

# *Tibouchina urvilleana*

Glory bush  
Melastomataceae

Forest Starr, Kim Starr, and Lloyd Loope  
United States Geological Survey--Biological Resources Division  
Haleakala Field Station, Maui, Hawai'i

April, 2003

## OVERVIEW

*Tibouchina urvilleana* is widely cultivated for its attractive purple flowers. In Hawai'i, this species is a pest in moist areas where it forms large thickets and spreads vegetatively. On Maui, most plants observed during island wide surveys were cultivated, especially in the Kula and Pi'iholo areas, and some were naturalized, especially in lowland moist disturbed areas along the Hana Hwy. *T. urvilleana* was also reported from Iao Valley. *T. urvilleana* is a Hawai'i state noxious weed. Though fairly widespread, control of *T. urvilleana* in discrete locations, natural areas, and vulnerable habitat may help prevent larger infestations from occurring.

## TAXONOMY

**Family:** Melastomataceae (Melastoma family) (Wagner et al. 1999).

**Latin name:** *Tibouchina urvilleana* (DC) Cogn. (Wagner et al. 1999).

**Synonyms:** *Lisiandra urvilleana* DC, *Pleroma grandiflora* Hort., *P. splendens* Hort., *Tibouchina semidecandra* sensu Hawaiian botanists, non (DC) Cogn. (Wagner et al. 1999).

**Common names:** Glory bush, princess flower, Lasiandra (Brickell and Zuk 1997, Wagner et al. 1999).

**Taxonomic notes:** The genus, *Tibouchina*, is made up of about 350 species, many native to Brazil, but also ranging from Mexico and the West Indies to northern Argentina (Wagner et al. 1999). Our plants are referred to var. *urvilleana*, which has glandular hairs on pedicels, bracts, and hypanthium (Wagner et al. 1999).

**Nomenclature:** The generic name is derived from a native name of the plants in Guiana (Wagner et al. 1999).

**Related species in Hawai'i:** Several other *Tibouchina* species are also cultivated in Hawai'i, including *T. multiflora* and *T. granulosa*. *Tibouchina* species that have naturalized in Hawai'i include *T. herbacea*, *T. longifolia*, and *T. urvilleana*.

## DESCRIPTION

"Shrubs or small trees 1-4 m tall; young branches quadrate, densely villous to hirtellous. Leaves elliptic-ovate to lanceolate, 4-12 cm long, 2-5 cm wide, 5-7 nerved, upper surface strigose, the hairs not adnate to surface, lower surface sericeous, margins entire, apex acute to acuminate, base obtuse to rounded, petioles 5-20 mm long. Inflorescences terminal, 8-15 cm long (incl. peduncle), with 2 bracts elliptic to elliptic-ovate, 2.5-3 cm long, 0.8-1.4 cm wide, deciduous, bracteoles enclosing and concealing floral buds; hypanthium densely strigose; calyx lobes linear-subulate, 12-15 mm long, 3-5 mm wide,

deciduous after anthesis; petals 5, purple, 25-40 mm long, 20-40 mm wide; stamens dimorphic; larger anthers 15-16 mm long, connective prolonged 6-7 mm, with an appendage ca. 1 mm long, smaller anthers 11-14 mm long, with shorter connective and appendage but otherwise as in larger anthers; filaments glandular puberulent at base. Fruiting hypanthium 14-15 mm long, 9-10 mm wide. Mature seeds not seen." (Wagner et al. 1999).

## **BIOLOGY & ECOLOGY**

**Cultivation:** *T. urvilleana* is widely cultivated in warm regions for its soft foliage and showy purple flowers. The shrub does best in cool Mediterranean climates, such as coastal southern California, and does not like hot summers (Riffle 1998).

**Invasiveness:** *T. urvilleana* is known to form thickets in wet areas of Hawai'i from 200-1,700 m (Smith 1985). Whistler (2000) warns that *T. urvilleana* has become naturalized in some areas and it should not be introduced to areas where it is not already found.

**Pollination:** Not known.

**Propagation:** *Tibouchina* species are propagated from cuttings (Riffle 1998). According to Wagner et al. (1999), "cultivated material of *T. urvilleana* appears to be self-incompatible and no plump seeds have been observed on any of the collections gathered from adventive populations."

**Dispersal:** *Tibouchina* plants are spread long distances by humans who cultivate the plant. Plants spread vegetatively when branches touch the ground. Plants can also be spread in dumping of garden debris.

**Pests and diseases:** Brickell and Zuk (1997) report that *Tibouchina* spp. are susceptible to gray mold, mushroom root rot, leaf spots, root rot of seedlings, and spider mites. Dehgan (1998) reports that scale, nematodes and root rot are sometimes problems of *T. urvilleana*.

## **DISTRIBUTION**

**Native range:** *Tibouchina* species are evergreen plants from the rainforest areas of tropical America (Brickell and Zuk 1997). *T. urvilleana* is native to southern Brazil (Rio Grande do Sul to Rio de Janeiro) (Wagner et al. 1999).

**Global distribution:** *T. urvilleana* is cultivated in warm areas with mild climates. It is cultivated in southern parts of the United States, Hawai'i, and elsewhere in the Pacific. PIER (2003) reports the following areas where *T. urvilleana* is present: Cook Islands (Rorotonga (cult.)), Hawai'i, Kermadec Islands (Raoul, remains of cult.), and Samoa (Upolu (remnant of cult.)).

