

PILOSTYLES THURBERI (RAFFLESIACEAE) IN TEXAS AND NEW MEXICO

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In the course of investigations of the Genus *Pilostyles*, the authors have greatly expanded the known distribution of this interesting parasitic flowering plant.

Approximately ten collections were known for this plant in Texas when this study began in 1959. Frederick V. Coville made the first known collections in Texas on the Matador ranch, Dickens County, 14 June 1894 (no. 1860) and between Big Spring and Dorwood ranch, Texas, 19 June 1904 (no. 1891). (Coville started a new series of collection numbers each year). These collections were the basis for *Pilostyles covillei* by J. N. Rose (Contrib. U.S. Nat. Herb. 12:263. 1909). Since these early collections, the authors and others have extended the known distribution to 34 counties in Texas with 63 collections; and New Mexico in 2 counties with 3 collections. Despite repeated efforts the plant has not been found in Oklahoma, although both of the host species of *Dalea* occur there. It seems worthwhile to publish these records primarily to encourage others to look for this interesting plant.

Variations have been observed by the authors in the growth patterns of the parasite on the two hosts. The infected plants generally exhibit slight stunting and more profuse branching than adjacent uninfected plants (Fig. 1). The host may exhibit chlorotic tendencies. The parasite occurs in longitudinal rows or dense masses at the base of the stem on *Dalea frutescens* (Fig. 3). On *Dalea formosa*, the parasite may occur in basal masses, longitudinal rows, or solitarily (Fig. 4). The parasite is found primarily on plants growing under marginal or "stress" conditions (usually exposed rocky ledges).

The individual flowers are red-purple to brown-purple in color and approximately 1-3 mm. long and 0.5-2 mm. wide (Fig. 2). The flower is unisexual and usually has four or more sepals without petals. The calyx and subtending bracts are usually white tipped.

The following list is based on specimens deposited at the herbarium of Texas Technological College unless otherwise indicated.

TEXAS COLLECTIONS

On *Dalea formosa*:

