

Heuchera *meala*

a line long, connivent over the recurved styles: capsule globose nearly free from the calyx. Common along mountain streams at low elevations, Brit. Columbia to Oregon.

14 TIARELLA L. Gen. n. 560.

Perennial herbs with simple or trifoliolate leaves and small white flowers in simple or paniculate racemes. Calyx campanulate, nearly free from the ovary, 5-parted, white and petal-like, valvate in the bud. Petals 5, entire, small, with short claws, in ours persistent. Stamens 10, inserted with the petals into the base of the calyx: filaments filiform, exserted, the 5 opposite the sepals longest: anthers ovate, 2-celled: styles 2; stigmas simple. Capsule 1-celled, with 2 parietal placentæ, 2-valved, the valves very unequal. Seeds rather large, subglobose, smooth and shining.

T. trifoliata L. Sp 406. Softly hirsute: stems slender, ascending, 6-12 inches high, from slender creeping rootstocks: leaves trifoliolate, the middle leaflet ovate with cuneate base, slightly 3-lobed; the lateral ones oblique, 2-lobed, all coarsely and repandly apiculate-dentate, on slender petioles: flowers numerous, in an elongated narrow panicle: calyx cleft nearly to the base, the lanceolate lobes about a line long, acute; petals filiform, nearly twice as long as the calyx; filaments filiform, as long as the petals; valves of the capsule membranaceous, tipped with the slender persistent styles, the larger one 6 lines long, more than twice as long as the other. Common in forests, Alaska to California.

T. laciniata Hook. Fl. i, 239, t. 77. Scabrous-hirsute: stems about 3-leaved; leaves trifoliolate, the terminal leaflet deeply 3-cleft, the lateral ones 2-cleft, the segments broadly lanceolate, laciniate-pinnatifid: panicle loose: petals filiform and resembling the filaments. Vancouver Island to Washington.

T. unifoliata Hook. l. c. 238 t. 81. Sparingly pubescent or nearly glabrous: stems slender, erect or ascending, 6-16 inches high from slender running rootstocks: leaves simple, cordate, acute, obscurely 5-7-lobed, coarsely apiculate-dentate, 1-3 inches in diameter, on long slender petioles: flowers numerous, in a narrow panicle; calyx cleft to near the base; petals filiform, twice the length of the rather obtuse oblong-ovate calyx-lobes: valves of the capsule merely convex, the largest one oblong, acute, 5 lines long, twice as long as the other. Common in the forests of the high mountains, Alaska to California.

15 HEUCHERA L. Gen. n. 320.

Perennial herbs with mostly radical palmately veined leaves with partly free stipules and rather small flowers in terminal panicals or spikes. Calyx campanulate, coherent with the ovary below, 5-cleft, the segments imbricate in the bud. Petals 5, sometimes wanting, small, entire. Stamens 5, inserted alternately with the petals into the throat of the calyx; anthers 2-celled; styles 2; capsule 1-celled with 2 parietal placentæ, many-seeded, 2-beaked, dehiscent between the beaks; seeds horizontal, oval, minutely muriate or hispidulous.

* Filaments and styles filiform, much exserted: calyx short obconic or campanulate, the lobes spreading, equal: petals mostly persistent, at length often revolute or twisted: panicle effuse.

H. glabra Willd. Roem. & Schult. Syst. vi, 216. Glabrous: stems 1-3-leaved, 12-20 inches high, clustered at the ends of a much branched caudex: leaves roundish-cordate, accurately and irregularly lobed and doubly serrate, sparingly ciliate, 2-4 inches broad; on slender petioles 6-10 inches long; flowers numerous in an open cymulose panicle; calyx glandular-pubescent, 2 lines long, cleft to the middle, the oblong obtuse lobes about as long as the tube; petals white, little more than a line long, about equalling the stamens with ovate-lanceolate blade and long slender claw, recurved; styles at length much exerted: seeds oblong or oval, minutely hispid in lines. On cliffs and rocks along streams, Alaska to the highest peaks of the Cascade and Rocky mountains.

H. micrantha Dougl. Lindl. Bot. Reg. xv, t. 1302. Pilose with long crinkly hairs below: stems nearly naked, 1-2 feet high, from the ends of slender creeping rootstocks: leaves round-cordate to reniform, 1-3 inches broad, slightly and obtusely lobed, mucronulately crenate, ciliate, on slender pedicels 2-8 inches long; panicle diffuse, many-flowered; flowers small, on slender pedicels, in small dichotomous cymules; calyx turbinate, the rounded lobes about equalling the tube; limb of the petals linear-lanceolate as long as the claw, soon curled or twisted: styles slender, long exerted: capsule ovate-lanceolate, at length exerted, the slender beaks erect. Common on rocky banks and cliffs, Brit. Columbia to California.

* * Filaments and styles subulate, short: calyx campanulate, the lobes equal: flowers small, in narrow panicles.

H. cuneata. Smooth or the leaves and inflorescence minutely pubescent: stems slender, 6-18 inches long, leafless but with a few ovate ciliate sessile bracts below: leaves elliptical to ovate or oblong, more or less cuneate at base, 6-12 lines long, obscurely 3-5-lobed, coarsely serrate and ciliate: flowers rather numerous, on short pedicels; calyx purplish, pubescent, 2 lines long, cleft to the middle, with oblong acutish lobes; petals minute, scarcely equalling the calyx-lobes; stamens and styles not exceeding the calyx: capsule ovoid scarcely exerted. On dry cliffs, Harney Valley eastern Oregon.

H. pilosissima F. & M. Ind. Sem. Hort. Petrop. v, 56. Villous or hirsute with spreading viscid hairs: stems 6-18 inches high, rather stout, leafless or with a few small leaves: leaves round-cordate, obtusely lobed and crenate. 1-3 inches in diameter: flowers in a close and clustered or sometimes loose panicle, usually as long as their pedicels: calyx somewhat globular; rounded or obtuse at base and the broad short lobes more or less incurving, densely hairy; stamens about equalling the calyx; short styles and narrow spatulate petals but little exerted. On dry cliffs in the Coast Mountains, from the border of Oregon southward.

H. parvifolia Nutt. T. & G. Fl. i, 581. Scabrous-pubescent: stems leafless, 10-20 inches high: leaves forming a small radical cluster, round-cordate, crenately 5-7-lobed with short and rounded lobes, rather coarsely dentate, ciliate: panicle racemose; flowers very small; calyx campanulate, the limb spreading, dilated; petals minute; stems shorter than the lobes of the calyx; styles very short, conical: capsule ovate, the beaks exerted: seeds minutely hispid. From the Blue Mountains of Oregon to the Rocky Mountains.

* * * Filaments and styles very short; subulate; calyx campanulate, the lobes erect and somewhat unequal: petals minute or wanting: flowers often large, glomerate or spicate.

H. cylindrica Dougl. Hook. Fl. i, 236. Stems 1-3 feet high, leafless the lower portion with the petioles and veins beneath very villous or hirsute with spreading fulvous hairs: leaves ovate-cordate, glabrous above,