

LOCAL ~ ~ TRIBUNE



THE CIRCUMSTANCES OF THE BUILDING OF THE LICK OBSERVATORY: 1871-1881

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INTRODUCTION

James Lick, a California pioneer and land speculator from the days of the Gold Rush, remains one of the most colorful characters of local Santa Clara County to this day. Besides being rather arrogant and eccentric, he was also a philanthropist, and he bequeathed a great deal of money to the County to use for the public's benefit. One of his most famous contributions to the County, and the project said to be most dear to him,¹ was the Lick Observatory, the largest in the world at that time. Not so well known about the Observatory, however, is the fact that the history of its planning and construction is nearly as colorful as that of the man whose name it bears. It is generally accepted that as soon as Lick proposed to build the Observatory, that the County accepted and the task accomplished within a matter of years. In the Publications of the Lick Observatory, it is stated that "the condition (of building the Observatory) was promptly agreed to..."² More detailed research, however, reveals that the planning and construction of the Observatory was an extremely lengthy, complicated process marked by constant defeat, controversy, and even scandal. It is the purpose of this paper to reveal and discuss these circumstances, especially those related to the Lick Trust and the construction of the road to the summit of Mt. Hamilton and

¹ Edward S. Holden, ed., The Handbook of the Lick Observatory (Berkeley, 1888), p. 17.

² Edward S. Holden, ed., "History of the Observatory", Publications of the Lick Observatory, (Vol. 9, 1896), pp. 10-11.

to relate these events to the entire picture of San Jose and Santa Clara County history.

THE OBSERVATORY BEGINNINGS

James Lick was a cabinet maker who arrived in San Francisco in 1848 with \$40,000.³ This he promptly invested in gold and land in the Santa Clara County. He soon had amassed a considerable fortune, and a considerable liking to the Bay Area. Very early he planned to have a great deal of his money to benefit this area.⁴

It was not until 1860 that James Lick was given the idea to construct an astronomical observatory in California. At this time, George Madeira, a young student of astronomy and geology, was lecturing throughout California and Lick attended his lecture in San Jose. After the lecture Lick became acquainted with Madeira and the two became close friends. Lick was fascinated with astronomy and constantly asked the young student questions about the nature of the universe. Later, Lick attended another lecture by Madeira in San Francisco. After the lecture Madeira told Lick, "Why, if I had your wealth, Mr. Lick, I would construct the largest telescope possible to construct." Lick did not forget these words.⁵

Although it appears that George Madeira's statement was the key motivation behind Lick's undertaking of the project, it is possible that two other men, Joseph Henry and George

³ Holden, The Handbook of the Lick Observatory, p.3.

⁴ Dorothy Schaumberg, interview with the author, Santa Cruz, California, May 25, 1984.

⁵ Rosemary Lick, The Generous Miser; The Story of James Lick of California, (New York, 1967), pp. 61-62.

Davidson, deserve a share of the credit.⁶ Henry met Lick in 1871 and, in response to Lick's question of how may a man preserve his name after his death, cited the example of James Smithson and the Smithsonian Institute, and suggested that Lick build a monument of his own.⁷ George Davidson was the President of the California Academy of Sciences at that time, acquainted with Lick because the philanthropist was also a member of the Academy. Lick has wished to make a contribution to the Academy and science in general, and Davidson suggested that he build a powerful observatory since it was greatly needed in the field.⁸ Whoever was responsible, the idea had been placed in Lick's head, and on October 20, 1873, the California Academy of Sciences announced Lick's intention to build an astronomical observatory in California.⁹

During this time Lick's health had been steadily deteriorating, and at the urgings of Thomas Fraser, Lick's confidential agent and perhaps closest friend, formally established his trust while recuperating from a serious stroke. The seven trustees in charge of his fortune, all leading citizens of San Francisco, were as follows: Thomas H. Selby, a well-known business man, Darius D. Mills, a banker and real-estate owner and one of the wealthiest men in California, Henry M. Newhall, a close friend and real-estate owner, William Alvord, former Mayor of San Francisco, John D.

⁶ Lick, p. 62.

⁷ Lick, p. 62.

