....	Toner	2,851
Colden	N. Y.....	Guyot	2,786
Colvin	N. Y.....	State Survey	1,991
Cranberry	N. Y.....	Toner	1,570
Crooked	N. Y.....	Toner	718
Crooked	N. Y.....	State Survey	2,022
Crystal	Minn.....	Saint Paul and Sioux City Railroad.	1,062
Crystal	Cal.....	Railroad Reports	5,907
Crystal	N. Y.....	State Survey	1,603
Denning's	Me.....	Toner	88
Devil's	Dak.....	Thomas	1,467

Lakes of the United States—Continued.

Name.	State or Territory.	Authority or reference.	Elevation.
Donner.....	Cal.....	Railroad Reports.....	<i>Feet.</i> 5,964
Drummond.....	Va.....	Toner.....	21
Echo.....	N. H.....	Guyot.....	1,926
Eckelson.....	Minn.....	Railroad Reports.....	1,454
Eckford.....	N. Y.....	Toner.....	1,791
Elk.....	Minn.....	Pacific Railroad Reports.....	1,298
Elk.....	N. Y.....	State Survey.....	2,053
Erie.....		Railroad Report, Gardner's determination.	573.08
Erie.....		Railroad Reports, Comstock's determination.	573.60
Fish River.....	Me.....	Water-Power of Maine.....	660
Flathead.....	Mont.....	Pacific Railroad Reports.....	2,800
Forked.....	N. Y.....	Toner.....	1,704
Franklin.....	Nev.....	Pacific Railroad Reports.....	6,200
George.....	N. Y.....	Toner.....	324
Gillett's.....	Mich.....		932
Gleneida.....	N. Y.....	Toner.....	505
Gosiute.....	Nev.....	Pacific Railroad Reports.....	5,952
Graham.....	Minn.....	Southern Minnesota Railroad.....	1,413
Grand.....	Colo.....	Hayden.....	8,153
Grass.....	Mich.....		955
Great Salt.....	Utah.....	Utah Central Railroad.....	4,218
Gull.....	N. Y.....	State Survey.....	2,019
Harney's.....	Oreg.....	Wallen.....	4,150
Henderson.....	N. Y.....	Toner.....	1,936
Henderson.....	N. Y.....	Guyot.....	1,829
Henry.....	Minn.....	Pacific Railroad Reports.....	1,284
Henry's.....	Idaho.....	Hayden.....	6,443
Heron.....	Minn.....	Saint Paul and Sioux City Railroad.....	1,403
Heron.....	Minn.....	Southern Minnesota Railroad.....	1,371
Honey.....	Nev.....		4,095
Hopating.....	N. J.....	Toner.....	414
Horicon.....	Wis.....	Toner.....	868
Howard.....	Minn.....	Saint Paul and Pacific Railroad.....	1,049
Itasca.....	Minn.....	Toner.....	1,575
Izuzah.....	Minn.....	Toner.....	1,186
Jessie.....	Minn.....	Pacific Railroad Reports.....	1,260
Kachiss.....	W. T.....	Pacific Railroad Reports.....	2,158
Kalikomega.....	Minn.....		1,192
Kalispelm.....	Idaho.....	Toner.....	2,093
Kaupista.....	Dak.....	Chicago and Northwestern Railroad.....	1,659
Kaniskusahkee.....	Dak.....	Pacific Railroad Reports.....	2,431
Kern.....	Cal.....	Pacific Railroad Reports.....	398
Ketchelus.....	W. T.....		2,388
Klamath.....	Oreg.....	Pacific Railroad Reports.....	4,131
Ksitkas.....	W. T.....		1,953
Lac qui Parle.....	Minn.....	Toner.....	946
Leech.....	Minn.....	Toner.....	1,330
Lewey.....	N. Y.....	State Survey.....	1,738
Lewis.....	Wyo.....	Hayden.....	7,750
Long.....	N. Y.....	State Survey.....	1,620
Long.....	N. Y.....	State Geological Survey.....	1,575
Long.....	Me.....	Water-Power of Maine.....	603
Long Pond.....	Me.....	Water-Power of Maine.....	1,094
Lost.....	N. Y.....	State Survey.....	1,761
Lower Saranac.....	N. Y.....	State Geological Survey.....	1,527
Mahopac.....	N. Y.....	Toner.....	660
Mary.....	Colo.....	Toner.....	9,324
Mason.....	N. Y.....	State Survey.....	1,860
Mattagamon.....	Me.....	Water-Power of Maine.....	850
Michigan.....		Railroad, Gardner's determination.....	589 15
Milinoquet.....	Me.....	Water-Power of Maine.....	500

Lakes of the United States—Continued.

Name.	State or Territory.	Authority or reference.	Elevation.
			<i>Feet.</i>
Minnetonka	Minn	Saint Paul and Pacific Railroad	922
Minnetonka	Minn	Toner	990
Minor	N. Y.	State Survey	1, 985
Moon	N. Y.	Toner	1, 772
Moose	N. Y.	State Survey	2, 239
Moosehead	Me	Water-Power of Maine	1, 023
Moosetocmagantic	Me	Water-Power of Maine	1, 486
Moss	N. Y.	State Survey	4, 312
Mountain	Minn	Saint Paul and Sioux City Railroad	1, 086
Mud	N. Y.	State Survey	1, 747
Mud	N. Y.	Toner	1, 799
Mud	Nev	Pacific Railroad Reports	4, 079
Nagowicka	Wis	Toner	852
Nemahbin	Wis	Toner	867
Newcomb	N. Y.	Toner	1, 698
Niger	N. Y.	State Survey	1, 842
Oconomowoc	Wis	Toner	860
Odell	Ohio	Toner	924
Of the Clouds	N. H.	Guyot	5, 009
Of the Woods	Minn	Hind	978
Okinokane	W. T.	Pacific Railroad Reports	1, 163
Oneida	N. Y.	Toner	360
Ontario		Railroad, Gardner's determination	250
Ontario		Railroad, Comstock's determination	246. 91
Osborn's	Colo	Toner	8, 821
Otsego	N. Y.	Toner	1, 193
Otter	N. Y.	Toner	2, 206
Oven	N. Y.	State Survey	2, 025
Owasco	N. Y.	Toner	691
Pahranagut	Nev		3, 400
Pamedumcook	Me	Water-Power of Maine	500
Pemidgi	Minn	Toner	1, 456
Pend d'Oreille	Idaho	Petermann	2, 093
Pend d'Oreille	Idaho	Pacific Railroad Reports	1, 630
Pewankee	Wis	Toner	1, 591
Pike	Minn	Pacific Railroad Reports	1, 134
Piseco	N. Y.	Toner	1, 648
Placid	N. Y.	State Survey	1, 991
Plait-il	W. T.		1, 911
Pleasant	N. Y.	Toner	1, 706
Pomgoawahem	Me	Water-Power of Maine	914
Poplar	Minn	Pacific Railroad Reports	1, 562
Portage	Me	Water-Power of Maine	625
Prior	Minn	Railroad Reports	809
Pyramid	Nev	Pacific Railroad Reports	4, 890
Quinsigamond	Mass	Toner	361
Qui Parle	Minn	Petermann	946
Qui Parle	Minn	United States Engineer Corps, level	954
Racket, or Raquette	N. Y.	State Geological Survey	1, 731
Racket, or Raquette	N. Y.	State Survey	1, 766
Rainy	Minn	Hind	1, 100
Random	Wis	Toner	870
Rangeley	Me	Water-Power of Maine	1, 511
Rhett	Cal	Pacific Railroad Reports	4, 014
Rich	N. Y.	State Geological Survey	1, 547
Richardson	Me	Water-Power of Maine	1, 456
Ripogonus	Me	Water-Power of Maine	878
Round	Oreg		4, 671
Saint Clair		Railroad Reports .....	.....
Saint Croix	Wis	Saint Paul, Stillwater and Taylor's Falls Railroad	664
Sakatah	Minn	Toner	932
Salmon	N. Y.	State Survey	1, 756

Lakes of the United States—Continued.

