

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

SOME NEW PLANTS FROM THE PACIFIC NORTH-
WEST.

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In various collections of plants sent to the writer recently from Oregon, Washington and British Columbia, there were found several species not heretofore described. Some of these seem to be very local as they have not been found by other collectors. Most of them are from rather high Alpine localities. The type specimens are in the possession of the writer, unless otherwise indicated.

Erysimum torulosum, n. sp.

Biennial, with a stout taproot; stems erect, usually simple, solitary, 15-45 cm. high; herbage green, sparsely strigillose throughout with short forked hairs; basal leaves spatulate, acute, coarsely dentate to subentire, 3-8 cm. long; cauline similar but reduced, mostly entire; sepals lanceolate acutish, green at first, 7 mm. long; petals yellow, 1.5 cm. long; peduncles in fruit, 1 cm. long; pods ascending or spreading, 4-angled, torulose, strigillose, conspicuously beaked, 6-8 cm. long; seeds not margined.

Mount Rainier, Wash., on Owyhigh, alt. 5500 ft. *J. B. Flett*, Aug. 11, 1919; Nos. 3158 (type), 3160; Mt. Rainier, *Piper* 2062; *Allen* 266; Mt. St. Helens, *Coville* 777.

This plant must be segregated from *E. asperum* (Nutt.) DC. on account of its green herbage and very different torulose pods. Perhaps all the specimens from high altitudes in the Cascade and Olympic Mts. are to be referred here, but until the present mature pods seem not to have been collected.

Arabis macella, n. sp.

Biennial from a stout taproot; stems many, simple, slender, flexuous, terete, sparsely pilose below with simple hairs, otherwise glabrous, 40-50 cm. tall; basal leaves spatulate-oblong, obtuse, 3 cm. long, the blade longer than the margined petiole, glabrous on the faces, the margins ciliate with

simple hairs; cauline leaves few, oblong to linear, obtuse to acute, broad but not auriculate at base, ciliate, the lower 2 cm. long, reduced upwards; racemes in fruit 5–15 cm. long; pedicels erect in anthesis, spreading in fruit, 1–1.5 cm. long, glabrous; sepals oblong, obtuse, margined, glabrous, the two outer gibbous at base, 2–2.5 mm. long; petals oblong-spatulate, obtuse, white, 4 mm. long; pods erect, glabrous, somewhat compressed, the valves mostly 3-nerved, the midrib stoutest, 1.5–2 cm. long, 1 mm. wide, tipped with a style 1.5 mm. long; seeds in one row, oval, compressed, wingless, dark brown, 0.5 mm. long; cotyledons accumbent.

Ritzville, Wash., *Sandberg* and *Leiberg* No. 202, June 11, 1893, type in the U. S. National Herbarium sheet No. 289784. An ally of *A. furcata* Wats.

Castilleja brevilibata, n. sp.

Perennial with a deep taproot and branched multicapital caudex; stems clustered, erect or ascending, 10–15 cm. high, puberulent or in the inflorescence pilose; leaves sessile, oblong, obtuse, 3-nerved, hispidulous and somewhat viscid especially on the margins, 1–2 cm. long, entire or mostly with 3 short obtuse lobes; bracts similar to the leaves but broader and more deeply lobed, the tips scarlet; flowers subsessile; racemes rather loose, narrow, 5–10 cm. long; calyx 10 mm. or in fruit 12–13 mm. long, subequally cleft before and behind, just equalling the corolla lip, the lobes each with 2 short obtuse teeth; corolla 15–18 mm. long, the galea 8 mm. long, slender, glandular puberulent on the back especially at tip, the broad margin scarlet; lip green, fleshy, 2 mm. long, the acute teeth incurved; stigma bilobed, small; capsule ovoid, very acute, dark brown, glabrous, 6–8 mm. long.

In reddish soil on mountain slopes, 8 miles south of Waldo, Josephine County, Oregon, June 14, 1904, *C. V. Piper* No. 6118 (sheet 527,720, U. S. National Herbarium *type*) and No. 6230; same locality, *Thomas Howell*, June 8, 1884.

Allied to *C. angustifolia* (Nutt.) Don, but differing in all its parts being smaller, the short-lobed leaves, and the somewhat viscid hispidulous pubescence.

Castilleja chlorotica, n. sp.

Perennial with a stout vertical taproot, several to many stems arising from the crown; stems erect or nearly so, mostly simple, 15–20 cm. high, viscid puberulent; leaves sessile, oblong-lanceolate, obtuse, about 2 cm. long, minutely and very sparsely puberulent, mostly simple but some of the upper ones 3-cleft; flowers subsessile; racemes 3–4 cm. long, at first dense, becoming looser below; bracts all 3-cleft, the middle lobe broadest, acute or obtuse, as long as the flowers; calyx yellowish green, 15 mm. long, minutely puberulent on the tube, hispidulous on the lobes, subequally cleft before and behind into lobes shorter than the tube, each lobe cleft into two broad triangular acute teeth which extend well beyond the corolla lip; corolla 2 cm. long; galea 8 mm. long, hispidulous on the back, greenish except the narrow purple margin; lip 2 mm. long, green, fleshy, the lobes

involute, acute; stigma small, globose; immature pods ovoid, acute, glabrous.

Grayhart Buttes, County, Oregon, alt. 2250 meters, August 8, 1896, Coville and Leiberg No. 283.

Related to *C. angustifolia* (Nutt.) Don, but distinguished by its viscid puberulence, mostly entire leaves, and peculiarly colored bracts and corolla.

