Barbarea orthoceras Ledeb., WINTER CRESS. Biennial herb, taprooted, rosetted, 1-stemmed at base, erect with several ascending branches, 15–60 cm tall; shoot with basal and cauline leaves, glabrous. **Stems:** conspicuously ridged and angled, to 5.5 mm diameter, with 3 ridges descending from each leaf, glossy green, internodes 10–50 mm long. **Leaves:** helically alternate, pinnately compound and pinnately lobed (basal and lower cauline leaves) having to 8 paired or alternate leaflets or lobes and simple (rarely on the uppermost cauline leaves), petiolate to sessile and clasping, without stipules; petiole of basal leaves 30–70 mm long, < blade, reduced upward, channeled, winged especially where blade base extended beyond stem; blade of pinnate basal leaves lyre-shaped, 160–180 × 35–45 mm, the terminal leaflet or lobe roundish to ovate, 35–60 × 35–40 mm, cordate with short lobes at base, entire to slightly indented or slightly wavy on margins, rounded at tip, the lateral leaflets or lobes kidney-shaped, the lobe nearest to terminal lobe ca. 20–25 × 12–15 mm decreasing to ca. 7 × 3 mm at base, minor deltate lobes often present between larger lobes or leaflets, pinnately veined with midrib slightly sunken and purplish on upper surface and principal veins slightly raised on lower surface, satiny and bright green; blade of cauline leaves lyre-shaped below to ovate above, 25–95 × 20–50 mm, clasping cordate at base, terminal segment resembling that of basal leaves or 3-lobed to oblanceolate, lateral lobes resembling those on basal leaves or somewhat larger and fewer on upper cauline leaves. **Inflorescence:** panicle of racemes, terminal, to 150 mm long, many-flowered, domed and open flowers not overtopping buds; bract subtending raceme = upper cauline leaf, sessile and clasping, reduced upward; peduncle to 50 mm long, ridged; rachis ridged; bractlets absent; pedicel ascending, at anthesis 2.5–3 × 0.8–1 mm increasing 2× in fruit, slightly flattened, with conspicuous lateral angles sometimes becoming colorless and ± winged. **Flower:** bisexual, radial, 5–6 mm across; compressed in bud; **sepals** 4, dimorphic, outer pair oblong, 3.5–4 × 1.2–1.4 mm, hooded at tip, with a subterminal, greenish protrusion (conspicuous in bud), inner pair lanceolate, 3.5–3.8 mm long, broader and cupped around edges, ± pouchlike at base, greenish yellow, membranous on margins; **petals** 4, not clawed, obovate, 3.5–5 × 1.6–2.5 mm, narrowly tapered at base, rounded to truncate at tip, whitish at base and light yellow above, with faint veins; **stamens** 6, free, dimorphic with outer 2 short and inner 4 longer; filaments ± 2 mm long (short stamens) and ± 3 mm long (long stamens), light yellow to pale green; anthers basifixed, dithecal, 0.8–1.2 × 0.3–4 mm, light yellow, longitudinally dehiscent; pollen creamy white; **nectaries** 4, between short and long filaments, tonguelike, minute, light green, producing copious nectar; **pistil** 1, 2.5–3.5 mm long, at anthesis = short stamens; ovary superior, candle-shaped, green, valves strongly 1-veined from base to tip, 2-chambered, each chamber with 1 row of 12–15 ovules; style cylindric but slightly swollen in upper part, 0.6–0.8 × 0.3–0.4 mm, darker green than valves; stigma cushion-shaped, ca. 0.4 mm diameter, inconspicuously 2-lobed. **Fruit:** siliqua (silique), dehiscent by 2 valves parallel to septum, many-seeded, ± straight, linear, 25–50 × 1 mm, with 1 row of seeds per chamber, slightly bulging from seeds, with 1 conspicuous vein per valve; beak < 1.5 mm long. **Seed:** compressed-ovoid, 1–1.1 mm long, with 1 or 2 knobs at micropyle, glossy black, not smooth but showing cellular outlines; not mucilaginous when wet. Mid-March–early June.

Native. Biennial herb occasionally encountered along certain creek beds and edges of southern oak woodland in the SMM, tending to grow in shade. *Barbarea orthoceras* is a glabrous mustard with pinnately lobed basal leaves, showy, light yellow flowers, and slender fruits. Seeds of our populations are much smaller than reported elsewhere.
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