



The Zao mountain range stretches out beyond a cluster of trees with *juhyo* formations

The Spectacle of Rime Ice-Covered Trees Spread Through Zao in Winter

In the Zao mountain range, which extends across both Miyagi and Yamagata prefectures in Japan's Tohoku region, one can delight in the amazing sight of trees blanketed in snow and rime ice formations during the winter season, known as *juhyo*. We had the opportunity to speak with a person in charge of organizing guided tours for the captivating trees in Miyagi Prefecture.

(Text: Morohashi Kumiko)

Juhyo is a rare natural phenomenon that occurs exclusively in a few mountain ranges in Japan, and it is exceptionally rare even by international standards. The creation of *juhyo* in Zao involves three steps. First, moisture in the snow or wind hits the branches and leaves of the native coniferous Aomori todomatsu tree¹, freezing upon contact. Second, a



Juhyo is created as ice and snow accumulate on the branches of Aomori todomatsu trees.



Left: *Juhyo*, known as “snow monsters,” feature peculiar and wild shapes.

Right: Popular tours offer views of *juhyo* from snow vehicles.

significant amount of snow, driven by blizzards or similar conditions, enters the gaps in the ice. Third, additional snow adheres, and the formation grows in the direction of the wind. *Juhyo* grows as this three-step process is repeated.

Katase Yasuyuki of Miyagi Zao Sumikawa Snow Park explains, “On the Miyagi side, it is possible to observe *juhyo* from December onwards. Initially, at the tips of the branches, baby *juhyo*, known as ‘shrimp tails,’ attach, resembling Christmas trees with visible branches and leaves. As layers of ice gradually accumulate, these formations grow larger and transform into majestic *juhyo* known as ‘snow monsters.’ These formations can be seen until around March.”

While it is also possible to observe *juhyo* in Yamagata, Katase notes that, in comparison to the soft and gentle appearance with rounded features of Yamagata’s *juhyo*, those on the Miyagi side are described as rough and rugged. He suggests that the reason for this difference lies in the topography.

“It is said that on the Yamagata side, fine powder-like snow brought by the westerly winds from the sea accumulates, forming *juhyo* as it settles. On the Miyagi side, the strong winds blowing down from the Zao mountain range create hard, hail-like particles that freeze, resulting in *juhyo* with a more rugged appear-


ance,” comments Katase. The majestic and grand *juhyo* formations are artistic masterpieces symbolizing Zao’s harsh winter nature.



Juhyo can form on Aomori Todomatsu trees, believed to be almost 300 years old, creating the illusion of giant living organisms.

“In recent times, the number of overseas tourists has been growing, and tours offering views from snow vehicles are particularly popular,” remarks Katase. “Since *juhyo* forms facing westward with the wind, we recommend tours during the afternoon when they sparkle in the sunlight.”

Lately, the Aomori todomatsu trees, which naturally grow in the Zao mountain range, have aged and face issues such as damage from insect pests. Consequently, both Yamagata and Miyagi prefectures hold regular meetings to consider the preservation and regeneration of the trees. “The Aomori todomatsu is believed to have a lifespan of 300 years, with extremely slow growth. It is said to take over 50 years from germination to bearing fruit,” says Katase. “Being a high-altitude species that does not thrive

below 1,100 meters, it is considered quite challenging to grow the trees. Various initiatives are being undertaken to preserve Zao’s winter landscape. We invite you to visit the area and witness the beautiful, majestic *juhyo* formations.” 

1. An evergreen tree belonging to the fir family (Pinaceae), also known as *Abies mariesii*. It is distributed in the subalpine zone in the north of Japan’s main island.