Ochna thomasiana

Mickey Mouse plant
Ochnaceae

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March, 2003

OVERVIEW

Ochna species are ornamental shrubs and tress native to tropical woodlands of Africa and Asia. Several species, including *Ochna thomasiana*, are cultivated in Hawai'i for their colorful flowers and unusual fruits. On Maui, *Ochna* species are commonly seen in gardens as specimen plants or as hedges in residential and urban areas. During roadside surveys on Maui in 2000, it was found that *Ochna* spp. were particularly popular and widely planted and naturalized in a few lowland residential areas, including Lahaina, Wailuku, and Kahului. *Ochna* species were less commonly observed in Kapalua, Ha'iku, Pukalani, Kula, and Kipahulu. During these surveys, plants were only identified to genus level, so it is uncertain whether the majority of these were *O. serrulata* or *O. thomasiana* or a combination of both. On Maui, *O. thomasiana* is naturalized on both West and East Maui (Oppenheimer 2003, in press, Starr et al. 2003, in press). *O. serrulata* is naturalized on the island of Hawai'i at Manuka, but has not yet been documented as naturalized on Maui and perhaps is the less commonly planted of the two species on Maui, though this is not certain. Regardless, in Hawai'i both species are known to spread from initial plantings via bird dispersed fruits, frequently volunteering near homes and gardens and nearby disturbed areas. On East Maui, a few mature trees along with numerous small seedlings that were scattered within 4 m (12 ft) of parent plants of *Ochna thomasiana* were recently discovered by Park staff in a disturbed mesic lowland forest in the Ka'apahu district of Haleakala National Park. No other plants were observed nearby. While *Ochna* spp. are fairly widespread in cultivation on Maui, they are not common in natural areas yet. Early detection and rapid control of discrete incipient populations in and near protected natural areas may help prevent future infestations of *Ochna* spp. in sensitive areas.

TAXONOMY

Family: Ochnaceae (Ochna family) (Herbarium Pacificum Staff 1998, Wagner et al. 1999).
Latin name: *Ochna thomasiana* Engl. & Gilg (Herbarium Pacificum Staff 1998, Wagner et al. 1999).
Synonyms: *Ochna kirkii* D. Oliver, incorrectly identified in previous local botanical literature including Neal (1965) and Wagner et al. (1990).
Common names: Mickey Mouse plant, bird's eye bush (Brickell and Zuk 1997).
Taxonomic notes: The genus, *Ochna*, is made up of over 80 species of deciduous or semi-evergreen trees and shrubs from the tropical woodlands of Africa and Asia.

Previously called *Ochna kirkii* and reidentified as *O. thomasiana* (Herbarium Pacificum Staff 1998, Wagner et al. 1999).
Nomenclature: The common name (Mickey Mouse plant) is derived from the large drupelet fruits that look like mouse ears (Whistler 2000).
Related species in Hawai'i: Two species of *Ochna* are documented as naturalized in Hawai'i, *Ochna serrulata* and *Ochna thomasiana*. Other *Ochna* species that are cultivated in Hawai'i include *Ochna integerrima* (Vietnamese Mickey Mouse plant) and *Ochna mossambicensis* (African Mickey Mouse plant).

DESCRIPTION

"Lenticellate twigs and branchlets; broadly elliptic leaf blades, more or less cordate at the base and clasping the stem; and the 5-8 prominent, long cilia on the margin of the blade in the basal half. There are up to 12 glossy black drupelets borne erect on the red, waxy receptacle with reflexed red sepals." (Herbarium Pacificum Staff 1998, Wagner et al. 1999).

"Shrub to 2 m high (6 1/2 ft) or more. Leaves simple, alternate, blade elliptic, 3-12 cm long (1 1/4-5 in), glabrous, with bristle-toothed margins. Flowers intermittently during the year; flowers several, borne in axillary and terminal clusters. Corolla of five free, obovate, yellow petals 1.8-2.5 cm long (3/4-1 in), with many yellow stamens in the center. Fruit composed of one to five black ovoid drupelets 7-10 mm long (1/4-3/8 in) borne on a fleshy red disk around the long, red style, with a red, persistent calyx." (Whistler 2000).

BIOLOGY & ECOLOGY

Cultivation: *Ochna thomasiana* is widely cultivated as an ornamental garden plant for its yellow flowers an unusual fruits.

Invasiveness: *Ochna thomasiana* spreads from initial plantings via bird dispersed fruits and is naturalized in lowland disturbed mesic forests in at least Hawai'i (Herbarium Pacificum Staff 1998, Wagner et al. 1999).

Pollination: Unknown.

Propagation: *Ochna thomasiana* can be propagated by seeds or cuttings (Whistle 2000).

Dispersal: Seeds are likely dispersed by birds who are attracted to the fruits (Csurhes and Edwards 1998, PIER 2003).

Pests and diseases: Brickell and Zuk (1997) report that *Ochna* species are susceptible to spider mites.

