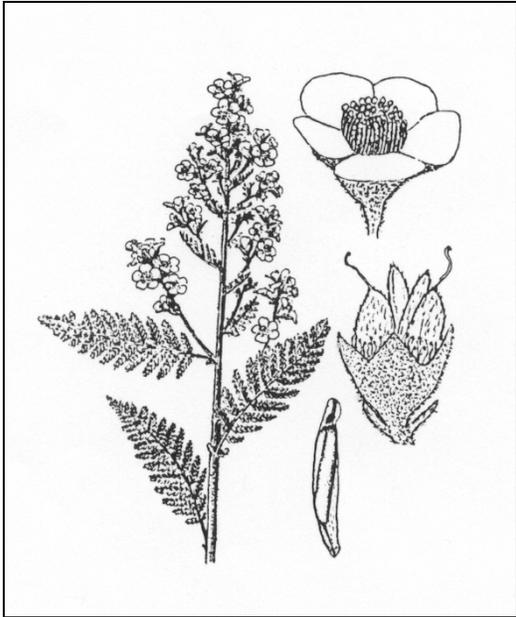


***Chamaebatiaria millefolium* (Torr.) Maxim.**
ROSACEAE

fern bush

Synonyms: *Spiraea millefolium* Torr.
Sorbaria millefolium Focke
Basilima millefolium Greene
Chamaebatiaria glutinosa Rydb.
Spiraea glutinosa Fedde



Drawing source: Hitchcock and others 1961

General Description.—Fern bush or desert sweet, the single species in its genus, is an upright, multistemmed, sweetly aromatic shrub 0.3 to 2 m tall. Bark of young branches is brown, becoming smooth and gray with age. Leaves are leathery, alternate, simple, twice pinnately divided, stipulate, and clustered near the branch tips. Foliage and young branches are viscid and pubescent with simple and stellate, pointed and glandular-capitate hairs. Southern populations are evergreen (Phillips 1949), while northern populations are largely deciduous, retaining a few leaves though winter and initiating new leaf growth in early spring. The profuse, terminal, leafy-bracteate panicles are 5 to 20 cm long and produce abundant flowers that are showy, creamy white, and insect-pollinated. Flowers are complete, regular, and five-merous. Follicles are pubescent and coriaceous. Seeds are yellowish to brownish and linear to narrowly fusiform. Germination is epigeal (Hickmann 1993, Hitchcock and others 1961, Welsh and others 1987). Chromosome number is $x = n = 9$ (McArthur

and Sanderson 1985). Variability within the species appears low and hybridization with other species has not been reported.

Range.—Fern bush is endemic to the Great Basin, Colorado Plateau, and surrounding areas. It occurs east of the Cascade and Sierra Nevada Mountains from central Oregon eastward into Wyoming and south to southeastern California, Nevada, Utah, northern Arizona, and northern New Mexico (Hitchcock and others 1961, Phillips 1949, Welsh and others 1987).

Ecology.—Fern bush grows in fissures in rock outcrops and cliffs and on well-drained soils of dry, rocky, gravelly canyons and mountain slopes at elevations ranging from 900 to 3,400 m (Hickman 1993). It is often an early successional species on cinder cones and basalt lava flows, but it also grows on soils derived from limestone and granite (Egler 1941, Everett 1957, Merkle 1952). Fern bush occurs in isolated populations or as an associated species in *Artemisia* spp., *Pinus* spp.-*Juniperus* spp., northern *Juniperus*, mountain brush, *Populus tremuloides* Michx., *Pinus flexilis* James, *P. ponderosa* Dougl., *Picea* spp. A.--*Abies* spp., *Pinus longaveva* D. Bailey, and chaparral communities (Hickman 1993, Welsh and others 1987).

Reproduction.—Plants flower from June to September (Hitchcock and others 1961, Phillips 1949) with irrigation prolonging the flowering season (Shaw and Hurd 2001). Seeds ripen in August to October. The follicles are hand collected. They open as they dry, and seeds are extracted by screening. Shaw and Hurd (2001) found an average of about 3.7 million seeds/kg for two seed lots grown under irrigation. Fresh seeds are nondormant while stored seeds require a 1- to 3-month prechill (Phillips 1949, Shaw and Hurd 2001). The optimum temperature for germination of southwestern populations is 18 to 26 °C (Phillips 1949).

Growth and Management.—Seedlings establish from shallow seeding on well-drained soils where vegetative competition is limited (Shaw and Hurd 2001). Fall seeding or artificial prechilling is required for seeds of northern populations. Seedlings develop rapidly if adequate water is available. Bareroot seedlings can be lifted following one growing season. Irrigated plants begin flowering during the second year (Shaw and Hurd 2001). Unlike its namesake genus, *Chamaebatia* Benth., fern bush is not nodulated by nitrogen-fixing actinomycetes (McArthur and Sanderson 1985). Fern bush is a rare host of *Phoradendron juniperinum* A. Gray, the juniper mistletoe (Hawksworth and Mathiasen 1978).

Benefits.—Fern bush provides cover for many organisms. It is sometimes browsed by mule deer (*Odocoileus hemionus* Rafinesque), sheep (*Ovis* spp.), and goats (*Capra hircus*), but it receives little use by cattle (*Bos* spp.). First cultivated in 1878 (Rehder 1940), fern bush is a valued ornamental due to its showy flowers, long flowering period, and fernlike foliage (Hitchcock and others 1961, Phillips 1949). Mass plantings, xeriscapes, screens, hedges, and specimen plants thrive in full sun (Phillips 1949). Native Americans used a tea made from its leaves for treatment of stomachaches (Mozingo 1987). Plants produce cyanic acids in their tissue (Fikensher and others 1981).

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