⁸ San Jose Mercury News, May 30, 1965, p. 5.

⁹ Lick, p. 62.

Earl, one of the founders and directors of William Ralston's Bank, Mayor James Otis, and George H. Howard, a wealthy businessman.¹⁰ With these men, and his attorney, Theodore H. Hittell, Lick established his first Deed of Trust. His entire fortune of \$3,000,000 was placed in the hands of these trustees,¹¹ and his provisions concerning the observatory stated that they were to spend \$700,000 for the construction of "a powerful telescope, superior to and more powerful than any telescope yet made...and also with a suitable observatory connected therewith".¹²

The first announcement of the Lick Trust was made on June 2, 1874, after many private disputes between Lick and his trustees.¹³ A new Deed of Trust was drawn up on July 16, 1874, clarifying certain points of the first deed. The first draft had specified that the Observatory was to be located on land which Lick had acquired on the shores of Lake Tahoe.¹⁴ This land was purchased at the advice of George Davidson, who felt that Lake Tahoe would be the ideal location for such an observatory. After a talk with his advisor Fraser, however,

¹⁰ Lick, p. 65.

¹¹ A bound collection of documents containing the Deed of Trust of James Lick, esq. of San Francisco, hereafter cited as Deed of Trust, in the California Room of the San Jose Public Library, hereafter California Room, September 21, 1875.

¹² Deed of Trust, September 21, 1875.

¹³ Lick, p. 66.

¹⁴ Lick, p. 66.

who stated the winters at Lake Tahoe were very extreme,¹⁵ Lick refused to build the observatory there and began to consider other areas around Santa Clara County. This decision was much to the chagrin of Davidson, who later left the group of scientists helping design the observatory.¹⁶ The second draft of the Trust left the location to be determined by Lick. Specifications regarding the purchase of land, the construction of the telescope, and the building of the observatory were contained in the third clause of the Lick Trust Deed.¹⁷

Disagreement between Lick and his trustees over Lick's other bequests led to the development of animosity between the two parties. Because of what Lick considered the "lack of action" on the part of his trustees concerning the stipulations of the Deed, he asked Selby, the head of the Board of Trustees, to resign on January 23, 1875.¹⁸ Selby refused, and when Lick later decided to revoke his Deed of Trust and write a new one and appoint a new board of trustees,

¹⁵ The Diary of Thomas E. Fraser, hereafter cited as Fraser Diary, in the Mary Lea Shane Archives of the Lick Observatory in the University Library of the University of California, Santa Cruz, hereafter Lick Archives, p. 4.

¹⁶ San Jose Mercury News, May 30, 1965, p. 5. A wealth of articles is available on the history of the Observatory in local newspapers during these years because of the development of the 120-inch refractor in the late 1950's, which brought new popularity to the Observatory.

¹⁷ Lick, p. 66.

¹⁸ Lick, pp. 67-68.

Judge William P. Dairgerfield ruled that that would be impossible.¹⁹ In March of 1875 Lick wrote a letter to his trustees explaining that his Deed of Trust contained many mistakes, and that he was displeased with their performance and asked them to resign. Lick then hired a young attorney, John Felton, to revoke the Deed of Trust and draw up a new trust.²⁰ Selby soon resigned and, after being pressured by Felton, the other Trustees soon followed. Later they brought suit against James Lick,²¹ challenging the legality of dissolving the trust, but they were unsuccessful, and the new Deed of Trust was drawn up on September 21, 1875. The new trustees were Captain Richard S. Floyd, Faxon D. Atherton, Bernard D. Murphy, John H. Lick, and John Nightengale.²² For his services Felton received \$100,000 in gold coin and, at his request, the Observatory, when completed, would be turned over to the Regents of the University of California, of which Felton was a member.²³ This clause was included in the new Lick Deed of Trust.

Meanwhile, Lick and his advisor, Fraser, were considering alternate locations for the observatory. One of these was Mt. St. Helena in Napa County, and Lick decided to visit the site

¹⁹ Lick, p. 68.

²⁰ Lick, pp. 69-70.

²¹ Deed of Trust, September 21, 1875.

