MOUNT HAMILTON, CAL.

We present our readers with a view of Mount Hamilton, the site selected for the Lick Observatory. Previous to any decision being finally arrived at, Mr. S. W. Burnham, of Chicago, was directed to make a report upon the fitness of the selection for the purpose. He states that "in accordance with an arrangement made with the Trustees of the James Lick bequest to make a series of astronomical observations for the purpose of determining the atmospheric condition of that location, with reference to its adaptation for the proposed Lick Observatory (originally suggested by Prof. Edward S. Holden, in 1874, and subsequently approved by Prof. Simon Newcomb, in 1879), I left Chicago on August 10, 1879, arrived in San Francisco on the evening of August 15, and left for Mt. Hamilton the next morning in company with Capt. Richard S. Floyd, President of the Trustees. The summit was reached during the afternoon of the same day. The telescope, which was already on the ground, was hurriedly unpacked, temporarily set up in the observatory, and used that night."

SITUATION OF MT. HAMILTON.

The city of San Jose, the nearest point of railroad connection from Mt. Hamilton, is 50 miles south of San Francisco. Mt. Hamilton, by the highway, is 26 miles from San Jose, nearly east, and is reached by a good road constructed two or three years since by the county of Santa Clara. In order to keep the grade within the limit of six feet in one hundred, the last portion of the road is carried up the ridges of the mountain by a circuitous route. The distance between the Observatory and San Jose, in an air-line, is only 13 miles.

The approximate geographical of the Observatory Peak is:

Longitude	121°	36′	40″	W.
Latitude	37°	21′	3″	N.

The elevation of this point is 4,250 feet above the level of the sea. The north peak, which is about three-fourths of a mile distant, is 140 feet higher. The ridge between is a good trail connecting the two peaks. The sides of the mountain, in most directions, are very steep, and form an acute angle at the summit. The view from the peaks is unobstructed in every direction, there being no higher ground within a radius of 100 miles. In this connection the e report of Messrs. Herrmann Bros., the engineers who surveyed the road, will be of interest:

"The scope of the horizon from Mt. Hamilton takes in more ground, according to Prof. Whitney's judgment, than almost any similar peak in the United States, there being no obstruction to the view from any quarter. It is remarkably free from fogs and clouds, as we had ample occasion to observe during our last winter's stay on the mountain when locating the road. The bearings of the most notable objects are as follows, the distances being taken, when out of our county, from our most reliable maps:

Mt. Loma Prieta	S. 35° 5′ W.,	19½	miles.
Mt. Thayer	S. 51° 18′ W.,	19¾	"
Mt. Poucher	S. 38° 35′ W.,	6	"
Block Mountain	S. 87° W.,	27½	"
Mt. Tamalpais	N. 51° 20′ W.,	66	"
Mission Peak	N. 47° 55′ W.,	16	"
Mt. Story	N. 25° 45′ W.,	10¾	"
Mt. Diablo	N. 21° 45′ W.,	39½	"
Mt. Sautana	S. 37° E.,	35	"
Murphy's Peak	S. 6° 5′ W.,	15	"

