BURSERACEAE TORCHWOOD FAMILY

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Trees or shrubs, with resin ducts containing triterpenoid compounds and/or aromatic oils, mostly dioecious, less often monoecious, polygamodioecious or with only perfect flowers, deciduous (rarely evergreen). LEAVES alternate (rarely opposite), pinnately compound or decompound (rarely unifoliolate), usually exstipulate; rachis often winged. INFLORESCENCE axillary (rarely terminal), mostly paniculate or uniflorous (rarely cymose, racemose or in heads). FLOWERS actinomorphic; sepals 3-5 (-6), imbricate (rarely valvate), usually connate at the base; petals (0) 3-5 (-6), free or rarely connate, imbricate (rarely valvate); nectar-disc annular to cup-shaped (rarely absent), sometimes adnate to the calyx; stamens in 1-2 whorls, equalling or twice the number of petals, the outer whorl opposite the petals, often unequal, the filaments generally distinct (rarely connate), borne outside (rarely within) the nectar-disc; staminodia often present in pistillate flowers; ovary superior, (2-)3(-5) loculed, rudimentary or absent in staminate flowers, the placentation axile; style 1 or lacking; stigma (2-)3(-5) lobed; ovules 1 or 2 in each locule. FRUIT usually drupe like, 1-loculed (rarely 3-5 loculed), the exo- and mesocarp mostly dry (rarely fleshy), dehiscent by valves or indehiscent; stones 1-5, 1-seeded. SEEDS lacking endosperm, frequently with a pseudoaril. Ca. 20 genera, 600 spp., pantropical, with the greatest diversity in ne Africa, tropical America and Malaysia. Commercial products are gums, resins and balsam, *Boswellia* (frankincense), *Commiphora* (incense and myrrh), *Bursera* (varnish), *Aucoumea* (timber, gaboon-mahogany). Brizicky, G. K. 1962. *J. Arnold. Arbor.* 43:173-186.

Bursera Jacquin Elephant Tree

Trees or shrubs, in ours with semi-succulent trunks and branches, the outer bark yellowish to beige, the inner bark bluish-green. LEAVES alternate, simple, once-pinnate (in ours), or bi-pinnate, mostly odd-pinnate, usually crowded at the end of small branches, exstipulate, glabrous (in ours), the rachis narrowly winged; leaflets (1)3-11(-many), opposite or sub-opposite. INFLORESCENCE uniflorous or a cyme of 2-5(-6) flowers (in ours) to paniculate, generally appearing before or with the first leaves, mostly bracteate. FLOWERS small; sepals in ours light green to slightly reddish, triangular, as many as petals, 1-2 mm long (in ours), basally connate, valvate; petals in ours reflexed at anthesis, white-cream colored (in ours) to pale yellow, greenish or reddish, lanceolate, valvate, 3-4 mm long (in ours), 3 (-5) in pistillate flowers, (3-)5 in staminate flowers; stamens in ours about twice the number of petals, in two whorls, inserted in the base of the nectar-disc, mostly smaller and sterile in pistillate flowers, the filaments ca. 1 mm long, the anthers 1.5-2 mm long; nectar-disc annular, 6-10 lobed, light yellowish-cream (in ours); pistil with 2 or in ours 3 carpels with stigma lobes and locules equalling carpels in number, the style short; ovules 2 per locule. FRUIT with 1 valve per carpel, in ours purplish-green, 5-7 mm long, 5-6 mm wide; peduncle recurved. SEEDS at maturity with a thin orangish-red aril (in ours), 5-6 mm long. $2n = 22, 24$. --ca. 100 spp. AZ, CA, FL and most of tropical America with the greatest diversity in the tropical deciduous forests of western Mex. (for J. Burser). Johnson, M. B. 1992. *Desert Plants* 10:126-143. McVaugh, R. and J. Rzedowski. 1965. *Kew Bull.* 18:317-383.