²² Lick, p. 69.

²³ San Jose Mercury News, October 4, 1976, p. C11.

himself in November of 1875. The trip was a disaster, though, and he was brought home, very ill. It was while he was recuperating that Fraser suggested Mt. Hamilton, 13 miles east of San Jose. When Lick learned there was a mountain in Santa Clara County over 4,000 feet, he was very surprised and pleased, and ordered Fraser to check it out.²⁴ On this trip, Fraser found there were two drawbacks to the location; there was no water near the summit and the mountain was very sharp and would require leveling down some 30 feet at a cost of about \$10,000. However, he also stated that a quality road to the summit could be easily constructed and an observatory erected, and he was greatly impressed with the view from the mountain.²⁵

On June 15, 1876, Lick wrote to his trustees that he had designated the summit of Mt. Hamilton for the sight of his observatory. The same day he sent a letter to the Board of Supervisors of Santa Clara County, stating his intention to build an observatory on Mt. Hamilton, providing that the County first build a road to the summit that would "be first class in every particular", and to have the work commence immediately. He also stated his willingness to accept bonds of Santa Clara County as payment, if this would hasten matters.²⁶ This proposal was quickly accepted by the Board of Supervisors in September of 1875, and construction on the road

²⁴ Fraser Diary, P. 4.

²⁵ Fraser Diary, pp. 4-5.

²⁶ Lick, pp. 72-73.

was to begin as soon as possible.²⁷

The people of Santa Clara County, as well as the Board of Supervisors, looked favorably upon the building of the observatory. Not only would it attract tourists from miles around, but would create new jobs building the road for residents of the county. Newspapers continually printed articles concerning the progress of the construction, and the San Jose Weekly Mercury designated itself the "official correspondent of the Lick Observatory".²⁸ Public attitude towards the Observatory began to change, ^{however,} as events of the construction of the road unfolded to reveal many things of questionable nature.

²⁷ Holden, "History of the Observatory", p. 11.

²⁸ San Jose Weekly Mercury, February 17, 1875, p. 2.
(microfilm)

THE CONSTRUCTION OF MT. HAMILTON ROAD AND THE COUNTY BONDS

"The ascent becomes steep and the curves tricky..."²⁹

This statement, written by a reporter for the San Francisco Chronicle, gives a good general description of Mt. Hamilton Road, which winds its way 23 miles up to the 4,209 foot summit. One visitor counted 365 turns in the road,³⁰ and the Mt. Hamilton Stage Company, who used to stagecoach rides up the mountain, claimed it was "the best mountain road in the world".³¹

Although the view of the surrounding valley is spectacular, the reporter's description is a most accurate summary of the characteristics of the road.³² The condition of the road itself is more than satisfactory, but it is questionable whether this could correctly be termed "a first class road".

A "first class road" was exactly what Santa Clara County had to provide before the commencement of the construction of the Lick Observatory would occur.

In late September of 1875, the Board of Supervisors hired a highly trained civil engineer, A.J. Hermann, to survey

²⁹ San Francisco Chronicle, July 24, 1949, p. D2.

³⁰ Holden, The Handbook of the Lick Observatory, p. 16.

³¹ Pamphlet of the Mt. Hamilton Stage Co., describing the trip up the Mountain road, in the California Room, p. 1.

³² Taken from the personal observations of the author, noted February 12, 1984.

a route for the road to the summit of Mt. Hamilton and to determine approximate costs.³³ In his preliminary survey for the Supervisors, Hermann estimated the total cost of building the road to be about \$47,260.³⁴ In a letter to Thomas Fraser, now Superintendent of Construction of the Observatory, Hermann also urged him to begin construction on the road immediately, as "people of very doubtful character are inquiring about the state of lands on and about Mt. Hamilton."³⁵ In February of 1876, after being inspected by the Road Committee of the Board of Supervisors and approved, the survey of Hermann was complete and construction on the road would begin.³⁶

The County hired a well-known contractor, E.L. Derby, to begin construction on the road in February.³⁷ The residents of the County and San Jose in particular watched the progress with growing eagerness and enthusiasm, and the San Jose Weekly Mercury featured an article about the road nearly every day. Readers became outraged, though, when they learned that Derby

³³ Term Paper by Neal R. Underwood, "The Planning and Construction of the Lick Observatory; 1873-1888", in the California Room, April 1976, p. 9.