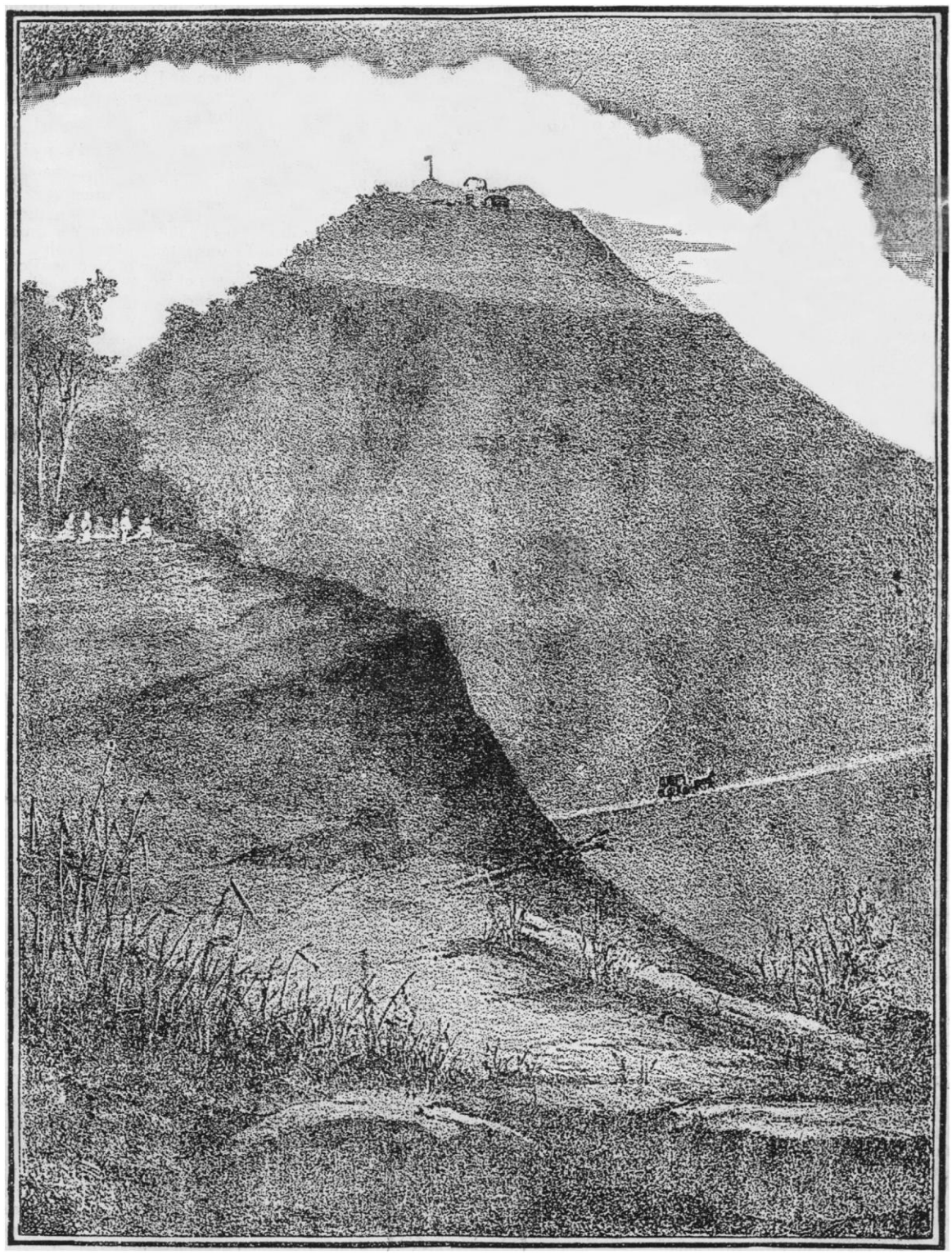
None of these points reach the altitude of Mt. Hamilton. Of those within a radius of 20 miles the Loma Prieta reaches 3,800 feet, Thayer 3,550, and Block Mt. 2,800. All the rest are between 1,500 and 2,500 feet. Of the further peaks Mt. Diablo is 3,856.

The formation of Mt. Hamilton, as of all the near surrounding ridges, is of trap rock. The high points, not worn down by the atmosphere and the action of the rain, are, therefore, very hard as soon as the upper crust is removed. In building the road we struck this hard rock at six or seven points on and near the cone, with a good prospect of finding it continuous and getting harder in the same proportion in going deeper. It has broken through the older formations at several points, near the base of the mountain, where it shows the same character, only intensified. At the top it appears as a greenstone porphyr, with small larkspur veins, exceedingly hard, without any defined strata, but in large boulders worn smooth, and generally flat on one side, and cemented together by other material less hard and easier to work. At a great many places the metamorphic slate, uplifted by the later upheavals, shows in considerable bodies, one of them being on the south side of the Observatory Peak, and nearly opposite one of the hardest points of porphyr."

At sunset the Pacific Ocean is seen over the summit of the Coast Range at various points, and occasionally a snow-covered mountain was seen in a northerly direction, supposed to be Lasson Butte, the distance of which is about 175 miles. The great range of the Sierra Nevada, about 130 miles distant, came out sharp and distinct at sunrise. There were many very distant peaks in the east and south-east which could not conveniently be identified. As an illustration of the transparency of the atmosphere, I may mention a fact communicated to me by Prof. Davidson, of the U. S. Coast Survey. He was at work in the Sierra Nevada, at an altitude of over 10,000 feet, and was able to see with the naked eye the five-inch mirror of a heliotrope 175 miles distant.

For a critical *resumé* of the work done by Mr. W. S. Burnham upon Mount Hamilton, and the results he arrived at, we refer our readers to the article on "Mountain Sites for Astronomical Observatories," in our last week's issue.

The opinion of Mr. Burnham is summed up in the last words of his report when he observes that "Mount Hamilton would be much more desirable, and more could be accomplished there with a large telescope than at any other place where an observatory has yet been established. So far as there have been opportunities for judging, it is obviously an appropriate place for erecting and maintaining the telescope to be constructed under the Lick deed of trust, and required to be "superior to, and more powerful than, any telescope ever yet made." With such an instrument in such a field wonderful discoveries may be made. The only limit to the size of the object glass would be found in the mechanical difficulties attending its construction. No refractor that can be made in the present state of the art would be unsuitable, so far as the observed conditions would enable one to judge. It is impossible to overestimate the great discoveries which might be made and the important work done with a first-class object glass of thirty inches or more aperture, as perfect in all respects as the instrument at the Naval Observatory at Washington."



VIEW OF MOUNT HAMILTON, CAL.—SITE OF THE LICK OBSERVATORY.
(Fac simile from official report.)