

DENNSTAEDTIACEAE BRACKEN FAMILY

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Perennial herbs with usually branched rhizomes, these hairy in ours. ROOTS adventitious, usually branched. AERIAL STEMS absent. LEAVES narrowly or widely spaced along the rhizome, monomorphic or nearly so, the vernation circinate. BLADES variously pinnately compound, herbaceous to somewhat papery or leathery in texture, variously glabrous to hairy. VENATION free or fused along the margins, the veinlets unbranched or udichotomosly few-branched. SORI on the abaxial leaf surface, surficial, confluent, forming a line along the margins in ours. INDUSIA usually present, sometimes poorly developed, the recurved pinna margins sometimes also acting as a pseudoindusium. PARAPHYSES absent. SPORANGIA with a stalk 1–3 cells wide, with a vertical ring-like annulus, glabrous. SPORES usually 64 per sporangium, monomorphic, trilete in ours, tetrahedral-globose, usually brown. GAMETOPHYTES surficial, cordate, green, sometimes glandular, potentially bisexual. —Ca. 20 genera and 400 spp., nearly worldwide.

Pteridium Gled. ex Scop. Bracken

Colonial perennial herbs. RHIZOMES moderately stout, deep-seated, very long-creeping, densely pubescent with multicellular hairs. LEAVES widely spaced, deciduous. PETIOLES shorter than to about as long as the blade, grooved adaxially. BLADES somewhat papery or leathery, broadly deltate, 2–4 times pinnately compound. PINNAE pinnatifid, acuminate at the tip, with numerous lobes, variously pubescent. SORI forming a more or less uninterrupted submarginal line. INDUSIA of 2 types, curled pinnae margins forming pseudoindusia opposed to excurrent true indusia, these linear, often poorly developed. $X = 52$. —5 spp., nearly worldwide. (Greek for “small fern”).

The treatment here follows the recent classification of *Pteridium* to comprise 5 species, with a number of additional infraspecific taxa (Thomson et al. 2008). Many previous authors have followed Tryon’s (1941) treatment of a single species with a dozen infraspecific taxa.

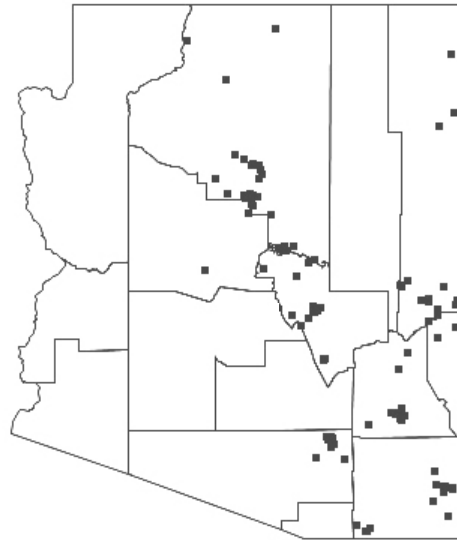
Pteridium aquilinum (L.) Kuhn (eagle-like). Bracken. —LEAVES widely spaced along the rhizome, 0.4–3.5 m long. PETIOLES straw-colored, hairy at least proximally. RACHISES similar to petioles, straw colored to green, glabrous or hairy. BLADES 15–100 cm wide, broadly deltate, mostly 3-pinnate-pinnatifid, with usually 14 or fewer main lateral pinnae, these often opposite or nearly so along the rachis, the basal few pairs of pinnae longer basiscopically than acroscopically. PINNAE 7–50 cm long, mostly 2–5 times as long as wide, the pinnules with numerous deep lobes, sparsely to densely hairy, at least abaxially (Fig. 2A). LOBES with the margins entire or inconspicuously crenulate. PSEUDOINDUSIA differentiated from the rest of the blade, pale or whitened, glabrous or hairy. SPORES 25–40 μm long, the surface finely granulate, dark brown. $2n = 104$. —Nearly worldwide.

Bracken is found on every continent except Antarctica and generally is considered one of the world's worst weeds, which render range land unsuitable for grazing. Toxins contained in the leaves inhibit the growth of other plant species, and the species has been shown to interfere with the regeneration of trees and shrubs following fires or logging in the western United States. Although the developing fiddleheads have been harvested for human consumption, the leaves also contain a number of nerve toxins, as well as carcinogenic and mutagenic compounds, that are poisonous to both livestock and humans when ingested.

Subsp. ***pubescens*** (Underw.) J.A. Thomson, Mickel & Mehlreter (hairy). Western Bracken (Fig. 2B). —PINNULES positioned nearly 90 degrees from the costa, both surfaces moderately to densely pubescent with lax contorted hairs, the adaxial surface usually glabrescent at maturity. PSEUDOINDUSIA hairy on the surface and margin. —Montane woodlands and forests, especially pine forests, occasionally stream banks, open lava, or roadsides: Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Yavapai cos (Fig. 1); 1180–2900 m (3900–9500 ft); w U.S. east to MT and TX, w Can., nw Mex.

LITERATURE CITED

- THOMSON, J.A. 2000. New perspectives on taxonomic relationships in *Pteridium*. Pp. 15–34. In: J.A. Taylor and R.T. Smith (eds.). *Bracken Fern: Toxicity, Biology and Control*. International Bracken Group, Aberystwyth.
- THOMSON, J.A., J.T. MICKEL and K. MEHLRETER. 2008. Taxonomic status and relationships of bracken ferns (*Pteridium*: Dennstaedtiaceae) of Laurasian affinity in Central and North America. *Botanical Journal of the Linnean Society* 157: 1–17.
- TRYON, R.M. 1941. Revision of the genus *Pteridium*. *Contributions of the Gray Herbarium Of Harvard University* 134: 1–70 [reprint from *Rhodora* 43, 1941].



Dennstaedtiaceae Figure 1. Distribution of: *Pteridium aquilinum* subsp. *pubescens*.



Dennstaedtiaceae Figure 2. *Pteridium aquilinum* subsp. *pubescens*: (A) pinnae; (B) crozier.