

Measurements of the height by angles of elevation and depression between Old Camp Independence, Lone Pine, and the Peak and return, give a result of 14,470 feet.⁵ "It is," says Wheeler,⁶ "the highest point measured by careful barometric observations within the territory of the United States, except Alaska."

HISTORICAL NOTES.⁷

The mountain was first seen from Mount Brewer by members of the geological survey of California, Brewer, King, and others, in 1864, and named Mount Whitney. On August 18, 1873, John Lucas, C. D. Bigole, and A. H. Johnson, climbed the peak and called it Fisherman's Peak. On September 1, 1873, Clarence King, then in New York, learned that the peak which he had climbed in 1871, now known as Sheep Mountain, Old Mount Whitney, and Mount Corcoran (Bierstadt) lying to the south of Whitney, was not Mount Whitney, and hastening west climbed the right peak September 19, 1873. On September 6, 1873, the mountain was climbed by Carl Rabe, and the first mercurial barometer, Green, No. 1554, carried to the summit. Professor Langley's expedition is well known. He reached Lone Pine on July 24, 1881, and left on September 10 by way of Lone Pine canyon. The journey, in brief, is described in pages 36 to 44, Professional Paper No. 15, Signal Service, published in 1884.

I can not do better than quote Professor Langley's statement given on page 44:

I do not think the Italian Government, in its observatory on Etna, the French, in that of the Puy de Dome, or any other nation at any other occupied station, has a finer site for such a purpose than the United States possess in Whitney and its neighboring peaks; and it is most earnestly to be hoped that something more than a mere ordinary meteorological station will be finally erected here and that the almost unequaled advantages of this site will be developed by the Government.

COMPUTATION OF THE ALTITUDE OF MOUNT WHITNEY.

A report by Mr. H. L. HEISKELL to Prof. F. H. BIGELOW, dated October 2, 1903.

Relative to the observations made on Mount Whitney, Cal., by Professor McAdie on July 8, 1903, at 10 a. m., 11 a. m., noon, and 1 p. m., and used by him in connection with simultaneous observations taken at Independence, San Francisco, and Mount Tamalpais, to determine the height of the summit, I find that the observations are too few, and taken at a bad time of the day, to give any very accurate results.

Three essential elements must be considered in barometric hypsometry: temperature, pressure, and vapor pressure, and the observations should be taken at different times of the day and on different days, so as to obtain a true mean; an error of one degree in mean temperature causes an error of 20 feet in the height of Mount Whitney; an error of .001 of an inch in pressure causes an error of one foot in the computed height. In these observations the attached thermometer is read for temperature and there are no hygrometric observations; then again the temperature at Independence, etc., was taken from the thermograph, so that a possible error of from 100 to 200 feet is not improbable.

or a degree less than that used by him. Recomputing the elevation, but using a temperature of 54° and sea-level pressure of 30.06 my computation gives 14,572. The sea-level pressure used by Mr. Heiskell was 30.04 inches and the station pressures 17.694, which, according to the method of computation used above, would give an elevation of 14,534 feet.—A. M., November 20, 1903.

⁵ But this depends upon the height of Lone Pine depot; and this in turn upon the elevation of Mound House on the Virginia and Truckee Railroad.

⁶ Quoted above.

⁷ References: Langley—Researches on Solar Heat. Wheeler—Surveys West of One Hundredth Meridian, 1889. Steuart—Mount Whitney Club, Visalia, Cal. LeConte—Sierra Club Bulletin.

From the data available, using your formula in your Barometry Report, I make the height of Mount Whitney as follows:

	Feet.
By using the simultaneous observations taken by the observer at Independence and by Professor McAdie at Mount Whitney, the elevation is	14 651
San Francisco and Mount Whitney	14 532
Mount Tamalpais and Mount Whitney	14 618
Mean	14 600

If we reduce the observations at Independence, San Francisco, and Mount Tamalpais to sea level and then compute to Mount Whitney, we have,

	Feet.
Independence and Mount Whitney	14 590
San Francisco and Mount Whitney	14 532
Mount Tamalpais and Mount Whitney	14 595
Mean	14 572

or a difference of 28 feet from the preceding.

Professor McAdie, using observations taken at San Francisco only, calculates the height as 14 515.

On September 2, 3, 4, 5, and 6, 1881, Professor Langley had a very accurate and careful series of 18 simultaneous observations taken at Lone Pine and Mount Whitney and published in his Researches on Solar Heat. His barometers were carefully compared and his temperature and hygrometer observations were made by experienced observers, so that the accuracy of the work can hardly be questioned. In 1900 Mr. Gannett deduced from railroad levels the elevation of Lone Pine as 3661 feet above sea level, but in 1881 the height of Lone Pine was given by Mr. George Davidson to Professor Langley as 3760 feet, or nearly 100 feet higher. The means of 18 simultaneous observations at the two points are as follows:

	Lone Pine.		Mount Whitney.
Pressure	26.018	Pressure	17.586
Temperature	69.57	Temperature	37.20

Using the height of Lone Pine, as given by Mr Gannett in 1900 (3661 feet), and the barometric observations of Professor Langley, I make the height of Mount Whitney 14,423.

Professor Langley, in his report, using 3883 feet for Lone Pine and his own barometric work, says Mount Whitney, by barometer observations, is 14,625.

Professor Langley, by using Davidson's altitude, 3760 feet, for Lone Pine and barometer observations at Mount Whitney, makes the height 14,522.

On August 17 to September 7, 1881, Professor Langley had 16 simultaneous observations taken at Lone Pine and Mountain Camp to determine the height of the camp; to see how we agree on that height I herewith give the data:

Using Davidson's height of Lone Pine, 3760 feet, the height of Mountain Camp is 11,624.

Using Gannett's height of Lone Pine, 3661 feet, Mountain Camp is 11,525.

Professor Langley makes Mountain Camp 11,625.

From the above, I should say that the approximate heights are:

Lone Pine, Gannett, 3661.

Mountain Camp, Gannett and Langley, reduced by me, 11,525.

Mount Whitney, Gannett and Langley, reduced by me, 14,423.

I should, therefore, suggest that the adopted height of Mount Whitney be about 14,423 feet, as determined by using Professor Langley's observations and Professor Gannett's height in 1900 for Lone Pine.¹

¹ A letter from Professor McAdie makes it very doubtful whether the hamlet "Lone Pine," occupied by Professor Langley, in 1881, is the same as the railroad station "Lone Pine," subsequently established. Other letters will be found on page 533.—ED.