

Plantago L. PLANTAIN

Plantago lanceolata L., ENGLISH PLANTAIN. Perennial herb (annual), with a caudex and \pm diffuse-rooted, rosetted (= multiple shoots), acaulous, several–many-stemmed at base, scapose, 20–80 (–118) cm tall; gynomonoecious (gynodioecious); shoots with only basal leaves, silky-hairy to nearly glabrous. **Stems:** = scapelike peduncles, at plant base where leaves attached. **Leaves:** helically alternate, simple, petiolate to sessile, without stipules; petiole 0–145 mm long, indistinct from blade, U-shaped in \times -section, 5-veined or 7(9)-veined, aging purplish, tough and difficult to tear, base flared with membranous margins, with silky hairs to 10 mm long; blade \pm elliptic to oblanceolate or lanceolate, 100–250(–550) \times 20–80(–115) mm, long-tapered at base, \pm entire but remotely toothed having blunt teeth on margins, acute at tip, conspicuously parallel-veined with 5 or 7(9) principal veins raised on lower surface, \pm glabrous (full sun) to conspicuously pubescent with silky hairs (shade), minor veins inconspicuously netlike. **Inflorescence:** spike, terminal, several–many per plant, compact ovoid-conic aging cylindric, 10–80 \times 10–12 mm, with 100s of flowers, bracteate, glabrous (sparsely villous); peduncle to 750(–1130) \times 1.5–2.5(–4) mm, green, very tough and eventually wiry, 5–8 ridged, with appressed, upward-pointing white hairs, hollow; bractlet subtending flower cupped-obovate to broadly cupped-ovate, in range 2.6–3 \times 1.7–2 mm, broadly tapered and broadly attached at base, entire, acuminate at tip, scarious except narrowly green and herbaceous along most of midrib, glabrous (sparsely villous), with a small brownish dot at top of herbaceous part of midrib. **Flower:** bisexual (also pistillate), radial, 4 mm long + long-exserted style and stamens, strongly protogynous; **sepals** 4 appearing as 3 with 2 sepals fused to form 1 outer sepal, scarious, dimorphic, persistent around fruit; outer sepal ovate to fan-shaped, 2–2.4 \times 1.5–2.2 mm, rounded to long-tapered at base, truncate, weakly 2-toothed or 2-notched at tip above 2 veins, glabrous or with several fine villous hairs near end of each vein, narrowly herbaceous along each vein; lateral sepals typically ovate, 2.1–2.2 mm long, slightly asymmetrically folded lengthwise and \pm keeled above midpoint, 1-veined, villous-ciliate along vein approaching tip; **corolla** 4-lobed, rotate to strongly reflexed when anthers exerted, translucent and scarious, persistent; tube + throat narrowly urn-shaped, 2.5–3 mm long, neatly abscising around circumference as ovary matures; lobes ovate, 1.4–1.8 \times 0.8–1.3 mm, light reddish brown to orangish on swollen midvein at base and intruding into throat, slightly cupped, acute to acuminate at tip; **stamens** 4, alternate with corolla lobes, fused to corolla tube ca. 0.5 mm from base, strongly exerted; filaments folded in bud but unfolding and becoming in range 4.5–5 mm long, colorless; anthers dorsifixed near base of connective, dithecal, narrowly triangular prior to dehiscence becoming broadly heart-shaped to \pm oblong after dehiscence, ca. 2 \times 0.5–1.1 mm, cordate at base, with a sterile, greenish appendage at tip, light yellow with greenish connective, longitudinally dehiscent; pollen light yellow to colorless; **pistil** 1, 3–5 mm long; ovary superior, \pm spheroid slightly compressed, ca. 0.7 mm long, 2-chambered, each chamber with 1 ovule; style exerted days before stamens become exerted, 2.3–4 mm long, reddish brown to brown, stigmatic and short-hairy along most of style, the basal 0.3–0.5 mm thicker, greenish, and glabrous. **Fruit:** capsule, dehiscent around fruit 0.8–1.3 mm above base (circumscissile), 2-seeded, ellipsoid to oblongoid, 2.5–3.5 \times 1.5–2 mm, pale tan; lower portion of fruit persistent. **Seed:** \pm hemi-ellipsoid to hemi-oblongoid, 1.8–3 \times 1–1.5 mm, shiny brown to coppery

brown (black), convex on outer side and concave on inner side, thickly margined on tips and lateral edges of concavity; ± transparent with pale, linear embryo visible through surface (especially from convex surface), mucilaginous when wet. Late January–early October.

Naturalized. Perennial herb common throughout the range in ruderal locations, especially on margins of wetlands and along roadsides and ditches where water collects. *Plantago lanceolata* forms a dense basal rosette using basal leaves from the several to many shoots arising on a caudex. These leaves have parallel venation. The plant is scapose, having a very long peduncle relative to the size of the terminal spike; in very robust plants the peduncle may be a meter in length. Flowers of English plantain are wind pollinated and strongly protogynous, wherein the basal flowers have exerted, receptive stigmas days before the same flowers unfurl their stamens. Fruits dehisce neatly around the capsule above the base (circumscissile dehiscence) so that the top falls as a cap to reveal the two seeds that fill the two chambers. Seed set is essentially 100%, helping to make this a very successful weed.

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