³⁴ A report on the preliminary survey for the road to Mt. Hamilton, written by A.J. Hermann-County Surveyor and Civil Engineer, dated September 20, 1875, in the Lick Archives.

³⁵ Letter to Thomas Fraser from A.J. Hermann dated September 23, 1875, in the Lick Archives.

³⁶ Underwood, "The Planning and Construction...", p. 10.

³⁷ Underwood, "The Planning and Construction...", p. 10.

was employing Chinese laborers to build the road. One citizen, F. Welch, presented to the Board of Supervisors a petition to halt Chinese labor on the road, and the Mercury ran an article which urged Derby to hire white laborers.³⁸ However, the citizens and County's concern over the Chinese labor appears not to have stemmed from a concern for the welfare of the immigrants but rather a concern over the growing population of "Chinks" among a "superior race", as frequent Mercury articles entitled "The Chinese Question" indicate. At the advice of the Supervisors, Derby ceased hiring Chinese laborers, although some still remained working as late as April of 1876.³⁹

The Trustees were notified of the road's progress in March of 1876 in a letter to Captain Floyd, President of the Board of Trustees, from A.J. Herman. Hermann indicated his plans for supplying water to the summit and stated "the road is going ahead bravely...on Monday next a new force of 300 men is to begin at the base of the mountain".⁴⁰ In town, one newspaper, The Patriot, was continually condemning the Board of Supervisors for undertaking such a mammoth task as building

³⁸ San Jose Weekly Mercury, February 17, 1876, p. 1 (microfilm). During this period, there was a fairly extensive "Chinese Scare" in Santa Clara County. Articles of this sort frequently appeared in newspapers. It is interesting to note that, while several pictures were taken of the construction done on the Observatory, no pictures were allowed to be taken of the Chinese laborers working on the road.

³⁹ Underwood, "The Planning and Construction...", p. 10.

⁴⁰ Letter to R.S. Floyd, President of the Trustees, from A.J. Hermann, dated March 18, 1876, in the Lick Archives.

Mt. Hamilton Road. The Mercury defended the Board, saying that time would not permit the Board to take more care in the construction of the road, and that "they have done it as well and at as small expense as could be reasonable expected, under the circumstances".⁴¹ Furthermore, the Mercury stated that The Patriot was condemning the supervisors simply because it wasn't chosen as "the official paper" of the Observatory. Attempting to regain the support of the residents of the county, the Board of Supervisors moved on April 13, 1876, to change the name of the Mt. Hamilton Road to Lick Avenue, a decision that was very popular in town.⁴²

In May of 1876, Derby had 600 men employed in the construction of the road.⁴³ The road was nearely all gravel to the area of Smith's Creek, the site of a construction camp, seven miles by road from the summit. Derby stated that the road would be completed by May 20, 1876, a date considerably sooner than the Supervisors had estimated, and asked for a sum of \$17,000 to cover additional unforeseen costs, which was granted to him.⁴⁴

On June 1, 1876, the Road Committee of the Board of Supervisors examined the road that Derby claimed was completed.⁴⁵ They initially reported that finishing touches were needed in spots and that a bridge over Smith's Creek was