Name.	State or Territory.	Authority or reference.	Elevation.
			<i>Feet.</i>
San Cristoval	Colo	Hayden	9,000
Sand	N. Y.	Toner	1,793
Sandford	N. Y.	Toner	1,826
Sandford	N. Y.	Guyot	1,731
Sandford	N. Y.	State Survey	1,722
Sandy	Minn	Toner	1,450
San Luis	Colo	Hayden	7,592
San Miguel	Colo	Hayden	9,720
Saranac, lower	N. Y.	State Survey	1,557
Saranac, upper	N. Y.	State Survey	1,606
Schoodie	Me	Water-Power of Maine	300
Schuyler	N. Y.	Toner	1,200
Sebago	Me	Water-Power of Maine	247
Sebec	Me	Water-Power of Maine	375
Self's	Minn	Saint Paul and Pacific Railroad	851
Seneca	N. Y.	State Geological Survey	370
Sevier	Utah	Wheeler	4,600
Shetek	Minn	Petermann	1,518
Shoshone	Wyo	Hayden	7,870
Silver	N. Y.	State Survey	1,983
Skaneateles	N. Y.	Toner	932
Smith	Minn	Saint Paul and Pacific Railroad	1,049
Smith's	N. Y.	State Survey	1,775
Spirit	Minn	Toner	1,310
Square and Cross	Me	Water-Power of Maine	587
Squawpan	Me	Water-Power of Maine	580
Stampede	Oreg	Wallen	4,196
Stony Ponds	N. Y.	State Geological Survey	1,536
Sueur	Minn	Petermann	1,011
Superior		Railroad Reports	609. 40
Tahoe	Cal	Railroad Reports	6,247
Takara	Minn		1,168
Tear of the Clouds	N. Y.	State Survey	4,327
Tiger	Minn	Railroad Reports	979
Traverse	Minn		975
Traverse	Minn	Petermann	960
Traverse	Minn	Pacific Railroad Reports	1,200
Traverse	Minn	United States Engineer Corps, level	1,000. 5
Tulare	Cal	Pacific Railroad Reports	398
Tully	N. Y.	Toner	1,200
Tupper's	N. Y.	Toner	1,545
Tupper's	N. Y.	State Survey	1,554
Twin Lakes	Colo	Hayden	9,357
Umbagog	Me	Water-Power of Maine	1,256
Upper Klamath	Oreg		4,131
Upper Saint Croix	Wis	Petermann	956
Upper Saranac	N. Y.		1,567
Utah	Utah	Utah Southern Railroad	4,498. 5
Walker's	Nev	Pacific Railroad Reports	3,840
Washoe	Nev	Foster	5,006
Watumpi	Oreg		4,287
Webber	Cal	Railroad	6,904
Willailootzas	W. T	Toner	2,940
Williamson's	Cal		2,588
Winnebago		Toner	748
Winnipeg		Hind	630
Winnipiseogee	N. H		501
Wood	Me	Water-Power of Maine	1,094
Woodhull	N. Y.	Toner	2,019
Wright	Cal	Pacific Railroad Reports	4,470
Yellowstone	Wyo	Hayden	7,788

SECTION III.

ELEVATIONS AND SLOPES OF SOME OF THE PRINCIPAL RIVERS OF THE WEST.

Animas River, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Divide at head.....	113	12,500	-----
Head Baker's Park.....	105	9,900	450
Foot Baker's Park.....	97	9,400	28
Mouth Cascade Creek.....	80	7,700	100
Head Animas Park.....	70	6,900	80
Foot Animas Park.....	56	6,600	21
Mouth Florida.....	38	6,106	27
Mouth.....	0	5,310	21

Mean fall per mile from head of Baker's Park to mouth, 43.7 feet.
All elevations are barometric.

Arkansas River.

Locality.	Authority or reference.	From mouth.	Elevation.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Source in Tennessee Pass.....	Hayden.....	1,539	10,000	-----
Mouth Colorado Gulch.....	Hayden.....	1,521	9,586	23
Mouth Lake Creek.....	Hayden.....	1,510	9,089	45.2
Mouth Pine Creek.....	Hayden.....	1,501	8,620	52.1
Mouth Cottonwood Creek.....	Hayden.....	1,488	8,317	23.3
Mouth Chalk Creek.....	Hayden.....	1,480	7,877	55.3
Mouth South Arkansas.....	Kansas Pacific Railroad (preliminary).	1,457	6,500	59.9
Cañon City.....	Denver and Rio Grande Railroad.	1,404	5,300	22.6
Pueblo.....	Denver and Rio Grande Railroad.	1,364	4,670	15.8
Mouth of Apishpa River.....		1,323	4,371	7.3
24 miles above Bent's Fort.....		1,313	4,091	28
Near Bent's Fort.....		1,289	3,672	17.5
		1,272	3,537	8
		1,249	3,328	9.1
		1,228	3,166	7.7
West line of Kansas.....		1,207	3,047	5.7
		1,184	2,852	8.5
		1,163	2,692	7.6
		1,141	2,556	6.2
Santa Fé Crossing.....		1,121	2,431	6.3
Near Fort Atkinson.....		1,095	2,331	3.9
Second Coon Creek.....			2,244	
First Coon Creek.....			2,004	
Mouth Pawnee Fork.....			1,962	6.5
Mouth Walnut Creek.....			1,872	
Great Bend.....		992	1,658	
Near Fort Gibson.....		642	560	3.14
Near Fort Smith.....		522	418	1.18
Little Rock.....		250	252	0.61
Mouth.....		0	162	0.36

Big Hole River, Montana (Northern Pacific Railroad surveys).

Locality.	Elevation. Feet.
Head of cañon	5,335
Mouth Moose Creek	5,276
Foot of cañon	5,230
Mouth Camp Creek	5,135
Mouth	4,718

All elevations are barometric.

Big Horn River, Wyoming and Montana.

Source	7,527
Mouth Popo Agie	5,347
Leaves Big Horn Range	3,534
Mouth	2,831

All elevations are barometric.

Bitterroot River, Montana.

Mean fall per mile	11.1
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Blackfoot Fork, Montana.

Mean fall per mile	30
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Boyer River, Iowa.

Mean fall per mile from Dennison to mouth	3.3
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Canadian River, Indian Territory (Pacific Railroad Reports).

Mouth Spring Creek	2,678
Mouth Valley Creek	2,505
Mouth Wine Creek	2,454
Mouth Wolf Creek	2,319
Epsom Springs	2,171
Fort Smith	466

All elevations are barometric.

Cedar River, Iowa.

Fall per mile from State line to Cedar Falls	3.6
from Cedar Falls to Moscow	2.4
from Moscow to mouth	2

Clark's Fork of the Columbia.

Mean fall per mile	11
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Colorado River of the West.

Locality.	Authority or reference.	From mouth.	Elevation.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Junction of Grand and Green	Powell	1,037	3,900	.....
	Powell	1,022	3,780	8.00
	Powell	1,018	3,625	38.75
Mille Crag Bend	Powell	996	3,470	7.05
Mouth Dirty Devil River	Powell	989	3,425	6.43
Mouth Escalante River	Powell	942	3,325	2.22
Mouth San Juan River	Powell	934	3,300	3.12
Crossing of the Fathers	Powell	906	3,250	1.80
Mouth Navajo Creek	Powell	895	3,200	4.55
Mouth Paria River	Powell	877	3,180	1.11
Mouth Colorado Chiquito	Powell	816	2,680	8.20
	Powell	794	2,550	5.95
	Powell	784	2,340	21.00
	Powell	742	1,875	11.07
Kanab Creek	Powell	731	1,800	6.82

Colorado River of the West—Continued.

