






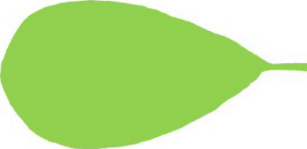



Simplified Guide to *Symphyotrichum* Species for Wisconsin and the Great Lakes region

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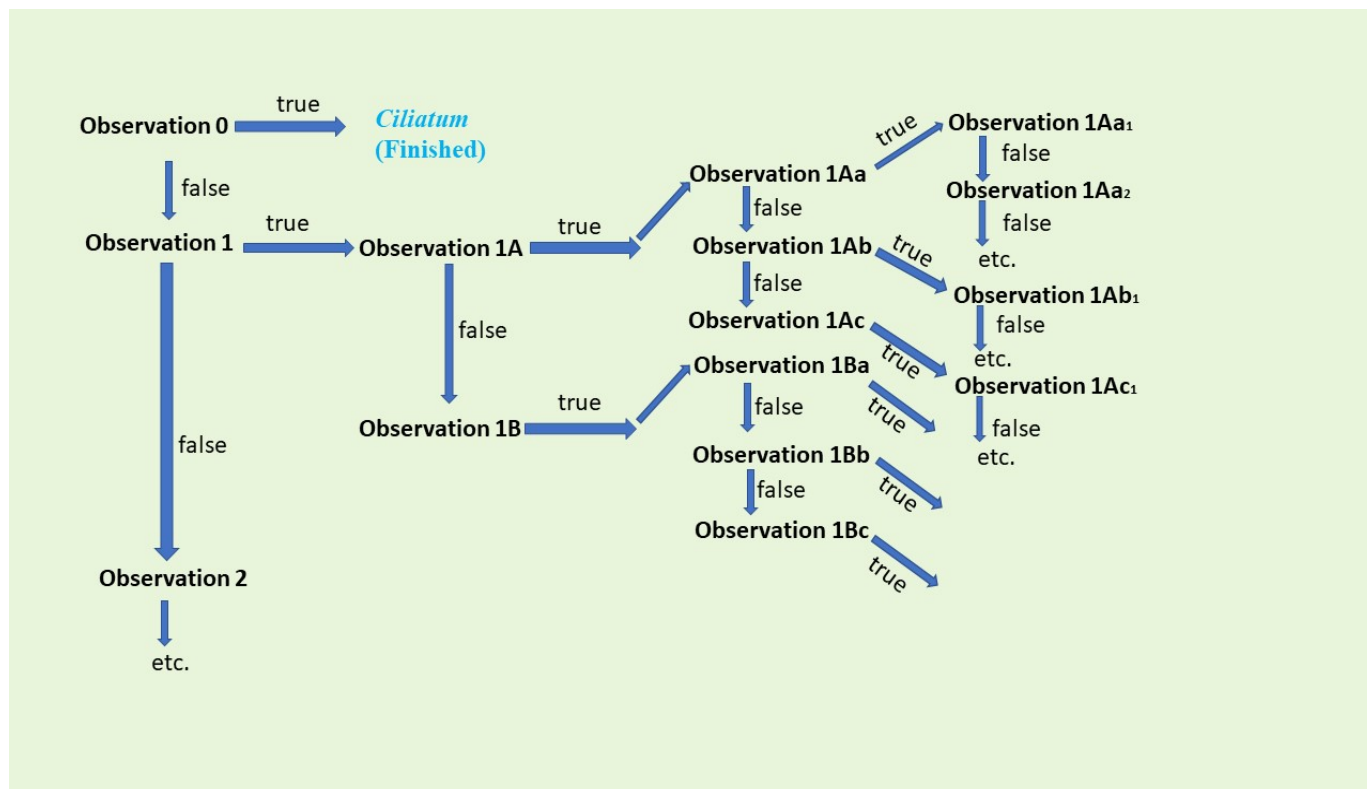
The principal objective of this guide is to help narrow the choices to aid in the ID of an unknown *Symphyotrichum* species by making observations on a few characteristics. The flow chart below is based on ray floret color, then disc floret color, then flower size, then leaf shape and size, and sometimes an additional characteristic is used. Basal leaves and sometimes proximal cauline leaves have often withered by flowering, so it is more useful to note the distal leaf shapes.

