

VARIATIONS IN *LACTUCA CANADENSIS*.

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THE treatment of *Lactuca canadensis* L. and its forms in our various manuals seems not to accord exactly with what is found in the field. The writer has attempted a different classification of these variations, and the result is presented in the accompanying key. In floral and fruit characters *L. canadensis* is remarkably constant. It is only in the leaves that great fluctuation is found. Here variation is marked, as it often is in the ligulate *Compositae*.

The var. *typica* and its three following varieties are not equally related. The last three varieties are phases of one polymorphic subdivision of the species. This subdivision is to be set off against var. *typica*. These two primary divisions intergrade but little, and have slightly different, though overlapping ranges, the typical form not extending so far south. In the second group the varieties and forms show abundant intergradations. In the entire-leaved varieties, the lobed leaves have been wholly replaced, while in the obovate toothed-leaved variety the oblanceolate or obovate toothed basal leaves, frequently found in var. *integrifolia*, have spread over the whole plant. It is as though in one case the leaves were pushed toward the base of the stem through the multiplication of the upper entire leaves, while in the opposite case the lower leaves have entirely replaced the upper. The lobed leaves immediately below the entire ones in var. *latifolia* have broadly falcate divisions, while the lowermost on the same plant usually have the divisions obovate, subtruncate and toothed. When these lowest leaves are entirely eliminated through the multiplication of the entire leaves, the only divided leaves remaining are those with broadly falcate divisions. Unless this relation is understood the grouping together under one varietal head of plants apparently so dissimilar may be a trifle confusing.

The description of *L. canadensis* given by Linnaeus leaves the impression that he had in hand a form with unlobed leaves, since a character so striking would naturally have been mentioned. The species was based on a specimen of Kalm's. This Dr. Gray saw, and at that time made the note that it was the *L. elongata* of authors. Since Dr. Gray recognized a species *integrifolia*, it is to be presumed

that the Kalm specimen had divided leaves. On this basis the writer is using the name *L. canadensis* L. as synonymous with and antedating *L. elongata* Muhl.

L. Steelei Britton, like *L. Morssii* Robinson, combines characters of *L. canadensis* and *L. spicata*. These are probably hybrids of the two species last mentioned. The achene in both is 3-5-ribbed and tapers to a short stout beak as in *L. spicata*, but the pappus in both is pure white. However, the leaves in the various specimens fluctuate in form between the two species.

- a* Leaves with linear-falcate, usually entire lobes; upper unlobed leaves (if any) linear or linear-lanceolate *b*
- b* Leaf-base sagittate or auriculate. var. *typica*.
- b* Leaf-base tapering, not sagittate. f. *angustipes*.
- a* Leaves with broadly falcate, or obovate and obliquely truncate, entire or toothed lobes; upper leaves similar or unlobed and lanceolate or ovate-lanceolate, rarely oblanceolate or obovate, entire or rarely toothed *c*
- c* Leaf-base sagittate, clasping. var. *latifolia*.
- c* Leaf-base tapering, not sagittate. f. *exauriculata*.
- a* Leaves all unlobed, lanceolate, oblong, oblanceolate or obovate, entire or denticulate, the lowest sometimes shallowly lobed *d*
- d* Cauline leaves lanceolate to ovate-lanceolate, entire or rarely toothed *e*
- e* Leaf-base sagittate, clasping. var. *integrifolia*.
- e* Leaf-base tapering, not sagittate. f. *angustata*.
- d* Cauline leaves oblanceolate or obovate, usually toothed *f*
- f* Leaf-base sagittately clasping. var. *obovata*.
- f* Leaf-base tapering, not sagittate. f. *stenopoda*.