Locality.	Authority or reference.	From mouth.	Elevation.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Toroweap Valley	Powell	697	1,650	4.48
Toroweap Valley	Powell	665	1,500	4.69
Mouth Diamond Creek	Powell	646	1,310	10.00
Grand Wash	Powell	593	1,000	5.85
Mouth Virgin River	Powell	570	930	3.04
Head Black Cañon	Powell	530	900	75
Shallow Rapid	Ives	500	860	1.33
Shallow Rapid	Ives	489	790	6.36
Deep Rapid	Ives	456	656	4.06
Mojave Valley	Ives	411	565	2.02
Mojave Cañon	Ives	382	524	1.41
Mouth Williams's River	Ives	340	465	1.40
Beaver Island	Ives	322	440	1.39
Riverside Mountain	Ives	302	409	1.55
Halfway Bend	Ives	279	378	1.35
Long Shoals	Ives	260	350	1.47
Long Bend	Ives	239	322	1.33
Foot of Colorado Valley	Ives	210	282	1.38
Canebrake Cañon	Ives	188	252	1.36
Purple Hill Pass	Ives	175	234	1.38
Explorer's Pass	Ives	166	222	1.33
Fort Yuma	Ives	150	200	1.38
Cocopa Village	Ives	132	172	1.56
Cocopa Village	Ives	119	155	1.31
Cocopa Village	Ives	109	140	1.50
Cocopa Village	Ives	99	128	1.20
Cocopa Village	Ives	89	112	1.60
Cocopa Village	Ives	78	97	1.36
Cocopa Village	Ives	64	77	1.43
Cocopa Village	Ives	48	54	1.44
Robuson's Landing	Ives	10	-----	1.42

Mean fall per mile from junction of Grand and Green Rivers to mouth, 3.76 feet.
 All elevations are barometric. Stage of water not given. Distances are measured along the river.

Des Moines River, Iowa.

	<i>Feet.</i>
Mean fall per mile from Fort Dodge to Ottumwa	2.3
Mean fall per mile Ottumwa to mouth	1.9

Rio Dolores, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Mouth Lost Cañon	134	6,950	-----
	111	6,500	20
Mouth Disappointment Creek	83	5,600	32
In Transverse Valley	49	5,100	15
Mouth San Miguel	43	5,000	17
Mouth Unaweep Cañon	21	4,600	18
Mouth	0	4,250	17

All elevations are barometric.
 Mean fall per mile, 20.1 feet.

Eagle River, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head in Tennessee Pass	62	10,418	-----
Mouth Homestake Creek	50	8,693	144
Mouth Roche Montonuil Creek	45	7,856	167
Mouth Gore's Creek	41	7,700	39
Head of Cañon	29	7,065	53
Mouth	0	6,125	32

All elevations are barometric.

East Nishnabotany River, Iowa.

Fall per mile from the crossing of the Chicago, Rock Island and Pacific Railroad to mouth	2.4
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Floyd River, Iowa.

Fall per mile from the mouth of Willow Creek to its mouth	3
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Gallatin River, Montana (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head	93	6,823	-----
Ten miles above cañon	67	6,149	26
Middle of cañon	52	5,586	37.5
Foot of cañon	44	5,215	41.4
Bridge	20	4,493	30.1
Mouth	0	4,100	19.8

All elevations are barometric.

Gila River, Arizona (Pacific Railroad Reports).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
	578	4,347	-----
	418	3,732	3.8
	390	3,147	20.9
	327	2,674	7.5
	230	1,751	9.5
	193	1,419	9.6
	126	845	8.6
	87	293	11.3
Mouth	0	254	0.5

All elevations are barometric.

Grand River, Colorado and Utah (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Grand Lake, Middle Park	348	8,153	-----
Forks	344	8,123	5
Hot Springs	320	7,715	17
Mouth Muddy Creek	302	7,180	30
Foot cañon in Park Range (Gore's Cañon)	295	7,000	25.7
Mouth Eagle River	228	6,125	13.1
Mouth Roaring Fork	209	5,743	20.1
	203	5,645	16.3
Mouth North Main Creek	188	5,445	13.3

Grand River—Continued.

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Month Roan Creek	152	5, 100	9. 6
Mouth Gunnison River	120	4, 523	18
Head Low Cañon	104	4, 500	1. 4
Horseshoe Bend	70	4, 300	5. 9
Mouth Dolores	52	4, 250	2. 8
Mouth, junction with the Green	0	3, 900	6. 7

All elevations are barometric.

Mean fall per mile from Grand Lake to its mouth, 12. 2 feet.

Rio Grande.

Locality.	Authority.	From head.	Elevation.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Cunningham Pass, head	Hayden		12, 090	
Mouth Pole Creek	Hayden	4. 5	10, 790	288. 9
Mouth Lost-Trail Creek	Hayden	13	9, 590	141. 1
Antelope Park	Hayden	28	8, 990	40
Del Norte	Hayden	88	7, 890	18. 3
In San Luis Valley	Hayden	118	7, 574	10. 5
In San Luis Valley	Hayden	148	7, 415	5. 3
Foot Taos Cañon	Kansas Pacific Railroad, preliminary surveys.		7, 301	
Peña Blanca	Pacific Railroad Reports.		5, 288	
Mouth Rio Galisteo	Pacific Railroad Reports.		5, 242	
Albuquerque	Pacific Railroad Reports.		5, 026	
Isleta	Pacific Railroad Reports.		4, 910	
Socorro	Pacific Railroad Reports.		4, 560	
Alamosa	Pacific Railroad Reports.		4, 200	
El Paso	Pacific Railroad Reports.		3, 800	

All elevations are barometric, except that at the foot of Taos Cañon.

Green River.

Locality.	Authority.	From mouth.	Elevation.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Forks, near head		641	7, 000	
		581	6, 238	12. 7
		561	6, 210	1. 4
Green River City	Powell	531	6, 130	2. 7
Mouth of Black's Fork	Powell	499	5, 950	5. 6
Mouth of Henry's Fork	Powell	471	5, 820	4. 6
Mouth of Vermillion Creek	Powell	399	5, 360	6. 4
Mouth of Yampa	Powell	379	5, 060	15
Split Mountain Cañon	Powell	344	4, 780	5. 1
Mouths of White and Uinta Riv'rs	Powell	277	4, 660	1. 8
	Powell	213	4, 625	0. 6
Brown Cliffs	Powell	168	4, 600	0. 6
Mouth of Price River	Powell	139	4, 175	14. 6
Roan or Book Cliffs	Powell	132	4, 100	10. 7
Head of Labyrinth Cañon	Powell	105	4, 000	3. 7
Head of Stillwater Cañon	Powell	43	3, 950	0. 9
Mouth of Grand River	Powell		3, 900	1. 1

All elevations are barometric.

Mean fall per mile from the upper forks to the junction with the Grand, 6. 4 feet.

Gunnison River, Colorado (Hayden.)

Locality.	From	Eleva-	Fall per
	mouth.	tion.	mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head	200	11,000	-----
Mouth of Pass Creek	185	9,869	75.4
Head of Upper Cañon	176	9,576	32.6
Mouth of Slate River	157	8,176	73.7
Mouth of Tamichi Creek	141	7,725	28.2
Foot of Open Valley	130	7,638	7.9
Mouth of White-Earth River	123	7,450	26.9
Mouth of Lake Fork	112	7,213	21.5
Mouth of Cebolla Creek	97	6,800	27.5
Mouth of North Fork	62	5,405	39.9
Mouth of Uncompahgre River	45	5,100	17.9
Mouth of Roubideau's Creek	40	4,925	35
Mouth	-----	4,523	10

All elevations are barometric.

Mean fall per mile from mouth of Pass Creek to mouth, 29 feet.

Iowa River, Iowa.

	<i>Feet.</i>
Mean fall per mile from Iowa Falls to Iowa City	3.1
Mean fall per mile from Iowa City to mouth	2.4

Jefferson River, Montana.

Locality.	Elevation.
	<i>Feet.</i>
Head of Red Rock Creek	6,500
Beaverhead	4,888
Mouth Big Hole River	4,718
Bridge	4,672
Mouth Hell Cañon Creek	4,598
Mouth Fish Creek	4,457
Mouth White Tail Deer Creek	4,351
Mouth North Boulder Creek	4,303
Head cañon	4,276
Foot cañon	4,219
Mouth	4,100

All elevations are barometric.

