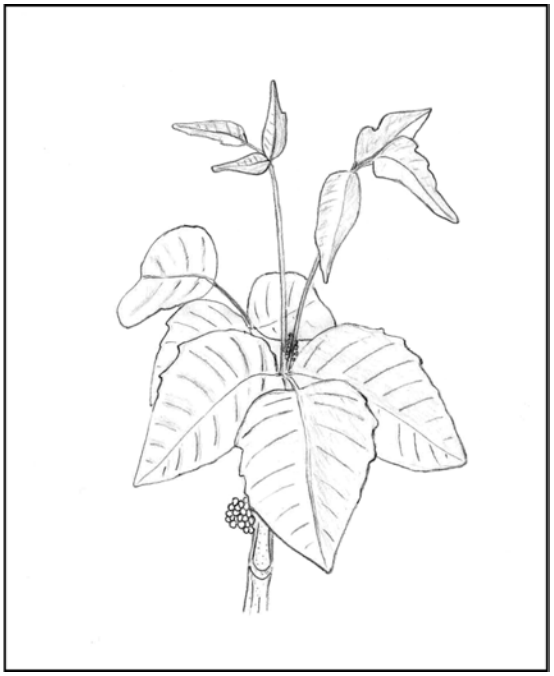
***Toxicodendron rydbergii* (Small ex Rydb.) Greene** western poison ivy
ANACARDIACEAE

Synonyms: *Rhus radicans* L. var. *rydbergii* (Small ex Rydb.) Rehd.
Rhus radicans L. var. *vulgaris* (Small ex Rydb.) Rehd.
Rhus toxicodendron L. var. *vulgaris* Michx.
Toxicodendron desertorum Lundell



General Description.—Western poison ivy, also called poison oak, poison ivy, and Ryberg's poison ivy, is a deciduous, normally upright shrub, occasionally a scrambling vine, usually 20 to 100 cm in height with stems 4 to 10 mm in diameter. The woody stems, which arise from underground stems that extend up to 2 m from the parent plant, are sparingly branched and have smoothish, brown to gray bark, with dark brown lenticels, and wooly, brown, winter buds. The alternate, bright-green leaves are trifoliate with long petioles. Leaflets are ovate to rhombic, 3 to 15 cm long, the lateral leaflets usually somewhat oblique and shorter than the central leaflet. Leaflet margins are lobbed, rounded-dentate, or entire. Small yellowish flowers are grouped in dense axillary panicles. The fruits, which remain attached throughout the winter, are ivory-colored, globose drupes 4 to 6 mm in diameter and contain one seed each. There are 2n = 30 chromosomes (Lasica 2002, St. John 1963, Welsh and others 1987). Western poison ivy is similar in appearance to eastern poison ivy [*T. radicans* (L.) Kuntze] except that it is a shrub and rarely and weakly climbs. It is known to hybridize with eastern poison ivy (Rook 1998).

Range.—Western poison ivy is native across southern Canada from Nova Scotia to British Colombia and throughout the United States except California and New Jersey and from Missouri, Kentucky, and South Carolina southward (McMurray 1988, Natural Resources Conservation Service 2003). Although it has been planted outside its natural range (botanic gardens, etc.), there are not reports of it escaping.

Ecology.—Western poison ivy grows on a wide range of sites--on river bottoms, streambanks, disturbed upland sites such as roadsides, fencerows, sand dunes, logged areas, orchards, talus slopes in subalpine areas, and around seeps and on shaded canyon sides in cold desert areas. It grows from 600 to 2,500 m elevation in the interior West and probably near sea level in coastal areas. It tolerates short-term flooding. The species grows in both full sun and under forest canopies. It colonizes all soil textural types derived from most parent materials with pH's from mildly acid to mildly alkaline. Western poison ivy often grows on skeletal soils, rocky slopes, and cliff sides. The species invades quickly after disturbance. Bare mineral soil is the best surface for seed germination and seedling establishment (Moye 1999). It often forms clonal thickets. Western poison ivy tolerates fire well by sprouting from underground stems but does not increase in density as a result (McMurry 1988, Welsh and others 1987).

Reproduction.—Flowering occurs in late spring through early summer. Plants on the Great Plains sometimes flower a second time in August or September (McMurry 1988). Good fruit and seed crops occurs almost every year. The seeds are dispersed by birds, mammals, and gravity. Seedlings are necessary to establish new colonies but vegetative (by sprouts from underground

stems) reproduction is more important for local spread.

Growth and Management.—Western poison ivy grows at a moderate rate. Clones are relatively stable over time. Although it is not as invasive as eastern poison ivy, it is often desirable to eliminate it from areas of heavy human use. Spot spraying or wiping with the herbicide glyphosate during the active growing season can effectively control eastern poison ivy (Pavek 1992) and probably will be effective for western poison ivy. Grubbing and mowing offers some degree of control but puts the worker at risk of contracting dermatitis so that protective clothing should be worn during the operation. Branches and roots should be piled to rot in an out-of-the-way place or bagged and sent to the landfill, never burned.

Poison Effects.—The pale yellow oil called urushiol, present in all plant parts, is the source of the allergenic pain and suffering associated with this species. If even a minute amount (nanograms) the oil stays in contact with human skin for more than 5 minutes, it will be absorbed and metabolized. The metabolites bind with proteins, forming compounds that the immune system recognizes as "foreign" and attacks. The immune response results in rash, blisters, and an intense itch (Borialforest.org 2003) that lasts for 1 to 3 weeks. Sensitivity can vary over the life of a person. A few people have life-threatening reactions to the allergen (Schwartz 1999). The chemical is the same and the effect (called rhus dermatitis) is the same for all *Toxicodendron*s. Ten to 15 percent of the U.S. population is completely immune to rhus dermatitis, 25 to 35 percent react only to high doses, and 50 percent have a consistent reaction to relatively small doses of the allergen (Family Practice Notebook.com. 2003). The best defense is to avoid contact with the plant, especially with the sap or smoke from burning *Toxicodendron* material. The next line of defense is to quickly wash the exposed skin with soap and copious amounts of water, or if not available, with mud and water or an alkaline material such as baking soda or wood ashes and water. After a rash develops, the sufferer is advised to apply hydrocortisone cream or any of several creams sold over-the-counter for the treatment of rhus dermatitis. A folk remedy mentioned in the literature (Felter 1922) and found by the author to almost instantly and completely (but temporarily) stop the itch and irritation of rhus dermatitis is to rub the mashed juicy stems of jewel weed (*Impatiens spp.*) on the affected area.

Benefits.—Western poison ivy helps protect the soil and adds beauty in the summer with its dark green leaves and in autumn with bright colors to forest and shrublands. Although it causes browsing animals no ill effects, western poison ivy is low in protein and energy and consequently is only occasionally grazed by domestic animals and wild ungulates. However, the fruits are eaten by quail, wild turkeys, and some songbirds. It does provide cover for small mammals and birds (McMurray 1988). In herbal medicine, extracts of the leaves of this and other *Toxicodendron* species have been and still are used to treat herpetic eruptions, palsy, and rheumatism. Small internal doses will act as a sedative but must be used with care (Grieve 2003).

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