

## A COMMENTARY ON *CHEILANTHES LANOSA* (PTERIDACEAE) IN TEXAS

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### ABSTRACT

Based on a historical collection (1925) from McLennan County, Texas, by E.T. Wherry, *Cheilanthes lanosa* (Pteridaceae) is substantiated as a natural member of the flora of the state. A review of the published accounts of the species in Texas is also included.

**KEY WORDS:** *Cheilanthes*, Pteridaceae, Texas, E.T. Wherry

*Cheilanthes lanosa* (Michx.) D.C. Eaton (Pteridaceae) has been long recognized as a component of the Texas flora (Eaton 1859; Bush 1903; Cory and Parks 1937; Correll 1949, 1956, and others). Treatments of the species for Texas by Diggs et al. (1999, 2006), however, have questioned whether the species is actually a part of the Texas flora, especially as its primary range is more northern and eastern. The major centers of distribution are concentrated in the Appalachian and Ozark highlands of the United States (USDA, NRCS 2011). The present paper, through literature review and a search for a supporting specimens, resolves this question.

The accounts of *Cheilanthes lanosa* in Texas began with Eaton (1859) in the Report on the United States and Mexican Boundary Survey, where the new combination *C. lanosa* was proposed for the plant originally known as *Nephrodium lanosum* Michx. The listing of this species in Texas was based upon [Charles]Wright s.n. collected "Along the Rio Grande."

Reverchon (1903) included the names of 51 ferns and 15 fern allies in his checklist of the fern flora of Texas. Neither *Cheilanthes lanosa* nor its synonyms, *Nephrodium lanosum* Michx. and *Cheilanthes vestita* Sw., were included.

Bush (1903) included *Cheilanthes lanosa* in his list of ferns of Texas (p. 351). He stated that "No specimen of this species has been seen from Texas, and it is included on the authority of Britton & Brown's [1896] Illustrated Flora." Lucien M. Underwood (1896), who contributed the treatment of the pteridophytes in that work, did not indicate the basis for including Texas as part of the distribution of the species.

In a Catalogue of the Flora of the State of Texas, Cory and Parks (1937) cited *Cheilanthes lanosa* as occurring in two of the then recognized plant areas (ecoregions) of Texas (see map on page 2). One is area 7, described as Plains Country, which consisted of the areas now delineated as the Rolling Plains (area 8) and the High Plains (area 9) in Gould (1962, 1969). The second is area 4, cited as the Blackland Prairie. Cory and Park's area 4 consisted of the areas in Gould (1962, 1969) recognized as the Post Oak Savannah, the Blackland Prairies, and Cross Timbers and Prairies, where they are numbered as areas 3, 4, and 5, respectively. The source (specimen or reference) for the inclusion in either area was not given and the report by Cory and Parks must be considered unsubstantiated.

In 1949, Correll cited the distribution of *Cheilanthes lanosa* as "McLennan County. Only one locality known for Texas," thus refuting the Eaton (1859) record. Later, Correll (1956), in *Ferns and Fern Allies of Texas*, presented partial data of the now sole Texas record as "McLennan Co., Harrison, E.T. Wherry s.n." Neither the date of collection nor herbarium where the specimen is accessioned was included. [In this work, dates and herbaria are not included as part of the listings of essicacatae. A list of herbaria consulted is on page 16, which also includes a statement that the treatment is based upon these materials (i.e., the specimens cited).] Correll (1956) provided adequate documentation of the collection of the species within the state, which carried the "force of authority." Since then, and doubtless based upon Correll (1956), *C. lanosa* has been included as part of the vascular flora of the state (Correll & Johnston 1970; Hatch et al. 1990; Johnston 1990; Turner et al 2003; etc.). The species was also treated as occurring in Texas by Windham and Rabe (1993), where it is mapped as distributed in the northeast part of the state, rather than the disjunct location in McLennan County of east-central Texas.

Recent treatments of *Cheilanthes lanosa* for the state by Diggs et al. (1999, 2006) raised "the possibility that the species is not part of the TX flora." The idea seems to have resulted from the lack of a reference and/or adequate citation of a specimen in Cory and Parks (1937) and Correll (1949, 1956), making confirmation of the reports difficult. Additionally, failure to recognize that the collector of the specimen was Edgar Theodore Wherry may have contributed to this reasoning. Wherry, former professor of Botany at the University of Pennsylvania, was author of over 400 publications, which included such classics as the *Fern Guide* (1961) and *Southern Fern Guide* (1964). That the Wherry collection was unnumbered (as are all of Wherry's individual collections that we canvassed) and was collected barely six miles from Baylor University, led to the assumption that the specimen was in the Baylor University Herbarium (see Diggs et al., 1999, 2006). Reference to the list of herbaria consulted by Correll (1956), which does not include Baylor University, would have invalidated that assumption.

A visit to the United States National Herbarium (US) by the senior author in May, 2011, resulted in locating the Wherry specimen (Figure 1). The label on this specimen is a "stock" label with the data, other than the header "PLANTS OF TEXAS" and the binomial, written in the script of an unknown person (Wherry?). The binomial is written in the hand of William R. Maxon (fide Gregory McKee) in a pen with a broad nib. The envelope contains several additional fronds and fragments. Aside from the stamp of the U.S. National Herbarium and the accession number (1466623), the only other item on the sheet is an annotation by Donovan S. Correll, dated 1947, confirming the determination as *Cheilanthes lanosa*. This is the specimen, referred to by Correll (1949, 1956), that documents the presence of *C. lanosa* in Texas. It is also the only known record for the species in the state.

Finally, attempts to relocate the species in nature were unsuccessful. The Harrison area, which was visited several times, is a highly impacted Blackland Prairie consisting of clay soils of 1–3 % slopes. Exposed rocks, ledges, cliffs, or rocky ridges, all prime locations for *Cheilanthes lanosa*,

could not be located either by ground search or by reference to period maps or aerial photographs. The preceding, when combined with the proximate location given by Wherry, abundance of quarries from surface mining of gravel and sand, and stringent Texas trespass laws, couple to make the possibility of relocation doubtful at best.



Figure 1. *Cheilanthes lanosa* (E.T. Wherry s.n., US). Photo courtesy Gregory McKee of the United States National Herbarium.

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