Kansas River, Kansas, low-water slope (railroad levels).

Locality.	From	Eleva-	Fall per
	mouth.	tion.	mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Mouth Saline River	-----	1,961	-----
Fort Riley	132	1,047	-----
Manhattan	115	993	3.2
Topeka	65	873	2.4
Lawrence	39	813	2.3
Mouth	0	751	1.6

Kansas City, mouth of Kansas River, high water 1844, is 770.77 feet. I have not the range between high and low water, but assume it to be 20 feet, making low water 751 feet.

Lake Fork of the Gunnison, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Head	59	13,260	-----
Valley	56.5	11,060	880
Mouth South Branch	51	9,860	218
Mouth Godwin Creek	36	8,660	80
Mouth Indian Creek	15	7,860	38
Mouth	-----	7,213	43

All elevations are barometric.

La Plata River, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Parrott City	43	8,500	-----
	38	7,920	116
	22	6,270	103
	10	5,500	64
Mouth	-----	5,297	20

All elevations are barometric.

Little Sioux River, Iowa.

Mean fall per mile from Cherokee to Smithland	Feet.	2.6
Mean fall per mile from Smithland to mouth		0.4

Los Pinos River, Colorado (Hayden).

Locality,	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Weeminuche Pass	75	10,670	-----
Trail leaves stream	69	9,888	130
Mouth West Branch	61	8,688	133
Mouth Vallecito Creek	48	7,688	83
Big Bend	42	7,288	67
Trail crosses	33	6,680	67
Mouth	-----	5,750	28

All elevations are barometric.

Rio Mancos River, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Merritt's Ranch	62	9,770	-----
	52	7,360	241
	38	6,250	79
	32	5,730	87
	22	5,270	46
	12	4,900	37
Mouth	-----	4,700	17

All elevations are barometric.

LISTS OF ELEVATIONS.

Madison River, Montana (Hayden).

Locality.	From	Eleva-	Fall per
	mouth.	tion.	mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head, Madison Lake	170	8,301	-----
Upper Geyser Basin	160	7,367	93.4
Mouth East Fork	148	7,237	10.8
Mouth Gibbon's Fork	142	6,808	71.5
Mouth South Fork	116	6,567	9.3
In Middle Cañon	103	6,348	16.8
Mouth Indian Creek	66	5,494	23.1
Opposite Virginia City	55	5,026	42.5
Head Lower Cañon, mouth Meadow Creek	41	4,848	12.7
Foot Lower Cañon, mouth Cold Spring Creek	23	4,521	18.2
Mouth		4,129	17

All elevations are barometric.

Maquoketa River, Iowa.

Mean fall from Manchester to mouth..... 3.4 feet

Minnesota River, Minnesota, low-water slope (levels by United States Engineer Corps).

Locality.	From	Eleva-	Fall per
	mouth.	tion.	mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Big Stone Lake	261.6	992.80	-----
Pomme de Terre Creek	241.5	962.68	2.98
Lac qui Parle	227.9	954.04	0.64
Chippewa River	215.7	939.84	1.16
Foot Minnesota Falls	200.3	883.14	3.68
Mouth Yellow Medicine River	195.7	875.12	1.74
Redwood River	174.5	831.67	2.05
Fort Ridgely	155.2	807.39	1.26
Big Cottonwood River	134.6	795.92	1.08
Judson	122.5	773.78	1.83
South Bend	116.4	769.2	0.75
Mouth Blue Earth	115	768.9	0.19
Mankato	113.7	765.7	2.99
Winona and Saint Peter Railroad bridge		746	-----
Saint Peter	96.1	743.4	1.26
Ottawa	88.6	736	0.99
Le Sueur	80.1	729.2	0.80
East Henderson	72	724.8	0.54
Henderson	70.9	723.4	1.27
Faxon	56.8	713.4	0.71
Belle Plaine	49.3	709.8	0.48
Crest Little Rapids	35.8	706	0.28
Foot Little Rapids	35.5	704.8	10.67
Mouth		704.4	0.01

Mississippi River.

Locality.	State.	Authority.	From	Eleva-	Fall
			preced-	tion.	per
			ing.		mile.
			<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Source	Minn..	Nicollet, b .....	.....	1,680	.....
Lake Itasca	Minn..	Nicollet, b	6	1,575	17.50
Head Lake Traverse	Minn..	Nicollet, b	90	1,456	1.32
Head Lake Cass	Minn..	Nicollet, b	45	1,402	1.20
Mouth Leech Lake River	Minn..	Nicollet, b	80	1,356	0.57
Head Falls of Peckagama	Minn..	Nicollet, b	38	1,340	0.33
Mouth of Swan River	Minn..	Nicollet, b	63	1,290	0.73
Mouth Sandy Lake River	Minn..	Nicollet, b	38	1,253	0.95
Mouth Pine River	Minn..	Nicollet, b	97	1,176	0.79
Mouth Crow Wing River	Minn..	Nicollet, b	48	1,130	0.95
Sauk Rapids	Minn..	St. Paul and P.R.R. ....	.....	991	.....
Saint Cloud (low water)	Minn..	St. Paul and P.R.R. ....	.....	962	.....
Saint Anthony (low water)	Minn..	St. Paul and P.R.R. ....	.....	800	.....
One-half mile below Saint An- thony's Falls (low water)	Minn..	St. Paul and P.R.R. ....	.....	720.9	.....
Mouth Minnesota (low water)	Minn..	U. S. E. C. levels .....	.....	704.4	.....
Saint Paul (high water)	Minn..	L. S. and M. R. R. ....	.....	706.4	.....
Saint Paul (low water)	Minn..	L. S. and M. R. R. ....	.....	685.4	.....
Newport (low water)	Minn..	U. S. E. C. levels	9	678.3	0.79
Nininger (low water)	Minn..	U. S. E. C. levels	11	671.5	0.62
Hastings (low water)	Minn..	U. S. E. C. levels	4	670.5	0.25
Prescott (low water)	Wis ..	U. S. E. C. levels	2	670	0.25
Red Wing (low water)	Minn..	U. S. E. C. levels	22	665.7	0.18
Wacouta (low water)	Minn..	U. S. E. C. levels	5	664.8	0.18
Lake City (low water)	Minn..	U. S. E. C. levels	13	664.2	0.05
Reed's Landing (low water)	Minn..	U. S. E. C. levels	8	663.7	0.06
Wabasha (low water)	Minn..	U. S. E. C. levels	3	662	0.56
Alma (low water)	Wis ..	U. S. E. C. levels	8	657.1	0.61
Minneiska (low water)	Minn..	U. S. E. C. levels	9	650.5	0.73
Fountain City (low water)	Wis ..	U. S. E. C. levels	12	643.2	0.61
Winona (low water)	Minn..	U. S. E. C. levels	7	639.9	0.47
Trempealeau (low water)	Wis ..	U. S. E. C. levels	12	635.8	0.34
Dresbach (low water)	Minn..	U. S. E. C. levels	9	629.7	0.68
La Crosse (low water)	Wis ..	U. S. E. C. levels	10	626.3	0.34
Prairie du Chien (low water)	Wis ..	Railroad Reports	61	613	.....
Dubuque (low water)	Iowa ..	Ill. Cent. Railroad .....	.....	599.15	.....
Clinton (high water 1864)	Iowa ..	C. and N. W. R. R. ....	.....	593.15	.....
Davenport (high water)	Iowa ..	C. and R. I. R. R. ....	.....	569.88	.....
Davenport (low water)	Iowa ..	C. and R. I. R. R. ....	.....	553.22	.....
Keokuk (high water 1851)	Iowa ..	Railroad Reports .....	.....	502.55	.....
Keokuk (low water 1851)	Iowa ..	Railroad Reports .....	.....	491.83	.....
Quincy (high water 1851)	Ill ..	C., B. and Q. R. R. ....	.....	493.11	.....
Quincy (low water 1854)	Ill ..	C., B. and Q. R. R. ....	.....	472.39	.....
Hannibal (high water 1851)	Mo	H. and St. Joe R. R. ....	.....	485.10	.....
Saint Louis (high water 1844)	Mo	Railroad Reports .....	.....	435.87	.....
Saint Louis (high water 1858)	Mo	Railroad Reports .....	.....	431.57	.....
Saint Louis (high water 1851)	Mo	Railroad Reports .....	.....	431.17	.....
Saint Louis (low water)	Mo	Railroad Reports .....	.....	394.48	.....
Cairo (high water 1858)	Ill ..	Railroad Reports	73	331.61	.....
Cairo (high water 1862)	Ill ..	.....	.....	332.92	.....
Cairo (high water 1867)	Ill ..	.....	.....	333.04	.....
Cairo (low water 1871)	Ill ..	.....	.....	279.32	.....
Cairo (ordinary low water)	Ill ..	.....	.....	291.23	.....
Columbus (high water 1858)	Ky ....	.....	21	320.01	.....
Hickman (high water 1858)	Ky ....	.....	.....	313.01	.....
Memphis (high water 1858)	Tenn ..	Railroad Reports .....	.....	219.65	.....
Memphis (high water)	Tenn ..	Railroad Reports .....	.....	218.70	.....
Memphis (low water)	Tenn ..	Railroad Reports .....	.....	184	.....
Gaines's Landing (low water) .....	.....	Humphreys and Abbot.	125	149	0.28