Be alert to the fact that many of the individual *Symphyotrichum* species exhibit multiple colors for the ray florets. Here, we focus on what is the most common color (or colors) and ignore the very uncommon colors infrequently observed. Disc floret colors are **before they change colors** with age. Where leaf lengths and widths are given, the lower values in the ranges will apply as you ascend higher up the stems.

Since all the species present below are *Symphyotrichum*, with some abuse of notation we omit the *S.* in each case. Leaf shapes that are used are shown in the table below.

 <p>elliptic Having the shape of an ellipse.</p>	 <p>lanceolate Having the shape of the head of a lance.</p>
 <p>linear Long and narrow shaped, e.g., like a blade of grass</p>	 <p>oblanceolate Much longer than wide with the widest portion near the tip.</p>
 <p>oblong Longer than broad, rounded at each end with roughly parallel sides.</p>	 <p>obovate Inverse ovate; egg-shaped leaf with the narrower end at the leaf stalk.</p>
 <p>ovate Egg-shaped, with the leaf widest below the middle.</p>	 <p>pandurate Shaped like a fiddle.</p>
 <p>subulate Tapering from the base to the apex; awl-shaped.</p>	

How to follow the numbers in the scheme.



0. If there are **no ray florets** you probably have: *ciliatum*.

1. If the ray florets are **white** you may have: *boreale*, *drummondii*, *dumosum*, *ericoides*, *falcatum*, *firmum*, *lanceolatum*, *lateriflorum*, *ontarionis*, *pilosum*, *racemosum*, *subulatum*, or *urophyllum*.

1A. If disc florets are **cream or pale yellow** you may have: *boreale*, *drummondii*, *dumosum*, *firmum*, *lateriflorum*, *ontarionis*, *pilosum*, *racemosum*, or *urophyllum*.

1Aa. If the flower head size is 0 to 0.5 inches you may have: *dumosum*, *lateriflorum*, *ontarionis*, *pilosum*, or *racemosum*.

1Aa1. Leaf shape (distal) **oblong** or **linear-lanceolate** to **linear**, 2–45 × 0.5–4 mm, you may have: *dumosum*.

1Aa2. Leaf shape (distal) **ovate**, **lance-ovate**, **lance-elliptic**, or **oblanceolate** to **lance-linear** or **linear**, 10–150 × 1–30 mm, you may have: *lateriflorum*.

1Aa3. Leaf shape (distal) elliptic-lanceolate to oblanceolate or lanceolate, (6–)10–80+ × 2–25 mm, you may have: *ontarionis*.

1Ab4. Leaf shape (distal) **lance-oblong** to **linear-lanceolate** to **linear** or **linear-oblanceolate** or **linear-subulate**, 10–100 × 1–8 mm, you may have: *pilosum*.

- 1Ab5.** Leaf shape (distal) **linear-lanceolate** to **linear**, 5–60+ × 1–8 mm, with clear differences in leaf sizes, you may have: *racemosum*.
- 1Ab.** If the flower head size is 0.5 to 1.0 inches you may have: *boreale*, *drummondii*, *dumosum*, *firmum*, *pilosum*, or *urophyllum*.
- 1Ab1.** Leaf shape (distal) **linear-lanceolate** or **lanceolate** to **linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.
- 1Ab2.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate**, to **oblong-elliptic** or **linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.
- 1Ab3.** Leaf shape (distal) **oblong** or **linear-lanceolate** to **linear**, 2–45 × 0.5–4 mm, you may have: *dumosum*.
- 1Ab4.** Leaf shape (distal) **lanceolate** to **lance-elliptic** to **oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.
- 1Ab5.** Leaf shape (distal) **lance-oblong** to **linear-lanceolate** to **linear** or **linear-oblanceolate** or **linear-subulate**, 10–100 × 1–8 mm, you may have: *pilosum*.
- 1Ab6.** Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless, you may have: *urophyllum*.
- 1Ac .** If the flower head size is over 1.0 inches you may have: *boreale*, *drummondii*, *firmum*, or *urophyllum*.
- 1Ac1.** Leaf shape (distal) **linear-lanceolate** or **lanceolate** to **linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.
- 1Ac2.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate**, to **oblong-elliptic** or **linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.
- 1Ac3.** Leaf shape (distal) **lanceolate** to **lance-elliptic** to **oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.
- 1Ac4.** Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless, you may have: *urophyllum*.
- 1B.** If disc florets are **yellow** you may have: *drummondii*, *ericoides*, *falcatum*, *firmum*, *lanceolatum*, or *subulatum*.
- 1Ba.** If the flower head size is 0 to 0.5 inches you may have: *ericoides*, *falcatum*, or *subulatum*.
- 1Ba1.** Leaf shape (distal) **oblong-ovate**, 10–40 × 1.5–3.5 mm, you may have: *ericoides*.
- 1Ba2.** Leaf shape (cauline) **linear-oblanceolate** to **oblong** or (distal) **linear-oblong** to **linear-lanceolate**, you may have: *falcatum*.
- 1Ba3.** Leaf shape (distal) **narrowly lanceolate** to **subulate** you may have: *subulatum*.
- 1Bb.** If the flower head size is 0.5 to 1.0 inches you may have: *drummondii*, *ericoides*, *falcatum*, or *lanceolatum*.
- 1Bb1.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate**, to **oblong-elliptic** or **linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

