

Rhododendron arboreum

Sm.

Ericaceae

chalan

LOCAL NAMES

English (rose tree, rhododendron); Nepali (lali guras); Trade name (chalan)

BOTANIC DESCRIPTION

Rhododendron arboreum is one of the most stately and impressive rhododendron species. It is extremely variable in stature, hardiness, flower color and leaf characteristics. Originally discovered in north-central India, the plant known locally as Lali Guras is the tallest of Nepal's rhododendrons, reaching heights of more than 20m. It has the largest trunk and flowers, blossoming earlier and longer than the others.

In its native land, huge trees of *R. arboreum* grow to a height of 25m or more.

Trunk often much branched, crooked or gnarled. Bark reddish brown, soft and rough, exfoliating in thin flakes.

The foliage of *R. arboreum* is extremely handsome. Its thick, stiff, leathery dark green leaves are covered on the under surface with a thin layer of indumentum ranging in color from silver to fawn to deep cinnamon, elegant in foliage. Leaves glossy green, oblong-lanceolate, 10-20 cm long and 3.6 cm wide. Crowded towards the ends of branches, petiole covered with white scales when young.

The flowers of *R. arboreum* range in color from a deep scarlet, to red with white markings, to pink to white. Bearing up to twenty blossoms in a single truss this rhododendron is a spectacular sight when in full bloom. It is reported that the bright red forms of this rhododendron are generally found at the lower elevations.

Fruit a capsule, oblong, curved, longitudinally ribbed, up to 3.8 cm long and 1.25 cm wide.

Seeds minute, dark brown, compressed, oblong.

Three varieties are recognized, var. *cinnamomum* is a small tree with smaller leaves and white, pale rose or purple spotted flowers and occurs in Nepal and northern Bengal.

R. arboreum in the world's most famous rhododendron. This spectacular plant was designated the national flower of Nepal, the legendary home of Mt. Everest and other mountain gods. It's even depicted on the national coat of arms.

BIOLOGY

The hermaphrodite flowers are insect-pollinated. Seed capsules ripen from August through March depending on altitude. The first hybrid rhododendrons were created during the early 1830s by Anthony Waterer, at Knapp Hill in Surrey, England. He crossed the rather tender *Rhododendron arboreum* with the much more hardy *Rhododendron caucasicum*. The result were plants which were more hardy than *Rhododendron arboreum* and which had the advantage of repeat blooming. These hybrids are still among the earliest blooming rhododendrons; they bloom when there is a strong possibility of frost. Repeat blooming means that unlike most rhododendrons, all of the flowers don't open at once; instead they open in succession. If the first blooms get damaged by frost, there are still flower buds which aren't damaged. Waterer named this hybrid family the 'Nobleanum' grex. A grex is a family of hybrids which result from the crossing of two species rhododendrons, it even includes crosses of the same species done by different breeders. This term became very confusing and it is no longer used by rhododendron breeders, it is only used to describe antique hybrids.

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ECOLOGY

R. arboreum is found in many vegetation types, and sometimes forms almost pure forest in restricted areas. It is common in the western Himalayas in association with *Quercus* species and *Pinus roxburghii*. It thrives best on moist loam although it is also found on moist rocky ground. The tree can withstand shading although it develops better in the open.

BIOPHYSICAL LIMITS

Altitude: 1200 - 4000 m

Mean annual temperature: 12 - 17°C

Mean annual rainfall: 200 - 1800 mm

Soil type: The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid soils and can grow in very acid soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bhutan, China, India, Nepal, Pakistan

Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

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PRODUCTS

Food: Flowers are sour-sweet and are eaten as pickles, although excess may cause intoxication. A sub-acidic jelly or preserve is made from the petals. The flower petals are eaten raw as a famine food in India.

Fuel: The wood is used as fuel and for making charcoal.

Timber: Sapwood reddish to brownish white; heartwood reddish brown, moderately hard, 640 kg/cu. m. It is easy to work, finishing to a smooth surface. It is used for tool handles, boxes and posts and is suitable for plywood.

Medicine: Leaves are applied to the forehead to relieve headache. Unspecified parts are used in the treatment of diarrhoea and dysentery.

SERVICES

Reclamation: *R. arboreum* readily colonizes newly disturbed ground such as road cuttings and landslides and in the crevices of bare rocks.

Ornamental: *R. arboreum* (Lali Guras in Nepal) is distributed throughout the length of Nepal at a variety of altitudes. It is known for its variably colored blossoms, which come in shades of red, pink and white. The blossoming plants are a spectacular sight, with up to twenty blossoms in a single truss.

Other services: The foliage adds to the plant's beauty. The under surface of the thick, stiff, leathery dark green leaves are covered with a thin layer of indumentum ranging in color from silver to fawn to deep cinnamon. Certain areas are known for their beautiful rhododendrons of various colors. Trekkers—tourists who make extensive hiking trips—sometimes plan their trips to pass through good rhododendron viewing areas. The government declared Milke-Jaljale a rhododendron conservation area on October 13, 1999.

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TREE MANAGEMENT

It coppices well but is a slow growing tree.

GERMPLASM MANAGEMENT

There are about 12 million seeds/kg. They are extracted by drying the capsules on paper in the sun.

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FURTHER READNG

CSIR. 1972. The Wealth of India: A dictionary of Indian raw materials and industrial products, Vol. IX. CSIR.

<http://www.geobop.com/Symbols/Plants/flowers/Rhododendrons/>

http://www.ibiblio.org/pfaf/cgi-bin/arr_html?Rhododendron+arboreum&CAN=LATIND

<http://www.suite101.com/article.cfm/668/19079>

Jackson JK. 1994. Manual of Afforestation in Nepal. Forest Research and Survey Centre Kathmandu, Nepal. Vol 2.

SUGGESTED CITATION

Orwa C, A Mutua, Kindt R , Jamnadass R, S Anthony. 2009 Agroforestry Database:a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp>)