Mississippi River—Continued.

Locality.	State.	Authority.	From preceding.	Elevation.	Fall per mile.
Natchez (low water).....	Miss ..	Humphreys and Abbot.	Miles. 269	Feet. 66	Feet. 0.24
Baton Rouge (low water).....	La	Humphreys and Abbot.	133	34	0.24
Mouth (low water).....	La	Humphreys and Abbot.	245	.....	0.14

Missouri River.

Locality.	Authority.	From mouth.	Elevation.	Fall per mile.
Head (Three Forks).....	Hayden	Miles. 2,824	Feet. 4,100	Feet.
Horseshoe Bend.....	Hayden	2,818	3,969	.....
Mouth Sun River .....	.....	2,639	3,573	.....
Mouth Little Prickly Pear Creek..	Stevens .....	.....	3,120	.....
Foot of Falls.....	.....	2,670	2,964	.....
Fort Benton.....	.....	2,644	2,845	.....
Fort Union.....	.....	1,894	2,194	.....
Mouth Poplar Creek.....	Stevens .....	.....	2,070	.....
Seven miles above the mouth of Muddy Creek.	.....	1,843	1,974	.....
Mouth Muddy Creek	Stevens	1,836	1,929	.....
Fort Berthold.....	.....	1,676	1,874	.....
Three miles above La Fontaine Rouge.	.....	1,639	1,834	.....
Mouth Little Knife River.....	Raynolds .....	.....	1,800	.....
Burnt Boat Island	Warren .....	.....	1,690	.....
Bismarck.....	Northern Pacific R. R.	.....	1,649	.....
Fort Pierre.....	.....	1,246	1,475	.....
Cheyenne agency.....	.....	.....	1,415	.....
Fort Sully.....	.....	.....	1,198	.....
Sioux City (low water).....	Illinois Central R. R.	842	1,104	.....
Sioux City and Pacific Ferry.....	S. C. and Pacific R. R.	.....	1,013	.....
Omaha (high water)	Railroad Reports.....	.....	1,002.26	.....
Omaha (low water)	Railroad Reports.....	.....	983.26	.....
East Plattsmouth (high water)	Burl. and Mo. R. R.	.....	972	.....
East Plattsmouth (low water)	Burl. and Mo. R. R.	.....	955	.....
Nebraska City (low water)	Nebraska Railroad.....	.....	919	.....
Saint Joseph (high water).....	Railroad Reports.....	484	820.11	.....
Saint Joseph (low water).....	Railroad Reports.....	.....	800	.....
Atchison (high water 1844).....	Railroad Reports.....	.....	809.88	.....
Atchison (low water).....	Railroad Reports.....	.....	784.88	.....
Leavenworth (high water 1844)...	Railroad Reports.....	.....	788.89	.....
Leavenworth (extreme low water 1867).	Railroad Reports.....	.....	763.89	.....
Kansas City (high water 1844) ...	Railroad Reports.....	.....	770.77	.....
Mouth	Railroad Reports.....	.....	.....	.....

Mojave River (Pacific Railroad Reports).

Locality.	From Mojave Depot Camp.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Mojave Depot Camp	20	2,664	.....
	34	2,227	21.85
	58	2,117	7.85
	89	1,820	12.38
		1,111	22.87

All elevations are barometric.

North Platte River.

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Head in North Park		8,900	.....
Fort Steele		6,800	.....
	355	5,150	.....
	330	4,940	7.6
Fort Laramie	210	4,250	5.7
	185	3,985	16
	172	3,950	2.3
	150	3,820	5.9
	125	3,641	7.2
	117	3,575	8.3
	98	3,460	6.1
Fort Grattan	75	3,325	5.9
Mouth		2,789	7.1

All elevations are barometric. Mean fall per mile for 355 miles above mouth, 6.7 feet.

North Raccoon River, Iowa.

Mean fall per mile from Jefferson to Forks	Feet. 4
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Pecos River, Texas.

Mean fall per mile in lower part of its course	4
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Platte River, Nebraska.

Mean fall per mile from North Platte to mouth, about	4.9
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Rio Puerco, Arizona (Pacific Railroad Reports).

Locality.	From Navajo Springs.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Navajo Springs		5,655	-----
Mouth Lerou Fork	46	5,016	14.11
	59	4,802	16.46
	67	4,735	8.38
	77	4,675	6
	86	4,618	6.33
	102	4,594	1.50

All elevations are barometric.

Raccoon River, Iowa.

Mean fall per mile from Forks to mouth ^{Feet.} 2.11

Red River of the North, Minnesota.

Mean fall per mile from Moorhead to Breckinridge (U. S. Engineer Corps)..... 0.76

Red River of Louisiana (from Humphreys and Abbot's Physics and Hydraulics of the Mississippi River, low-water slope).

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Source	1,200	2,450	-----
Preston	820	641	4.80
Fulton	595	242	1.80
Head of Raft	405	207	0.20
Sireveport	330	180	0.36
Mouth Black River	30	58	0.41
Mouth		54	0.14

Roaring Fork, Colorado (Hayden).

Head	64	11,676	-----
Mouth Hunter's Creek	55	9,400	225
Mouth Difficult Creek	48	8,241	166
Mouth Castle Creek	43	7,942	60
Mouth Frying-Pan Creek	25	6,626	73
Mouth Rock Creek	12	6,000	48
Mouth		5,743	21

All elevations are barometric.

Sacramento River (Pacific Railroad Reports).

Locality.	From Fort Reading.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
	170	4,472	-----
Foot of first cañon	138	3,622	26.57
Mouth Fall River	124	3,250	26.57
Mouth Canoe Creek	110	2,867	27.36
	88	2,177	31.36
	80	1,730	55.88
	64	1,156	35.87
	49	1,078	5.20
Mouth McCloud's River	33	922	9.75
	22	837	7.73
Fort Reading		675	7.36

All elevations are barometric.

San Juan River, Colorado (Hayden).

Locality.	From preced- ing.	Eleva- tion.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Pagosa Springs		7, 095	.....
Mouth Rio Piedra.....	38	6, 000	29
Mouth Rio Los Pinos	25	5, 750	10
Mouth Rio Animas	40	5, 310	11
Mouth Rio La Plata	3	5, 297	4. 3
Pictured Rocks	11	5, 180	10. 7
	22	4, 880	13. 6
Mouth Rio Mancos	21	4, 700	8. 6
	13	4, 540	12. 3
Mouth McElmo	12	4, 510	2. 5
Four miles below mouth Montezuma.....	11	4, 390	11. 0
Mouth.....		3, 300	.....

All elevations are barometric.

San Miguel River, Colorado (Hayden).

