

■Al-Shehbaz, I.A. 2010. *Armoracia*, p. 459-460 [*Armoracia rusticana*]. IN: Flora of North America, vol. 7. Oxford University Press, New York.

***Armoracia rusticana** P. Gaertner [rural] [*Armoracia lapathifolia* Gilibert, *Cochlearia armoracia* Linnaeus]. Perennials from fusiform to cylindrical roots, 50-120 cm or more tall; basal leaves broadly oblong to ovate, 10-50 cm long, the margins coarsely toothed; cauline leaves oblong in outline, coarsely toothed to pinnatisect, becoming linear distally; racemes 10-40 cm long; fruiting pedicels ascending; sepals 2-4 mm long; petals white, 5-8 mm long; fruits rarely produced, 4-6 mm long. ●Moist disturbed ground, an escape from gardens, reported for the state by Al-Shehbaz without locality; no specimens known; native to Europe and Asia. ♦The condiment is derived from the roots, which also act as efficient propagules when fragmented.

Barbarea [for Saint Barbara] YELLOW-ROCKET [2].

Biennial to perennial (sometimes annual) herbs, glabrous to sparsely pubescent, the stems erect and distally branched; leaves basal (rosette-forming or not) and cauline, the basal leaves sessile and auriculate or amplexicaul; inflorescences racemose or corymbose, elongated in fruit; petals yellow, sometimes pale to whitish, longer than the sepals, obscurely clawed; filaments not dilated; fruit a linear siliqua, the styles somewhat beak-like, the seeds uniseriate. ♦About 22 species, temperate regions of the northern hemisphere, and Australia.

■Hartman, R.L. 1973. New plant records for New Mexico [*Barbarea vulgaris*]. Southwestern Naturalist 18(2):241-242.

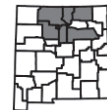
1 Style beaks of mature siliques 2-3 mm long; upper stem leaves shallowly lobed to toothed; auricles of cauline leaves glabrous..... **B. vulgaris**

1 Style beaks of mature siliques to about 1 mm long; upper stem leaves deeply lobed to pinnatifid, or if not, then narrowed to a winged petiole; auricles of cauline leaves usually sparsely pubescent **B. orthoceras**

Barbarea orthoceras Ledebour [straight-homed]. Biennials to perennials, mostly glabrous, 20-60 cm tall; leaves usually lyrate-pinnatifid, the lower blades 2-8 cm long with a large rounded terminal lobe and 2-4 pairs of smaller leaflets below, the upper blades deeply lobed to pinnatifid with ciliate auricles; fruiting pedicels erect to ascending; sepals 2-3 mm long; petals yellow to pale yellow, 5-8 mm long; siliques 3-5 cm long, the styles 0.5-1.3 mm long. ●Wet ground of seeps, streams, creeks, irrigation canals; widespread in the mountains.



***Barbarea vulgaris** W.T. Aiton [common] [*Erysimum barbarea* Linnaeus]. Mostly biennial herbs, glabrous to ciliate, 20-90 cm or more tall; lower leaves lyrate-pinnatifid, 2-10 cm long with a large rounded terminal lobe and 1-2(3) pairs of smaller leaflets below; upper leaves ovate to nearly orbicular, coarsely toothed, the auricles glabrous; fruiting pedicels ascending to divaricate; sepals 3-5 mm long; petals yellow, 6-10 mm long; siliques 1-3 cm long, the styles 1.5-3 mm long. ●Wet disturbed ground around streams and ditches in the mountains; native Europe and Asia. ♦A report from Otero County has not been verified, but not unlikely.

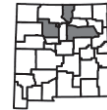


Berteroa [for Carlo Giuseppe Bertero (1789-1831), Italian botanist] BERTEROA [1].

Annual to biennial herbs, pubescent, the hairs stellate and simple, the stems erects and branching distally; leaves basal (not rosette-forming) and cauline, the middle and distal ones sessile, entire to sometimes toothed; inflorescences racemose or corymbose, much elongated in fruit; petals usually white, rarely yellowish, the apices deeply bifid; fruits a silicle, stellate-hairy, the seeds biseriate. ♦5 species in Europe and Asia.

■Sivinski, R.C., T. Lowrey, and C. Keller. 1995. Additions to the floras of Colorado and New Mexico [*Berteroa incana*]. Phytologia 79(5): 319-324.

***Berteroa incana** (Linnaeus) A.P. de Candolle [ash-colored]. Plants densely stellate-hairy, mixed with simple hairs, 25-80 cm tall; basal leaves not persisting, oblanceolate 3-8 cm long; cauline leaves oblanceolate, 2-5 cm long; fruiting pedicels appressed to the rachis; flowers somewhat bilateral rather than cruciform; sepals about 2 mm long; petals obcordate, white, 4-7 mm long, bifid, the lobes 1-3 mm long; filaments white; silicles oblong-elliptic, 5-8 mm long, the styles 1-4 mm long. ●Woodlands, roadsides, moist drainages; native to Europe and Asia; known from a few collections in the northern counties. ♦Plants are reported to be toxic to horses, and are sometimes found in alfalfa hay.



