NEW COMBINATIONS FOR THE MONTANA FLORA

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ABSTRACT

Three new combinations are proposed. *Agoseris carnea* Rydb. and *A. lackschewitzii* Douglass M. Hend. & R.K. Moseley are considered the same entity and have been subsumed into *A. aurantiaca* (Hook.) Greene as a new infraspecific taxon. *Artemisia lindleyana* Besser has been treated as a distinct species, but a recent treatment subsumes it into *A. ludoviciana* Nutt. Similarities between the two entities are undeniable, but morphological and ecological differences lead me to believe that the former is best considered as a subspecies of the latter. Recent transfer of many New World asters into *Symphyotrichum* requires a new combination for *Aster cusickii* A. Gray if it is to be recognized as a subspecific taxon in *Symphyotrichum foliaceum* (Lindl. ex DC.) G.L. Nesom.

RESUMEN

Se proponen tres combinaciones nuevas. *Agoseris carnea* Rydb. y *A. lackschewitzii* Douglass M. Hend. & R.K. Moseley se consideran la misma entidad y se incluyen en *A. aurantiaca* (Hook.) Greene como un nuevo taxón infraespecífico. *Artemisia lindleyana* Besser ha sido tratada como una especie distinta, pero un tratamiento reciente la subsume en *A. ludoviciana* Nutt. Las semejanzas entre las dos entidades son innegables, pero las diferencias morfológicas y ecológicas me hacen creer que la primera está mejor considerada como una subspecie de la última. La reciente transferencia de muchas *Aster* del Nuevo Mundo a *Symphyotrichum* requieren una nueva combinación para *Aster cusickii* A. Gray si hay que reconocerla como un taxón subespecífico en *Symphyotrichum foliaceum* (Lindl. ex DC.) G.L. Nesom.

INTRODUCTION

Examination of herbarium material in preparation for a new floristic manual for Montana has convinced me that several new combinations are warranted.

SYSTEMATICS


*Agoseris aurantiaca* has traditionally been parsed into two varieties: var. *aurantiaca* has lanceolate phyllaries, ciliate and villous on the outer surface and achenes abruptly narrowed to the beak; var. *purpurea* (A. Gray) Cronquist has ovate-attenuate, outer phyllaries, ciliate but glabrous on the outer surface and achenes gradually tapered to the beak (Cronquist 1994; Baird 2006). *Agoseris carnea* Rydb. has traditionally been subsumed under *A. aurantiaca* var. *aurantiaca* because of its similar involucre (Hitchcock et al. 1955; Cronquist 1994; Baird 2006) although it has pink rather than orange rays in fresh material (Rydberg 1900). Henderson et al. (1990) described this pink-flowered *Agoseris* as *A. lackschewitzii* from material collected in east-central Idaho and adjacent Montana, U.S.A. and were unaware of the plant occurring in British Columbia, Canada, and having been previously described as *A. carnea* by Rydberg. However, they correctly pointed out that this pink-flowered form has narrow, villous phyllaries as in *A. aurantiaca* var. *aurantiaca* but achenes gradually tapered to the beak as in var. *purpurea*, and that it occurred in moist to wet meadows, an unusual habitat for either variety of *A. aurantiaca*. Though Henderson et al. (1990) believed these plants represented a distinct species, the close relationship to *A. aurantiaca* cannot be denied, and I believe it is better placed as a third variety of *A. aurantiaca* distinguished from the other two as follows:
Agoseris aurantiaca var. carneae is found in upper montane to subalpine moist to wet meadows from British Columbia and Alberta south to Wyoming and Idaho. Rydberg (1900) gives the type locality as Mt. Queste, but "Mt. Avert" is given on the holotype.


