

## The Benefits and Drawbacks of Hot Springs

The waters of Tamagawa Onsen become cooler as they mingle with the Yugawa river water, and the compounds previously dissolved in the hot-spring waters solidify into various precipitates, including hokutolite, sulfur, silicic acid, and barite. The precipitates form minute crystals and amorphous solids called *yu-no-hana* or “hot water flowers” that are harvested for use as bath additives.

While the highly acidic waters have made Tamagawa Onsen a popular health retreat, such waters can have a negative impact on rivers and rice farms located downstream, an effect that locals have dubbed “Tamagawa poison water.” Nearby Lake Tazawako has also been affected by acidification, leading to the disappearance of nearly all of the fish in the lake.

To combat these issues, countermeasures have been introduced, including treatment of the water at the Tamagawa Acidic Water Neutralization Treatment facility.