

locating a railroad; and the engineer, Allen Campbell, Esq., writes me, 'I am puzzled about longitude. I find that an air-line from Santa Lucia to Valparaiso does not exceed (by my survey) 64 English miles. Deducing the longitude of Valparaiso by this datum from your longitude, I make it only $71^{\circ} 35' 00''$. Mr. Mowatt calls it $71^{\circ} 40' 30''$, and by Capt. Fitzroy it is $71^{\circ} 41' 15''$, making a difference between us of about 5 miles.' And, in a subsequent letter, he says, 'I have been over our work again, and we find it all right; so Valparaiso is undoubtedly farther east than Mowatt or Fitzroy make it. I am told old tables stated its longitude $71^{\circ} 35'$, and this would seem near the truth.' A chronometer (pocket), which has been running very regularly, and brought here two days since, gives a difference of time $3^m 56^s \cdot 1$, thus placing Valparaiso in $4^h 46^m 15^s$, if our longitude be correct. The same chronometer will be again transported in a few days, though too late for the result to be communicated in this letter. As the longitude of Valparaiso is of greater interest than that of any other point on the western coast, I have proposed to Señor Pissis, an engineer employed by the Chile Government to make a survey of the Republic, that we shall determine the difference of time between it and our observatory, by means of rockets and flashes of gunpowder. This will be carried into effect next month, there being a hill to the northward which is visible from both stations.

"Our geographical position has recently enabled me to observe two phenomena of more than ordinary interest, viz. two immersions and two emersions of *γ Geminorum*, on the 5th inst., and an earthquake, under a magnifying power of 150, some nights afterwards; but my letter has already been extended beyond your patience perhaps, and I will not trouble you with them.

"The desire for information respecting the Wager has never been lost sight of; and the only person able to give any information has been talked with more than once. This is General Aldunate, formerly Intendent of Chiloe, but now Director of the Military Academy here. He seems to have no doubt that parts of the old ship would be found; but to do so, would require a special voyage, as the locality of the wreck is never visited. At the time of Capt. Fitzroy's survey, there was an old man on the island, who had assisted in removing a part of her guns, and with whom Fitzroy had a long conversation in the presence of the General.

"P.S. In my letter of July 28th, 1850, I find that an error of 2^m was made in giving you our longitude."

Extract of a Letter from Capt. W. S. Jacob of the Madras Observatory.

"I was quite unaware, until I saw it mentioned in the Annual Report for 1851, that the Lucknow Observatory was no longer kept up since the death of Col. Wilcox. It is my intention to act on the suggestion given in a note to the Report, that the Lucknow instruments might possibly be procured for Madras, and to apply

to the Government to that effect, as soon as I have ascertained from the Resident at Lucknow that the instruments are to be disposed of. I cannot, however, help thinking that Bombay would be a better place to transfer them to. There is there a better observatory than we have here, with no instrument except a 5-foot transit. The climate of Bombay is, astronomically, far superior to that of Madras, and I cannot but consider it very unfortunate that this place should have been pitched on as the site of the chief Indian Observatory, the climate being in my view very unsuitable; partly because from its relaxing nature few Europeans are able to keep up a prolonged series of observations without losing their health, and also because the amount of clear observing weather in the year is small compared with many other places in the country. Bombay is very superior in this latter respect; and I have no doubt it would be an advantage to science if that were made the principal observatory, and the astronomer located there instead of here, there being merely some one put in charge of the observatory here to give the time and rate chronometers, as is the case now in Bombay. An astronomer for each place would, of course, be better still, but of this there is little hope at present. Still better places than Bombay might be found, such as Poona, where the air is clearer and the climate less adverse to exertion; but to establish an entirely new station would involve a greater outlay in the way of buildings, &c., and would, therefore, be more difficult to accomplish. There is another point which I have to notice. In the same Report it is stated that application had been made to the East India Company, but without success, for the establishment of a large reflector on the Nilgherry Hills; this is a mistake. Will you, therefore, kindly correct this error by stating in the *Monthly Notices* that no direct official application has as yet been made to the East India Company on this subject? The Nilgherries would not, I fear, afford a good situation, as the proportion of cloudy weather there is nearly as large as here.

“ My 2-foot speculum is, I regret to say, not in a very forward state. Our mutual friend, Capt. Worster, who had undertaken to make it, having, after two unsuccessful castings, been obliged by ill health and increased official duties, to lay it aside for a time: and within the last month he has gone to the Cape on sick leave for two years. He had succeeded with a third casting, and just commenced the rough grinding of it before he left. I am very doubtful of being able to complete it myself, my mechanical skill and experience in such matters being of very small amount. If completed, Poona would be the place to erect it at; there being no place of which I have any experience with so favourable a sky; it beats both the Cape and the Mediterranean entirely. But how that is to be done I do not see, for my private means are not sufficient to allow of my working it there on my own account, though, with a very little assistance, I would gladly do so, for here I feel myself to be of less use than I should like to be, and I do not think my health will enable me to hold out much longer.”