

than that now prevailing. This condition is shown by stream channels that were cut in the thick marls and clays laid down during the first stage, the Lithoid, and by gravels and sands laid down on the Lithoid beds. As the waters again rose in the lake the peculiar thinolitic and dendritic forms of carbonate of calcium were deposited and the shore lines were carved out. Thereafter the lake continued to rise until it reached the level of the Lahontan beach lines. Then succeeded another period of irregular but increasing desiccation which is supposed to have become complete. Within a comparatively recent time, possibly less than 300 years, a period of somewhat increased humidity has restored the lakes of the region to their present state. On this point, however, see Synder's opinion cited on page 146.

Evidences confirmatory of the theory, that in the Great Basin region there have been at least two periods of humid climate, of somewhat reduced temperature, of glacial ice and of high water in the lakes, have been secured in the investigation of the geology of Mono Lake, in Mono County, California (Russell, 8th Ann. Rep. U. S. Geol. Surv., Pt. I, 1889, pp. 269-394), and of Owens Lake (Knopf, Prof. Paper 110, U. S. Geol. Surv., 1918, pp. 93-105).

Russell stated in his account of Lake Lahontan (his p. 238) that the fossils obtained from the deposits of the lake consisted of the bones of mammals and fishes; the shells of fresh-water mollusks and of ostracoid crustaceans; the larval cases of a caddis fly; a single chipped instrument of human workmanship; and vestiges of vegetable matter of doubtful nature. The vertebrate remains were sent to Professor O. C. Marsh for determination, but no definite report has ever been made on them. They were probably of so fragmentary nature that they could be determined only in a general way. The mammalian bones were stated to belong to a proboscidean, a horse, an ox and a camel. The cannon-bone of the ox (bison) is in the U. S. National Museum. A nearly entire skeleton of either an elephant or of a mastodon had been discovered near Ryepatch, on Humboldt River, but it is not certain that any of this was preserved. It may be ignored. The other genera, *Equus*, *Bison* and *Camelops*?, were found in the Walker Canyon.

On his page 143, Russell presented a generalized section of the Lahontan sediments, which, abbreviated, is as follows:

Upper lacustral clays.....	50 to 75 feet
Fossils: <i>Cypris</i> , <i>Anodonta</i> , etc., together with mastodon or elephant, horse, camel.	
Medial gravels	50 to 200 feet
Fossils: <i>Anodonta</i> , <i>Pompholyx</i> , etc.	
Lower lacustral clays.....	100 feet or more
Fossils: <i>Pompholyx</i> .	

It appears therefore that the mammalian remains came from the deposits of the second high-water stage. As already stated in the discussion of the Lake Bonneville beds, the present writer regards this formation as belonging approximately to the first interglacial stage, equivalent to the Aftonian.

From a paper written by Dr. W J McGee (Amer. Anthropologist, vol. II, pp. 301-312), it is learned that the vertebrate remains were collected by him in a ride along the canyon of Walker River about 15 miles above the head of