

Proceedings of the Iowa Academy of Science

Volume 2 | Annual Issue

Article 37

1894

Topaz Crystals of Thomas Mountain, Utah

Arthur J. Jones

Copyright ©1894 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Jones, Arthur J. (1894) "Topaz Crystals of Thomas Mountain, Utah," *Proceedings of the Iowa Academy of Science*, 2(1), 175-177.

Available at: <https://scholarworks.uni.edu/pias/vol2/iss1/37>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

TOPAZ CRYSTALS OF THOMAS MOUNTAIN, UTAH.

BY ARTHUR J. JONES.

In the summer of 1891 it was the privilege of the writer to visit what is known as Topaz Mountain in southern Utah. It is about thirty-five miles south of the northern end of the Dugway Mountains, called by Simpson the Thomas Range, twenty-five miles northwest of Deseret, forty miles north of Sevier Lake, and about the same distance west of Eureka, Utah.

This locality was discovered by Henry Englemann, geologist of Capt. Simpson's expedition across Utah in 1859. Owing to inaccuracies in the description of the place it was lost sight of for nearly ten years but was at last re-discovered and has since been visited constantly by tourists. Very few accounts of the locality have, however, appeared in print.

Englemann* describes the crystals found here as follows:

"Perfectly colorless and transparent and of great beauty and luster. Degree of hardness=8. Before the blowpipe they proved infusible and when strongly heated they were covered with small blisters, but did not show any change of color. They exhibit reactions of fluorine, alumina and silicic acid."

Prof. J. E. Clayton of Salt Lake City, visited this place in 1884 and collected many very beautiful crystals, some of which he sent to Whitman Cross for examination. These were soon afterward described by the latter† in connection with similar crystals from Colorado.

Other accounts of the same occurrence have been given from the information furnished by Prof. Clayton, by Mr. G. F. Kunz.‡

In the book first mentioned Mr. Kunz describes the topaz as "the most beautiful and brilliant crystals known to occur in

* Exploration across the Great Basin of Utah, Simpson, 1859. p. 325.

† Am. Jour. Sci., (3), XXXI, 432. 1886.

‡ Gems and Precious Stones, p. 67. New York, 1892. U. S. Geol. Surv., Mineral Resources, 1883-1884, p. 738. 1885. U. S. Geol. Surv., Mineral Resources, 1892, p. 764. 1893.

the United States." A short account of the same topaz is also given by Mr. A. N. Alling.* Dana also mentions this locality.†

The crystals occur in cavities formed in lava. This rock is white or grayish in color and has a peculiarly banded structure resembling sandstone. It seems to be made up of loose, intensely sharp crystals laid down in layers, as though it might have been the settlements of volcanic ejectamenta. It carries finely disseminated gold and lead and is a typical rhyolite of Pliocene-Tertiary age or of the immediately preceding period. The lava overlies all the stratified rock and caps the Dugway range. It is in a bed nearly 1,000 feet thick, fifteen miles long and from two to five miles wide. The natural occurrence of the crystals is in cavities in the rock, but the great majority of those seen had been separated from the lava and were scattered over the surface. The whole mountain was apparently covered with them and presented a magnificent appearance in the bright sunlight, the crystals gleaming like drops of dew in the morning sun. Turn where you would the glitter of the bright gems met your eyes. In some places they were so thick that one could almost scoop them up. But by far the greater number were broken and imperfect, the most perfect ones generally being the tips broken off along the basal cleavage planes from larger crystals. In the course of four or five hours nearly a pint of quite perfect specimens was collected with a much larger number of imperfect ones. These crystals varied in size from tiny ones no larger than a pin-head to those as large as one's thumb. For the most part they are, as Englemann described them, "entirely colorless and transparent," but some wine-colored ones were also discovered. These were always and only found in cavities in the rock where they were not exposed to the light, it being thus conclusively proven that the wine-colored ones fade to white under the influence of bright sunlight. This change of color has also been noticed in the topaz found at Nathrop, Colorado.

With the topaz of the latter place crystals of garnet, quartz and sanidine are associated in varying quantities.

It has been suggested that these crystals are of secondary formation resulting from the action of acid waters on the rock since its deposition. But Cross, in the article above mentioned,

* Am. Jour. Sci., (3), XXXIII, 146. 1888.

† A System of Mineralogy, p. 495. 1893.

says of the Nathrop crystals: "They are evidently not secondary like zeolites, but primary and produced by sublimation or crystallization from presumably heated solutions contemporaneous or nearly so with the final consolidation of the rock." It is very likely that the Utah topaz was formed in the same way.

FORMATION OF THE FLINT BEDS OF THE BURLINGTON LIMESTONES.

BY FRANCIS M. FULTZ.

[Abstract.]

For convenience the flint beds of the Burlington limestones are usually separated into two divisions, known as the "lower" and "upper" flint beds. The lower series is probably from fifteen to twenty feet thick and the upper a little more. They have always been classed as the latest deposits of the Lower Burlington and Upper Burlington limestones, respectively. The lower beds are not so continuously chert as the Upper; in fact much of the deposit is siliceous shale mixed with clay and containing thin bands of limestone. There are also certain strata which look like heavy-bedded limestone, but which contain so much siliceous and argillaceous matter as to be utterly worthless. As already stated the upper series is somewhat the thicker. There is also a much greater proportion of chert and much less siliceous shale, while the amount of limestone remains about the same.

As yet no very satisfactory theory as to the origin of these flint beds has been advanced. Certainly none satisfactory enough to be generally accepted. The investigation to which attention is here called has been mainly as to whether the origin of the material has been chemical or organic. So far the preponderance of evidence is in favor of the former.