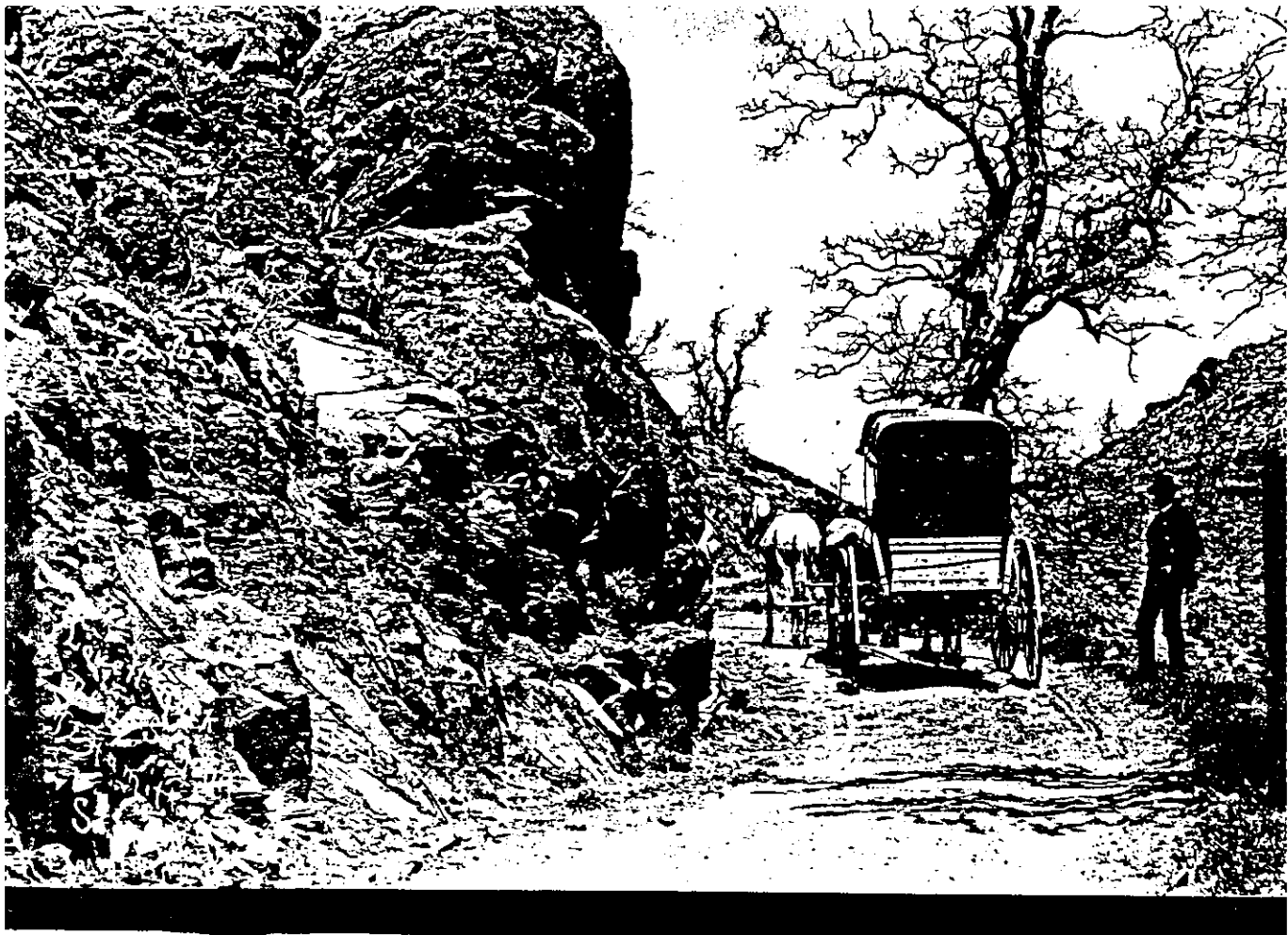
⁴¹ San Jose Weekly Mercury, February 17, 1876, p. 2. (microfilm)

⁴² San Jose Weekly Mercury, April 13, 1876, p. 1. (microfilm)

⁴³ Underwood, "The Planning and Construction...", p. 10.

⁴⁴ San Jose Weekly Mercury, May 11, 1876, p. 3. (microfilm)

⁴⁵ Underwood, "The Planning and Construction...", pp. 10-11.