Boechera [for Tyge Wittrock Boecher (Böcher) (1909-1983), Danish botanist] ROCK-CRESS [14].

Contributed by Patrick J. Alexander

Tufted or single-stemmed perennials or biennials with well-developed basal rosettes, pubescent at least on the margins of the basal leaves, sometimes pubescent throughout, at least some of the trichomes forked or dendritic, the basal rosettes sometimes terminated by a flowering stem, sometimes extending past the attachment of the flowering stems (references to basal leaves in the key apply only to those below the flowering stems); flowering stems erect or ascending, usually unbranched; leaves basal and cauline, the cauline leaves auriculate (ours) or not; inflorescence a raceme or occasionally a panicle, ebracteate; flowers pedicellate, with white to lavender, pale magenta, or purple petals, usually paler on the claw; fruits linear (ours) or, rarely, oblong or lanceolate, latiseptate (flattened parallel to the septum), dehiscent; seeds uniseriate (in one distinct row in each valve), irregularly biseriate (in two partially overlapping rows), or biseriate (in two distinct rows) in each valve. ♦Taxonomy of this genus is very complex. Sexual diploid species can hybridize to form asexual diploid hybrids. Although reproducing asexually, these diploid hybrids can produce viable pollen and cross with sexual diploids to produce asexual triploid hybrids. These three groups of species can be distinguished by examining pollen: pollen of sexual diploids is narrowly ellipsoid, with three symmetrical colpi; pollen of asexual diploid hybrids is a mixture of malformed, shrunken grains without cellular contents, narrowly ellipsoid grains with three symmetrical colpi, and spheroid, irregularly colpate grains; pollen of asexual triploid hybrids is spheroid and irregularly colpate. Species can usually be identified without resorting to pollen, but occasionally examining pollen will be necessary. Some of the hybrid species in New Mexico have not yet been described, and I use hybrid formulae for several of them below. This treatment does not, however, include all the undescribed hybrid species in the state. Some plants will not properly fit anywhere.

■Alexander, P. J., M. D. Windham, J. B. Beck, I. A. Al-Shehbaz, L. Allphin, & C. D. Bailey. 2015. Weaving a tangled web: divergent and reticulate speciation in *Boechera fendleri* sensu lato (Brassicaceae: Boechereae). Systematic Botany 40(2):572-596.

■Al-Shehbaz, I.A. 2003. Transfer of most North American species of *Arabis* to *Boechera* (Brassicaceae). Novon 13:381-391.

■Al-Shehbaz, I.A. & M.D. Windham. 2010. *Boechera*, p. 348-412 [*Boechera consanguinea*]. IN: Flora of North America, vol. 7. Oxford University Press, New York.

■Windham, M.D. & I.A. Al-Shehbaz. 2006. New and noteworthy species of *Boechera* (Brassicaceae) I: Sexual diploids. Harvard Papers in Botany 11(1):61-88.

■Windham, M.D. & I. A. Al-Shehbaz. 2007. New and noteworthy species of *Boechera* (Brassicaceae) II: Apomictic hybrids. Harvard Papers in Botany 11(2):257-274.

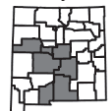
■Windham, M. D. & I. A. Al-Shehbaz. 2007. New and noteworthy species of *Boechera* (Brassicaceae) III: additional sexual diploids and apomictic hybrids. Harvard Papers in Botany 12:235-257.

■Windham, M. D., J. B. Beck, F-W. Li, L. Allphin, J. G. Carman, D. A. Sherwood, C. A. Rushworth, E. Sigel, P.J. Alexander, C. D. Bailey, and I. A. Al-Shehbaz. 2015. Searching for diamonds in the apomictic rough: a case study involving *Boechera lignifera* (Brassicaceae). Systematic Botany 40(4):1031-1044.

- 1 Basal rosettes with several flowering stems (rarely, only one) borne laterally, the rosette producing a tuft of leaves above the attachment of the flowering stems
- 2 Sepals glabrous..... **B. porphyrea** (in part)