1. Terminal leaflet equal to or longer than lateral leaflets; leaflets generally 5-15, lanceolate to elliptic, more than 1 cm long, generally 3-12 mm wide, the apex acute; bark of young twigs grayish brown . . . . . ***B. fagaroides***

Vascular Plants of Arizona: Burseraceae. JOURNAL OF ARIZONA-NEVADA ACADEMY OF SCIENCE 32(1):29-31; 1999.

1' Terminal leaflet equal to or shorter than lateral leaflets; leaflets generally 11-23, oblong to linear, generally less than 1 cm long, generally 1-2 mm wide, the apex generally obtuse; bark of young twigs mostly reddish brown ..... ***B. microphylla***

Bursera fagaroides (H.B.K.) Engelmann. Fragrant Bursera. --Small trees or shrubs to 10 m high, the outer bark exfoliating in sheets, the larger branches with cream colored latex-like resin; twigs greyish-brown, slightly aromatic, with transparent resin. LEAVES (3-)5-12 cm long, (3-)4-7 cm wide; petiole 1-2(-3) cm long; leaflets (3) 5-15, 1-4 cm long, 3-15 mm wide, lanceolate to elliptic, the margins entire or irregularly dentate, the midvein prominant, the terminal leaflet equal to or longer than the lateral leaflets. [*B. odorata* Brandeg.] --3 vars. AZ; Baja C., Baja C. Sur, Son. to Guer. and Ver., Mex.

Var. **elongata** McVaugh & Rzedowski. --AZ plants to 5 m high. LEAVES: lateral leaflets lanceolate to elliptic-lanceolate, the apex often attenuate. -- Known in AZ from only a few collections in Fresnal Canyon, Baboquivari Mts., Pima Co. It has not been recollected since 1947; ca. 1200 m (4000 ft.); Baja C., Baja C. Sur, Chih., Nay., Sin., Son., Mex.

Bursera microphylla A. Gray (small-leaved). Elephant Tree. --Small trees or shrubs to 6 m high, the outer bark of the main trunk exfoliating in strips (sometimes in sheets); twigs maroon to reddish brown, with abundant aromatic, transparent resin. LEAVES 1-5(-10) cm long, 0.7-2(-3) cm wide; petiole ca. 0.5-2 cm long; leaflets (5-)11-23(-29), (2-)3-10(-16) mm long, (0.8-)1-2.5(-3.5) mm wide, narrowly oblong to linear (rarely lanceolate), the margins entire (rarely irregularly dentate), the terminal leaflet sometimes orbicular, equal to or shorter than the laterals. INFLORESCENCE 0.8-2 cm long. --Rocky slopes and canyons; Maricopa, Pima, Pinal and Yuma cos.; 150-1000 m (500-3200 ft); (May)Jun-July(Aug, Oct); CA; Baja C., Baja C. Sur, Son., Mex.