A photograph of a section of Mt. Hamilton Road, showing some of the iron rock that had to be blasted away from the mountain. The picture was taken in the late 1880's.

under construction. Later, in a formal report to the Supervisors, the inspection committee announced that the road was unfinished and inadequate. Derby stated that, because of unexpected quantity of a peculiar type of iron rock, he was unable to complete the construction of the road.⁴⁶ The

Mercury stated that "the contractor has missed his guess...our citizens are all interested in the completion of the road". Apparently, the citizens were aware of the obvious benefits the completion of the road would bring. In a later article, the Mercury assured the residents of San Jose and Santa Clara County that "the honest taxpayer" would not suffer from "the Mt. Hamilton Muddle", as they were worried since the money to build the road had been raised by the County largely through tax increases.⁴⁷ The County was not required to pay Derby unless he completed the road, and the Mercury stated:

"Nearely everybody appears to have been deceived all around - the contractor on the quality of his rock, the Board of Supervisors on the quality of the contractor."⁴⁸

The controversy grew when, in a report to the Supervisors the Road Committee suggested that Derby had embezzled about \$1000 from the road fund. They stated that the approximate cost of finishing the road would be about \$11,819, and that the Board is not responsible for the miscalculations on the

⁴⁶ San Jose Weekly Mercury, June 8, 1876, p. 2. (microfilm)

⁴⁷ San Jose Weekly Mercury, June 15, 1876, p. 2. (microfilm)

⁴⁸ San Jose Weekly Mercury, June 15, 1876, p. 1. (microfilm)

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part of the contractor.⁴⁹ The Mercury defended Derby, stating that it was doubtful that he embezzled any money, and that "the weather at the commencement and for some weeks was very inclement..." It urged its readers to be more concerned with how the rest of the construction would be funded:

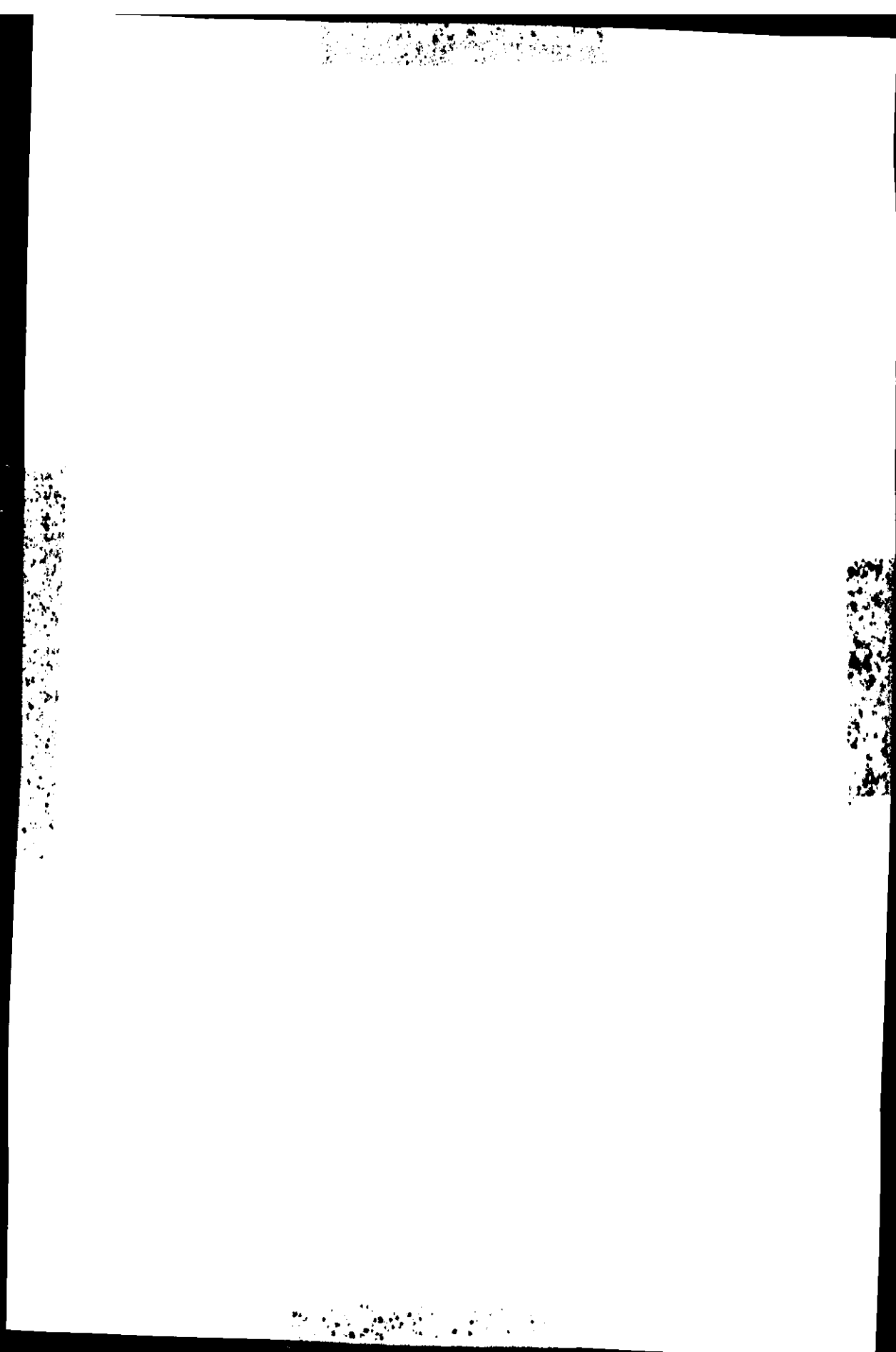
"The fact of most consequence is the fact that the contract fund is not sufficient to complete the work according to the contract stipulation..."⁵⁰

