

Tanigawa's Unique Topography, Geology, and Plant Life

The topography of the Tanigawa Mountain Range is marked by features such as steep valleys, avalanche chutes, and snow-filled nivation hollows. The range was uplifted by tectonic activity beginning some 4.4 million years ago, after which glacial movement formed the sharp valleys of Machigasawa, Ichinokurasawa, and Yūnosawa. Embankments of accumulated rock and unconsolidated debris, called moraines, formed on the valleys' lower slopes and are evidence of the glaciers that carved them. The mountain range divides the prefectures of Niigata and Gunma. Since its formation, heavy precipitation carried by fierce winds from the west has eroded the mountains' face on the Gunma side, creating a sheer, barren and precipitous face that is a dramatic contrast to the gentle, sloping side that faces Niigata.

The Tanigawa Mountain Range is composed of various kinds of rock. Its base is formed of serpentinite and plutonic rocks (such as granite, granodiorite, and porphyritic granite). This serpentinite often contains fragments of schist and veins of talc, which can be identified by its lustrous surface and whitish, snakeskin-like pattern.

Only small shrubs and grasses can survive in the harsh alpine environment of the Tanigawa Mountain Range. The mountains' faces are steep and composed largely of serpentinite, which degrades into soil that is shallow, dry, and lacks important nutrients. A relative of edelweiss called *hosoba hina-usu yukisō* (*Leontopodium fauriei* var. *angustifolium*) has evolved to survive in the dry cracks of serpentinite. Its leaves are covered in fuzzy, felt-like hairs that condense the air's moisture into water.