

*Cheirodendron trigynum* wet forest or *M. polymorpha* mixed montane bog between 551 and 1,382 m (1,807 and 4,532 ft) in elevation. Associated native plants include *Cibotium* sp., *Leptecophylla tameiameia*, or *Oreobolus furcatus* (NCN) (J. Lau, *in litt.* 2001).

The primary threats to *Platanthera holochila* on Molokai are habitat degradation and destruction by feral pigs, competition with non-native plants, and a risk of extinction from naturally occurring events and/or reduced reproductive vigor, due to the small number of remaining occurrences and individuals. Predation by non-native slugs may also be a potential threat to this species (Service 1999a, 61 FR 53108).

#### *Pteris lidgatei* (NCN)

*Pteris lidgatei*, a short-lived member of the maidenhair fern family (Adiantaceae), is a coarse perennial herb, 0.5 to 1 m (1.6 to 3.3 ft) tall. *Pteris lidgatei* can be distinguished from other species of *Pteris* in the Hawaiian Islands by the texture of its fronds and the tendency of the sori along the leaf margins to be broken into short segments instead of being fused into continuous marginal sori (Wagner and Wagner 1992).

Little is known about the life history of this species. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998a).

Historically, *Pteris lidgatei* was found on Oahu, Molokai, and West Maui. Currently, this species is known from Oahu and Maui. It was last collected on Molokai in 1912 from the slopes of Olokui by C. N. Forbes (HINHP Database 2000).

On Molokai, *Pteris lidgatei* grew on steep streambanks between 78 and 1,266 m (256 and 4,152 ft) in elevation in wet forest (HINHP Database 2000).

Nothing is known of the threats that may have affected *Pteris lidgatei* on Molokai (Service 1998a).

#### *Schiedea nuttallii* (NCN)

*Schiedea nuttallii*, a long-lived perennial member of the pink family (Caryophyllaceae), is a generally hairless, erect subshrub. This species is distinguished from others in this endemic Hawaiian genus by its habit, length of the stem internodes, length of the inflorescence, number of flowers per inflorescence, and smaller leaves, flowers, and seeds (Wagner *et al.* 1999).

Based on field and greenhouse observations, *Schiedea nuttallii* is

hermaphroditic (flowers contain both male and female parts). Plants on Oahu have been under observation for 10 years, and they appear to be long-lived. *Schiedea nuttallii* appears to be an outcrossing (requires cross-pollination) species. Under greenhouse conditions, plants fail to set seed unless hand-pollinated, suggesting that this species requires insects for pollination. Fruits and flowers are abundant in the wet season but can be found throughout the year. Little else is known about the life history of this plant. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a; Weller *et al.* 1990; Kapua Kawelo, U.S. Department of Defense, Army Environmental, *in litt.* 1999).

Historically, *Schiedea nuttallii* was known from scattered locations on Kauai, Oahu, Molokai, and Maui. Currently, populations occur on Kauai, Oahu, and Molokai. On Molokai, one occurrence with 22 individuals of *Schiedea nuttallii* is reported on private lands (GDSI 2000, HINHP Database 2000, Service 1999a).

On Molokai, *Schiedea nuttallii* typically grows in streamside grottos in wet *Metrosideros polymorpha*-*Cheirodendron trigynum* forest at elevations between 677 and 1,423 m (2,220 and 4,667 ft). Associated plants include *Asplenium lobulatum* (piipii lau manamana), *Asplenium macraei* (iwaiwa lau lii), *Asplenium unilaterale* (pamoho) *Cyrtandra hawaiiensis* (haiwale), *Thelypteris sandwicensis* (NCN), or *Vandenboschia davallioides* (palai hihii) (J. Lau, *in litt.* 2001).

*Schiedea nuttallii* on Molokai is seriously threatened by competition with several non-native plants; predation by the black twig borer, slugs, and snails; and a risk of extinction from naturally occurring events (e.g., landslides) and/or from reduced reproductive vigor due to the small number of individuals (Service 1999a, 61 FR 53108).

#### *Sesbania tomentosa* (ohai)

*Sesbania tomentosa*, a short-lived perennial member of the pea family (Fabaceae), is typically a sprawling shrub but may also be a small tree. Each compound leaf consists of 18 to 38 oblong to elliptic leaflets, which are usually sparsely to densely covered with silky hairs. The flowers are salmon colored tinged with yellow, orange-red, scarlet or, rarely, pure yellow. *Sesbania tomentosa* is the only endemic Hawaiian species in the genus, differing from the naturalized *S. sesban* (Egyptian rattlepod) by the color of the flowers,

the longer petals and calyx, and the number of seeds per pod (Geesink *et al.* 1999).

The pollination biology of *Sesbania tomentosa* has been studied by David Hopper, University of Hawaii. His findings suggest that, although many insects visit *Sesbania* flowers, the majority of successful pollination is accomplished by native bees of the genus *Hylaeus* and that occurrences at Kaena Point on Oahu are probably pollinator-limited. Flowering at Kaena Point is highest during the winter-spring rains, and gradually declines throughout the rest of the year. Other aspects of this plant's life history are unknown (Service 1999a).

Currently, *Sesbania tomentosa* occurs on six of the eight main Hawaiian Islands (Kauai, Oahu, Molokai, Kahoolawe, Maui, and Hawaii Island) and in the Northwestern Hawaiian Islands (Nihoa and Necker islands). It is no longer found on Niihau and Lanai. On Molokai, *Sesbania tomentosa* is known from 9 occurrences with over 2,000 individuals, occurring from Moomomi to Nenehanaup and from Kamiloloa to Makolekau on State- and privately owned lands (GDSI 2000, HINHP Database 2000, Service 1999a, 59 FR 56333).

On Molokai, *Sesbania tomentosa* is found in *Scaevola sericea* coastal dry shrubland on windswept slopes, sea cliffs and weathered basaltic slopes between sea level and 516 m (0 and 1,692 ft) in elevation. Associated plant species include *Dodonaea viscosa*, *Jacquemontia ovalifolia* ssp. *sandwicensis*, *Melanthera integrifolia*, or *Sida fallax* (HINHP Database 2000, Service 1999a).

The primary threats to *Sesbania tomentosa* on Molokai are competition with various non-native plant species, such as *Lantana camara* and grass species; habitat degradation by feral cattle; lack of adequate pollination; seed predation by rats, mice, and potentially non-native insects; and destruction by random environmental events (e.g., fire) and human activities (e.g., off-road vehicles) (Service 1999a, 59 FR 56333).

#### *Silene lanceolata* (NCN)

*Silene lanceolata*, a member of the pink family (Caryophyllaceae), is an upright, short-lived perennial plant with stems 15 to 50 cm (6 to 20 in) long, which are woody at the base. The flowers are white with deeply-lobed, clawed petals. This species is distinguished from *S. alexandri*, the only other member of the genus found on Molokai, by its smaller flowers and capsules and its stamens, which are