1Bb2. Leaf shape (distal) **oblong-ovate**, 10–40 × 1.5–3.5 mm, you may have: *ericoides*.

1Bb3. Leaf shape (cauline) **linear-ob lanceolate** to **oblong** or (distal) **linear-oblong** to **linear-lanceolate**, you may have: *falcatum*.

1Bb4. Leaf shape (distal) **ob lanceolate** to **linear**, 30–100(–140) mm, you may have: *lanceolatum*.

1Bc . If the flower head size is over 1.0 inches you may have: *drummondii*.

2. If the ray florets are **blue (light or dark)** you may have: *boreale*, *ciliolatum*, *cordifolium*, *drummondii*, *dumosum*, *falcatum*, *firmum*, *laeve*, *lanceolatum*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, *robysianum*, *shortii*, or *urophyllum*.

2A. If disc florets are **cream or pale yellow** you may have: *boreale*, *cordifolium*, *drummondii*, *firmum*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, *shortii*, or *urophyllum*.

2Aa. If the flower head size is 0 to 0.5 inches you may have: N/A

2Ab. If the flower head size is 0.5 to 1.0 inches you may have: *boreale*, *cordifolium*, *drummondii*, *firmum*, *laeve*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, *shortii*, or *urophyllum*.

2Ab1. Leaf shape (distal) **linear-lanceolate** or **lanceolate** to **linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.

2Ab2. Leaf shape (distal) ovate to lanceolate, 5–105 × 2–45 mm, you may have: *cordifolium*.

2Ab3. Leaf shape (distal) **ovate** to **ovate-lanceolate** or **oblong-lanceolate**, to **oblong-elliptic** or **linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

2Ab4. Leaf shape (distal) **lanceolate** to **lance-elliptic** to **ob lanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.

2Ab5. Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear**, 7–45 × 1–14 mm, you may have: *laeve*.

2Ab6. Leaf shape (distal) **lanceolate** or **linear-lanceolate** to **subulate**, 5–80 × 1–10 mm, you may have: *oolentangiense*.

2Ab7. Leaf shape (distal) **ovate** or **elliptic-lanceolate** to **lanceolate** or **linear**, 10–85 × 2–17 mm, you may have: *praealtum*.

2Ab8. Leaf shape (distal) **ob lanceolate** to **lanceolate**, sometimes **pandurate**, 7–90 × 2–25 mm, you may have: *preanthoides*.

2Ab9. Leaf shape (distal) **ob lanceolate** or **lanceolate** to **oblong** or **elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.

2Ab10. Leaf shape (distal) **ovate** to **lanceolate**, 8–80 × 1–40 mm, you may have: *shortii*.

2Ab11. Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless, you may have: *urophyllum*.

2Ac . If the flower head size is over 1.0 inches you may have: *boreale*, *drummondii*, *firmum*, *laeve*, *oolentangiense*, *preanthoides*, *puniceum*, *shortii*, or *urophyllum*.