- 2 Sepals pubescent
 - 3 Basal leaf surfaces with 3- to 8-rayed trichomes
 - 4 Fruits ascending to horizontal and seeds uniseriate *B. thompsonii*
 - 4 Not as above; either fruits pendent, seeds irregularly biseriata, or both
 - 5 Basal leaves entire, narrowly oblanceolate to linear
 - 6 Fruiting pedicels sparsely pubescent, seeds uniseriate or, rarely, irregularly biseriata *B. kelseyana*
 - 6 Fruiting pedicels glabrous, seeds irregularly biseriata *B. gracilentia* (in part)
 - 5 Basal leaves dentate, oblanceolate to obovate
 - 7 Seeds irregularly biseriata, fruits horizontal to slightly descending, rarely widely pendent, plants mostly north of Interstate 40 *B. gracilentia* (in part)
 - 7 Seeds uniseriate, fruits widely pendent, plants south of Interstate 40 *B. perennans*
 - 3 Basal leaf surfaces with simple and forked trichomes
 - 8 Pollen narrowly ellipsoid; found throughout the western 2/3 of New Mexico (if in doubt, take this lead) *B. fendleri*
 - 8 Pollen a mixture of narrowly ellipsoid and 25-50% malformed, shrunken grains; sporadic from Taos County south to western Lincoln County, usually in mixed populations in which some plants have single, central flowering stems *B. centrifendleri* (in part)
 - 1 Basal rosettes with a single flowering stem that arises centrally and terminates the rosette (rarely with additional flowering stems arising laterally below the terminal one)
 - 9 Sepals pubescent
 - 10 Fruits densely pubescent throughout *B. formosa*
 - 10 Fruits glabrous or with a few, scattered trichomes distally
 - 11 Basal leaf surfaces with 4- to 8-rayed trichomes
 - 12 Fruiting pedicels and fruits strongly reflexed to closely pendent *B. consanguinea*
 - 12 Fruiting pedicels and fruits horizontal or slightly descending *B. formosa* × *kelseyana* × *perennans* hybrids
 - 11 Basal leaf surfaces with simple to 3-rayed trichomes, or glabrous
 - 13 Basal leaves narrowly oblanceolate, margins prominently ciliate throughout their lengths and surfaces glabrous or with a few simple or forked trichomes near the margins; lower fruiting pedicels usually less than 12 mm long *B. sanluisensis*
 - 13 Basal leaves broadly oblanceolate, margins ciliate only towards the base and surfaces pubescent throughout; lower fruiting pedicels usually more than 12 mm long
 - 14 Basal leaf surfaces with at least some 3-rayed trichomes; lower fruiting pedicels usually more than 20 mm long *B. gracilipes*
 - 14 Basal leaf surfaces with simple and forked trichomes only; lower fruiting pedicels usually less than 20 mm long *B. centrifendleri* (in part)
 - 9 Sepals glabrous
 - 15 Fruits erect, ascending, or divaricate; trichomes of the basal leaf surfaces sessile or nearly so, or basal leaf surfaces glabrous
 - 16 Fruits erect or, rarely, strongly ascending; basal leaves with sessile, 2-rayed trichomes and, rarely, simple cilia on the petiole *B. stricta*
 - 16 Fruits ascending to divaricate; basal leaves with short-stalked 2-4-rayed trichomes and prominent simple cilia on or near the petiole *Boechera fendleri* × *stricta* hybrids
 - 15 Fruits pendent
 - 17 Basal leaves narrowly oblanceolate, margins prominently ciliate throughout their lengths and surfaces glabrous or with a few simple or forked trichomes near the margins *B. carrizoensis*
 - 17 Basal leaves broadly oblanceolate, margins prominently ciliate only near the petiole and surfaces pubescent throughout
 - 18 Basal rosettes usually elevated above the ground on woody caudices; pollen a mixture of narrowly ellipsoid and malformed, shrunken grains; plants of the southern edge of New Mexico in the Guadalupe Mountains, Comudas Mountains, and Sierra de las Uvas *B. zephyra*
 - 18 Basal rosettes not elevated above the ground on woody caudices; pollen grains spheroid and irregularly colpate; plants mostly north of the previous
 - 19 Basal leaves prominently and sharply dentate, the larger > 2.5 cm long, with at least some 4- to 6-rayed trichomes *B. porphyrea* (in part)
 - 19 Basal leaves shallowly dentate, the larger < 2.5 cm long, with forked and 3-rayed trichomes only *B. fendleri* × *spatifolia* × *texana* hybrids

Boechera carrizoensis P.J. Alexander [from the Carrizozo Malpais]. Long-lived perennials with (1)2-6(12) rosettes usually elevated above the ground on woody caudices; a single glabrous flowering stem terminates the rosette; basal leaves narrowly oblanceolate, entire or shallowly dentate, ciliate with simple trichomes from petiole to leaf apex, often mixed with a few forked trichomes distally, blade surfaces glabrous or with sparse simple and forked trichomes near the margins; cauline leaves 7-15 in number; lower fruiting pedicels 9-18 mm, slightly ascending to horizontal at base, gently recurved, glabrous; flowers with glabrous sepals, petals pale lavender, fading to lavender; fruits 2.4-3 mm wide, closely pendent or occasionally widely pendent, straight or slightly curved, glabrous, with distinctly biseriata seeds. ●Found in central and southern New Mexico, usually on sandstone or limestone slopes in Chihuahuan desert scrub or at the lower extremes of piñon-juniper woodland; flowering March to April. ♦This is an asexual diploid hybrid; one parent is *Boechera texana*, the second is not known. In basal leaf shape and pubescence, it closely resembles *Boechera sanluisensis*.