L. CANADENSIS var. **typica** var. nov. *L. canadensis* L. Sp. Pl. ed. 1, ii. 796 (1753). *L. elongata* Muhl. in Willd. Sp. Pl. iii. 1525 (1804). *L. elongata* α *longifolia* T. & G. Fl. N. A. ii. 496 (1843). *Sonchus pallidus* Willd. Sp. Pl. iii. 1521 (1804). *L. canadensis* Robinson & Fernald in Gray's Man. ed. 7. 866 (1908) in part.—Foliorum segmentis lineari-falcatis plerumque integris, basi sagittatis amplexicaulibus; foliis superioribus rariter elobatis et linearibus vel anguste lanceolatis.—Quebec and Prince Edward Island to Saskatchewan, south to Massachusetts, New York, Illinois and Missouri; also occasionally on the Pacific Coast where probably introduced.

Var. **TYPICA** forma **angustipes** f. nov., foliis basi angustatis nec sagittatis nec auriculatis.—A sporadic form seen from Central New York, but probably occurring elsewhere. TYPE SPECIMEN: Shel-drake, Cayuga Co., New York, 1919, *Eames & Wiegand*, in Herb. New York State College of Agriculture.

Var. **LATIFOLIA** O. Kuntze Rev. Gen. i. 349 (1891). *L. elongata* Ell. Bot. S. C. & Ga. ii. 252 (1822). *L. canadensis* Robinson & Fernald in Gray's Man. ed. 7. 866 (1908) in part.—Prince Edward Island to Wisconsin, south to Florida and Oklahoma. A common form in the Middle Eastern States.

Var. *LATIFOLIA* forma **exauriculata** f. nov., foliis basi angustatis nec sagittatis nec auriculatis.—Seen from Massachusetts, Connecticut, Central New York and Florida. TYPE: Wenham, Mass., *C. E. Faxon*, in Gray Herb.

Var. *INTEGRIFOLIA* (Bigelow) Gray Man. ed. 5. 281 (1869). *L. integrifolia* Bigelow Fl. Bost. ed. 2. 287 (1824). *L. sagittifolia* Elliott Bot. S. C. & Ga. ii. 253 (1822), and Gray's Man. ed. 7. 867 (1908). *L. elongata* β *integrifolia* T. & G. Fl. N. A. ii. 496 (1843). *L. canadensis* var. *montana* Britton in Britton & Brown Ill. Flora N. U. S. & Can. iii. 274 (1898).—Prince Edward Island to Wisconsin, south to South Carolina, Illinois, Oklahoma and Nebraska.

Var. *INTEGRIFOLIA* forma **angustata** f. nov., foliis basi angustatis nec sagittatis nec auriculatis.—A sporadic form seen from Pemberton, Massachusetts, Southington, Connecticut, Delaware, central New York, and a doubtful specimen from Illinois. TYPE: Southington, Connecticut, 1892, *C. H. Bissell*, no. 333, in Gray Herb.

Var. **obovata** var. nov. *L. integrifolia* Robinson & Fernald in Gray's Man. ed. 7. 266 (1908). Foliis omnibus oblanceolatis vel obovatis elobatis vel infimis paullo lobatis; margine integris vel plerumque plus minusve denticulatis; basi sagittatis.—Maine to Indiana and Nebraska, south to New Jersey and Oklahoma. TYPE: Maugus Hill, Wellesley, Mass. 1897, *E. F. Williams*, in Gray Herb.

Var. *OBOVATA* forma **stenopoda** f. nov., foliis basi angustatis nec sagittatis nec auriculatis.—Specimens seen from Connecticut and Oklahoma. TYPE: valley of Stink Creek near Tonkana, Kay County, Oklahoma, 1913, *G. W. Stevens*, no. 1812, in Gray Herb.

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SOME VARIATIONS OF *CARDAMINE PRATENSIS* IN AMERICA.

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To one who is familiar with the pink-petaled Cuckoo Flower which is frequently naturalized on lawns and in meadows from Newfoundland to New England an excursion, such as the recent field-trip of the New England Botanical Club, to Berkshire County, brings a great surprise. The familiar pink-flowered plant about Boston grows, as stated, in lawns or grassy meadows and is obviously a recent introduction. This plant is also found in lawns in Berkshire County; but in the deepest woodland swamps, in the quaking and