- 2Ac1.** Leaf shape (distal) **linear-lanceolate** or **lanceolate** to **linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.
- 2Ac2.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.
- 2Ac3.** Leaf shape (distal) **lanceolate** to **lance-elliptic** to **oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.
- 2Ac4.** Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear**, 7–45 × 1–14 mm, you may have: *laeve*.
- 2Ac5.** Leaf shape (distal) **lanceolate** or **linear-lanceolate** to **subulate**, 5–80 × 1–10 mm, you may have: *oolentangiense*.
- 2Ac6.** Leaf shape (distal) **oblanceolate to lanceolate**, sometimes **pandurate**, 7–90 × 2–25 mm, you may have: *prenanthoides*.
- 2Ac7.** Leaf shape (distal) **oblanceolate** or **lanceolate** to **oblong** or **elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.
- 2Ac8.** Leaf shape (distal) **ovate** to **lanceolate**, 8–80 × 1–40 mm, you may have: *shortii*.
- 2Ac9.** Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless, you may have: *urophyllum*.
- 2B.** If disc florets are **yellow** you may have: *ciliolatum*, *drummondii*, *falcatum*, *firmum*, *laeve*, *lanceolatum*, *puniceum*, or *robysianum*.
- 2Ba.** If the flower head size is 0 to 0.5 inches you may have: *falcatum* or *robysianum*.
- 2Ba1.** Leaf shape (cauline) **linear-oblanceolate** to **oblong** or (distal) **linear-oblong** to **linear-lanceolate**, you may have: *falcatum*.
- 2Ba2.** Leaf shape (distal) **linear-lanceolate** to **linear**, 10–110 × 1–7 mm and slightly clasping or not, you may have: *robysianum*.
- 2Bb.** If the flower head size is 0.5 to 1.0 inches you may have: *drummondii*, *falcatum*, *firmum*, *laeve*, *lanceolatum*, *puniceum*, or *robysianum*.
- 2Bb1.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.
- 2Bb2.** Leaf shape (cauline) **linear-oblanceolate** to **oblong** or (distal) **linear-oblong** to **linear-lanceolate**, you may have: *falcatum*.
- 2Bb3.** Leaf shape (distal) **lanceolate** to **lance-elliptic** to **oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.
- 2Bb4.** Leaf shape (distal) **lance-ovate** or **lanceolate** to **linear**, 7–45 × 1–14 mm, you may have: *laeve*.
- 2Bb5.** Leaf shape (distal) **oblanceolate** to **linear**, 30–100(–140) mm, you may have: *lanceolatum*.
- 2Bb6.** Leaf shape (distal) **oblanceolate** or **lanceolate** to **oblong** or **elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.

2Bb7. Leaf shape (distal) **linear-lanceolate** to **linear**, 10–110 × 1–7 mm and slightly clasping or not, you may have: *robysianum*.

2Bc . If the flower head size is over 1.0 inches you may have: *ciliolatum*, *drummondii*, *firmum*, *laeve*, or *puniceum*.

2Bc1. Leaf shape (distal) **lance-ovate** to **linear-lanceolate** or **linear**, stalkless or can sometimes be slightly stalked with a winged-stalk, 18–75 × (2–)5–25 mm, you may have: *ciliolatum*.

2Bc2. Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

2Bc3. Leaf shape (distal) **lanceolate to lance-elliptic to oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.

2Bc4. Leaf shape (distal) **lance-ovate** or **lanceolate to linear**, 7–45 × 1–14 mm, you may have: *laeve*.

2Bc5. Leaf shape (distal) **oblanceolate** or **lanceolate to oblong** or **elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.

3. If the ray florets are **lavender or purple or violet** you may have: *boreale*, *ciliolatum*, *cordifolium*, *drummondii*, *dumosum*, *firmum*, *laeve*, *novae-angliae*, *oblongifolium*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, *robysianum*, *sericeum*, *shortii*, or *subulatum*.

3A. If disc florets are **cream or pale yellow** you may have: *boreale*, *cordifolium*, *drummondii*, *dumosum*, *firmum*, *novae-angliae*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, or *shortii*.

3Aa. If the flower head size is 0 to 0.5 inches you may have: *dumosum*.

3Ab. If the flower head size is 0.5 to 1.0 inches you may have: *boreale*, *cordifolium*, *drummondii*, *dumosum*, *firmum*, *novae-angliae*, *oblongifolium*, *oolentangiense*, *praealtum*, *preanthoides*, *puniceum*, or *shortii*.

3Ab1. Leaf shape (distal) **linear-lanceolate** or **lanceolate to linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.

3Ab2. Leaf shape (distal) **ovate to lanceolate**, 5–105 × 2–45 mm, you may have: *cordifolium*.

3Ab3. Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

3Ab4. Leaf shape (distal) **oblong** or **linear-lanceolate to linear**, 2–45 × 0.5–4 mm, not stalked, you may have: *dumosum*.

