

Lilies in Japan

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Japan consists of four main islands—Hokkaido, Honshu, Shikoku and Kyushu—from north to south and is surrounded by hundreds of islets which run in a long line from northeast to southwest within the limits of 45°31'16" to 24°0'16"N and 145°49'03" to 128°06'23"E.

Although they belong mostly to the temperate zones and the climate is the same as the east coast of the Continent, the annual change of temperature is comparatively great. Humidity is high in summer but low in winter, especially on the Pacific coast.

The climatic variation is really wide for the size of the country, because the northern part is near the subfrigid zone, the southwestern region reaches the subtropical zone and there are also many high mountains over 3,000 meters in the central part of Honshu.

Therefore, many kinds of native plants grow in Japan; that is, 3,694 species of higher plants belonging to 990 genera and 170 families have been described, among which 15 species of lilies (*Lilium*) are included.

Species and their distribution

Among them are about 100 species of lilies which grow naturally on the continents of the Northern Hemisphere, 15 Japanese species and their varieties which have very beautiful flowers as compared with those in other countries and their natural distribution is so wide that almost all the 47 prefectures of this country have wild lilies. Therefore, it can be said honestly that Japan is a country of lilies in the world.

Indigenous lilies are found from the sea-

shore to the highland 2,400 meters above sea level. The flowering time of lilies is in early April when *L. longiflorum* Thunb. bloom in the Ryukyu Islands, the southwesternmost part of Japan. From May to June *L. japonicum* Thunb., *L. rubellum* Baker and *L. concolor* Salisb. are in flower, in July and August many kinds of lilies as *L. alexandrae* Wallace, *L. nobilissimum* Makino, *L. auratum* Lindl., *L. platyphyllum* Makino, *L. dauricum* Ker-Gawl., *L. maculatum* Thunb., *L. callosum* Sieb. et Zucc., *L. lancifolium* Thunb., *L. maximo-wiczii* Regel, *L. medeoloides* A. Gray, *L. speciosum* Thunb. bear flowers in succession.

During this period, the nature of Japan is ornamented with beautiful lilies from seaside areas and grassy plains to hills and high mountains so as to be admired by visitors from Western countries.

L. longiflorum Thunb. are popular lilies with pure white and fragrant flowers. This flower is universally admired and is esteemed by Christians as a pure and holy flower symbolizing the Holy Mother, indispensable to Christian ceremonial occasions.

L. japonicum Thunb. (Pink Lily) grows wild in the central part of Honshu and westward. The color is unusually pink for lily. This lily has been familiar to Japanese for a long time, being sung in old poems and used in the Lily Festival which is celebrated on June 17 each year in city of Nara as a graceful observance which came from "Kojiki", the legendary story of ancient Japan, in the year 712 and is remindful of the age of gods.

L. rubellum Baker (Rosy Lily) grows wild in the mountainous regions of the northeast-



Fig. 1. *L. longiflorum* Thunb. (wild) Erabu Is.



Fig. 2. *L. japonicum* Thunb. (wild) Aichi Pref.



Fig. 3. *L. auratum* (Lindl. (wild) Nara Pref.



Fig. 6. *L. maculatum* Thunb. (wild) Sado Is.

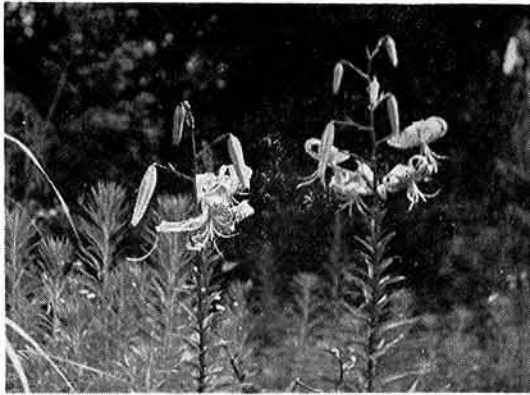


Fig. 4. *L. lancifolium* Thunb. (culture)



Fig. 5. *L. maximowiczii* Regel. (wild) Akita Pref.



