
LETTER

On the Equilibrium between Radon and Radium and Radium B in Radioactive Mineral Waters

By Shunji UMEMOTO

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From April, 1951 to March, 1952, the author measured continuously the variation of the contents of radium, radon, etc. in a spring called Hisui-no-Yu, at Misasa, Tottori, Japan; and it was found that when the amount of flow increased, the water temperature rose, the content of radon increased and the contents of radium and other common elements decreased. From these results, however, it was difficult to find any explanation for the formation and structure of this spring.⁽¹⁾

Therefore, from February, 1952, the author measured continuously the radium radon, radium B and chloride content, the amount of flow and the water temperature of Hisui-no-Yu and three other springs at Misasa and the following results were obtained:

(1) The radon content was higher than the value which would be expected from the equilibrium between radium and radon.⁽²⁾

(2) At times, the radium B content exceeded the value which would be expected from the equilibrium between radon and radium B. It is very interesting that, on some occasions, the equilibrium between such short-lived radioactive elements is not retained in mineral waters.

Further studies of this work will be made and more detailed results will be given later.

(1) S. Umemoto, *J. Chem. Soc. Japan*, **73**, 756 (1952) etc.

(2) This result was the same as that obtained already by the author and other investigators and the radium content varied with the chloride content as reported previously.

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