

## On the Radon Content of the Mineral Springs of Masutomi.

By Kazuo KURODA and Masaki NAKANISHI.

(Received November 10, 1942.)

In the previous papers,<sup>(1)(2)</sup> S. Oana and one of the present authors (K. Kuroda) reported the radon content of the mineral springs of Masutomi, Yamanashi Prefecture. In those papers they reported that the springs belonging to the group A contained a large amount of radium, but their radon content was always very low.<sup>(3)</sup> The present authors, however, measured recently the radon content of the springs of group A, and found a number of springs containing an exceedingly large amount of radon.

There are several springs on the river Hontani (A6, A7, A8, A9, etc.). The springs issue from the granite and produce a splendid sinter in which, according to G. Schwabe,<sup>(4)</sup> various organisms are found, and supposed to be deposited by the biological reactions. The author (Kuroda) measured the radon content of the spring A6 in May, 1942 and found that its radon content was  $600 \times 10^{-10}$  Curie per litre. The springs A7 and A8 were observed by G. Schwabe and found to be very interesting biologically. The author, however, did not measure their radon content, and determined only the temperature, pH,  $\text{HCO}_3'$  and  $\text{CO}_2$  contents of the spring water.

The radon content of the springs A8 and A9 was measured on 1 November, 1942, a rainy day, and it was found that the radon content of both springs was larger than 1000 Mache. As it was rainy on that day, and moreover, there was a small spring quite near to the spring A9 which flows into this spring, it was supposed that the radon content of the springs A8 and A9 would be really larger than the value obtained at that time. We measured then the radon content of A92, a small spring flowing into the spring A9, and found that its radon content was about 663 Mache, considerably smaller than the radon content of A9 measured on the previous day.

The radon content of the spring A9 was therefore expected to be far larger than 1000 Mache, so we measured on the next day the radon content of the spring water of A9, which was not mixed by the water of A92.

A 10 c.c. portion of the spring water was diluted with distilled water to 500 c.c. and the radioactivity was measured by I. M. fontactoscope. The constant of the fontactoscope was 0.585 Mache radon per div. per

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(1) S. Oana and K. Kuroda, this Bulletin, 15(1940), 485.

(2) S. Oana and K. Kuroda, this Bulletin, 17(1942), 397.

(3) S. Oana and K. Kuroda, this Bulletin, 17(1942), 414-415.

(4) The results of biological observations will be published shortly after in the „Mitteilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens“, together with our geochemical observations.

min. or  $2.129 \times 10^{-10}$  Curie radon per div. per min. The velocity of the foil of the fontactoscope was about 50 div. per min.

The radon content of this spring was found to be 1930 Mache or  $7030 \times 10^{-10}$  Curie per litre. This is the highest value ever observed in this country, and the fourth in the world.<sup>(5)</sup>

On the following day the radon content of this spring water was measured once more, and was found that its radon content diminished down to 1490 Mache. It is quite interesting to ascertain the phenomenon that such a large variation of the radioactivity of the spring water was caused by the effect of the rain. The experiments on such a phenomenon are now planned and the results will be reported later. The radon content of all the newly found springs of A group is very high.

The authors express their hearty thanks to Prof. Kenjiro Kimura for his kind guidance in the course of this study. The cost of this research has been defrayed from the Scientific Research Encouragement Grant from the Department of Education, to which the authors' thanks are due.

*Chemical Institute, Faculty of Science,  
Imperial University of Tokyo.*

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(5) George Hevesy and F. A. Paneth, "A Manual of Radioactivity," London, (1938), 227.