

Raphanus L. RADISH

Raphanus sativus L., WILD RADISH. Annual, thick-taprooted, rosetted, several-stemmed at base, typically fork-branched at each node, in range 30–140 cm tall; shoots with basal leaves and cauline leaves, hispid-hirsute to \pm strigose or aging scabrous, with hairs scattered over most of plant but dense at growing tips, the hairs unbranched and enlarged to bulbous at base, with the largest hairs persistent; taproot thick and elongated, not swollen, whitish to radish red, with strong odor of radish. **Stems:** \pm cylindric, < 20 mm diameter, weakly zigzagged, with projecting leaf bases, green, \pm glaucous, often becoming striped with dark red and having dark red rings encircling stems at nodes. **Leaves:** helically alternate, deeply pinnately lobed having broad, deep sinuses and petiolate (basal and lower cauline leaves) grading to unlobed and sessile (upper cauline leaves), without stipules; petiole channeled, crescent-shaped to subcircular in \times -section, to 40 mm long, broad at base and scaling with leaf length, green, channel pale green becoming pink-rose or pale burgundy, sparsely hirsute; blade of basal leaves oblanceolate, 100–240(–350+) \times 50–85(–125+) mm, 4–8-lobed, the rachis subcylindric, narrowly winged, flat or slightly convex between wings, sinuses \pm to midrib at base, the terminal lobe to 1/2 blade length, the lateral lobes spreading or directed backward, typically opposite to subopposite or sometimes alternate near base of blade, increasing in size from base to tip, shorter lobes triangular to ovate, 4–7 \times 4–6 mm, larger lobes oblong to ovate, 10–46 \times 9–35 mm, oblique at base with leading half broadly attached to rachis and trailing half heart-shaped, entire or remotely dentate on margins, rounded or obtuse at tip, terminal lobe wide-ovate to round, shallowly crenate to dentate on margins, weakly sublobed or not, truncate to broadly tapered and sometimes oblique at base, pinnately veined with principal veins conspicuously raised on lower surface, upper surface sparsely hirsute; blade of upper cauline leaves ovate to elliptic, decreasing to 40 \times 10–20 mm, crenate to dentate on margins, pinnately veined. **Inflorescence:** panicle of racemes, terminal, open, many-flowered, racemes initially 25–35 mm long increasing to 120–435 mm long in fruit, \pm flat-topped with several open flowers overtopping buds, bracteate, glabrous; bract subtending each raceme leaflike, unlobed, ca. 40 \times 10 mm, decreasing upward; bractlets absent; pedicel at anthesis ascending and 5–12 mm long increasing 1.5 \times and sometimes spreading in fruit, glabrous, slightly glaucous. **Flower:** bisexual, radial, 15–21 mm across, light yellowish in bud; **sepals** 4, erect, \pm dimorphic, narrowly lanceolate, outer 2 sepals oblong, 7.5–8.2 \times 1.7–2.4 mm, pouchlike at base, 5-veined, inner 2 sepals narrower, 7.1–8.1 \times 1.4–1.6 mm, 3-veined below and 5-veined above midpoint, hooded at tip, light green to yellowish green with narrowly membranous margins, with 0–several bristlelike hairs above midpoint; **petals** 4, conspicuously long-clawed with limb spreading at a right angle, oblanceolate to spatulate, 13–17.3 mm long; claw erect, narrowly wedge-shaped, 6–10 mm long, slightly > sepal length, white, 1-veined, flat on outer surface and with raised midrib on inner surface; limb obovate, 6.3–9 \times 4.7–6.4 mm, white or reddish purple from tip backward fading to white below midpoint, pinnately veined, the veins conspicuous, dark purple or green fading to pale yellow or whitish, terminating in open ends or closed loops; **stamens** 6, free, dimorphic, outer 2 short and inner 4 longer, inner stamens with anthers exerted; filaments 4.6–6.5 mm long (short stamens) and 6.9–9.5 mm long (long stamens), mostly whitish to pale green, green at base and below anther, with green to dark purplish

gray veins, \pm visible on inner surface; anthers basifixed, dithecal, 2.3–3 mm long, light yellow, narrowly arrow-shaped at base, acute at tip, longitudinally dehiscent, with large colorless cells on outer face of connective; pollen light yellow; **nectaries** 4, 2 broad and typically 2 narrow, each broad nectary outside base of short stamen, \pm quadrate (sometimes \pm triangular or trapezoidal) to corn kernel-like, $0.4 \times 0.4 \times 0.2$ mm, each narrow nectary alternate with a pair of long stamens, peglike or tongue-shaped to ovoid compressed side-to-side, ca. 0.4 mm long, green; **pistil** 1, at anthesis 6–8.5 mm long, with a weakly differentiated base below ovary, glabrous; base < 1.2 mm long; ovary superior, cylindrical, greenish white, sometimes striped, lacking well-defined valves, inconspicuously 2-chambered typically with < 10 green ovules; style not distinct from ovary; stigma slightly exerted to midpoint of exerted anthers, capitate, yellowish green, short-papillate. **Fruit:** siliqua (silique), short-stalked and beaked, 1–9-seeded, indehiscent and not breaking between seeds, lanceoloid with narrowly conic beak, $12\text{--}61 \times 6\text{--}8$ mm, tannish brown, slightly distorted and bulging from seeds but not constricted between seeds, hard, each seed tightly enclosed within spheroidal cavity surrounded by hard wall; stalk seedless, $1.5\text{--}2.5 \times 1.7\text{--}3.2$ mm, beak 3–20 mm long. **Seed:** subspheroid, $3.8\text{--}4.4 \times 2.8\text{--}3.3$ mm, lacking margins, cinnamon brown to golden buff, faintly netlike, germinating from within seed chamber. Early December–late July.

Naturalized. Weedy annual well-established close to the coast in vacant lots and disturbed habitats but occurring elsewhere and to be expected in any disturbed inland habitat.

Raphanus sativus is the traditional scientific name for the plant, but which apparently arose in Europe via hybrid origin of two mustard species (*Brassica*), and there the interspecific hybrid was adopted to cultivation for its piquant, edible root. Taxonomically, therefore, this genus probably should be submerged into *Brassica*, to make that genus monophyletic. Wild radish typically has reddish purple flowers, in various shades, but often there are also white-flowered individuals within the population.

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