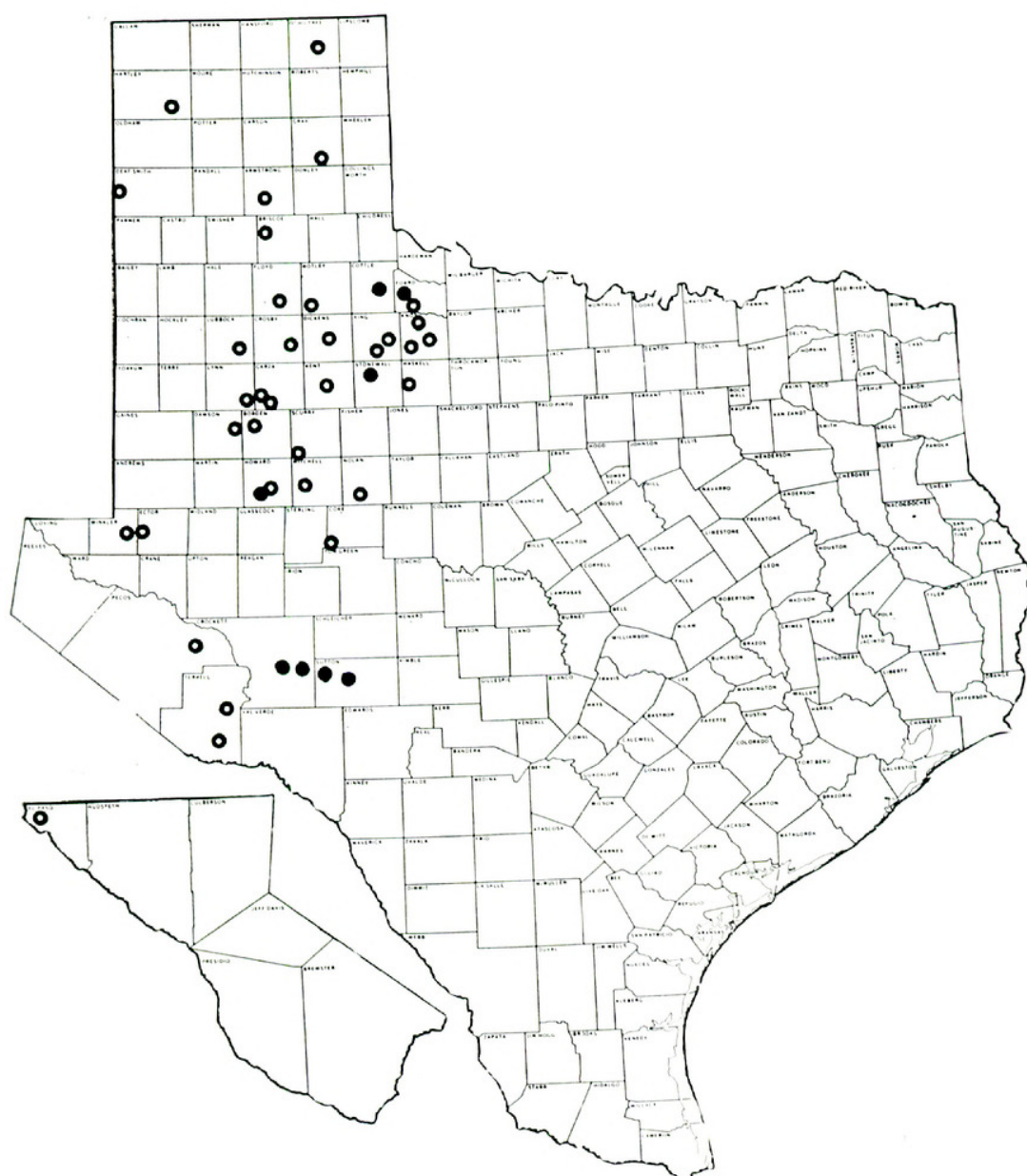
Armstrong County

Rowell 8030, 22 Nov. 1959

Rowell 8251a, 2 May 1961

Blassingame 670 & Rowell, 13 June 1966

Blassingame 671 & Rowell, 14 June 1966



Map 1. County distribution of *Pilostyles thurberi* Gray in Texas. Open circles: on *Dalea formosa*; closed circles: on *D. frutescens*.

Borden County
Briscoe County
Coke County
Crosby County
Dawson County
Deaf Smith County
Dickens County

Ector County

El Paso County
Foard County

Blossingame 688 & Stanford, 25 June 1966
Blossingame 672 & Rowell, 14 June 1966
Blossingame 653, 6 June 1966
Blossingame 680, 23 June 1966
Blossingame 690 & Stanford, 25 June 1966
Waller 1031, 3 Aug. 1966
Coville 1860, 14 June 1894 (US)
Blossingame 675, 15 June 1966
Rowell 8784, 4 June 1963
Blossingame 579, 12 June 1965
Blossingame 621, 2 June 1966
Warnock 16986 & M. C. Johnston, 25 Oct. 1958 (SRSC)
Blossingame 663, 9 June 1966

Floyd County	Rowell 8231a, 18 June 1962
	Blassingame s.n., 19 June 1964
	Blassingame 658 & Rowell, 7 June 1966
Garza County	Rowell 10168, 7 June 1964
	Hutchins 1226 & Blassingame, 16 June 1966
	Hutchins 1227 & Blassingame, 16 June 1966
Gray County	Rowell 10152, 28 May 1964
Hartley County	Blassingame 678 & Rowell, 19 June 1966
Haskell County	Blassingame 666, 10 June 1966
Howard County	Blassingame 656, 6 June 1966
(Howard County)?	Coville 1891, 19 June 1904
Kent County	Blassingame 676, 15 June 1966
King County	Blassingame 681, 23 June 1966
Knox County	Blassingame 664, 9 June 1966
	Blassingame 665, 9 June 1966
	Blassingame 682, 23 June 1966
Lubbock County	Myrick s.n. & Rowell, 4 June 1960
	Blassingame 659 & Rowell, 7 June 1966
Lynn County	Blassingame 687 & Stanford, 28 June 1966
Mitchell County	Blassingame 668, 11 June 1966
Motley County	Blassingame 686, 26 June 1966
Nolan County	Blassingame 667, 10 June 1966
Ochiltree County	Rowell 10373, 5 June 1964
Pecos County	Warnock 17315 & M. C. Johnston, 1 Nov. 1958 (SRSC)
Scurry County	Blassingame 669, 11 June 1966
Terrell County	Warnock 17237 & M. C. Johnston, 1 Nov. 1958 (SRSC)
	Rowell 8252, 6 Aug. 1962
	Blassingame 639, 5 June 1966
	Blassingame 640, 5 June 1966
Winkler County	Rowell 8306, 6 May 1962
	Rowell 8566, 5 May 1963

On *Dalea frutescens*:

Cottle County	Blassingame 661, 9 June 1966
Crockett County	M. C. Johnston 3261, 10 Sept. 1958
	M. C. Johnston 3265, 10 Sept. 1958
	Rowell 8253, 6 Aug. 1962
	Blassingame 647, 5 June 1966
	Blassingame 648, 5 June 1966
	Blassingame 650, 5 June 1966
	Blassingame 651, 5 June 1966
Foard County	Blassingame 662, 9 June 1966
Howard County	Blassingame 657, 6 June 1966
Stonewall County	Blassingame 674, 15 June 1966
Sutton County	M. C. Johnston 3260, 10 Sept. 1958 (SRSC)
	Rowell 6000, 29 May 1959
	Rowell 8763, 3 June 1963
	Blassingame 652, 6 June 1966
(County unknown)	Lindheimer 376 (isotype of <i>D. frutescens</i>) (SMU)

NEW MEXICO COLLECTIONS

On *Dalea formosa*

Guadalupe County	Blassingame 691 & Rowell, 5 Aug. 1966
San Miguel County	Rowell 8551, 3 May 1963
	Blassingame 692 & Rowell, 7 Aug. 1966
	Blassingame 693 & Rowell, 7 Aug. 1966



Fig. 1. (upper) Habitat photograph of *Dalea formosa* with infected plant on right.

Fig. 2. (lower) Detail photograph of *Pilostyles* flowers.



Fig. 3. (upper) Photograph of *Pilostyles* on *Dalea frutescens*.

Fig. 4. (lower) Photograph of *Pilostyles* on *Dalea formosa*.



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