Locality.	From mouth.	Eleva- tion.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head Bear Creek Pass.....	88	12, 600	.....
Valley below pass.....	86	10, 200	1, 200
	82	9, 600	150
	80	8, 800	400
Junction East Branch	74	7, 700	183
Exit from the mountains	64	7, 200	50
Crossing of Navajo trail	46	6, 300	50
Foot of Western Bend	22	5, 500	33
Mouth.....		5, 000	23

All elevations are barometric.

Skunk River, Iowa.

Mean fall per mile from Colfax to Oakland.....	<i>Feet.</i> 2. 2
Mean fall per mile from Oakland to mouth.....	1. 5

Snake River, Wyoming and Idaho.

Lo lit .	Authority.	From preced- ing.	Eleva- tion.	Fall per mile.
		<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head.....	Hayden		7, 986	.....
Shoshone Lake	Hayden	2	7, 870	58
Lewis Lake	Hayden	5	7, 828	8. 4
Mouth Lewis Fork.....	Hayden	12	6, 870	79. 8
Jackson's Lake	Hayden	15	6, 806	4. 3
Mouth Henry's Fork.....	Hayden	175	5, 000	10. 3
Taylor's Bridge.....	Hayden	35	4, 814	5. 3
Stoner's Stage Station.....	Hayden	15	4, 621	12. 9
Mouth Portneuf River.....			4, 409	.....
Head of Great Cañon.....			4, 296	.....
Head of American Falls.....	Frémont		4, 240	.....
Foot of American Falls .....				.....

Snake River—Continued.

Locality.	Authority.	From preceding.	Elevation.	Fall per mile.
		Miles.	Feet.	Feet.
Head Salmon Falls			3,226	
Foot Salmon Falls			2,896	
Two miles below Fishing Falls	Frémont	} 140 {	2,761	} 5.5
Ford	Frémont		2,649	
Mouth Owyhee River			2,130	
Below Birch Creek	Frémont		1,879	
Mouth				

All elevations are barometric.

South Platte River.

Locality.	Authority.	From preceding.	Elevation.	Fall per mile.
		Miles.	Feet.	Feet.
Head, near Mount Lincoln	Hayden		11,000	
Fairplay, South Park	Hayden	14	9,800	85.7
Mouth Little Platte River	Hayden	25	8,683	44.7
Foot South Park (head Upper Cañon) ..	Hayden	11	8,165	47.1
Foot Upper Cañon	Hayden	10	7,921	24.4
Mouth Tarryall Creek	Hayden	10	7,326	59.5
Mouth North Fork	Preliminary R. R. surveys.	18	6,110	67.6
Exit from mountains	Preliminary R. R. surveys.	12	5,487	51.9
Denver		18	5,150	18.7
Hughes		21	5,050	4.8
Platteville		17	4,950	5.9
Evans		17	4,725	13.2
Big Spring			3,360	
Brulé		10	3,300	6
Ogalalla		9	3,220	8.9
Roscoe		10	3,130	9
Alkali		10	3,050	8
North Platte, mouth		31	2,789	8.4

Turkey River, Iowa.

Mean fall per mile from Crane Creek to mouth 5

Uncompagre River, Colorado (Hayden).

Locality.	From mouth.	Elevation.	Fall per mile.
	Miles.	Feet.	Feet.
Divide at head	78.5	11,100	
Small Valley	74.5	9,700	350
Lower end of Small Valley	72.5	9,500	100
Lower end of cañon	68.5	8,000	375
Junction Dallas Fork	54.5	7,000	71.4
Uncompagre Agency	40	6,400	41.4
Ford of Salt Lake road	29.5	5,800	57.1
Mouth		5,100	23.7

All elevations are barometric.

Upper Iowa River, Iowa.

Mean fall per mile from Decorah to mouth..... *Feet.* 8.5

Wapsipinicon River, Iowa.

Mean fall from Independence to mouth..... 2.8

West Nishnabotany River.

Fall per mile from crossing of Chicago, Rock Island and Pacific Railroad to mouth. 2.7

Williams River, Arizona (Pacific Railroad Reports).

Locality.	From mouth.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Head.....	145	5,752	.....
	138	5,360	56
	128	4,812	54.80
	80	2,243	53.52
	71	1,945	33.11
	67	1,853	23
	62	1,657	39.80
	52	1,308	34.90
	40	1,184	10.13
	23	899	23.75
	17	693	18.72
Mouth.....	13	504	47.25
		378	9.69

All elevations are barometric.

Yellowstone River, Montana (mainly from Hayden).

Locality.	From mouth Shield's R.	Elevation.	Fall per mile.
	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>
Yellowstone Lake.....	105.5	7,788	.....
Top of Upper Falls (height of Upper Falls, 140 feet).....	90.5	7,693	6.3
Top of Lower Falls (height of Lower Falls, 397 feet).....	90.0	7,485	13.6
Mouth Tower Creek.....	77	6,207	67.8
Mouth Gardiner's River.....	54	5,360	53.6
Mouth Cañon Creek.....	38	5,058	21.8
Head of Tower Cañon.....	8	4,643	12.2
Mouth Shield's River.....		4,500	17.9
Mouth Big Horn River.....		2,831	.....
Mouth.....		2,184	.....

TABLE OF HYPSONETRIC AREAS AND MEAN HEIGHTS OF THE STATES AND TERRITORIES.

The following table exhibits, first, the areas in each of the several States and Territories and the United States, between contours one thousand feet apart in vertical distance. These areas were scaled off from the original of the contour map of the United States contained in this volume; and second, the mean heights of the several States and Territories and the United States. These mean heights were obtained as follows: Most of the Atlantic States and those of the Mississippi Valley, by taking a mean of all the elevations which we have. In the States of the Mississippi Valley this method should give a close approximation to correctness, as they are very uniform in surface, and the elevations which we have are distributed over them quite uniformly.

In those States containing portions of the Appalachian Mountain system this method is obviously faulty, and the results given by it would generally be somewhat too low. I have used it, however, in default of detailed knowledge concerning the topography, which would enable me to use a better method.

In such of these States as are marked "a," I have adopted the mean deduced by Dr. Toner, in his "Dictionary of Elevations." They were evidently deduced in the manner above described.

The mean height of Maine was taken from "Water-Power of Maine."

The mean heights of the States and Territories occupying the slope of the great plains, namely, Dakota, Nebraska, Kansas, Indian Territory, and Texas, were determined in the following manner: Dividing their area into small squares of equal size, I have, by aid of the contour map, estimated the mean height of each square, and thence of the whole.

The mean heights of the States and Territories farther west were determined in a different manner. The area between every two contours was supposed to have a mean height equal to the mean of the two contours; for example, the area between 6,000 and 7,000 feet was supposed to have a mean height of 6,500 feet. Then the sum of the products of the areas by their respective mean heights, divided by the total area, gave what I have adopted as the mean height. The assumption which I have made concerning the mean height of each area is not strictly correct. In some cases this mean height would be less, in others greater, and oftener the former. The probable error, however, will not be great in those Territories where there is great range of elevation. Its effect is, of course, to make the mean heights greater, rather than less, than the truth.

The mean height of the United States was deduced by the same method as that last explained.

