

a trunk 6-30 inches in diameter: bark close and smooth by exfoliation, on large trees becoming rough near the base, turning brownish-red: leaves oval or oblong, entire or serrulate, green with more or less red veins above, pale and finely reticulated beneath, 3-5 inches long by 1-3 inches broad, firm-coriaceous: branches of the panicle minutely pubescent: calyx-lobes broadly ovate, about a line long: corolla globular, 3-5 lines long: berries somewhat drupaceous, reddish-orange, 3-5 lines in diameter. On dry hillsides, Vancouver Island to southern California: west of the Cascade Mts.

2 ARCTOSTAPHYLOS Adans. Fam. Pl. ii, 165. (MANZANITA.)

Shrubs or small trees with alternate broad coriaceous evergreen leaves which are usually vertical by a twist of the petiole, and small white to light red flowers in terminal, usually pendulous, racemes or panicles. Pedicels bracteate and bracteolate. Calyx deeply 5-parted. Corolla urn-shaped, with 4 or 5 recurved lobes. Stamens 8 or 10; filaments dilated and hairy at base; anthers with 2 reflexed awns on the back, the cells opening by a hole at the top. Ovary 4-10-celled, with a single pendulous ovule in each cell, in fruit becoming a 4-10-celled, and by abortion, 1-7-seeded stone or patumen, or the cells distinct or more or less coalescent at the ventral edge. Seeds with a slender erect radical and small cotyledons in fleshy albumen.

\* Depressed and trailing or creeping, green, glabrous or minutely pubescent, no bristly hairs: flowers rather few in simple small clusters: ovary and fruit glabrous: nutlets 1-nerved on the back.

A. *Uva-ursi* Spreng. Syst. ii, 287. (KINNIKINIC.) Diffusely much branched and rooting at the nodes, forming depressed patches several feet in diameter from a single main root: leaves oblong-spatulate, obtuse or retuse, an inch or less long, tapering into a short petiole; bracts ovate, acute, somewhat foliaceous: flowers few, in short racemes, white; corolla ovoid, constricted at the throat, about 2 lines long; drupe globose, red, glabrous, 3-5 lines in diameter, containing 5 coalescent nutlets. In open woods, California to the Arctic Circle and across the Continent.

A. *intermedia* Greene Pitt. ii, 171. Diffusely branching, the main divisions of the stem procumbent, a foot or two long; leafy branches ascending or erect, less than a foot high: leaves obovate-cuneiform, about an inch long, obtuse, puberulent beneath: racemes terminal, subsessile, few-flowered: fruit globose, slightly depressed, 3-4 lines in diameter; nutlets 5-7, firmly consolidated. On dry gravelly ground, Mason Co. Washington.

A. *Nevadensis* Gray Syn. Fl. ii, 27. Stems loosely branching from the base, the branches decumbent, 1-2 feet long: leaves ovate or oval to lanceolate-spatulate, cuspidate-mucronate, abruptly petioled, 6-12 lines long; racemes few-flowered: corolla white, oblong, 2-4 lines long: drupes dull red, 3-4 lines in diameter: nutlets mostly separate. On the high mountains, Washington to California.

\*\* Erect low shrubs: leaves at most an inch long: flowers on short, mostly clustered, racemes or spikes, only a line or two long.

A. *hispidula*. Stems 4-6 feet high, with very dark colored bark, rather strictly branched; branchlets glandular-hispidulous, very leafy: leaves oblong or oblong-ovate or some oblong-lanceolate, with indistinct cartilaginous margins acute at both ends, cuspidate, green and glabrous, with round pubescent petioles: bracts glabrous, triangular with a very broad base, acuminate, not foliaceous: pedicels glabrous, longer than the

bracts: corolla rose-color, 2-3 lines long: filaments sparingly hairy: ovary glabrous: fruit not seen. On bottom lands along Smith river at Gasque Del Norte Co. California: no doubt in adjacent Oregon.

**A. intricata.** Stem erect, 3-6 feet high with very dark-colored bark, irregularly and intricately branched, the branchlets tomentose and glandular: leaves oblong to ovate, acute and cuspidate, usually abruptly contracted below to a short glandular-hispid petiole, bright green, minutely tomentose, the margins ciliate: bracts acuminate-ovate with a broad base, hispid-ciliate, somewhat foliaceous: pedicels very short, glandular: corolla bright rose-color, about 3 lines long: filaments loosely hairy: ovary densely tomentose: fruit not seen. On stony hillsides near Smith river west of Gasque, Del Norte Co. California; no doubt in adjacent Oregon.

**A. cinerea.** Erect, 3-6 feet high, densely branched from the base, with rather light-colored bark and cinereous branchlets: leaves oblong or obovate, obtuse or acutish to acute, cuspidate, whitish-green, tapering below to a stout flat cinereous petiole, smooth: bracts not foliaceous, acuminate-lanceolate with a broad base, minutely cinereous; pedicels longer than the bracts, minutely tomentose: corolla dark rose-color to nearly white: filaments densely hairy: ovary hairy at the top: fruit globose, flattened at each end: some of the nutlets coalescent. Rocky hillsides along the eastern base of the Coast Mountains near Waldo, Oregon.

\* \* \* Erect shrubs or low trees: leaves 1-3 inches long: flowers 3-4 lines long, on short clustered racemes: drupes obcompressed-globose: some of the nutlets coalescent.

**A. oblongifolia.** Densely branching from the base, with reddish-brown bark and cinereous branchlets, 4-6 feet high: leaves oblong or the lowest obovate, obtuse, cuspidate, usually abruptly contracted below to a rather long round petiole, whitish-green, smooth: bracts somewhat foliaceous, acuminate-lanceolate with a broad base, minutely pubescent: pedicels longer than the bracts, minutely pubescent and sparingly glandular: corolla white tinged with red: filaments very sparingly if at all hairy: ovary pubescent at the top. Rocky hillsides, eastern base of the Coast Mountains near Waldo, Oregon.

**A. parvifolia.** Stems branching from the base, with light reddish bark and minutely white-tomentose branchlets: leaves small, oblong or cuneate-oblong, obtuse or acutish, minutely cuspidate, whitish-green, on flattish petioles: bracts triangular, short-acuminate, minutely pubescent: pedicels not longer than the lower bracts, minutely pubescent: filaments sparingly hairy: ovary glabrous. On the high hills near Andersons, Josephine Co. Oregon.

**A. pulchella.** Arborescent, 6-12 feet high, branching from the base, with dark-colored bark and minutely pubescent branchlets: leaves ovate to oblong, obtuse, obscurely mucronate, smooth, cinereous-green: bracts acuminate-ovate with a very broad base, minutely pubescent: pedicels much longer than the bracts, sparingly glandular: filaments slightly hairy: ovary glabrous. On the mountains of Josephine Co. Oregon.

**A. viscida** Parry Proc. Cal. Acad. ii, 496. Arborescent, intricately branched from the base, with dark-colored bark and glabrous branchlets: leaves orbicular to ovate or oblong, acutish to rounded at the apex, with or without a small cusp, ashy-green and glabrous: bracts broadly triangular, shortly acuminate: pedicels much longer than the bracts, densely viscid-glandular: filaments densely hairy: ovary glabrous. Common in Josephine and Jackson Counties Oregon and adjacent California.

**A. Manzanita** Parry l. c. ?. Arborescent, 6-10 feet high, with reddish brown bark and the young branchlets black-glandular: leaves ovate to