

is derived from the fact that its borders and some part of its bed are characterized by an abundance of submerged stumps and prostrate trunks of trees, chiefly those of *Pinus ponderosa*. I was informed by Indians, in 1877, that some among them still living, could remember a time when no lake existed in this part of the valley. "The lower end of the lake is shallow and reedy, but is well rimmed round by bold mounds and ridges of drift material on all sides but that now giving issue to the stream, showing that no former channel in a different direction is possible." The outlet had been slightly deepened artificially a few years before the date of my first visit, at a time when the water (which is employed for purposes of irrigation in the lower valley) had for some reason ceased to flow. The existence of a ledge of hard rocks, however, rendered it impossible, without blasting, to deepen the outlet much. In 1890, I found, on again visiting the outlet, that an attempt had been made to dam the lake, but had been abandoned, and the dam was completely broken through. No evidence was found on either occasion of high water marks, other than slight traces such as might be accounted for by annual seasonal changes, but in 1877 I satisfied myself that the existence of an outlet to the lake was a comparatively recent event, by the following observation:—"A short distance beyond the actual outlet of the lake, stumps of the ordinary yellow pine (*P. ponderosa*) are found in the bed of the brook, where the circumstances render any diversion of the stream impossible. This tree never grows in damp ground, far less with its roots surrounded by water, but is frequently found on hill sides, rooting in the gullies down which a little water may run for a few days in the spring. The valley now carrying the brook must have been of this nature at the time the trees flourished, and this, in itself, would show either that the lake did not exist at the time or that no water flowed from it. The circumstances show that the natural diversion of the streams feeding the lake is not possible."

In my report above cited, and dealing with this as an isolated case, I suggested that the possible stoppage of some subterranean drainage-channel might explain the existence of the lake; but in view of the facts since observed and in the absence of any proof of such a channel, it now appears to me more probable that Stump Lake may be accepted as another instance of a general change in climatic conditions. The circumstances, it is true, are somewhat more complicated than those in the cases previously cited, and it would also appear that, if thus explained, the increase of humidity called for must date back to an earlier period by many years than that necessitated by the other observations.

While none of the facts here cited possess numerical accuracy, and we are without such data as would allow of the satisfactory separation of the ordinary annual seasonal changes in level from those of a secular character, the general tenor of the evidence is sufficiently clear. It shows