

when the fact is taken into consideration that a very small variation in the amount of beryllium oxide in either of the above equations would largely affect the result for carbon.

The conclusion seems warranted that the atomic weight of beryllium is very close to 9.112, or that there is an equal and balancing error in both equations.

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*Changes of Color Caused by the Action of Certain Rays on Glass.*--- In the Journal, Vol. 27, page 909, under the above title, appeared certain comments by S. Avery relative to glass becoming violet on exposure to the sun's rays. As there pointed out, the color appears to be dependent upon the presence of manganese originally in the glass, and the intensity of the color is approximately proportional to the manganese present. The occurrences reported by Mr. Avery and Sir Wm. Crookes resulted from exposures to the sun's rays in New Mexico and South America. Among the quotations from Sir Crookes, is: "It would be interesting to hear if travelers in other tropical countries have observed any such change of color of glass." Apparently, the inference is that there is a connection between the phenomenon and the sun's rays in the tropics.

My attention was recently attracted by a similar occurrence in the Butte District, in Montana, U. S. A. The northern part of this district contains large ore bodies, in which manganese as dioxide is a very prominent component. Seemingly, all colorless glass which is allowed to remain for some years on this surface, exposed to the sun's rays, shows a violet color of greater or less intensity. This color is not merely a superficial coating, but extends completely through the glass. The writer never investigated the cause, but is personally able to vouch for the fact of actual occurrence. The color would naturally suggest the presence of manganese, either originally in the glass or derived from extrinsic sources. On account of the proximity of bodies heavily charged with manganese, the latter inference was a possible one, although I considered it hardly probable in view of the fact that most colorless glass contains manganese. It is, however, evident that the phenomenon is not confined to the tropics.

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