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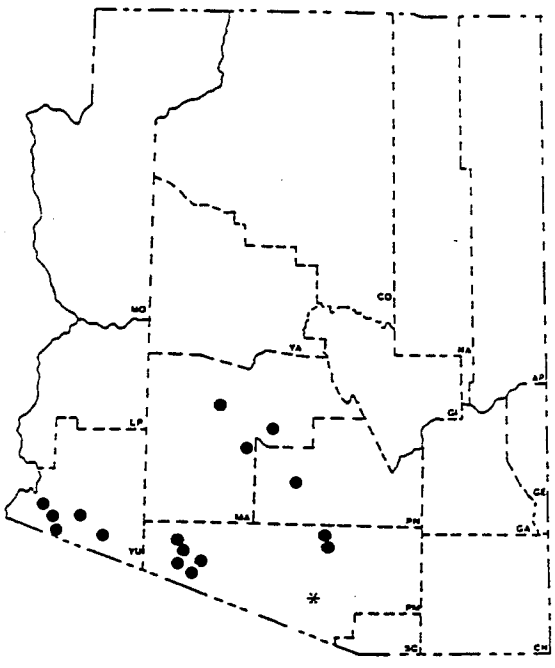
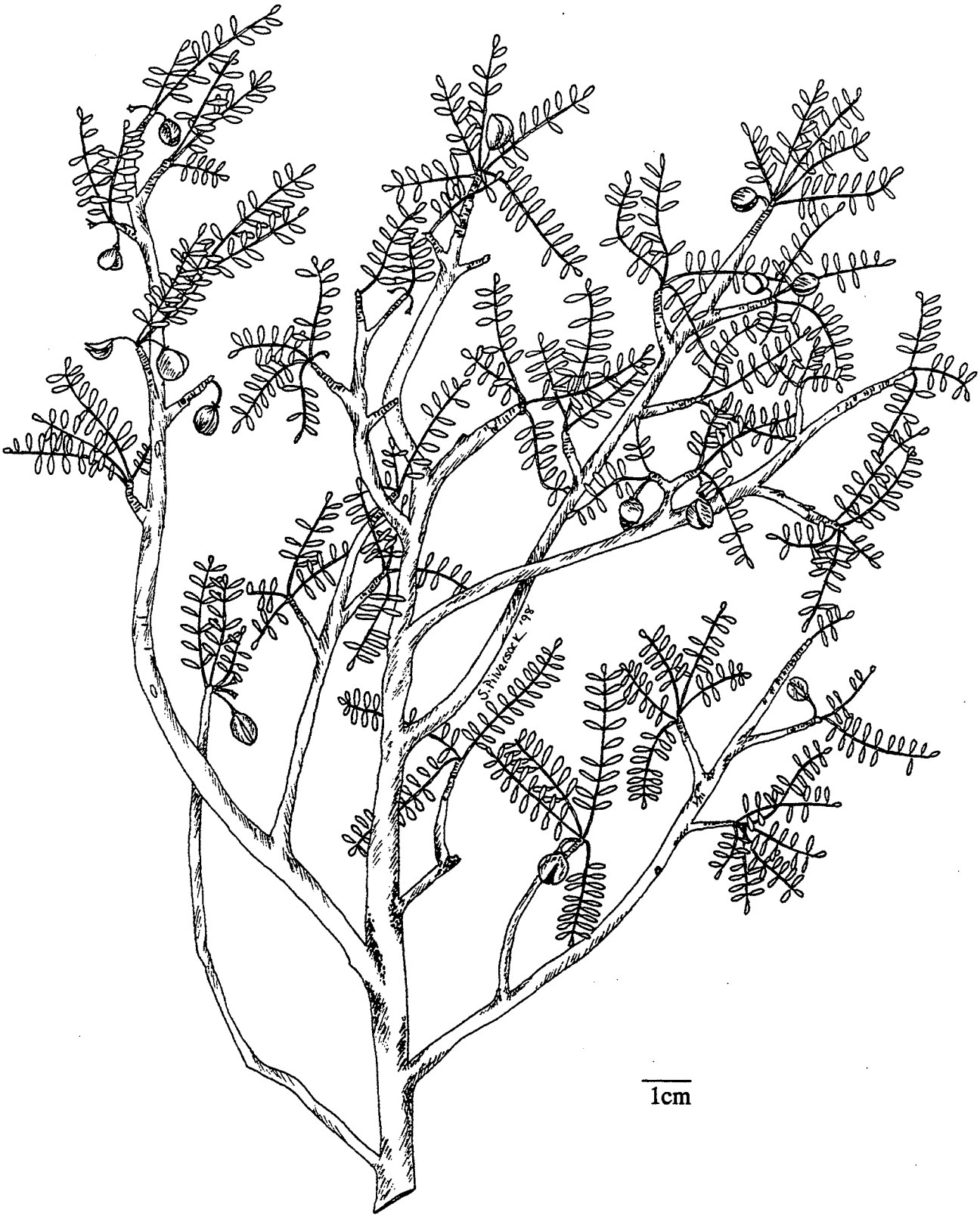


Burseraceae Fig. 1. Distribution map. *Bursera microphylla* (dots) and *Bursera fagaroides* var. *elongata* (star).



Burseraceae Fig. 2. *Bursera microphylla*. Fruiting branch. Illustration by S. Pilversack..