

## **Oki Islands Geopark: Unique Ecology**

### **Endemic Species**

The Oki Islands were cut off from mainland Japan by rising sea levels around 10,000 years ago. This is a relatively short time in evolutionary terms, and the majority of the plant and animal species found on the islands are identical to their mainland counterparts. However, some Oki species did evolve differently: the Oki dandelion differs from the common dandelion by its involucre bracts, which are leaflike structures that surround and support the head of the flower. When the flower blooms, the bracts of common dandelions curve backward and down, like green petals, but those of the Oki species remain tightly closed against the flower's head.

Another inhabitant of the island, the Oki salamander, underwent more dramatic adaptations: the Oki species bears traits of both lotic (stream-dwelling) and lentic (pool-dwelling) salamanders. Genetic research suggests it originally evolved from a stream dweller to a pool dweller, then partially back again when it found itself on islands with abundant mountain streams. This species is currently classified as vulnerable to extinction by the Japanese Ministry of the Environment.

### **A Composite Ecosystem**

Oki Island ecology is characterized by the presence of various plant species from very different climates. Species normally found in cold northern extremes or on alpine plateaus grow together with species from the tropical or near-tropical southern regions of Japan. For example, Asian fawn lily and rugosa rose are species from northern Japan, but they can be found on the islands alongside subtropical and warm-temperate flowers such as the yellow hibiscus (*Hibiscus hamabo*) and the nagoran epiphyte orchid *Sedirea japonica*.

The northern or alpine plants are believed to have migrated to the islands during various glacial periods, when the islands were still connected to the mainland, and to have survived there even after dying out elsewhere. The southern plants may have arrived as seeds carried north by the Tsushima Warm Current, which flows along the northwest coast of Japan.