I must admit I felt perplexed and mortified, not only at the loss of time, but at being unable to detect the cause of the discrepancies. I determined, however, to persevere, and continued to observe from the 1st to the 10th of February, but with no better results, some corresponding, whilst others disagreed every alternate series. The deviation was irregular, and having kept a watch upon the apparatus, I began to suspect that the discrepancy was the effect of volcanic action, and that the ground was unstable. To ascertain whether this was the case, I tried a mercurial horizon on the top of the pendulum-frame, and after watching it for nearly an hour, I could perceive no movement or vibration. On inquiry, I found there was a hot spring beyond low-water mark, which the man who attended the tide-staff had discovered in wading off. This spring was about one hundred and twenty feet from the pendulum-house; but I at last satisfied myself that the tide, and more particularly the surf, had more to do with it; and in looking over the series, I found that when the surf was heaviest they were most discordant.

During this time I was employed in making astronomical observations, and when they were finished, I felt myself at liberty to try other situations for the pendulum observations. Mr. Pitman having offered me his son's house at Paneo, I had every thing transported thither. Paneo is situated on a high bank of lava rock, covered by six or eight feet of decomposed lava rock and vegetable mould. On this soil, large bread-fruit trees, some of them two feet in diameter, were growing. The height of the house above the water was fifty-four feet, and it is removed about three hundred yards from the beach. Between Paneo and Hilo the Wailuku river runs, at whose mouth on the Hilo side, there was generally a long and regular surf rolling in; but I did not suppose it possible that this surf could incommode the observations. After repairing one of the grass-houses, the pendulum-house and apparatus were put up, the whole being in perfect adjustment, and the series was begun.

The first difficulty I now had to contend with was the stopping of the clock. When this was reported to me, I was almost in despair, for on the other side of the bay it had been proved to go well. The clock was again set in motion, but in a short time again stopped; and the apparatus was once more to be taken down, and all the adjustments were again to be made, a work of three or four hours. On opening the clock-case, the cause of its stopping was disclosed by the appearance of a large spider, which had wound his web so tightly round the fork, and connected it so closely with the case, as to stop the pendulum. Although this was provoking, I was much relieved by