

Hirschfeldia Moench

Hirschfeldia incana (L.) Lagrèze-Fossat, SUMMER MUSTARD. Perennial herb (annual), taprooted, rosetted, 1–several-stemmed at base, fork-branched in inflorescence, ascending to erect, in range 8–175 cm tall; shoots with basal and cauline leaves, scabrous and hirsute to \pm short-strigose bent downward, the long hairs unbranched with bulbous bases; taproot woody, thick, to 20 mm diameter. **Stems:** cylindric to angular with many low ridges, to 15 mm diameter, with several ridges descending from each leaf, green. **Leaves:** helically alternate, pinnately lobed, often divided to midrib (basal and lower cauline leaves), upper cauline leaves unlobed and reduced, petiolate (basal leaves) to sessile (upper cauline leaves), without stipules; petiole of basal leaves channeled, to 40 mm long, reduced upward, typically hirsute (including channel), broad, sometimes with lateral ridges appressed together, channel light green becoming pinkish to purplish red; blade oblanceolate to obovate in outline (lyrate), 45–200 \times 18–80 mm (basal leaves) and 50–140 \times 20–65 mm (cauline leaves), irregularly lobed and cut, terminal lobe on large blades roundish to ovate or broadly elliptic, \gg lateral lobes, lateral lobes increasing in size base to tip, sometimes deeply cut on subterminal lobes, the lobes dentate or crenate on margins, rounded at tip, narrowly winged on midrib between lobes, pinnately veined with principal veins raised on lower surface, hirsute but more densely so on lower surface.

Inflorescence: panicle of racemes, terminal, open, = upper 1/2 of plant, many-flowered, the open flowers overtopping buds, raceme to 330 mm long and lax in fruit, with bract subtending each raceme; peduncle and lateral axes sparsely hirsute to glabrescent; bract subtending raceme leaflike (lower ones) or reduced upward, the upper ones linear to oblanceolate-linear, 12–20 \times 1.5–2 mm, short-dentate to subentire on margins, acute at tip, pinnately veined, upper surface hirsute or glabrous on small bracts; bractlet subtending pedicel absent; pedicel at anthesis 1.2–2.5 mm long increasing 2 \times in fruit, appressed in fruit. **Flower:** bisexual, radial, 6–8 mm across; **sepals** 4, free or adhering together above midpoint, slightly dimorphic, one pair tapered at base and \pm hooded at tip, the other pair slightly pouchlike at base and acute at tip, ascending to erect, elliptic-oblong to oblanceolate or lanceolate, 2.5–4.2 \times 0.7–1.4 mm, light greenish or yellowish green sometimes blushed reddish, membranous on margins and tip, sparsely villous near tip, inconspicuously several-veined; **petals** 4, clawed, obovate, 6–8(–10) \times 2–2.7(–4.5) mm; claw erect, 1.5–2 mm long, light green to pale yellow or colorless with yellowish midrib; limb spreading, in range bright yellow, pinnately veined; **stamens** 6, free, dimorphic with outer 2 short and inner 4 longer, erect, exerted; filaments 2.7–3 mm long (short stamens) and 3.5–4.5 mm long (long stamens), greenish at base becoming yellow approaching tip, glabrous; anthers dorsifixed, dithecal, oblong, 1–1.6 mm long, yellow and at anthesis with a tiny purplish red to deep purple spot at tip, longitudinally dehiscent; pollen bright yellow; **nectaries** 4, alternate with and outside long stamens, the larger 2 nectaries subtended by short stamens and \pm kidney-shaped, the others conic or dotlike, dark green; **pistil** 1, 3–4.5 mm long, = length of long stamens; ovary superior, somewhat 4-sided, light green, glabrous or with some scattered hairs below midpoint, 2-chambered, each chamber with 4–6 ovules in a single row but from 2 marginal placentae, with septum parallel to valves; style straight, at anthesis 1.5–2.5 mm long (becoming beak); stigma capitate, unlobed, greenish or light yellow, papillate. **Fruit:** siliqua (silique), dehiscent by 2 valves, 6–15-

seeded (frequently 1 seed enclosed in beak), straight-subcylindric, 8–17 mm long (including beak), straw-colored, glabrous, with lateral veins inconspicuous on valve; beak 3–6 mm long, somewhat swollen by seed, 8–10-ridged, abscising when fruit dehisces, edge at base archlike. **Seed:** ± obovoid to oblanceoloid or oblong (seed within beak), 0.8–1 × 0.4–0.7 mm, red-brown, with concave cells and cell margins forming a netlike pattern; mucilaginous when wetted. January–December.

Naturalized. Perennial herb very common and thoroughly naturalized throughout the range in disturbed habitats or mixed with natives. *Hirschfeldia incana* was formerly known as *Brassica geniculata*, and in the future the generic status of this species needs to be reassessed. Summer mustard forms rosettes and may be found in flower somewhere in range any day of the year, whereas species of *Brassica* flower mainly during early to late spring. Like *Brassica*, this species has bright yellow flowers and a conspicuous beak on the fruit, but unlike *Brassica*, it has ridges on the fruit beak. A diagnostic character is that in bud and at anthesis in *Hirschfeldia* each anther possesses a deep purple spot at the tip, a character not observed in any other yellow mustard in range.

B. A. Prigge & A. C. Gibson