States and Territories.	Approximate area, square miles.	Mean height above sea, feet.	Area, in square miles, between—					
			Sea-level and 1,000 feet.	1,000 and 2,000 feet.	2,000 and 3,000 feet.	3,000 and 4,000 feet.	4,000 and 5,000 feet.	
Alabama.....	50,700	375a	46,500	4,200	.....	.....	.....	.....
Arizona.....	109,300	4,300	3,000	10,800	18,900	20,400	14,500	.....
Arkansas.....	52,200	350	51,400	800	.....	.....	.....	.....
California.....	159,400	2,800	43,000	27,000	32,000	18,000	13,500	.....
Colorado.....	104,500	7,000	.....	.....	.....	9,000	21,800	.....
Connecticut.....	4,750	300a	4,550	200	.....	.....	.....	.....
Dakota.....	151,000	1,950	.....	78,700	62,600	7,600	1,000	.....
Delaware.....	2,120	100a	2,120	.....	.....	.....	.....	.....
Florida.....	59,300	60a	59,300	.....	.....	.....	.....	.....
Georgia.....	59,000	575a	48,700	6,500	1,300	900	400	.....
Idaho.....	86,300	4,700	.....	1,100	13,200	16,000	22,200	.....
Illinois.....	55,400	625a	55,400	.....	.....	.....	.....	.....
Indiana.....	33,800	675a	31,900	1,900	.....	.....	.....	.....
Indian Territory.....	69,000	1,250	36,300	23,600	5,500	3,000	400	.....
Iowa.....	55,000	325	24,600	30,400	.....	.....	.....	.....
Kansas.....	81,300	1,780	17,300	32,000	14,900	17,100	.....	.....
Kentucky.....	37,700	600a	32,100	5,300	200	100	.....	.....
Louisiana.....	41,300	75a	41,300	.....	.....	.....	.....	.....
Maine.....	35,000	600	23,600	10,600	700	100	.....	.....
Maryland.....	11,100	375a	10,300	800	.....	.....	.....	.....
Massachusetts.....	7,800	400a	7,300	500	.....	.....	.....	.....

Hypsometric areas and mean heights of the States and Territories.

States and Territories.	Approximate area, square miles.	Mean height above sea, feet.	Area, in square miles, between					
			Sea-level and 1,000 feet.	1,000 and 2,000 feet.	2,000 and 3,000 feet.	3,000 and 4,000 feet.	4,000 and 5,000 feet.	
Michigan.....	56,500	800 ^a	53,000	3,500				
Minnesota.....	83,500	1,050	15,700	67,130	700			
Mississippi.....	47,200	275 ^a	47,200					
Missouri.....	65,400	800	62,900	2,500				
Montana.....	143,600	3,900			40,700	51,600	19,700	
Nebraska.....	76,000	2,550		20,600	22,100	24,800	8,500	
Nevada.....	112,000	5,600		500	4,700	9,300	21,000	
New Hampshire.....	9,280	625 ^a	6,180	2,100	600	300	100	
New Jersey.....	8,320	200 ^a	8,320					
New Mexico.....	121,200	5,660				2,000	52,000	
New York.....	47,100	800 ^a	36,000	10,200	500	300	100	
North Carolina.....	50,704	550 ^a	42,500	5,200	1,700	800	500	
Ohio.....	40,000	700 ^a	30,900	9,100				
Oregon.....	95,300	3,800	11,060	11,300	10,800	11,000	30,000	
Pennsylvania.....	46,000	750	25,500	20,500				
Rhode Island.....	1,300	125 ^a	1,300					
South Carolina.....	34,000	350 ^a	31,300	2,700				
Tennessee.....	45,600	600 ^a	27,400	13,600	3,600	700	100	
Texas.....	255,000	1,850	113,000	41,000	37,500	29,700	32,100	
Utah.....	84,500	6,100					21,000	
Vermont.....	10,200	600 ^a	5,400	4,000	600	250		
Virginia.....	38,300	700 ^a	26,000	7,900	3,500	900		
Washington Territory.....	70,000	2,600	16,000	18,000	15,400	6,900	4,400	
West Virginia.....	23,000	1,050 ^a	6,100	15,300	1,500	100		
Wisconsin.....	53,900	850 ^a	46,400	7,500				
Wyoming.....	97,600	6,400				3,000	19,000	
United States, exclusive of Alaska	2,980,800	2,600	1,150,500	497,400	293,200	233,800	282,300	

States and Territories.	Area, in square miles, between—							Area above 13,000 feet, square miles.
	5,000 and 6,000 feet.	6,000 and 7,000 feet.	7,000 and 8,000 feet.	8,000 and 9,000 feet.	9,000 and 10,000 feet.	10,000 and 11,000 feet.	11,000 and 12,000 feet.	
Alabama.....								
Arizona.....	14,000	21,000	4,800	1,600	200	100		
Arkansas.....								
California.....	9,500	6,000	3,900	2,500	1,600	900	700	500
Colorado.....	15,000	10,000	11,000	14,000	10,000	6,200	5,000	1,400
Connecticut.....								
Dakota.....	700	400						
Delaware.....								
Florida.....								
Georgia.....	200							
Idaho.....	19,200	9,400	4,100	1,600	400	100		
Illinois.....								
Indiana.....								
Indian Territory.....								
Iowa.....								
Kansas.....								
Kentucky.....								
Louisiana.....								
Maine.....								
Maryland.....								
Massachusetts.....								
Michigan.....								
Minnesota.....								
Mississippi.....								
Missouri.....								
Montana.....	17,100	9,000	4,500	1,100	100			
Nebraska.....								
Nevada.....	35,000	25,000	13,000	2,800	600	100		
New Hampshire.....								
New Jersey.....								

LISTS OF ELEVATIONS.

Hypsometric areas and mean heights of the States and Territories—Continued.

States and Territories.	Area, in square miles, between—								Area above 13,000 feet, square miles.
	5,000 and 6,000 feet.	6,000 and 7,000 feet.	7,000 and 8,000 feet.	8,000 and 9,000 feet.	9,000 and 10,000 feet.	10,000 and 11,000 feet.	11,000 and 12,000 feet.	12,000 and 13,000 feet.	
New Mexico	22,000	22,000	6,500	5,000	3,200	1,800	700	.....	.....
New York .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Carolina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon	11,300	4,300	2,800	1,500	800	200	200	100	.....
Pennsylvania .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas	1,700	.....	.....	.....	.....	.....	.....	.....	.....
Utah	25,000	19,500	9,500	4,800	2,500	1,400	600	200	.....
Vermont .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington Territory	3,200	2,600	1,100	800	700	500	300	100	.....
West Virginia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming	20,000	24,000	17,000	7,200	4,300	2,300	900	100	.....
United States, exclusive of Alaska	199,900	153,200	78,200	42,900	24,400	14,200	8,400	2,400	800

The mean heights of the several continents, as given by Humboldt, are as follows:

	<i>Feet.</i>
Europe	1,342
Asia	2,264
Africa	1,800
North America	1,496
South America	2,302

NOTES CONCERNING THE HYPSONOMETRIC MAP OF THE UNITED STATES.

The accompanying map is intended to represent approximately, and as nearly as the information at present extant enables me to do so, the locations of contour curves over the country.

The vertical interval between the curves is 1,000 feet. Near the Atlantic and Gulf coasts the contour approximately at 500 feet above sea, as constructed by Mr. Charles A. Schott, has been added.

In constructing these contours, though I have made use of the many thousands of elevations in my possession, I have borne in mind that elevations of isolated points merely, without a knowledge of the surrounding topography, are of little use. Indeed, in many cases they are worse than useless, as they may tend to mislead.

The *mean* heights of mountain-ranges have been expressed as nearly as possible. They will, no doubt, be subject to much criticism, as many of them are based on insufficient information, and my estimate of the *mean* heights of others, based on the heights of a few peaks, may not be correct.

The sources of information consulted and made use of in this work are almost numberless. I will enumerate only the principal ones. For a knowledge of the Appalachian system and the country adjacent, I am indebted mainly to the article by Professor Guyot on the Appalachian system, published in vol. xxxi (1861) of *Silliman's Journal*; also, in various State geological and geographical reports there is much material of value concerning the Eastern States. Information concerning the valley of the Mississippi is scattered far and wide, and to specify authorities would fill a volume. Reports of State and General Government surveys and profiles of railroads have supplied the greater part of this information.

On the slope of the great plains, between longitudes 96° and 104°, the contours are controlled largely by the plotted heights. These heights have been collated from, first, the profiles of the several railroads which cross the plains, the Northern Pacific, Union Pacific, Burlington and Missouri River, Kansas Pacific, Atlantic and Pacific, Arkansas Valley, and others of less importance; and, second, from the profiles of the routes of the numerous expeditions which have crossed the plains in various directions.