***Aster misellus*, n. sp.**

Perennial from a loosely muchbranched base; stems simple or loosely branched above, terete, sparsely white puberulent, purple, 10–20 cm. high; leaves pale, entire or few-toothed; basal leaves spatulate-oblong, obtuse, glabrous except the ciliolate margins, the blades equalling the petioles; cauline narrowly oblanceolate, obtuse to acute, half-clasping at base, 2–8 cm. long, ciliolate at the base and slightly so on the margins; upper ones reduced; heads few, mostly solitary terminating the branches, each about 1 cm. broad, hemispheric; tegules in two indistinct series, acute to obtusish, the midribs and tips green, broadly scarious-margined, ciliolate, glabrous on the back, shorter than the disk; rays about 20, pale violet 6–8 mm. long; pappus whitish; akenes sparsely hirsutulous.

Moist beach of Strawberry Lake, Strawberry Mts., Grant County, Oregon, *W. C. Cusick*, Nos. 3636 (type), 3623, 3625, September 9, 1910. Closely allied to *A. occidentalis* Nutt.

***Achillea eradiata*, n. sp.**

Perennial with a creeping rootstock; stems about 30 cm. high, corymbosely branched above, sulcate, sparsely villous; leaves green, sparsely villous, the lower ones 5 cm. long, petioled from a broad scarious base, the upper ones 2–3 cm. long, sessile and but slightly broadened at base; lower leaves with 10–15 pairs of divisions, separated by about half their length, most of the divisions deeply 5–10 cleft; upper leaves less deeply divided, the rachis margined, the divisions merely lobed or cleft; inflorescence loose, composed of about 5 corymbiform branches 4–5 cm. long; heads cylindric-turbinate, 5–7 mm. long, 3–4 mm. broad; tegules about 20, elliptic-ovate, sparsely villous, all obtuse, greenish along the midrib, the scarious margins brown; flowers 3 mm. long, cream-colored, all tubular, the outer ones slightly larger, an occasional one developing into an imperfect ligule; akenes immature.

Dry border of woods, east end of Pamela Lake, foot of Mt. Jefferson, Oregon, 4000 ft. alt., Aug. 13, 1919, *J. C. Nelson* No. 2791, one plant only growing with the common *Achillea lanulosa* Nutt., from which it is strikingly divergent. Very different from any other North American species in its very loosely divided leaves, large involucre, and rayless heads.

***Arnica aphanactis*, n. sp.**

Rootstocks slender, creeping; herbage wholly glabrous except the minutely puberulent peduncles; stems 30 cm. high, somewhat shiny; basal leaves not seen; cauline 2 pairs, elliptic or slightly ovate, paler beneath,

obtuse, coarsely irregularly serrate, 2-5 cm. long, the lower pair short petioled, the upper pair sessile and larger; heads three, long-peduncled from a lanceolate acute dentate sessile green bract; heads campanulate, rayless, 1.5 cm. high, 1 cm. broad; tegules 8, linear-lanceolate, acuminate, shorter than the flowers, glabrous; disk flowers about 25, each 1 cm. long; pappus bright white, barbellulate; akenes cylindric, glabrous.

Mount Baker, Washington, *G. W. Turesson* in 1915. Closely allied to *A. latifolia* Bong. and *A. betonicaefolia* Greene but rayless.

Arnica andersonii, n. sp.

Stems erect, 30-50 cm. high, very sparsely pubescent, simple or more commonly with a flowering branch in the axil of each cauline leaf; basal leaves with petioles as long as the blades, the latter thin, oblong to narrowly ovate, acute, abruptly narrowed at base, coarsely few-toothed, glabrous except the ciliolate margins, 6 to 8 cm. long; cauline leaves two pairs, the lower pair similar to the basal and petiolate, the upper sessile and usually conspicuously contracted at base; heads nodding in bud, large, each subtended at base by a pair of more or less modified leaves; involucre campanulate, 1.5 cm. broad; tegules 10, green, thin, lanceolate, acute, viscidly pubescent, 1.5 cm. long; rays about 10, lemon-yellow, 3 cm. long; disk florets 11-13 mm. long; akenes hirsutulous, 6-8 mm. long; pappus bright white, copious, short-plumose.

Skeena, Br. Col., *J. R. Anderson*, Sept. 11, 1910. Allied to *A. cordifolia* Hook. but differing particularly in the basal leaves and the pair of foliaceous bracts at the base of each head.

Arnica myriadenia, n. sp.

Stems clustered from a much branched caudex, erect, 30-50 cm. high, densely and minutely glandular, becoming increasingly hirsutulous toward the heads; basal leaves apparently none; cauline leaves 4 or 5 pairs with green blades and 2 or 3 basal pairs much reduced and more or less scarious, all sessile and connate at base, the lower ones conspicuously sheathing, lanceolate becoming narrower upwards, acute, entire or sparingly denticulate, densely and minutely glandular on both faces and somewhat puberulent especially on the margins, 4-12 cm. long, exceeding the internodes; heads 3 to 5, hemispheric, 2 cm. broad, short peduncled; tegules about 11, lanceolate, acuminate, green, densely glandular and somewhat puberulent, equalling the disk flowers; rays bright yellow, 1.5 cm. long; disk flowers 40-60; pappus brownish, barbellulate; akenes sparsely hispidulous, not glandular; plant strongly odorous.

Mount Rainier National Park, Washington, growing in talus on Owy-high, 5700 feet altitude, *J. B. Flett* No. 3211, August 13, 1919. The plant was found in no other place.