

Re-examination of meaning indicated by "Nigori-Sumi (Muddy and clear) Bridge" ~Turbidity Characteristic of Meeting Point of the Ushikubi River and the Ozo River, in Hakusan Tedorigawa Geopark ~

*Tatsuto Aoki¹

1. School of Regional Development Studies, Kanazawa University

Two main flow paths consisting the Tedori river water system that flows through the Hakusan Tedorigawa Geopark, the Ushikubi River, the main stream path, originating from the west side of Mt. Hakusan, and the Ozo River, tributary originating from the former the north of Mt. Hakusan. These two flow paths join in the vicinity of the "Nigori-Sumi Bridge" in the Seto area, then turn northward as the Tedori River. The word of "Nigori-Sumi" means "Muddiness and clearness" and this shows the difference in the turbidity between the two flow paths. On the webpage of Hakusan Tedorigawa Geopark, it is written as follows and is accompanied by photographs showing the state that high turbidity water and low water are joining.

“There is a point that the Ozo River meets the Tedori River, and only the Ozo River didn't settle down for a while during rugged weather, so it is sometimes possible to see a two-colored flow, muddy and clear water, at the meeting point. Thus this bridge was named Nigorisumi Bridge (nigori means muddy and sumi means clear).”

In this report, the author measured the turbidity of these two flow paths, organized the relationship with artificial river management, and re-examined the meaning of today's word of "Nigori-Sumi".

The Ushikubi River originated from Hakusan Gozengamine (2702 m), and Ozo River originated from Hakusan Onanjimine (2684 m), and joins at an altitude of 240 m near the Nigori-Sumi Bridge. The length of the flow path to the confluence point is 34.3 km for the Ushikubi River (average bed slope 71.8 ‰), and 24.5 km for the Ozo River (107.9 ‰). The Ozo River is steeper than the

Ushikubi River. Many of landslides are distributed in the both basin. However, it is believed that there was a crater of Paleo-Hakusan volcano in the Jigokudani of the Ozo River basin (Nagaoka, 1972), and severe degeneration is recognized. The Tedori dam is built in the Ushikubi River, and its flow is controlled by that dam. On the other hand, there is no artificial dam and the flow is not controlled in the Ozo River.

Five sites for water sampling are set in the basin, and sampled water immediately after the large-scale flood caused by the typhoon. As a result, immediately after large-scale flooding, the flow rate and turbidity are high in the Ozo River where the flow rate is not controlled and the geology of the catchment area is brittle. On the other hand, On the Ushikubi River controlled by a dam, water and suspended sediment are stored in the dam, so the increase in flow rate and turbidity is suppressed. As a result, in the vicinity of Nigori-Sumi bashi Bridge, the Ozo River becomes "muddy" and the Ushikubi River becomes "clear". When

time passes after flooding, the flow rate rapidly approaches the base flow rate in the Ozo River, and the contents of suspended sediment also decreases. On the contrary, in the Ushikubi River where discharge from the dam continues, the flow rate and turbidity is kept high because of the spouting water from the dam. As a result, the situation occurred where the Ushikubi River was "muddy" and the Ozo River was "clear".

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