The Llano Estacado and the western part of Texas are known mainly from the reports and maps of Pope,¹ Whipple,² and Marcy;³ the valley of the Canadian, from Whipple;² that of the Arkansas, from Emory,⁴ Gunnison,⁵ and the Arkansas Valley Railroad; the Kansas River and Smoky Hill Fork, from the Kansas Pacific Railroad; the Valley of the Republican, from Frémont⁶ and Stansbury;⁷ that of the Platte, from the Union Pacific Railroad. Information concerning the Missouri River and the country lying between that river and the Black Hills is derived from the work of Warren,⁸ Reynolds,⁹ and Ludlow.¹⁰ Stevens¹¹ gives much information concerning the country east of the Missouri, and the Northern Pacific Railroad furnishes a profile across it. Facts and figures concerning the plains of the Upper Missouri come mainly from Stevens.¹¹

The divides between the valleys have been crossed in many places, and profiles made, and in no place do they show much rise above the valleys.

The principal authorities consulted in regard to the Black Hills are the reports of Warren,⁸ Reynolds,⁹ Ludlow,¹⁰ and Jenney's map.¹²

Proceeding westward and entering the mountains, isolated elevations become of less value, while a knowledge of the general topographic features correspondingly increases in value.

For a knowledge of the topographic features of New Mexico, I have consulted the reports of the United States expeditions which have crossed that Territory; principal

¹ Pacific Railroad Reports, vol. ii.

² Pacific Railroad Reports, vols. iii and iv.

³ Exploration of Red River of Louisiana. Thirty-second Congress, second session, Executive Document No. 54.

⁴ Notes of a Military Reconnaissance from Fort Leavenworth, Mo., to San Diego, Cal., by Maj. W. H. Emory, 1846-'47. Thirtieth Congress, first session, Executive Document No. 7.

⁵ Pacific Railroad Report, vol. iii.

⁶ Report of the Exploring Expedition to the Rocky Mountains in the year 1842, and to Oregon and North California in the years 1843-44, by Brevet Capt. J. C. Frémont.

⁷ Exploration and Survey of the Valley of the Great Salt Lake of Utah. Howard Stansbury. Special session, 1851, Senate Executive Document No. 3.

⁸ Reconnaissance of the Dakota Country, 1855. Thirty-fourth Congress, first session, Senate Executive Document No. 76.

⁹ Exploration of the Yellowstone River, by Brevet Brig. Gen. W. F. Reynolds, and Geological Report, by Dr. F. V. Hayden. Fortieth Congress, first session, Senate Executive Document No. 77.

¹⁰ Report of a Reconnaissance of the Black Hills of Dakota in 1874, by Capt. William Ludlow.

¹¹ Pacific Railroad Reports, vol. i and Supplement, and vol. xii, part i.

¹² Map of the Black Hills, W. P. Janney, 1873.

among them are Emory,¹ Whipple,² Ives,³ Parké,⁴ and Simpson.⁵ The mountain and plateau regions of Colorado are from the work, published and unpublished, of this Survey. The plateau country adjacent to the Green and Colorado Rivers is from the published, and, through the courtesy of the geologist-in-charge, the unpublished, work of the survey in charge of Maj. J. W. Powell.⁶ The country of the Lower Colorado is known from Ives's⁷ report, and the rest of Arizona from Ives,³ Parke,⁴ Whipple,² Sitgreaves,⁸ Simpson,⁵ Mexican Boundary Survey,⁹ and the published results of the survey under Lieutenant Wheeler, Corps of Engineers. Southern California has been explored by Parke,⁴ Williamson,¹⁰ Whipple,² and, in more detail, by the California State survey.¹¹ The latter has made detailed study, also, of the greater part of the State, notably of the Sierra Nevada and the Coast ranges. Nevada and Western Utah are known principally from the maps of Wheeler's survey. Beckwith¹² also gives some information concerning this region. In the neighborhood of the Union Pacific Railroad, the maps of the "Survey of the Fortieth Parallel"¹³ under Mr. Clarence King have, so far as published, furnished valuable information.

Information concerning the country of the Bighorn, Powder, and Tongue Rivers is scanty. The only available source is the report of Reynolds.¹⁴

The work of this survey in Idaho, Wyoming, and Montana¹⁵ fills out a part of the mountain-region of these Territories. The Wind River Mountains and the adjacent country are described in Jones's report.¹⁶ The contours on the Snake River plateau are located from the work of this survey and from that of Frémont,¹⁷ Wallen,¹⁸ and Lander.¹⁹ In the Main and Bitterroot Ranges, the authorities are mainly Stevens²⁰ and Mullan.²¹ Harney's Lake and the northern part of the Great Basin are known from Wallen.¹⁸ The Blue Mountains of Oregon were traversed by Frémont,¹⁷ Lander,¹⁹ and Wallen.¹⁸ The Cascade Mountains in Oregon and Washington Territory are described by Williamson,²² Stevens,²⁰ and the Northern Boundary Commission.²³

The sources mentioned above are those most fruitful in heights and topographic descriptions. They are, however, but a tithe of the whole number of expeditions which have traversed the West. Many important reconnaissances have been omitted, as their results have been superseded by more accurate and detailed work.

¹ Notes of a Military Reconnaissance from Fort Leavenworth, Mo., to San Diego, Cal., by Maj. W. H. Emory, 1846-'47. Thirtieth Congress, first session, Executive Document No. 7.

² Pacific Railroad Reports, vols. iii and iv.

³ Report upon the Colorado River of the West, explored in 1857 and 1858, by Lieut. J. C. Ives. Thirty-sixth Congress, first session, Senate Executive Document.

⁴ Pacific Railroad Report, vol. vii.

⁵ Report of an Expedition into the Navajo Country, by Lieut. J. H. Simpson, 1849. Thirty-first Congress, first session, Senate Executive Document No. 64.

⁶ Exploration of the Colorado River of the West, in 1869-'72, by J. W. Powell.

⁷ Report upon the Colorado River of the West, explored in 1857 and 1858, by Lieut. J. C. Ives. Thirty-sixth Congress, first session, Senate Executive Document.

⁸ Expedition to the Zuni and Colorado Rivers, by Capt. L. Sitgreaves. Thirty-second Congress, second session, Senate Executive Document No. 59.

⁹ Report on United States and Mexican Boundary Survey, vol. i.

¹⁰ Pacific Railroad Report, vol. v.

¹¹ Report of Geological Survey of California. Geology. J. D. Whitney.

¹² Pacific Railroad Reports, vol. ii.

¹³ Geological Map, No. ii.

¹⁴ Exploration of the Yellowstone River, by Brevet Brig. Gen. W. F. Reynolds, and Geological Report, by Dr. F. V. Hayden. Fortieth Congress, first session, Senate Executive Document No. 77.

¹⁵ United States Geological Survey of Montana and Adjacent Territories, 1871, Hayden. United States Geological Survey of Montana, Idaho, Wyoming, and Utah, 1872, Hayden.

¹⁶ Northwestern Wyoming and Yellowstone National Park, 1873, Capt. Wm. A. Jones.

¹⁷ Report of the Exploring Expedition to the Rocky Mountains in the year 1842, and to Oregon and North California in the years 1843-'44, by Brevet Capt. J. C. Frémont.

¹⁸ Wagon Road Report, by Capt. H. D. Wallen. Thirty-sixth Congress, first session, Senate Executive Document No. 34.

¹⁹ Pacific Railroad Report, vol. ii.

²⁰ Pacific Railroad Report, vol. i, Supplement; and vol. xii, part i.

²¹ Military Road Report, Capt. John Mullan.

²² Pacific Railroad Report, vol. vi.

²³ Paper by George Gibbs, Journal American Geographical Society, vol. iii.



BRITISH POSSESSIONS

ATLANTIC OCEAN

GULF OF MEXICO

DEPARTMENT OF THE INTERIOR
U.S. Geological and Geographical Survey of the Territories
F.V. HAYDEN, U.S. Geologist in Charge

HYPSOMETRIC MAP of the UNITED STATES,

BY
Henry Gannett, M.E.

1877

Scale of Miles
0 10 20 30 40 50 60 70 80 90 100

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