

Vascular Plants of Williamson County

Aristata purpurea var. *nealleyi* – BLUE THREEAWN, NEALLEY THREEAWN [Poaceae]

Aristata purpurea Nutt. var. *nealleyi* (Vasey) Allred, BLUE THREEAWN, NEALLEY THREEAWN. Perennial herb, bunchgrass, inconspicuously rhizomed (“without rhizome”), fibrous-rooted, many-stemmed at base, cespitose and densely tufted, not branched above base, in range mostly < 30 cm tall; shoots with to 6 basal leaves and to 2 cauline leaves, the lower basal leaves with sheath > slender and soon inrolled blade, essentially glabrous but with tuft of silky hairs to 2.5 mm long at collar, not glaucous, shoot portion not scabrous to touch; rhizome horizontal and short (cespitose plant with several–many separated rhizome segments, with very short internodes, rhizome body concealed by leaf sheaths, prophylls, and cataphylls, with closely spaced shoots, cylindric, 1 mm diameter, solid, cataphylls appressed to rhizome, broadly acute, papery aging brownish; adventitious roots only several per rhizome segment, ca. 1 mm diameter, aging by core separating from cortical shell. **Stems (culms):** cylindric, to 0.4 mm diameter but the lowest cauline node sometimes swollen and pulvinuslike and to 1.2 mm diameter, if bent within 50 mm of ground (somewhat geniculate), wiry, with minute, upward-pointing teeth above the flag leaf; internodes solid. **Leaves:** alternate distichous, simple with sheath; prophyll 2-folded, open, 2-keeled, \pm 8 mm long, not pigmented, acuminate, densely short-ciliate along keels, initially domed between keels aging flat, margins to 1 mm wide; sheath open but strongly overlapping > 360° from top to base with wide membranous margins, with green veins aging whitish, inconspicuously ridged drying ridged but not fibrous, lacking lobes (auricles) at top; collar narrow, with unequal hairs; ligule a densely tufted line of short hairs, truncate, mostly 0.25(–0.50) mm long; blade linear and inrolled upward when stressed, to 110 \times 1 mm, minutely scabrous on margins, parallel-veined typically with several veins strongly raised on upper surface, upper surface puberulent along veins, lower surface with microhairs along veins and minute dots (silica bodies) in cells next to each vein. **Inflorescence:** spikelets, in a wispy, flexible terminal panicle, the panicle slender with closely appressed branches and spikelets until fruiting, in outline mostly to 200 \times 2.5–3 mm, appearing red-purple, flexible branch with to 12 spikelets not nodding or with pendent branchlets and lacking pulvinus at each node or junction, primary branches arising alternate distichous from nodes along rachis, at the base of panicle a node typically with 2 primary branches, spikelet with 1 bisexual flower, axes green and appearing scabrous along edges, awned with 3 awns from a common stalk; rachis compressed and solid with 2 minutely scabrous edges with scabrous edge continuous with keel of lower glume, branch axes appressed to rachis, slender and 3-angled, green, 1–several-forked, from a fork secondary branchlets 1.5–5 mm long. **Spikelet:** linear long-tapered from base to awn, body to 10 mm long and total awn to 34 mm long; breaking below glumes; **glumes** 2, unequal and dimorphic, lower glume keeled and folded, in range 6–7 mm long, 1 mm wide (flattened), 1-veined, at top scarcely notched at top with an awnlike tip in sinus < 0.4 mm long, purplish red with a green scabrous keel, having an oblique crease at base, membranous tissue minutely dotted (silica bodies); upper glume rounded on back with keel scarcely formed approaching tip, in range 8–10 mm long, upper glume > lower glume, short-notched at tip with an awnlike tip in sinus < 0.5 mm long, purplish red with the tip lobes colorless; callus appearing tufted to 2 dense lines of soft hairs to 1 mm long; **lemma** appearing tubular, membranous and inrolled with overlapping margins with awn at top,

body to 8 mm long and < upper glume, finely 3-veined, tinged greenish or purplish and narrow membranous margins, surface having minute teeth in lines, body tip 0.15–0.2 mm diameter junction indistinguishable from base of scabrous awn, the awn lower portion somewhat flattened and exserted from upper glume, ca. 4 mm long, initially green aging purplish red, forming a set of 3 subequal awns 15–29 mm long, ca. 0.1 mm thick, initially straight and red-purple drying brown and widely divergent; **palea** membranous, < 1.5 mm long, 2-veined folded with narrow margins with minute teeth along 2 edges. **Flower:** cleistogamous; **perianth (lodicules)** 2, oblanceolate nearly flat, ca. 0.7 × 0.2 mm, colorless, slightly thicker at top sometimes with a few short hairs on top margin; **stamens** 3, free; filaments 1.5–2 mm long, colorless; anthers dorsifixed, dithecal, ca. 1.3 mm long, glossy red-purple and light green, longitudinally dehiscent; pollen colorless; **pistil** 1, ca. 3 mm long, never exserted from lemma; ovary superior, fusiform-narrowly oblanceoloid, ca. 1 × 0.2 mm, portions greenish, 1-chambered with 1 ovule; styles forked at top of ovary with bases touchin, lower portion colorless, ca. 0.7 mm long, upper portion at level of anthers, ascending-papillate, purplish. **Fruit:** achene (caryopsis), dispersed fully enclosed in lower lemma with palea, narrowly fusiform-cylindric, to 6 mm long, tannish; awns of lemma 3 from top of awn stalk of lemma, stalk to 4 mm long and slightly twisted, awns 15–29 mm long.

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