

***Philadelphus lewisii* Pursh**
HYDRANGEACEAE

Lewis mock orange

Synonyms: *P. gordonianus* Lindl.
P. cordatus Petz. & Kirchn.
P. grahami Petz. & Kirchn.
P. columbianus Koehne



Illustration credits: E.G. Hurd, and Hitchcock and others 1961

General Description.—Lewis mock orange, also known as Indian arrowwood, Lewis syringa, mock orange, syringa, or western syringa, was named for Captain Meriwether Lewis, the famous Western explorer, who made the first collection of the species in 1806. The state flower of Idaho, Lewis mock orange is a long-lived and highly variable deciduous species, ranging from densely branched and rounded to erect, open shrubs 1.5 to 2.5 m in height. Clusters of arching stems develop on older specimens. Bark on young branches is red to chestnut brown, turning gray and exfoliating with age. Leaves are 2 to 8 cm long and 1 to 4 cm wide, opposite, and ovate to oblong with acute to acuminate tips. Terminal cymes of showy, perfect, four-merous, fragrant white flowers develop on lateral branches. The fruit is a woody, four-celled capsule containing numerous tiny, fusiform seeds (Hitchcock and others 1961, Welsh and others 1987).

Range.—Lewis mock orange is distributed from British Columbia south to northern California and east to southwestern Alberta and western Montana. It is most common at mid-elevations but grows from near sea level to 2,100 m (USDA Forest

Service 1937). Lewis mock orange exhibits wide ecological amplitude, growing in communities ranging from *Pseudotsuga menziesii* (Mirbel) Franco and *Sequoia sempervirens* (Lamb. ex D. Don) Endl. to *Artemisia* L., chaparral, and *Pinus contorta* Dougl. ex Loud and *Pinus ponderosa* P. & C. Lawson.

Ecology.—Lewis mock orange grows on soils ranging from dry, rocky, gravelly loams on open hillsides, to well-drained deep, rich alluvial loams near riparian zones (USDA Forest Service 1937). It is found in early to late seral as well as in climax communities. It occurs as small thickets, isolated plants, or in association with other shrubs on talus slopes, cliffs, canyons, or rocky hillsides and in transition zones of riparian areas (Hitchcock and others 1961, Hopkins and Kovalchik 1983). It is most common on northern and eastern exposures (USDA Forest Service 1937). The species is classified as fire resistant because it resprouts from the root crown following burning. It also regenerates from seeds that accumulate in the soil seed bank (Kramer and Johnson 1987). Lewis mock orange exhibits moderate drought and shade tolerance.

Reproduction.—Lewis mock orange flowers in late spring to early summer. Capsules mature in late summer and dehisce in September or October. Seeds are dispersed by wind and gravity. They are harvested by hand-stripping the capsules before the valves begin to open. Dried capsules are crushed to release the seeds, and trash is removed with an aspirator or fanning mill. There are 7,716,000 to 17,637,000 seeds/kg of clean seed (Stickney and others 2001), but seed fill is often low. Seed may be stored in airtight containers for up to 1 year. Wet prechilling for 8 weeks at 5 °C is required to release embryo dormancy (Stickney and others 2001). Intermittent exposure to light may be required for germination. Seeds may be broadcast seeded on a rough seedbed and covered using a Brillion seeder or similar device. They may also be spot seeded in selected, prepared areas

that are well-drained and free of herbaceous competition. Seeds may be mixed with other shrub seeds that require shallow or surface planting. Bareroot stock may be produced by fall seeding or by seeding moist, prechilled seeds in spring. Seedlings develop rapidly and can be transplanted as 1-year-old stock (Stickney and others 2001). Container stock is grown from seed or propagated from hardwood or softwood cuttings (Marchant and Sherlock 1984). Rooted suckers and crown divisions are also used.

Growth and Management.—Lewis mock orange seedlings establish well on a wide variety of soils but should be protected from competition and browsing. Plants grow at a moderate rate, flower reliably, and are generally free of insect and disease problems. Seedlings, however, are sometimes susceptible to damping off. Plants grown from seed may begin flowering in the second or third year (Everett 1957). Flowers are produced on twigs of the previous year; hence, landscape plants should be pruned after flowering.

Benefits.—Seedlings or larger planting stock of Lewis mock orange are transplanted into steep, rocky, unstable slopes where they provide soil stabilization and vegetative cover. The species is also useful in transitional areas of degraded riparian zones. Lewis mock orange is usually not grazed heavily by livestock, but in some areas it does receive fair amounts of use by cattle (*Bos* spp. L.) and sheep (*Ovis* spp. L.) (Leege 1968, USDA Forest Service 1937). It frequently occurs with other species that are more palatable to big game, and consequently, it may receive little use, except under severe conditions. However, it can provide good browse for deer (*Odocoileus* spp. Rafinesque) and elk (*Cervus canadensis* Erxleben), especially on winter ranges (Kufeld 1973, Leege 1968, Marchant and Sherlock 1984, USDA Forest Service 1937). New growth is generally highly palatable to big game (Leege 1968). The species provides food and cover for birds and other small animals. Lewis mock orange is a valued landscape species because of its showy, white flowers. It is used in borders, screens, hedges, and as specimen plants (Marchant and Sherlock 1984). Several commercial cultivars of Lewis mock orange have been developed. The flowers are used in preparing perfumes and teas (Taylor 1972). Native Americans made arrow shafts from the long woody shoots (USDA Forest Service 1937).

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