DISTRIBUTION

Native range: *Ochna thomasiana* is native to southeastern Africa (Whistler 2000).

Global distribution: *Ochna thomasiana* is cultivated as an ornamental specimen plant (Whistler 2000).

State of Hawai'i distribution: In Hawai'i, *Ochna thomasiana* is documented as naturalized on O'ahu and Maui (Imada et al. 2000, Oppenheimer in press, Starr et al. in press). On O'ahu, *O. thomasiana* is widespread in windward areas and is an abundant understory shrub in disturbed mesic forests (Imada et al. 2000). *O. thomasiana* is more widespread on O'ahu than previous collections indicate and it is likely naturalized on the neighbor islands as well (Imada et al. 2000).

Island of Maui distribution: On Maui, *Ochna* species are commonly seen in gardens as specimen plants or as hedges in residential and urban areas. During roadside surveys on Maui in 2000, it was found that *Ochna* spp. were particularly popular and widely planted and naturalized in mostly lowland residential areas, including Lahaina, Wailuku, and Kahului. *Ochna* species were less commonly cultivated and naturalized in Kipahulu, Kapalua, Ha'iku, Pukalani, and up to about 4,000 ft (1,219 m) elevation in Kula. During these surveys, plants were only identified to genus level, so it is uncertain whether the majority of these were *O. serrulata* or *O. thomasiana* or a combination of both. Regardless, in Hawai'i both species are known to spread from initial plantings via bird dispersed fruits and frequently volunteer near homes and gardens and nearby disturbed areas. *O. serrulata* is cultivated on Maui and is volunteering near parent plants, and will likely eventually be reported as naturalized as well. Currently, only *O. thomasiana* has been documented as naturalized from Maui. *O. thomasiana* was first reported as naturalized by Oppenheimer (in press) from West Maui from various collections made in Lahaina, Honokahua, and Iao Valley, where it is frequently seen growing around home and in older neighborhoods and is sparingly naturalized in nearby waste places. On East Maui, it is also demonstrating similar behavior, commonly seen as a volunteer in plantings and around homes, as well as in nearby disturbed mesic forest understory (Starr et al. in press). It was recently collected by Park staff from Haleakala National Park's Ka'apahu district from a degraded lowland mesic forest comprised of lama (*Diospyros sanwicense*), alahe'e (*Psydrax odorata*), and strawberry guava (*Psidium cattleianum*), approximately 200-400 ft (61-122 m) elevation. A few mature trees along with numerous small seedlings that were scattered within 4 m (12 ft) of parent plants were present. No other plants were observed nearby. Control of these few plants now will help prevent their establishment in the area.

CONTROL METHODS

Physical control: Smaller *Ochna* plants can probably be mechanically removed either by pulling or digging out the plants. This is likely a good way to control small populations of unwanted plants with little non-target effects.

Chemical control: In a larger infestation, chemical control may be necessary. Methods for woody species, such as cut stump or basal bark applications of herbicide are likely effective in controlling *Ochna thomasiana*.

Biological control: None known.

Cultural control: The public could be made aware that *Ochna* species spread and be asked not to plant them, especially near natural areas.

Noxious weed acts: None known.

MANAGEMENT RECOMMENDATIONS

Ochna species are widely cultivated in Hawai'i as ornamental garden plants. Two species, *Ochna serrulata* and *Ochna thomasiana* frequently volunteer near homes and gardens as well as disturbed mesic forests nearby plantings. On Maui, *O. serrulata* volunteers near plantings and *O. thomasiana* is naturalized on both West and East Maui. *Ochna* spp. are popular garden ornamentals and have already been planted in numerous neighborhoods. The public could be discouraged from future plantings, especially near natural areas. Natural area managers should become familiar with *Ochna* species so that they can be detected and controlled as early as possible to prevent large infestations.

REFERENCES

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

Csurhes, S. and R. Edwards. 1998. *Potential environmental weeds in Australia: Candidate species for preventative control.* Queensland Department of Natural Resources, Australia.

Herbarium Pacificum Staff. 1998. New Hawaiian plant records for 1997. *Bishop Mus. Occas. Pap*. 56(2): 8-15.

Imada, C.T., G.W. Staples, and D.R. Herbst. 2000. New Hawaiian plant records for 1999. *Bishop Mus. Occas. Pap.* 63(1): 9-16.

PIER (Pacific Islands Ecosystems at Risk). 2003. Invasive Plant Species: *Ochna serrulata*. Available: http://www.hear.org/pier (Accessed: March 21, 2003).

Oppenheimer, H.L. 2003 (in press). New plant records from Maui and Hawai'i Counties. *Bishop Mus. Occas. Pap*.

Starr, F., K. Starr, and L.L. Loope. 2003 (in press). New plant records from the Hawaiian Archipelago. *Bishop Mus. Occas. Pap*.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. *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.

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 Ornamenatals.* Timber Press, Portland, OR.