By this time mutual distrust had developed between the Board of Trustees and the Board of Supervisors. Because the process of constructing the road was taking so long, the Trustees refused to start construction on the Observatory itself until the road was complete, afraid that the County would not finish the road. The board, on the other hand, feared that the Observatory might not be completed, and the County would have spend thousands of dollars on a worthless road. This stalemate continued until in July of 1876 when N. Furlong, Chairman of the Board of Supervisors, wrote a letter to Captain Floyd suggesting that some of the money of the Lick Trust be used to purchase bonds of Santa Clara County, which could be redeemed after the fondation of the Observatory was completed. This would protect the safety of both the Trustees and the County.⁵¹ On August 2, 1876, Floyd responded by

⁴⁹ San Jose Weekly Mercury, June 15, 1876, p. 3. (microfilm)

⁵⁰ San Jose Weekly Mercury, June 15, 1876, p. 2. (microfilm)

⁵¹ Letter to Floyd from Supervisor N. Furlong, dated September 25, 1876, in the Lick Archives.



gratefully accepting Furlong's proposal and restating the Trustee's intention of building the observatory on Mt. Hamilton.⁵² In total, the Trustees purchased \$47,968 worth of bonds.⁵³

In September of 1876 the Supervisors forfeited the contract of Derby and hired a new set of contractors, Drinkwater and Swall, to complete the construction of Lick Avenue.⁵⁴ In their initial report to the Road Committee, the contractors stated that 15 1/2 miles of the road was unfinished, and much of Derby's work had to be redone, as he used cheap, bad rocking and parts of the road were not build sturdily. The road was finally completed in December of 1876, at a total cost of \$73,455.81⁵⁵

Construction of the Observatory did not begin until 1880, because of the numerous legal complications with the Trust fund.⁵⁶ The Trustees, however, found they had more legal problems in trying to obtain payment for the bonds used to fund the road. In 1876, the Board of Supervisors stated it would pay off the bonds when the foundation for the Observatory was complete. Unfortunately, the Trustees and the

⁵² A copy of a report of meeting of the Board of Trustees of the James Lick Trust, dated August 2, 1876, in the Lick Archives.

⁵³ A copy of the Schedule of Warrents deposited towards the bonds by the James Lick Trust, dated March 13, 1877, in the Lick Archives.

⁵⁴ San Jose Weekly Mercury, September 7, 1876, p. 3. (microfilm)

⁵⁵ Underwood, "The Planning and Construction...", p. 12.

⁵⁶ Fraser Diary, p. 5.

