

Tropaeolum L. NASTURTIIUM

Tropaeolum majus L., GARDEN NASTURTIIUM. Annual (perennial herb), taprooted, ascending-rossetted, 1–several-stemmed at base, decumbent and vinelike or sprawling, in range to 40 cm tall; shoots with ascending leaves and twining petioles and peduncles, puberulent becoming glabrate. **Stems:** cylindrical, to 10 mm diameter (not widest at the base), thick and \pm zigzagged, \pm fleshy, light green, often etiolated and also reddish at plant base, glabrous. **Leaves:** helically alternate, simple, petiolate to long-petiolate, without stipules; petiole sometimes twining around surrounding plant structures, cylindrical, to 530 mm long; blade shieldlike (peltate, with petiole eccentrically attached to lower surface), somewhat kidney-shaped to round, 20–130 mm long, entire to shallowly lobed on margin, palmately veined with 8–10 radiating principal veins somewhat raised on lower surface, puberulent with short, mostly erect hairs. **Inflorescence:** flowers solitary, axillary on long peduncle, lacking bracts; peduncle (pedicel) to 220 mm long, sometimes twining, puberulent becoming glabrate. **Flower:** bisexual, bilateral, 30–60 mm across, showy and spurred, perianth lobes orange to red-orange or yellow with dark veins converging on center; receptacle spreading, 1–1.5 mm long; sepals 5 (appearing fused at base), dimorphic with 2 lower and 3 upper; lower sepals free, triangular-lanceolate, 8–14 \times 2–4 mm, yellowish to yellowish green, green near tip, conspicuously veined; upper sepals united basally into a nectar spur, the lobes of lateral sepals triangular, 9–13 \times 4–6.5 mm, yellowish with 3–5 dark reddish veins and an irregular dark reddish line at orifice of spur, the lobe of central sepal narrowly triangular, 7–12 \times 2–5.5 mm, greenish yellow and without markings or with 2–4 dark reddish veins; **nectar spur** directed backward, 15–34 mm long, with 3 dark reddish veins inside of upper surface below orifice; **petals** 5, dimorphic, 3 lower and 2 upper, typically reddish orange (yellow); lower petals roundish and clawed, 27–32 \times 13–17 mm, the claw \pm 13 mm long, inrolled approaching limb, with long-fringed projections at top of claw and base of blade, the projections linear-lanceolate, 3–6.5 \times 0.2–0.7 mm, bright orange to yellow-orange, \pm flattened, finely papillate, commonly yellow-orange to dark red at hairlike tip; upper petals each attached between upper and lateral sepal and partially fused to lateral sepal, obovate to spatulate or long wedge-shaped, 27–34 \times 9–20 mm, tapered at base, rounded at tip, with \pm 7 dark reddish veins converging at base; **stamens** 8, some free and others fused to perianth tube; filaments unequal, \pm S-shaped to arching and then hooked below anther, 8–12 mm long, orange (yellow for yellow forms), abruptly constricted into narrow, whitish tip; anthers basifixed, dithecal, unequal, 1.5–3.5 mm long, orange, longitudinally dehiscent; pollen orange or yellow; **pistil** 1; ovary superior, deeply 3-lobed, 3–3.5 mm wide, ivory, conspicuously ridged, 3-chambered, each chamber with 1 ovule attached to central axis at the top; style stout and curved, to 8 mm long, white becoming yellow-orange (yellow), glabrous, 2-branched, the branches unequal and stigmatic at tips. **Fruit:** schizocarp of 3 hard mericarps with fleshy wall, deeply 3-lobed, to 25 mm wide, white to pale green, each mericarp seashell-like and with 5 longitudinal ridges and some cross wrinkles. **Seed:** ovoid, ca. 9.5 \times 7 mm, tannish to light orange-brown, \pm beaked at tip by short, reflexed funiculus. Late November–early July (September in cultivation).

Naturalized. An herbaceous garden plant with distinctive, showy flowers escaped into roadside habitats, especially along the coastline, but also fully naturalized, especially along moist coastal slopes and canyons. *Tropaeolum majus* has off-center, peltate leaves, and its reddish orange to yellow flowers have a long nectar-producing spur composed of three sepals.

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