

Epipactis Zinn HELLEBORINE

Epipactis gigantea Hooker, STREAM ORCHID, CHATTERBOX. Perennial herb, colonial, rhizomatous, fibrous-rooted, typically 1-stemmed at base (occasionally branched at ground level or belowground), erect to ascending, in range 30–110 cm tall; shoots with below-ground and above-ground cauline leaves, the below-ground shoot whitish, with much-reduced, appressed-deltate leaf blades, essentially glabrous to sparsely puberulent; rhizomes horizontal, shallow or deep-seated, cylindrical, 5+ mm diameter, whitish, with very thin leaf sheaths that easily disintegrate; adventitious roots \pm 1.5 mm diameter, whitish. **Stems:** cylindrical, < 10 mm basal diameter, straight to sinusoidal, green, glabrous at base and sparse-hairy above. **Leaves:** alternate distichous, simple with sheath; sheath closed, 4–22 mm long; blade lanceolate to ovate (widely elliptic), (10–)70–230 \times 16–65 mm, dull, entire (irregularly bladderlike), narrowly acute to acuminate at tip, parallel-veined with major veins raised on lower surface. **Inflorescence:** leafy raceme, typically 250–400 mm long, 10–15-flowered, flowers helically alternate but inflorescence appearing somewhat 1-sided due to secondary orientation of pedicels, bracteate; peduncle length \pm to midpoint of inflorescence, ridged from veins descending from bracts, sparsely puberulent, with 0–3 bracts; bracts along peduncle leaflike but not sheathing, lanceolate, to 190 mm long; rachis ridged like peduncle, puberulent (increasingly so upward); axis never straight; bractlet subtending pedicel ascending to spreading, lanceolate (ovate), to 105 mm long, decreasing upward, slightly cupped or folded to tip; pedicel recurved and twisted 180° thus reorienting top and bottom of flower, at anthesis \pm 5 mm long increasing somewhat in fruit, conspicuously puberulent. **Flower:** bisexual, bilateral, in range 13–15 mm across at anthesis (sepals), not spurred, lightly scented, remaining open and fresh for several days; **sepals** 3, somewhat dimorphic and unequal, central sepal ascending, symmetrically ovate and boat-shaped, 12–18 \times 5.5–6.5 mm, 1–3-ridged, lateral sepals spreading, asymmetrically ovate, in range 18–24 \times 7–10 mm, greenish with purplish veins, sparsely puberulent at base, acuminate and sometimes recurved at tip, 1-ridged above center; **petals** 3, dimorphic, lateral petals ascending and curved forward, elliptic-ovate, 13–18 \times 6–9 mm, rose to rose-purple with darker veins, greenish at base and on basal margins, acute to slightly acuminate at tip, with a conspicuous midvein on outer surface; lip (labellum = 3rd petal) 14–20 mm long, pouchlike below middle, 2-lobed (unlobed) and with a hinged terminal limb, the pouch deeply concave, with strongly raised purple veins (aging darker) on inner surface, bladderlike on outer surface, with reddish purple to orange projections (at tip and on margins) on inner floor of pouch, the lobes rounded, 3–4 mm wide, purplish rose, from upper tip of pouch, the hinged limb oblong, ca. 9 \times 4 mm, rounded with inrolled margins at tip, grooved between longitudinal ridges, the ridges semicircular, erect, thick, \pm spongy, orangey with purple veins on upper face, cream-colored on outer face, the underside of hinged limb cream-colored and sometimes rose-colored near tip; **stamens** 1, fused into column with style and stigma; anther ellipsoid, 4–5.5 \times 1.5 mm, sitting on top of column, hinged, green aging darker, dehiscent inward with 1 pollinium per sac, the sacs not separated; pollinia united, composed of copious pollen, pollen light yellow, soft; **pistil** 1; ovary inferior, oblanceolate in outline, at anthesis \pm 12 mm long, twisted at base, strongly 6-ridged, green with greenish or purplish ridges, puberulent, 1-chambered with many ovules; style (part of column fused with stamen) 5–9 mm long; stigma on lower face

at tip below anther, sticky, green. **Fruit:** capsule, dehiscing by longitudinal slits in the middle while tips remaining fused to 3 narrow wall strands at both ends, 3-valved, many-seeded, reflexed, narrowly obovoid to ellipsoid, in range 26–31 mm long, 6-ribbed, valves puberulent; perianth persistent. **Seed:** narrowly lanceoloid, $1.4\text{--}1.8 \times 0.13\text{--}0.2$ mm, extremely light weight and easily airborne; seed coat translucent pale brown enclosing darker embryo near midpoint. Late April–early August.

Native. Clonal perennial herb occasionally encountered growing in small patches along creeks and in cienegas of the SMM. An orchid flower remains open for numerous days, and in *Epipactis gigantea* each shoot has open flowers for at least a month. The flower design, characteristically inverted 180 degrees and with an inferior ovary, is difficult to understand initially because the male portion is reduced to a stamen fused to the style, and there are many complexities about the floral parts related to its pollination. Fruit set in range for this species appears very high, but new colonies of this orchid are not evident.
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