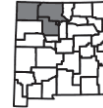


Boechera centrifendleri P.J. Alexander [alluding to the central orientation of the flowering stem when compared to *B. fendleri*]. Short-lived perennials with 1(3) rosettes at ground level; 1(3) flowering stems per rosette, usually arising centrally and terminating the rosette, sometimes arising laterally, hirsute proximally and glabrous distally; basal leaves broadly oblanceolate, usually shallowly dentate, ciliate with simple trichomes from petiole to leaf apex, usually mixed with

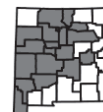


forked trichomes distally, blade surfaces pubescent with simple and forked trichomes or rarely glabrescent, with only sparse pubescence near margins; cauline leaves (8)15-27; lower fruiting pedicels (7)10-18(23) mm, slightly ascending to horizontal at base, gently recurved, glabrous or sparsely hirsute; flowers with sparsely hirsute sepals, petals usually pale lavender, fading to lavender; fruits 1.4-1.7 mm wide, closely or widely pendent, straight or slightly curved, glabrous, with irregularly biseriate seeds. ●Found primarily in northwestern New Mexico, on igneous slopes and level openings in ponderosa pine forest, piñon-juniper woodland, and scrub oak; flowering late April to early June. ♦This is an asexual diploid hybrid derived from *Boechea fendleri* and *Boechea gracilipes*. It is usually easily distinguished from *Boechea fendleri* by its single flowering stems terminating the rosettes (vs. 1-7 lateral stems), but some plants from the eastern edge of its range are very difficult to distinguish from *Boechea fendleri*.

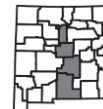
Boechea consanguinea (Greene) Windham & Al-Shehbaz [blood-red] [*Arabis consanguinea* Greene, *Arabis holboellii* of NM reports, *Arabis holboellii* Hornemann var. *retrofracta* of NM reports, *Boechea retrofracta* of NM reports]. Short-lived perennials with 1(3) rosettes usually at ground level, rarely elevated on woody caudices; a single flowering stem terminates the rosette, densely pubescent proximally, glabrous or sparsely pubescent distally; basal leaves oblanceolate, usually dentate, sometimes ciliate with spurred trichomes on and near petiole, blade surfaces moderately to densely pubescent with 4-8-rayed trichomes; cauline leaves 15-36; lower fruiting pedicels 8-14 mm, reflexed to divaricate-descending at base, gently recurved, usually pubescent, rarely glabrous; flowers with pubescent sepals, petals pale lavender, fading to lavender; fruits 1-2 mm wide, strongly reflexed to closely pendent, straight or slightly curved, glabrous, seeds biseriate to sub-biseriate. ●Found primarily with sagebrush in openings in ponderosa pine forest, uncommon in northwestern New Mexico; flowering in May. ♦This is an asexual triploid hybrid, probably including two or more lineages derived in part from *Boechea exilis* and/or *Boechea retrofracta*. Past treatments have usually placed it within a very broadly defined *Arabis holboellii*. §



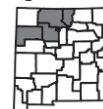
Boechea fendleri (S. Watson) W.A. Weber [for Augustus Fendler (1813-1883), German-born botanical collector who visited Santa Fe in 1847] [*Arabis fendleri* (S. Watson) Greene, *Arabis holboellii* var. *fendleri* S. Watson]. Short- to long-lived perennials with 1-2(6) rosettes usually at ground level, rarely elevated on woody caudices; 1-7 flowering stems per rosette, arising laterally from the rosettes, hirsute proximally and glabrous distally; basal leaves broadly oblanceolate, shallowly dentate, ciliate with simple trichomes from petiole to leaf apex, mixed with forked trichomes distally, blade surfaces pubescent with simple and forked trichomes or rarely glabrescent and with only sparse pubescence near the margins; cauline leaves 7-14; lower fruiting pedicels 7-13(17) mm, slightly ascending to horizontal at base, gently recurved, glabrous or sparsely hirsute; flowers with sparsely hirsute sepals, petals white or, rarely, pale lavender; fruits 1.4-1.9 mm wide, closely pendent, straight or slightly curved, glabrous, with irregularly biseriate seeds. ●Found throughout the western two-thirds of New Mexico on rocky (usually igneous) slopes in ponderosa pine forest, piñon-juniper woodlands, and scrub oak; flowering April to early June. ♦This is a sexual diploid species. The species here recognized as *Boechea carrizoensis*, *Boechea centrifendleri*, *Boechea porphyrea*, *Boechea sanluisensis*, and *Boechea zephyra* were all placed in *Arabis fendleri* in most previous works. §



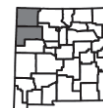
***Boechea fendleri* × *spatifolia* × *texana* hybrids.** Short-lived perennials with 1-2 rosettes at ground level; a single glabrous flowering stem terminates the rosette; basal leaves broadly oblanceolate, entire or shallowly dentate, ciliate with simple trichomes on and near petiole, surfaces pubescent with forked and 3-rayed trichomes; cauline leaves (7)11-18(23); lower fruiting pedicels 9-17 mm, slightly ascending to horizontal at base, gently recurved, glabrous; flowers with glabrous sepals, petals white or pale lavender, usually fading to purple; fruits 1.6-2.0 mm wide, widely pendent, straight or slightly curved, with irregularly biseriate seeds. ●Found near Santa Fe in northern New Mexico and extending south in a line to Texas on rocky (usually igneous) slopes in piñon-juniper woodland; flowering April to May. ♦This is an asexual triploid hybrid. Some hybrids not derived from *B. fendleri*, *B. spatifolia*, and *B. texana* will also key here, and are not morphologically distinguishable.