Fig. 7. *L. speciosum* Thunb. (wild) Koshiki Is.

ern part of Honshu. This species looks like a small miniature of the preceding one, only the flower color is rosy. This lily blooms from late April to early May in Tokyo and its neighboring plains.

L. alexandrae Wallace and *L. nobilissimum* Makino are very rare lilies growing only in

a few islands, among the southwestern islands. They have pure white flowers with very strong fragrance and are regarded as the best lilies.

These five species belong to the subgenus *Leucolirion* of *Lilium* and they have trumpet-shaped flowers which are mostly open sideways, rarely upward and have strong fragrance. They are only indigenous to Japan.

Lilies belonging to subgenus *Archelirion* have bowl-shaped flowers which open sideways, being the largest in lilies and have very strong fragrance. They are widely distributed in the central part of Honshu and eastward.

L. auratum Lindl. (Golden-Banded Lily) has white flowers with large spots and a yellow central stripe. *L. platyphyllum* Makino is the larger type of the preceding one, and its flower is pure white with no spot. This is a native of Izu Islands. The species belong to subgenus *Archelirion* and are only indigenous to Japan.

L. concolor Salisb. (Star Lily) is sparsely distributed in various parts of Japan. The small star-shaped pretty flower opens upward and the color is scarlet rarely yellow. This species grows wild in Korea, China and Siberia besides Japan.

L. dauricum Ker-Gawl. (Candle-Stick Lily) is a native of Hokkaido. The rice bowl-shaped flower opens upward and is medium in size, being black-spotted orange red and rarely yellow. This species is distributed in Korea, China, Siberia as well as in Japan.

L. maculatum Thunb. grows naturally in seaside regions of the Pacific Ocean and Sea of Japan and some varieties of this species are distributed in the mountainous regions in the central part of Honshu and westward.

The cup-shaped flower opens upward and is medium in size, being orange-red or yellow with reddish brown spots. These three species belong to subgenus *Pseudolirion* and their flowers are not fragrant.

In Japan, various horticultural species (*L. ×elegans* Thunb.), different in color and shape

of flowers, have been bred by interspecific crossing between these species for the past 300 years. This subgenus includes many other species than the Japanese ones.

The last subgenus *Martagon*, includes a large number of species which are widely distributed in the Northern Hemisphere. They bear abundant bell-shaped flowers which open sideways and are medium or small in size. Some of them are fragrant but others are not.

L. callosum Sieb. et Zucc. (Slimstern Lily) grows wild not only in Kyushu but also in Korea, China and Siberia. The flower is the smallest among lilies and faces downward. Its color is vermilion and yellow without spots. Flowering time is as late as August to September.

L. lancifolium Thunb. (Tiger Lily) is native of Japan, Korea and China. The Japanese species is triploid and sterile, but it propagates by axial bulbils which are produced on leaf axils. The flower has a shape of a flat bell and the color is vermilion with dark purple variegation. A yellow-flowered diploid variety has been found growing in Tsushima Island.

L. maximowiczii Regel is a smaller type of the preceding one and the widest in distribution among the lilies in Japan. This species does not produce axial bulbils, but it can propagate well by seed. The flower is orange red, and the yellow-flowered variety is named *L. leichtlinii* Hook. f.

L. medeoloides A. Gray (Wheel Lily) grows wild on high mountains in Japan and Korea but it is also distributed in the plains in Kuril Islands, Sakhalin and Kamchatka. Their leaves are unusually verticillate for lilies. The flowers are small and vermilion with black spots.

L. speciosum Thunb. (Showy Lily) grows naturally in Kyushu, Shikoku and China and they come in many varieties in these native places. C. P. Thunberg, a Swedish botanist who came to Japan in 1775, admired this lily, saying that this was one of the most beautiful flowers in the world. The flower is medium in size and there are many varieties distin-

guished by flower color such as pure white, white with pink and red spots, or entirely pink or red with white hem. This species is most densely distributed in the Koshiki Islands to the west of Kyushu and many beautiful varieties are also found there.

