

Citrus in the Batanes Islands, Northern Philippines

Domingo A. Madulid

Philippine National Museum, Manila, The Philippines

The Batanes Islands are a group of volcanic islands that rose from the ocean in the Late Miocene to Pleistocene. The group is relatively young compared to mainland Luzon and therefore received plants from neighboring regions only after flowering plants first evolved. Many plants must have been carried to the Batanes Islands by sea currents, wind, and birds.

This island group shares numerous indigenous species with the Babuyan Islands (North of Luzon), the Lanyu and Luta Islands of Taiwan, and the Ryukyu Islands of Japan. With a flora of about 671 flowering plants, 16% are endemic to the Batanes.

The Batanes group is a distinct biogeographical region within the Philippines, and is recognised as an 'Important Plant Area' due to its rich plant diversity, the high endemism, and the high level of threats to plant resources. Despite their small total area (about 210 sq. km.), the islands are particularly rich in plants belonging to the Rutaceae, the family of Citrus. Within the Batanes alone there are seven genera and 16 species of Rutaceae, while more than 25 genera and about 84 species are found in the Philippines as a whole.

Of particular interest is the genus *Citrus*. Many species or varieties are rare and apparently confined to the Batanes. Five species of Citrus are found in the Batanes, and nine are present in the entire country. An outstanding native citrus fruit called '*dukban*' is a delicacy among the Ivatan people and is commonly cultivated in backyards and fields. The oblong fruit has a thick white rind which is eaten raw or pickled, and the juicy flesh is very sour. The tree is apparently a cross between *C. maxima* and *C. medica* (according to the late Benjamin Stone), and is here given the name *Citrus* x '*Dukban*'. This plant is restricted in distribution to the Batanes Island, despite the close proximity of Northern Luzon.

Two other apparent hybrids are found in the islands. No formal botanical names have been given to these native *Citrus* until now. No information is currently available regarding the parentage and other vital biological attributes of these unrecorded hybrids.

Without doubt, *Citrus* species in the Batanes are a rich genetic resource that should be properly managed and protected not only by the people of the Batanes, but also by all people concerned with the islands and the plant group. At present, *Citrus* species are threatened mainly by habitat destruction and the conversion of land to agriculture or pasture. No conscious and concerted efforts are being made for their conservation and sustainable utilization. A strategy and action plan for managing and protecting *Citrus* in the Batanes is highly recommended.

Presenting author: Domingo A. Madulid