***Boechea fendleri* × *stricta* hybrids.** Short-lived perennials or biennials with 1(3) rosettes at ground level; a single flowering stem terminates the rosette, glabrous or sparsely pubescent proximally; basal leaves oblanceolate, entire or dentate, ciliate with simple trichomes on and near the petiole, distal leaf margins with appressed, short-stalked 2-3-rayed trichomes, surfaces sparsely pubescent with appressed, short-stalked 2-4-rayed trichomes or glabrous; cauline leaves (10)13-52; lower fruiting pedicels 5-22 mm, ascending at base, straight or gently recurved, glabrous; flowers with glabrous sepals, petals pale lavender or white, fading lavender; fruits 1-1.8 mm wide, divaricate-ascending, straight or slightly curved, with uniseriate or irregularly biseriate seeds. ●Found in north-central and northwestern New Mexico, usually in open ponderosa pine woodlands and montane meadows; flowering May to June. ♦These asexual diploid hybrids were usually included in a very broadly defined *Arabis divaricarpa* in previous works. Some plants in New Mexico may actually be derived from *Boechea spatifolia* and *B. stricta* or *B. sanluisensis* and *B. stricta*; more work is needed.



Boechea formosa (Greene) Windham & Al-Shehbaz [handsome, beautiful] [*Arabis formosa* Greene, *Arabis pulchra* M.E. Jones ex S. Watson var. *pallens* M.E. Jones]. Long-lived perennials with 1(3) rosettes elevated on woody caudices; usually with 1 flowering stem terminating the basal rosette, occasionally with 1-2 additional flowering stems arising laterally, pubescent throughout; basal leaves linear to linear-oblanceolate, entire, ciliate with simple or forked trichomes on the petiole, surfaces densely pubescent with 4-8-rayed trichomes; cauline leaves 7-18; lower fruiting pedicels 5-10(20) mm, horizontal to descending at base, recurved, pubescent; flowers with pubescent sepals, petals white to pale lavender; fruits 1.6-3 mm wide, divaricate-descending to reflexed, straight or slightly curved, pubescent throughout, with distinctly biseriate seeds. ●Found in northwestern New Mexico, usually on sandstone slopes in piñon-juniper woodland. ♦This is a sexual diploid.



***Boechea formosa* × *kelseyana* × *perennans* hybrids.** Long-lived perennials with 1-3 rosettes elevated on woody caudices or at ground level; usually with 1 flowering stem terminating the basal rosette, occasionally with 1-3 additional flowering stems arising laterally, pubescent throughout; basal leaves linear-oblanceolate, entire or denticulate, ciliate with simple trichomes on the petiole, surfaces densely pubescent with 4-8-rayed trichomes; cauline leaves 3-8; lower fruiting pedicels 7-14 mm, horizontal at base, straight or slightly recurved, pubescent or, rarely, glabrous; flowers with pubescent sepals, petals pale magenta or lavender; fruits 1.7-2 mm wide, horizontal to divaricate-descending, straight or slightly curved, with irregularly biseriate seeds. ●Found in northwestern New Mexico, usually on sandstone slopes in piñon-juniper woodland. ♦This asexual triploid hybrid is included within *Boechea duchesnensis* in the FNA treatment.



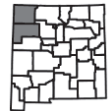
Boecheera gracilentia (Greene) Windham & Al-Shehbaz [very slender] [*Arabis gracilentia* Greene]. Short- or long-lived perennials, with 1-3 rosettes at ground level; 1-9 flowering stems per rosette, arising laterally from the rosette, pubescent proximally and glabrous distally; basal leaves oblanceolate, shallowly dentate or sometimes entire, ciliate with simple and spurred trichomes on and near the petiole, surfaces moderately to densely pubescent with 4-6(8)-rayed trichomes; cauline leaves 4-9; lower fruiting pedicels (7)10-18 mm, divaricate-ascending to horizontal at base, nearly straight or gently recurved, glabrous; flowers with pubescent sepals, petals pale magenta or lavender, fading to magenta or purple; fruits 1.7-2.2 mm wide, horizontal to widely pendent, usually curved, glabrous, with irregularly biseriate seeds. ● Found in north-central and northwestern New Mexico on rocky slopes in piñon-juniper woodland, ponderosa pine woodland, and scrub oak; flowering late April to early June. ♦ This is an asexual diploid hybrid between *Boecheera fendleri* and *Boecheera thompsonii*.



