

Bromus madritensis L. subsp. *madritensis*, MADRID BROME, COMPACT BROME. Annual, fibrous-rooted, several-many-stemmed at base, ascending (spreading when bearing many spikelet), in range to 50 cm tall; shoots with 3–4 cauline leaves, in range leaves with short hairs conspicuous to 10 cm from ground and inconspicuous on cauline leaves. **Stems (culms):** cylindric, to 2 mm diameter, glabrous, nodes often purple-red. **Leaves:** alternate distichous, simple with sheath; sheath closed for 40+ mm above node to within 7 mm of ligule, ridged with a prominent midvein and smaller lateral veins, narrowly membranous on margins of throat, of cauline leaves ± glabrous, without lobes (auricles) at top; ligule membranous, obtuse, in range 1.5–2.5 mm long, jagged-fringed on margin, glabrous; blade linear, 35–150 × 2.5–5.5 mm, the widest near the base, flat, minutely toothed on margins, parallel-veined with midrib raised on lower surface, finely pubescent. **Inflorescence:** spikelets, in terminal panicles, panicle fully exerted from leaf sheath of flag leaf, ± open, to 120 mm long, mostly with 4–5 nodes, in flower with lax and spreading lateral branches (never drooping), becoming stiffer and more ascending in fruit, with 1–2 spikelets per branch, spikelet with 6–10 florets but at least terminal floret = reduced lemma with short awn, bracteate, awned; rachis 50–70 mm long, minutely scabrous, lateral branches 1–5 per node, to 90 mm long (to tips of awns), axis below first fork wiry, 10–30 mm long, < spikelet, minutely scabrous. **Spikelet:** slightly compressed, in range mostly 40–55 mm long (including awns), not ribbed, finely pubescent, aging tinged purplish red, breaking above glumes and between florets; **glumes** 2, unequal, lanceolate, in range lower glume 9–10 mm long and generally 1-veined (sometimes 3-veined at base), upper glume 13–15 mm and 3-veined with lateral veins converging toward tip but terminating before merging with midvein, weakly keeled or ridged, with membranous margins, narrowly acuminate at tip, glabrous; **lemma** awned, lanceolate, 17–21 mm long (excluding awn), > glume, ± rounded on back, with membranous margins, 5-veined or 7-veined to midpoint, not keeled but midvein raised from near base to awn, the veins converging but not merging with midvein, finely pubescent with evenly spaced upward pointing hairs and minutely scabrous along veins and on margins, lacking pilose hairs, tip deeply 2-toothed and completely membranous, the teeth 1.5–3 mm long, the awn arising 3–4 mm below tip from either back, essentially straight, in range 20–25 mm long, aging purplish red and somewhat curved; **palea** narrowly elliptic, slightly > where awn arises on lemma, 2-veined, 2-keeled, folded strongly inward along veins, flat between keels, membranous with keels green and short-ciliate and scabrous, ± truncate at tip, surfaces glabrous, margins minutely toothed above midpoint, exposed membranous tissue aging purplish in fruit. **Flower:** bisexual; **perianth (lodicules)** 2, acuminate-lanceolate, 0.5–0.8 mm long, translucent, at anthesis bulbous at base becoming flat and persistent; **stamens** 2, exerted; filaments slender, 2–3 mm long, white; anthers basifixed, dithecal, 0.7–0.9 mm long, bright yellow, longitudinally dehiscent; pollen yellow; **pistil** 1; superior ovary, inversely conic and compressed, 0.6–0.7 × 0.4 mm, greenish, with a translucent, large terminal lobe, with short, ascending hairs, the lobe ± rectangular and with shallow notch at tip, ca. 0.6 × 0.5 mm, fleshy, 1-chambered with 1 ovule; styles 2, exerted sideways from palea and lemma, 1.5–2 mm long, colorless, appearing lateral from base of terminal lobe, conic at base and threadlike with many wavy lateral branches. **Fruit:** achene (caryopsis), dispersed as floret tightly enclosed within adherent palea and awned lemma + a rachilla segment or sometimes as a spikelet remaining intact with fruit-bearing florets and sterile florets,

awned dispersal unit commonly 35–40 mm long; achene narrowly ellipsoid not compressed, $9\text{--}12.5 \times 0.8\text{--}0.9 \times 0.6\text{--}0.7$ mm, grayish brown with purplish tinge, deeply longitudinally grooved on side facing palea, with whitish flap to 0.8 mm long and tuft of short hairs on tip; lemma with scabrous veins with midvein raised from base to tip, surface mostly reddish purple, scabrous, and scarios; palea short-ciliate along keels also with short teeth, scarios, trapped within groove of achene, surfaces appearing glabrous; rachilla segment appressed, flattened front-to-back, 1.9–3.1 mm long, scabrous on exposed side and glabrous on flat side. Early May–mid-June.

Naturalized. Annual known from several locations in range in disturbed grassy patches, usually in shady situations with moist soil in late spring, but likely more common because not familiar to many people. *Bromus madritensis* subsp. *madritensis*, like subsp. *rubens*, exhibits the reddish purple coloration of spikelets before fruits are mature, but Madrid brome has more spreading spikelets on longer branches, in which the axes are clearly visible. Many authors treat these two subspecies instead as distinct species, and it is noteworthy that Madrid brome only begins to flower in range after the typical red brome has already set fruits, so that in range they are structurally and temporally distinct, although obviously closely related.

B. A. Prigge & A. C. Gibson