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New Island Record for *Ochna serrulata* on O‘ahu (Ochnaceae)

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Ochnaceae

Ochna serrulata (Hochst.) Walp. **New island record**

Ochna serrulata is an ornamental shrub native to South Africa. This species has glabrous, dark green, narrowly elliptical leaves with leaf margins that are prominently toothed, and raised lenticels on its brown bark (du Toit & Obermeyer 1976). It is cultivated for its yellow flowers and conspicuous, persistent red sepals, to which black fruits are attached, a trait that is shared across the *Ochna* genus, giving these shrubs their common name, “Mickey Mouse bush” (Herbarium Pacificum Staff 1998; Staples & Herbst 2005). Its fruits depend primarily on bird dispersal, although other vectors, such as humans and water, may also play important roles in its reproductive ecology (Gosper *et al.* 2006). It is becoming invasive in a wide range of habitats in Australia and has been identified as an especially high risk invader in southeastern Queensland (Gosper *et al.* 2006). This plant is similarly categorized as “High Risk” according to the Hawaii-Pacific Weed Risk Assessment (PIER 2008). *Ochna serrulata* was reported as naturalized on the island of Hawai‘i, and has been found spreading from gardens on Maui, although it has not yet been recorded as naturalized there (Herbarium Pacificum Staff 1998; Starr *et al.* 2003). Its relative, *O. thomasiana*, is more common in cultivation (Staples & Herbst 2005) and has been recorded as naturalized on O‘ahu, Lāna‘i, Maui, and most recently on Kaua‘i (Oppenheimer 2003; Imada 2019). *Ochna serrulata* can be distinguished from the more widespread *O. thomasiana* by its narrower leaf shape and highly serrated leaf margins, rather than the “bristle-toothed margins” characteristic of *O. thomasiana*, with which it is sometimes confused (Whistler 2000; Starr *et al.* 2003).

We found *O. serrulata* naturalizing in Moanalua Valley on O‘ahu, beginning 1.8 km into the Moanalua Valley Trail and extending along 1.5 km of it (Fig. 1). Approximately 60 individuals of various size classes, including 20 seedlings, were observed, most frequently in shaded areas dominated by the alien *Psidium cattleyanum*. A couple of isolated individuals were recorded, but the plants were generally found in small clusters of around 2–6, with the largest cluster including approximately 30 individuals, moderately spaced along the side of the trail (Fig. 2). Two plants were fruiting at the time of the survey, and the tallest individual seen was around 2 m. New leaves were glossy and dark green in color, but older leaves were observed to have a rusty tinge to them. The undersides of the leaves were lighter and less shiny. Residential areas near the trail as well as the areas surrounding Moanalua Botanical Garden were surveyed for a likely source of this naturalization, but no cultivated plantings were found.

a)

b)

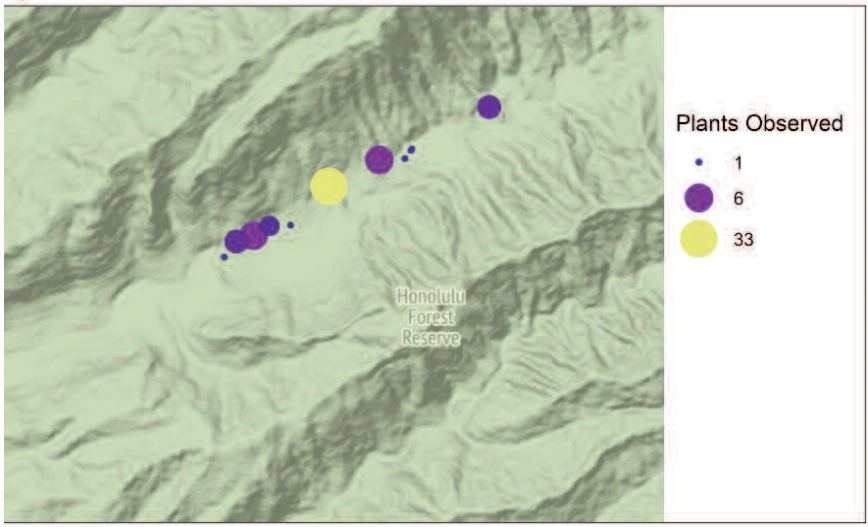

Figure 1. Distribution of *Ochna serrulata* in Moanalua Valley. **a**) Overview of the path along Moanalua Valley Trail along which *Ochna serrulata* was sighted, with the southern and northern points labeled with yellow markers (Google Earth, Maxar Technologies). **b**) Visual representation, created using the ggmap package in R (Kahle & Wickham 2013), showing where the clusters of *Ochna serrulata* were located along the Moanalua Valley Trail. The size and color of the points reflect the number of plants observed at each location.

Material examined: **O'AHU**: Moanalua Valley Trail, in understory of dense *Psidium cattleyanum* forest, naturalized along trail, more than 30 individuals in this area (21.38061, -157.86513), 16 Jun 2019, *K. Brock & C. Imada s.n.* (BISH 778860); Moanalua Valley, near the Kaholuamanu Picnic Grounds sign (21.378738, -157.868238), along trail in an alien-dominated area with *Livistona chinensis* and near *Citharexylum caudatum*, *Hibiscus tiliaceus*, *Syzygium cumini*, *Psidium cattleyanum*, and variegated *Pandanus tectorius*, 13 Jul 2020, *R.M. Steinbach 1* (BISH).

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