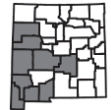
Boecheera gracilipes (Greene) Dorn [slender-stalked]. Short-lived perennials or biennials with 1-2 rosettes at ground level; a single flowering stem terminating the basal rosette, pubescent proximally and glabrous distally; basal leaves oblanceolate, shallowly dentate, sometimes ciliate with simple trichomes on the petiole, surfaces sparsely to densely pubescent with 2- or 3-rayed trichomes; cauline leaves 30-65; lower fruiting pedicels (15)20-47 mm, divaricate-ascending or horizontal at base, gently recurved, glabrous; flowers with pubescent sepals, petals white, fading to white or pale lavender; fruits 1.5-2.8 mm wide, widely pendent, straight or slightly curved, glabrous, with irregularly biseriate seeds. ● Rocky slopes in ponderosa pine forests and piñon-juniper woodlands, known in New Mexico from a single collection in western Catron County; flowering April to June. ♦ This is a sexual diploid found primarily on the Mogollon Rim in Arizona.



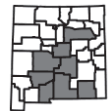
Boecheera kelseyana Windham & Allphin [for C. Ann Kelsey (1948-2013), long-time collections manager at the Garrett Herbarium, Utah Museum of Natural History] [*Arabis lignifera* of NM reports, *Boecheera lignifera* of NM reports]. Short-lived perennials, with 1(3) rosettes usually at ground level, rarely elevated on woody caudices; 1-5 flowering stems arising laterally from the rosette, pubescent proximally and sparsely pubescent or glabrous distally; basal leaves narrowly oblanceolate to linear, entire, sometimes ciliate with simple or spurred trichomes on the petiole, surfaces densely pubescent with (3)4-7-rayed trichomes; cauline leaves 4-13; lower fruiting pedicels (5)8-21 mm, usually ascending, sometimes horizontal, at base, gently recurved, sparsely pubescent; flowers with sparsely pubescent sepals 2.5-3.5, petals white, often fading pale lavender; fruits 1.4-2.0 mm wide, widely pendent, usually curved, glabrous, with uniseriate or, rarely, irregularly biseriate seeds. ● Found in northwestern New Mexico, in sandy soils or on sandstone in piñon-juniper woodlands; flowering late April to early June. ♦ This is a sexual diploid recently segregated from *Boecheera lignifera*.



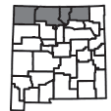
Boecheera perennans (S. Watson) W.A. Weber [perennial] [*Arabis angulata* Greene ex Wootton & Standley, *Arabis eremophila* Greene, *Arabis perennans* S. Watson]. Long-lived perennials with 1-3(5) rosettes, either at ground level or elevated on woody caudices; 1-6 flowering stems arising laterally from the rosette, pubescent proximally and usually glabrous distally; basal leaves oblanceolate to obovate, dentate, ciliate with simple trichomes on or near the petiole, surfaces moderately to densely pubescent with 3-6-rayed trichomes; cauline leaves 4-12(17); lower fruiting pedicels (6)10-25 mm, ± horizontal at base, straight to gently recurved, glabrous or very sparsely pubescent; flowers with pubescent sepals, petals white to lavender, fading purple; fruits 1.7-2.1 mm wide, widely pendent, usually curved, glabrous, with uniseriate seeds. ● Found primarily in northwestern part of the state, only sporadically in central or west-central New Mexico, usually on rocky, igneous slopes in Chihuahuan desert scrub or piñon-juniper woodlands; flowering March to May. ♦ This is a sexual diploid.



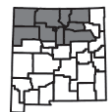
Boecheera porphyrea (Wootton & Standley) Windham, Al-Shehbaz, & P.J. Alexander [purplish, reddish] [*Arabis porphyrea* Wootton & Standley]. Long-lived perennials with 1-3 rosettes usually at ground level, occasionally elevated on woody caudices; 1-5 flowering stems per rosette, usually arising laterally from the rosettes, occasionally terminating the rosettes, glabrous throughout or sparsely pubescent proximally; basal leaves broadly oblanceolate, sharply dentate, ciliate with simple trichomes on the petiole, surfaces pubescent with forked to 4-rayed (a few 5- or 6-rayed) trichomes; cauline leaves 7-17(21); lower fruiting pedicels (10)15-27 mm, horizontal at base, gently recurved, glabrous; flowers with glabrous sepals; petals pale lavender, fading to purple; fruits 1.8-2.5 mm wide, widely pendent, nearly straight to curved, with irregularly biseriate seeds. ● Found in south-central and central New Mexico on rocky, usually igneous, slopes in Chihuahuan desert scrub, scrub oak, and piñon-juniper woodland; flowering March to May. ♦ This is an asexual triploid derived from *Boecheera gracilipes*, *Boecheera perennans*, and *Boecheera texana*.