**State of Hawai'i distribution:** In Hawai'i, *T. urvilleana* was first collected on the island of Hawai'i in 1917 and is now naturalized on Kaua'i, O'ahu, Maui, and Hawai'i (Wagner

et al. 1999). *T. urvilleana* forms dense thickets in moist areas of Hawai'i from 200-1,700 m (656-5,577 ft) elevation (Smith 1985).

**Island of Maui distribution:** On Maui, *T. urvilleana* is widely planted on East Maui where it is especially popular in the Kula area, elevation 2,000-4,000 ft (610-1,219 m), where the climate is relatively dry, mild, and cool. In these areas, no signs of reproduction have been observed to date. *T. urvilleana* is also fairly popular in residential Pi'iholo, at similar elevations as Kula, but this area tends to be a bit more moist. No regeneration has been observed in this area either. Areas where *T. urvilleana* seems to be showing aggressive tendencies are in moist disturbed lowlands, where it has been planted, including several areas along the Hana Hwy. In these areas, *T. urvilleana* appears to be spreading vegetatively and forming large patches and thickets often in the understory of other non-native trees that have also been planted in the area. On West Maui, *T. urvilleana* was reported during an expert interview from a planting in Iao Valley.

## CONTROL METHODS

**Physical control:** Not known. It is likely that it could be dug up.

**Chemical control:** Not known. It is likely that foliar, cut stump, or basal bark applications of herbicides would work.

**Biological control:** There have been no introductions of biological control agents to Hawai'i specifically for *T. urvilleana*. However, there is a moth, *Rhynchopalpua brunellus* Hampson, in the Noctuidae family, that was introduced to Hawai'i, Kaua'i, and O'ahu in 1965, 1968, and 1989, respectively (HDOA 2002). This moth is now also known to feed on *Tibouchina urvilleana*. This moth was recently found feeding on the tips of leaves of *T. urvilleana* plants along the Hana Hwy. It is not known how the moths got there. Also feeding on leaves of *T. urvilleana* in these areas is *Lius poseidon* (pers. obs.), a beetle in the Buprestidae family that was originally introduced to O'ahu in 1990 and Maui in 1994 for biological control of *Clidemia hirta* (HDOA 2002). Feeding damage by these organisms on plants in the area was evident, though plants still retained fairly healthy vigor.

**Cultural control:** The public could be discouraged from planting noxious weeds such as *T. urvilleana*.

**Noxious weed acts:** Plants in the genus, *Tibouchina*, are listed as Hawai'i State noxious weeds (HDOA 1992). According to PIER (2003), *T. urvilleana* is on a list of plants to be excluded from French Polynesia.

## MANAGEMENT RECOMMENDATIONS

*T. urvilleana* is cultivated in Hawai'i and is a pest in moist areas Kaua'i, O'ahu, Maui, and Hawai'i (Wagner et al. 1999). On Maui, *T. urvilleana* is widely planted and for the most part is not particularly invasive in most areas where it is cultivated (Kula, Pi'iholo, Pukalani), though it does show invasive tendencies in several moist areas along the Hana

Hwy. In these wet lowland disturbed areas, *T. urvilleana* appears to be spreading from plantings along the road and occurs in large patches and thickets. *T. urvilleana* is a Hawai'i state noxious weed, yet it is still widely cultivated. Island wide control seems unlikely due to widespread distribution. Though widespread, control in natural areas where the plant is limited in distribution, such as Iao Valley and some of the Hana Hwy. locations, may help prevent larger infestations and limit its spread to new areas. *T. urvilleana* should not be introduced to new areas.

## REFERENCES

Brickell, C. and J.D. Zuk. 1997. *The American Horticultural Society A-Z Encyclopedia of Garden Plants*. DK Publishing, Inc., NY.

Dehgan, B. 1998. *Landscape Plants for Subtropical Climates*. University Press of Florida, Gainesville, FL.

GRIN (Germplasm Resources Information Network). 2003. Online Database. United States Department of Agriculture, Agricultural Research Service, National Germplasm Resources Laboratory, Beltsville, MD. Available: <http://www.ars-grin.gov/> (Accessed: April 14, 2003).

HDOA (Hawai'i Department of Agriculture). 1992. *List of Plant Species Designated as Noxious Weeds for Eradication or Control Purposes* (June 18, 1992). Hawai'i Department of Agriculture, Honolulu, HI. Available: <http://www.botany.hawaii.edu/cpsu/-strawgua/other/noxious/noxious.html> (Accessed: July 25, 2001).

HDOA (Hawai'i Department of Agriculture). 2002. *Distribution and Host Records of Agricultural Pests and Other Organisms* (March, 2002). Hawaii Department of Agriculture, Honolulu, HI.

PIER (Pacific Islands Ecosystems at Risk). 2003. Invasive Plant Species: *Tibouchina urvilleana*. Available: <http://www.hear.org/pier> (Accessed: October 15, 2002).

Riffle, R.L. 1998. *The Tropical Look*. Timber Press, Portland, OR.

Smith, Clifford W. 1985. Impact of alien plants on Hawai'i's native biota. In: Charles P. Stone and J. Michael Scott, eds., *Hawai'i's Terrestrial Ecosystems: Preservation and Management*. Cooperative National Park Resources Studies Unit, University of Hawai'i, Manoa, HI.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1999. *Manual of the Flowering Plants of Hawai'i*. 2 vols. Bishop Museum Special Publication 83, University of Hawai'i and Bishop Museum Press, Honolulu, HI.

Whistler, W.A. 2000. *Tropical Ornamentals*. Timber Press, Portland, OR.