Breeding and cultivation

There are many beautiful lilies growing abundantly on mountains and plains. Therefore, since olden days, people only cut wild flowers and cultivated bulbs of wild lilies in their garden to enjoy them, because they were making no effort to conduct experiment on lily breeding with the exception of *L. × elegans* Thunb.

When Japanese lilies were introduced to Western countries in about the mid-19th century, the beautiful flowers astonished the people there and became the object of popular acclaim in the field of floriculture.

Accordingly, many traders in Japan scrambled to collect lily bulbs from plains and mountains to export them directly or after



Fig. 9. *L. elegans* Thunb. (culture)



Fig. 8. *L. × elegans* Thunb. (bulbs product field) Niigata Pref.

growing them in nurseries the export increased to 40,000,000 bulbs yearly in around 1935. Among lilies which were exported, the first was *L. longiflorum* Thunb., which formed 75 per cent of the total export, followed by *L. speciosum* Thunb. and *L. auratum* Lindl. Practically all the other species also were exported.

In Europe and America as well as in Australia and New Zealand which did not have any native lilies of their own, the florists were not satisfied with only importing wild lilies from Japan so they also started to import them from China.

Using Japanese and Chinese species as parents, they actively carried out the breeding of interspecific hybrids known as the Oriental Hybrids and the Asiatic Hybrids since the end of the late 19th century or so, by obtaining many excellent varieties.

The Oriental Hybrids were brought up by combining especially Japanese species such as *L. japonicum* Thunb., *L. rubellum* Baker, *L. auratum* Lindl., *L. platyphyllum* Makino and *L. speciosum* Thunb., etc., while the Asiatic Hybrids were selected from among crosses between *L. ×elegans* Thunb., *L. dauricum* Ker-Gawl., *L. lancifolium* Thunb. and *L. maximowiczii* Regel, etc.

In addition, during World War II when the import of lilies, including *L. longiflorum* Thunb., was stopped, the breeding of this species was carried out mainly by the Bulb Research Institute of the U.S. Department of Agriculture, resulting in the selection of many good varieties, as Croft, Ace, Georgia and Nelly white, etc. The export of lilies from Japan, accordingly, went into a severe slump under the pressure of these varieties.

But it is expected that export will retrieve its former position in the near future, because the breeding of lilies is now being promoted by prefectural experiment stations and private breeders as well as the Ministry of Agriculture and Forestry accompanied by a gradual increase in propagation of good varieties and the export itself has been resumed.

At present, the nursery bulb culture of *L. longiflorum* Thunb. is concentrated in Erabu Island of the Amami Islands to produce 30,000,000 bulbs every year and 30 per cent of the product are exported while the remainder is consumed by florists in this country for greenhouse culture after chilling as well as outdoor culture to produce cut flowers continuously from October to next July.

Cut flowers of lilies during the August to September period are produced by culturing *L. ×formolongo*, an interspecific hybrid between *L. formosanum* Wallace and *L. longiflorum* Thunb., indoors in cool highlands of the central part of Honshu. This hybrid lily is grown by seeding culture and the flowers can be harvested in the period mentioned above within a year after seeding. Bulbs of *L. speciosum* Thunb. are produced in both Kagoshima and Kanagawa prefectures and mainly used for export. Bulbs of *L. auratum* Lindl. and *L. platyphyllum* Makino are mostly collected from mountains and exported after nursery culture.

In Japan these lilies are grown mainly for producing bulbs for cooking rather than for ornamental use. *L. lancifolium* Thunb. and *L. maximowiczii* Regel are also important as edible bulbs and less valuable for ornamental use in Japan. *L. ×elegans* Thunb. and hybrid lilies bred in Western countries such as the Asiatic Hybrids and the Oriental Hybrids were reimported into Japan and have been in use as new varieties, the nursery culture of which is mainly carried out in such prefectures as Hokkaido, Niigata, Kanagawa and Chiba. These lilies are mostly used to meet domestic demands for garden plants, pot plants and cut flowers.

Japan has rested for a long time on her laurels of "the country of lilies in the world" in the lily industry. In the future, it is important to develop "a country of lilies in the world" in both name and reality by uniting the efforts of government and people to improve varieties and culture techniques for the purpose.