3Ab5. Leaf shape (distal) **lanceolate to lance-elliptic to oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.

3Ab6. Leaf shape (distal) **oblanceolate**, 30–80 × 6–15 mm, and bases auriculate-clasping, you may have: *novae-angliae*.

3Ab7. Leaf shape (distal) **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.

- 3Ab8.** Leaf shape (distal) **lanceolate** or **linear-lanceolate** to **subulate**, 5–80 × 1–10 mm, you may have: *oolentangiense*.
- 3Ab9.** Leaf shape (distal) **ovate** or **elliptic-lanceolate** to **lanceolate** or **linear**, 10–85 × 2–17 mm, you may have: *praealtum*.
- 3Ab10.** Leaf shape (distal) **oblanceolate to lanceolate**, sometimes **pandurate**, 7–90 × 2–25 mm, you may have: *prenanthoides*.
- 3Ab11.** Leaf shape (distal) **oblanceolate** or **lanceolate** to **oblong** or **elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.
- 3Ab12.** Leaf shape (distal) **ovate** to **lanceolate**, 8–80 × 1–40 mm, you may have: *shortii*.
- 3Ac .** If the flower head size is over 1.0 inches you may have: *boreale*, *ciliolatum*, *drummondii*, *firmum*, *novae-angliae*, *oblongifolium*, *oolentangiense*, *prenanthoides*, *puniceum*, or *shortii*.
- 3Ac1.** Leaf shape (distal) **linear-lanceolate** or **lanceolate** to **linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.
- 3Ac2.** Leaf shape (distal) **lance-ovate** to **linear-lanceolate** or **linear**, stalkless or can sometimes be slightly stalked with a winged-stalk, 18–75 × (2–)5–25 mm, you may have: *ciliolatum*.
- 3Ac3.** Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.
- 3Ac4.** Leaf shape (distal) **lanceolate** to **lance-elliptic** to **oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.
- 3Ac5.** Leaf shape (distal) **oblanceolate**, 30–80 × 6–15 mm, and bases auriculate-clasping, you may have: *novae-angliae*.
- 3Ac6.** Leaf shape (distal) **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.
- 3Ac7.** Leaf shape (distal) **lanceolate** or **linear-lanceolate** to **subulate**, 5–80 × 1–10 mm, you may have: *oolentangiense*.
- 3Ac8.** Leaf shape (distal) **oblanceolate to lanceolate**, sometimes **pandurate**, 7–90 × 2–25 mm, you may have: *prenanthoides*.
- 3Ac9.** Leaf shape (distal) **oblanceolate or lanceolate to oblong or elliptic-oblong or sometimes nearly pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.
- 3Ac10.** Leaf shape (distal) **ovate** to **lanceolate**, 8–80 × 1–40 mm, you may have: *shortii*.
- 3B.** If disc florets are **yellow** you may have: *ciliolatum*, *drummondii*, *firmum*, *laeve*, *oblongifolium*, *puniceum*, *robysianum*, or *subulatum*.
- 3Ba.** If the flower head size is 0 to 0.5 inches you may have: *robysianum* or *subulatum*.
- 3Ba1.** Leaf shape (distal) **linear-lanceolate** to **linear**, 10–110 × 1–7 mm and slightly clasping or not, you may have: *robysianum*.

3Ba2. Leaf shape (distal) **narrowly lanceolate** to **subulate** you may have: *subulatum*.

3Bb. If the flower head size is 0.5 to 1.0 inches you may have: *drummondii*, *firmum*, *laeve*, *oblongifolium*, *puniceum*, or *robysianum*.

3Bb1. Leaf shape (distal) **ovate to ovate-lanceolate** or **oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

3Bb2. Leaf shape (distal) **lanceolate to lance-elliptic to oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.

3Bb3. Leaf shape (distal) **lance-ovate or lanceolate to linear**, 7–45 × 1–14 mm, you may have: *laeve*.

3Bb4. Leaf shape (distal) **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.

3Bb5. Leaf shape (distal) **oblanceolate or lanceolate to oblong or elliptic-oblong** or sometimes nearly **pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.

3Bb6. Leaf shape (distal) **linear-lanceolate to linear**, 10–110 × 1–7 mm and slightly clasping or not, you may have: *robysianum*.

3Bc . If the flower head size is over 1.0 inches you may have: *ciliolatum*, *drummondii*, *firmum*, *laeve*, *oblongifolium*, or *puniceum*.