Supervisors had very different interpretations of the concept "foundation". In August of 1882, Fraser wrote a letter to the Chairman of the Board of Supervisors, stating that the foundation of the main observatory building was complete and that by the end of the month all instruments in two of the buildings would be in working order. He asked for an inspection by the Board of the Foundation and a speedy payment of the bonds.⁵⁷ After inspecting the foundation, the Board declared it incomplete and refused to pay the bonds. Fraser explained the situation in a letter to H.E. Matthews, a fellow trustee, on September 26, 1882. In his opinion, "the foundation" meant a leveling off of the mountain to allow the Observatory to be built, and this had been previously accomplished. He also stated that a new Board of Supervisors was coming into office, which meant a new set of bonds would have to be issued, which could be payable in 3 years at 6% interest.⁵⁸

Three years later the issue of the County bonds had not yet been resolved. During this time the Board had sent inspectors to examine the foundation three times, and each time they declared it unfinished and refused to pay the bonds.⁵⁹ The Supervisors maintained that a complete foundation constituted a main floor and the frame work for the walls

⁵⁷ Letter to M. Leonard, Chairman of the Board of Supervisors, from Fraser, dated August 1882, in the Lick Archives.

⁵⁸ Letter to H.E. Matthews from Fraser, dated September 26, 1882, in the Lick Archives.

⁵⁹ Report of Fraser to Trustees of the James Lick Trust, dated February 7, 1885, in the Lick Archives.

constructed. In a report to the Trustees in February of 1885, Fraser urged the Trustees to complete the Observatory soon, as they possessed \$30,000 in bonds yet to be payed off, and the Trustees were suffering a loss from those unpaid bonds of \$1500 per year. Furthermore, he stated that if the foundation was not complete by the standards of the Boards of Supervisors by 1890, the bonds would be declared null and void.⁶⁰

⁶⁰Report of Fraser to Trustees, dated February 7, 1885, in the Lick Archives.

CONCLUSION

On January 9, 1887, the Lick Astronomical Department of the University of California was completed, and turned over to the Regents of the University of California. On that same day, the body of James Lick was entombed in the base of the largest telescope of the Observatory.⁶¹

The complete process, from the concept to the finished reality, had spanned a period of 28 years. Far from a simple process, it was constantly marked by distrust on the part of all parties involved, controversy, and even scandal. Lick himself never did get to see his bequest or even descend the mountain; he died on October 1, 1876.⁶² Over the years the **vividness** has faded, but the building of the Lick Observatory still leaves a lasting mark upon the history of Santa Clara County.

The Observatory helped bring prosperity to neighboring San Jose through tourism and increased employment, but at the same time it momentarily divided the town into two distinct parts with decidedly different opinions about the construction of the Observatory. Yet it still remains as a colorful part of local culture and, most importantly, the Observatory itself remains as an important tool of science and a lasting monument to one of the most generous and eccentric heroes of Santa Clara County and California.

⁶¹ Lick, pp. 82-83.

⁶² Lick, p. 83.

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Author's Explanatory Note:

Many of the sources obtained for use in the research of this project are located exclusively in the Mary Lea Shane Archives of the Lick Observatory in the University Library at the University of California, Santa Cruz. The Lick Archives is a collection of various materials pertaining to all aspects of the Observatory, composed for the most part of primary sources, which was previously privately owned by Mary Lea Shane, wife of the Director of the Observatory, C.D. Shane. The collection of sources used for this paper consisted mainly of personal letters from the members of the parties involved in the establishment of the Lick Observatory; namely, the Board of Trustees, the Board of Supervisors, the contractors who build the road, etc. and various tables, charts, maps made out by these parties. Items used in the research of this project obtained from the Archives of a more concrete nature are listed below. Other sources used are as follows.

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The permission granted is for one-time use in your Project B paper for U. S. History Honors Class at Leland High School.

It was a pleasure to have you and your father visit the Archives and we hope we can serve you again on a project regarding the Lick Observatory.

Very truly yours,

Dorothy Schaumberg
(Mrs.) Dorothy Schaumberg

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**On the road to the Lick Observatory near San Jose, Cal.
Sharp curves of this winding road.**

B 2580

Photo. by H. E. Mathews,
Published by *Miller* S. F.



A photograph of a section of the Mt. Hamilton Road, showing 2 of its 365 curves. The picture was taken in the early 1880's.



