

PROCEEDINGS
OF THE
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WYETHIA HELIANTHOIDES NUTTALL AND WYETHIA
AMPLEXICAULIS NUTTALL.

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Capt. Nathaniel Wyeth in his first trip to the Pacific Northwest collected on his return journey in 1833 in the Flathead Valley, Montana, the two sunflower-like plants named in the title. On the first mentioned Nuttall founded the genus *Wyethia*, but the second he referred to the genus *Espeletia*. Six years later, however, he concluded that both were congeneric. At the present time twelve species of *Wyethia* are recognized by most botanists, half of them being confined to California. All of them are confined to the region of the Rocky Mountains and westward, but one species, *W. amplexicaulis*, ranging north of the 49th parallel of latitude.

In their typical forms *Wyethia helianthoides* and *W. amplexicaulis* are very different from each other and hitherto no varieties or subspecies of either have been described. Specimens recently collected in Oregon by the veteran botanist, Mr. W. C. Cusick, show that the latter species is more variable than has been supposed and that the two species are closely interrelated by a third intermediate plant here described as a new species. The types are in the possession of the author.

The relationships of the three species and of two new subspecies are indicated in the following key :

Leaves and tegules ciliate; rays cream-colored; akenes pubescent above the middle; corona pubescent, shorter than the width of the akene.

Upper cauline leaves petiolate *W. helianthoides* Nutt.

Upper cauline leaves sessile *W. cusickii* n. sp.

Leaves and tegules not ciliate; rays orange-yellow; akenes glabrous; corona glabrous longer than the width of the akene.

Herbage much varnished with resin; rays 2 to 3 cm. long
W. amplexicaulis Nutt.

Herbage slightly varnished with resin.
 Leaves dark green; rays 6 to 7 cm. long
W. amplexicaulis major n. subsp.

Leaves pale green; rays 3 to 4 cm. long
W. amplexicaulis subresinosa n. subsp.

Wyethia cusickii n. sp.

Whole plant slightly varnished with resin and with a sunflower-like odor, glabrous except the ciliate margins of the cauline leaves and tegules and a few hairs on the upper part of the peduncles; stems stout, 60 to 100 cm. tall, terete, rather strongly ribbed, often purple-tinged; basal leaves firm and thick, oblong lanceolate, acute or short-acuminate, 30 to 45 cm. long, on margined petioles less than half as long as the blades, the cauline sessile or subsessile, gradually reduced upwards; stems bearing a solitary terminal head, or more frequently a smaller head from the axil of each of the upper leaves; larger heads 4 cm. broad; tegules lanceolate, a few of the lowest ovate, acute, coarsely ciliate, 1.5 to 2.5 cm. long; rays about 15, pale yellow, oblong, lanceolate, acute, entire at tips or 2 or 3 toothed, 4 cm. long; bracts firm, linear, acuminate, ciliate, atomiferous-glandular near the tip; akenes pubescent toward the apex.

Found growing in swamp, Hog Valley, Blue Mountains, Union County, Oregon, together with *W. helianthoides* and *W. amplexicaulis subresinosa*, by W. C. Cusick. No. 3729 (type) June 17, 1912; No. 3730 June 17, 1912; No. 3731 June 17, 1912; No. 3748 May 29, 1913; No. 3770 July 5, 1913; No. 3782 July 5, 1913.

The specimens are intermediate between the two species with which it grew. The leaves resemble closely those of *W. amplexicaulis* except for the pubescence which is of the same general character as that of *W. helianthoides*. The akenial characters and the color of the rays are those of *W. helianthoides*. It is not unlikely that the plants may be hybrid in character. Mr. Cusick writes that its period of bloom is also intermediate being later than that of *W. helianthoides* but earlier than *W. amplexicaulis*.

Wyethia amplexicaulis major n. subsp.

Herbage but slightly resinous; leaves thinner, often denticulate, the basal broadly oblong-lanceolate, the cauline usually (?) petiolate; rays orange-yellow, 7 cm. long; akenes glabrous.

Mormon Basin, Baker County, Oregon, alt. 4000 ft. in open dry soil, June 17, 1913, W. C. Cusick, No. 3861.

Mr. Cusick states that the more salient characters of this plant are its larger flowers, larger translucent basal leaves, and stalked cauline leaves. On the whole, however, the plant seems too closely allied to *W. amplexicaulis* to be regarded as a distinct species.

Wyethia amplexicaulis subresinosa n. subsp.

Differs from the typical plant in being much less resinous and in the foliage being pale green.

Collected by W. C. Cusick in Hog Valley, Blue Mountains, Union County, Oregon, 4000 feet alt., June 18, 1912. No. 3738.