_Artemisia lindleyana_ has been treated as a distinct species (Hitchcock & Cronquist 1973; Dorn 1984) or a subspecies of the European _A. vulgaris_ L. (ssp. _lindleyana_ H.M. Hall & Clements). The most recent treatment of _Artemisia_ for North America (Shultz 2006) considers _A. lindleyana_ conspecific with _A. ludoviciana_ Nutt. Shultz (2006) recognized six subspecies within _A. ludoviciana_, and _A. lindleyana_ was reduced to synonymy under ssp. _incompta_ (Nutt.) Keck. Similar suffrutescent habit, flowers and involucres indicate a close relationship between _A. lindleyana_ and _A. ludoviciana_. Within this complex both _A. ludoviciana_ ssp. _incompta_ and _A. lindleyana_ have leaves that are glabrate above. However, the former has glabrate phyllaries, a paniculate inflorescence and deeply lobed leaves, while the latter has racemes of heads with tomentose involucres and leaves that are entire or nearly so. I agree with Shultz that _A. lindleyana_ should be placed within _A. ludoviciana_, but believe that differences between _A. lindleyana_ and _A. ludoviciana_ ssp. _incompta_ preclude subsuming the former in the latter. Shultz (2006) suggested that _A. lindleyana_ may warrant infraspecific status under _A. ludoviciana_, and Cronquist stated that he had observed _A. lindleyana_ growing adjacent to _A. ludoviciana_ sensu stricto without intermediates (Hitchcock et al. 1955). For these reasons I propose _lindleyana_ as a seventh subspecies of _A. ludoviciana_.

_Artemisia ludoviciana_ ssp. _lindleyana_ is found on sandy, gravelly or rocky banks of rivers from southern British Columbia to Oregon and east to Idaho and Montana west of the Continental Divide (Hitchcock et al. 1955). The other three subspecies of _A. ludoviciana_ in Montana generally occur in different habitats than ssp. _lindleyana_; ssp. _ludoviciana_ occurs in grasslands, sagebrush steppe and meadows; ssp. _candidans_ (Ryd.) Keck is found in grasslands, streambanks and roadsides; ssp. _incompta_ (Nutt.) Keck occurs in stony soil of talus slopes, rock outcrops and sagebrush steppe. Montana's four subspecies have different combinations of a few variable characters and can be differentiated with the following key:

1. Leaves glabrate and greenish above.
2. Phyllaries glabrate; inflorescence paniculate; leaves deeply lobed ssp. _incompta_.
3. Phyllaries tomentose; inflorescence racemose; leaves entire to shallowly lobed ssp. _lindleyana_.
4. Leaves glaucescent on both surfaces.
5. Leaves oblong-ovate to obovate, at least the lower lobed 1/3-way to the midvein ssp. _incompta_.
6. Leaves lanceolate, entire or shallowly lobed 1/4-way to the midvein ssp. _candidans_.
7. Leaves aurantiaca var. purpurea.
8. Rays pink at anthesis; achene tapered to the beak ssp. _carnea_.
9. Rays orange (sometimes drying pink); achene abruptly tapered to the beak var. _aurantiaca_.


_Aster cuscii_ was first described by Asa Gray based on a Cusick collection from northeastern Oregon (Gray 1880). Six years later Cronquist argued that the plant graded into other forms of _A. foliaceus_ and was best
treated as a variety of that species (Cronquist 1943). Nesom moved the taxon into the genus Symphyotrichum and recognized it at the species level (Nesom 1994). In the most recent treatment of the group, Brouillet et al. (2006) also recognized the taxon at the species rather than at the infraspecific level. My review of mainly Montana material suggests that low-elevation segregates of Symphyotrichum foliaceum sensu lato from the Northern Rocky Mountains often cannot always be confidently distinguished from each other based on the plastic, continuous, vegetative characters purported to separate them (Cronquist 1943). Thus, I prefer to recognize this plant as a variety of Symphyotrichum foliaceum rather than at the species level; however, the desired combination had not been previously made. Symphyotrichum foliaceum var. cusickii can be distinguished from other varieties of S. foliaceum using keys presented by Cronquist (1943) and Hitchcock and Cronquist (1973).

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REFERENCES