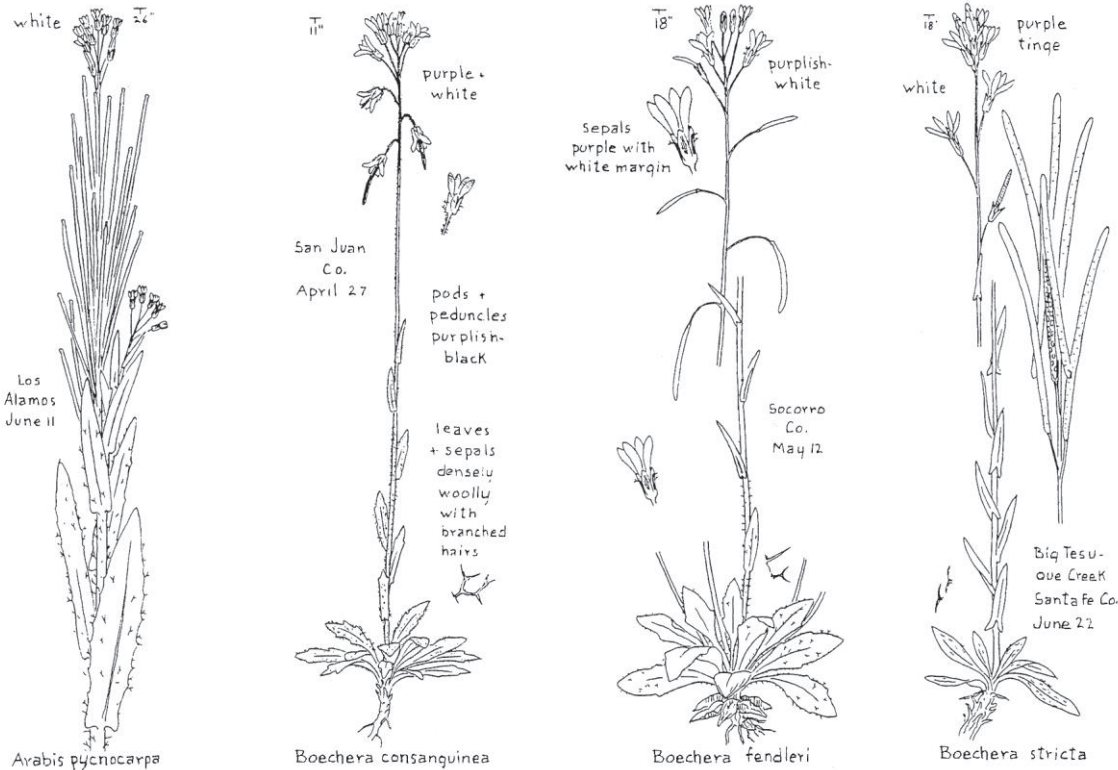


Boecheera sanluisensis P.J. Alexander [from the San Luis Valley, north-central New Mexico] [*Arabis fendleri* (S. Watson) Greene var. *spatifolia* of NM reports, *Arabis spatifolia* of NM reports, *Boecheera fendleri* (S. Watson) W.A. Weber var. *spatifolia* of NM reports]. Short-lived perennials with 1 basal rosette arising at ground level; a single flowering stem terminating the rosette, hirsute proximally and glabrous distally; basal leaves narrowly oblanceolate, usually entire, sometimes shallowly dentate, ciliate with simple trichomes from petiole to leaf apex, surfaces glabrous or with a few simple and forked trichomes distally; cauline leaves (9)12-19; lower fruiting pedicels 6-12(16) mm, slightly ascending to horizontal at base, gently recurved, glabrous or with a few simple or forked trichomes; flowers with sparsely hirsute sepals, petals white, not darkening; fruits 1.5-1.8 mm wide, widely pendent, straight or slightly curved, glabrous, with irregularly biseriate seeds. ● Found in northern New Mexico on rocky, usually igneous, slopes and in level openings in ponderosa woodland and in mixed coniferous forest, rarely in the upper margins of piñon-juniper woodland; flowering May to July. ♦ This is an asexual diploid hybrid derived from *Boecheera fendleri* and *Boecheera spatifolia*. Distinguishing it from *Boecheera spatifolia* can be difficult, but that species is not yet known from the state.



Boecheera stricta (Graham) Al-Shehbaz [narrow, upright] [*Arabis drummondii* Gray, *Arabis oxyphylla* Greene, *Boecheera drummondii* (Gray) A. & D. Löve, *Turritis stricta* Graham]. Short-lived perennials or biennials with 1-2(3) rosettes at ground level; a single flowering stem terminating the basal rosette, glabrous throughout or sparsely pubescent proximally; basal leaves oblanceolate, entire or, rarely, shallowly dentate, ciliate with appressed, sessile 2-rayed trichomes from petiole to leaf apex, sometimes with a few simple trichomes on the petiole, surfaces pubescent with appressed, sessile 2-rayed trichomes or glabrous; cauline leaves 6-18; lower fruiting pedicels 5-18(25) mm, erect or nearly so at base, straight, glabrous; flowers with glabrous sepals, petals white, fading pale lavender; fruits 2-3.5 mm wide, erect or, rarely, strongly ascending, usually appressed to the rachis, straight, with biseriate seeds. ● Found in north-central and northwestern New Mexico, usually above 9000 feet in montane meadows and openings in mixed conifer forest; flowering late May to early July. ♦ This is a sexual diploid. §