3Bc1. Leaf shape (distal) **lance-ovate to linear-lanceolate or linear**, stalkless or can sometimes be slightly stalked with a winged-stalk, 18–75 × (2–)5–25 mm, you may have: *ciliolatum*.

3Bc2. Leaf shape (distal) **ovate to ovate-lanceolate or oblong-lanceolate, to oblong-elliptic or linear-lanceolate**, 4–110 × 1–50 mm, you may have: *drummondii*.

3Bc3. Leaf shape (distal) **lanceolate to lance-elliptic to oblanceolate** and clasping, 40–70 × 10–25 mm, you may have: *firmum*.

3Bc4. Leaf shape (distal) **lance-ovate or lanceolate to linear**, 7–45 × 1–14 mm, you may have: *laeve*.

3Bc5. Leaf shape (distal) **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.

3Bc6. Leaf shape (distal) **oblanceolate or lanceolate to oblong or elliptic-oblong or sometimes nearly pandurate**, 8–160 × 1–40 mm and clasping, you may have: *puniceum*.

3C. If disc florets are **pink** you may have: *sericeum*.

4. If the ray florets are **pink** you may have: *boreale*, *dumosum*, *falcatum*, *lanceolatum*, *novae-angliae*, *oblongifolium*, *subulatum*, or *urophyllum*.

4A. If disc florets are **cream** or **pale yellow** you may have: *boreale*, *dumosum*, *novae-angliae*, or *urophyllum*.

4Aa. If the flower head size is 0 to 0.5 inches you may have: *dumosum*.

4Ab. If the flower head size is 0.5 to 1.0 inches you may have: *boreale*, *dumosum*, *novae-angliae*, *oblongifolium*, or *urophyllum*.

4Ab1. Leaf shape (distal) **linear-lanceolate** or **lanceolate to linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.

4Ab2. Leaf shape (distal) **oblong** or **linear-lanceolate to linear**, 2–45 × 0.5–4 mm, not stalked, you may have: *dumosum*.

4Ab3. Leaf shape (distal) **oblanceolate**, 30–80 × 6–15 mm, and bases auriculate-clasping, you may have: *novae-angliae*.

4Ab4. Leaf shape **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.

4Ab5. Leaf shape (distal) **lance-ovate** or **lanceolate to linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless you may have: *urophyllum*.

4Ac. If the flower head size is over 1.0 inches you may have: *boreale*, *novae-angliae*, or *urophyllum*.

4Ac1. Leaf shape (distal) **linear-lanceolate** or **lanceolate to linear**, (40–)60–150 × 2–6(–8) mm, not stalked, you may have: *boreale*.

4Ac2. Leaf shape (distal) **oblanceolate**, 30–80 × 6–15 mm, and bases auriculate-clasping, you may have: *novae-angliae*.

4Ac3. Leaf shape (distal) **lance-ovate or lanceolate to linear-lanceolate**, 10–100 × 1–25 mm, short-winged stalks and uppermost leaves can be stalkless, you may have: *urophyllum*.

4B. If disc florets are **yellow** you may have: *falcatum*, *lanceolatum*, *oblongifolium*, or *subulatum*.

4Ba. If the flower head size is 0 to 0.5 inches you may have: *falcatum* or *subulatum*.

4Ba1. Leaf shape (cauline) **linear oblanceolate to oblong** or (distal) **linear-oblong to linear-lanceolate**, you may have: *falcatum*.

4Ba2. Leaf shape (distal) **narrowly lanceolate to subulate** you may have: *subulatum*.

4Bb. If the flower head size is 0.5 to 1.0 inches you may have: *falcatum*, *lanceolatum*, or *oblongifolium*.

4Bb1. Leaf shape (cauline) **linear oblanceolate to oblong** or (distal) **linear-oblong to linear-lanceolate**, you may have: *falcatum*.

4Bb2. Leaf shape (distal) **oblanceolate to linear**, 30–100(–140) mm, you may have: *lanceolatum*.

4Bb3. Leaf shape **oblong**, 20–80 × 2–10(–20) mm, and crushed leaves have **aromatic odor**, you may have: *oblongifolium*.

4Bc . If the flower head size is over 1.0 inches you may have: *oblongifolium*.

References

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[Accessed 9/29/2020](#). **This is the key reference employed for leaf shapes and sizes.**

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