Boechera thompsonii (S.L. Welsh) N.H. Holmgren [for Robert Maeser Thompson (1929-2012), Utah plant enthusiast] [*Arabis pallidifolia* of NM reports, *Boechera pallidifolia* of NM reports, *Arabis selbyi* Rydberg of NM reports, *Boechera villosa* Windham & Al-Shehbaz, *Boechera selbyi* (Rydberg) W.A. Weber of NM reports]. Short-lived perennials with 1-4 rosettes usually at ground level, occasionally elevated on woody caudices; 2-5 flowering stems arising laterally from the rosette, pubescent throughout or glabrous distally; basal leaves oblanceolate to obovate, shallowly dentate or entire, usually ciliate with simple and forked trichomes on and near the petiole, surfaces densely pubescent with 4-8-rayed trichomes; cauline leaves 3-8(11); lower fruiting pedicels 7-15 mm, ascending to divaricate-ascending at base, straight or nearly so, sparsely pubescent or, rarely, glabrous; flowers with pubescent sepals, petals pale lavender; fruits 1-2 mm wide, ascending or, rarely, horizontal, curved, glabrous, with uniseriate seeds. ♦Found in north-central and northwestern New Mexico, usually on igneous or sandstone slopes in piñon-juniper woodland; flowering late April to early June. ♦This is a sexual diploid. In past works it has usually been called *Arabis selbyi* or *Boechera pallidifolia*.

Boechera zephyra P.J. Alexander [the west wind]. Plants mostly long-lived perennials, with (1)3-6(10) basal rosettes usually elevated on woody caudices; flowering stems 1 per rosette, arising centrally and terminating the rosette; glabrous; basal leaves broadly oblanceolate, 12-40 long, 5-10(14) mm wide, the margins shallowly dentate; simple marginal trichomes present on petiole only; blade surfaces pubescent with forked to 4-rayed trichomes; cauline leaves 9-14, not concealing the stem proximally; inflorescences often branched; lower fruiting pedicels 11-19 mm, glabrous; flowers with glabrous sepals; petals pale lavender at anthesis, usually darkening to purple with age; pollen a mixture of narrowly ellipsoid and malformed grains; fruits 2.0-2.4 mm wide, usually widely pendent, with irregularly biseriate seeds. ♦Found along the southern edge of New Mexico on rocky slopes, igneous or limestone, in Chihuahuan desert scrub or at the lower extremes of piñon-juniper-oak woodland; flowering March to April. ♦This is an asexual diploid hybrid, derived from *Boechera perennans* and *Boechera texana*.

Brassica [classical Latin name for cabbage] MUSTARD [6].

Mostly annual and biennial herbs (rarely perennial), glabrous to hairy; leaves basal (rosette-forming or not) and cauline, entire to toothed or lobed; inflorescences racemose or corymbose, much elongated in fruit; petals yellow to orange-yellow (rarely white), often clawed; filaments not winged; fruit a silique, with a long or short beak, the seeds uniseriate and not winged. ♦About 35 species of Europe, Asia, and northern Africa, widely introduced throughout the world. An extremely important crop plant in many parts of the world, including oilseeds, food crops, animal fodder, and seasonings. The genus *Sinapis* has been segregated from *Brassica*, but the features used to distinguish the two genera are sometimes of difficult interpretation; to aid identification, *Sinapis* is included in the key here.

■Allred, K.W. 1999. New plant distribution records [*Brassica napus*]. The New Mexico Botanist 13:7. ■Huff, C. 1996. New plant distribution records [*Brassica rapa*]. The New Mexico Botanist 3:6. ■McIntosh, L. 1996. Seven additions to the flora of New Mexico [*Brassica tournefortii*]. Phytologia 81(5):365-368. ■Warwick, S.I. 2010. *Brassica*, p. 419-424 [*Brassica nigra*]. IN: Flora of North America, vol. 7. Oxford University Press, New York.

- 1 Cauline leaves distinctly clasping the stem at their bases
 - 2 Petals 18-30 mm long; beaks of fruits 4-11 mm long *B. oleracea*
 - 2 Petals 6-16 mm long; beaks of fruits mostly 8-22 mm long
 - 3 Petals mostly pale yellow, mostly 6-10 mm long; beaks of fruit 8-22 mm long; plants usually green.....*B. rapa*
 - 3 Petals mostly bright yellow to golden, 10-16 mm long; beaks of fruit 10-16 mm long; plants usually glaucous..... *B. napus*
- 1 Cauline leaves not clasping the stem, short-stalked or sessile with a cuneate base
 - 4 Valves of the fruit hirsute, the beak strongly compressed, sword-like, and about ½ the total length of the fruit (*S. alba*) go to *Sinapis*