

## An Annotated List of the G3/T3 and Rarer Plant Taxa of Texas

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To help prioritize its conservation efforts, The Nature Conservancy of Texas is developing information about some of the rare and quasi-rare plant taxa of Texas. This list represents some of our current interests. Basic information about each taxon is provided here in the hope of stimulating interest and feedback from people in the field.

Deciding what is and what is not a rare plant species is difficult, since many factors should be taken into consideration: global distribution, availability of suitable habitat, and threats to that habitat or to the species itself, to name a few. Some of these factors, such as global distribution, are relatively easy to discern; others, such as threats, can be ascertained only after considerable field research. In the case of many or most taxa on this list, such research has not yet been conducted. For this and other reasons, the reader should not assume that this is a list of "endangered species." Although this list includes all of the Texas plant species designated by the U. S. Fish and Wildlife Service as threatened or endangered, it also includes numerous species-- hundreds, in fact-- that have no claim to such status.

In the absence of consistent information about the true status of many of these taxa, the criterion relied upon most heavily for inclusion is a simple estimate of global abundance. Taxa included on this list are those thought to be known from 100 populations or fewer world-wide. Even this seemingly cut-and-dry criterion is difficult to defend, since in most cases it is impossible, without serious research effort, to determine what constitutes one population. The reader should accept the concept of 100 populations as a simple guesstimate. Within this broad spectrum of rarity, three global ranks are recognized: G1, applied to taxa known from 1-5 populations; G2, applied to taxa known from 6-20 populations; and G3, applied to taxa known from 21-100 populations. (For subspecific taxa, i.e., varieties and subspecies, ranks T1, T2 and T3 are used in lieu of G1, G2 and G3 respectively. State ranks, e.g., S1, S2 or S3, follow similar numerical limits but indicate the number of populations known state-wide rather than globally.) Some readers may choose to call the G1 and G2 species "rare plants" and the G3 species "quasi-rare plants."

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## FERNS AND FERN ALLIES

### Isoetaceae Quillwort Family

*Isoetes lithophila* Pfeiffer. Rock quillwort. G2S2. Global range: Endemic to central Texas. State range: Central Mineral Basin (Llano Uplift) of central Texas, with records from Burnet, Gillespie, Llano and Mason counties, usually occurring in moist to wet sand and gravel in shallow vernal pools on Precambrian granite and gneiss exposures (Rowell, 1983; Walters & Wyatt, 1982). Element code: PPISO010A0.

*Isoetes piedmontana* (Pfeiffer) C. F. Reed. Piedmont quillwort. G3S1. Global range: Piedmont region of Virginia, North Carolina, South Carolina, Georgia and Alabama; disjunct in Texas (Jason Singhurst pers. comm., January 2004). State range: [Jason Singhurst will provide details.] Element code: PPISO010H0.

### Marsileaceae Water-clover Family

*Marsilea vestita* Hook. & Grev. subsp. *tenuifolia* (Engelm. ex A. Br.) D. M. Johnson. *Marsilea tenuifolia* Engelm. ex A. Br. G5T2QS2. Global range: Oklahoma and Texas. State range: Correll (1956) stated that this taxon ranged from the Blackland Prairies through the Edwards Plateau into the Plains Country, but in a more recent interpretation Johnson (1986) reported it as endemic to the Llano Uplift of central Texas, citing specimens from Burnet and Llano counties. He suggested that reports from other states to the north, e.g., Nebraska [and perhaps Oklahoma and the Texas Plains Country?], are based on narrow-leaved forms of *Marsilea vestita* var. *vestita*. Note, however, that the taxon was not recognized at any level by Johnson in his treatment for the Flora of North America (Johnson, 1993). [Should this be dropped?] Element code: PPMAR01081.

### Selaginellaceae Spikemoss Family

*Selaginella mutica* Underw. var. *limitanea* Weath. Including *Selaginella mutica* Underw. var. *texana* Weath. G4T3S3. Global range: Cochise County, Arizona; Dona Ana County, New Mexico; and west Texas south into northern Mexico (T. Reeves in Henrickson & Johnston, in prep.; Valdespino, 1993). State range: Rocky areas in the mountains of Brewster, El Paso and Jeff Davis counties (T. Reeves in Henrickson & Johnston, in prep.). Element code: PPSEL010S1.

*Selaginella viridissima* Weatherby. *Selaginella coryi* Weatherby. Green spikemoss. G2S1. Global range: Endemic to the Chihuahuan Desert, occurring in a few localities in Coahuila and west Texas (T. Reeves in Henrickson & Johnston, in prep.). State range: Known from Fern Canyon of Jeff Davis County and the Chisos Mountains of Brewster County, where it occurs on shaded or sheltered igneous rock ledges and cliffs. Element code: PPSEL011B0.

### Dryopteridaceae Woodfern Family

*Phanerophlebia umbonata* Underw. *Cyrtomium umbonatum* (Underw.) Morton. Mexican holly-fern. G3S1. Global range: Mostly in the Sierra Madre Oriental from San Luis Potosí north to Tamaulipas, Nuevo León, Coahuila and west Texas; reports from other Mexican states may be erroneous (T. Wendt in Henrickson & Johnston, in prep.). State range: Chisos and Davis mountains of Brewster and Jeff Davis counties (Correll, 1956). In Mexico the species occurs in moist sheltered areas on limestone or igneous substrates (T. Wendt in Henrickson & Johnston, in prep.). Element code: PPDY00Q020.

## CONIFERS

### Ephedraceae Jointfir Family

*Ephedra coryi* E. L. Reed. Cory's ephedra. G3S3. Global range: West Texas, with an isolated population in the San Andreas Mountains of southeastern New Mexico (Stevenson, 1993). State range: Dune areas and dry grasslands in the southern Plains County, with records from Andrews, Dawson, Gaines, Howard, Loving, Lubbock, Martin, Midland, Sterling and Winkler counties (Correll, 1966). Element code: PGEPH01030.

### Pinaceae Pine Family

*Pinus arizonica* Engelm. var. *stormiae* Martinez. Pino real. G4T3S1. Global range: Coahuila, Nuevo León, Tamaulipas and west Texas. State range: Known from a few sites in the Chisos Mountains (Powell, 1998).

## FLOWERING PLANTS

### Potamogetonaceae Pondweed Family

*Potamogeton clystocarpus* Fern. Little Aguja pondweed. G1S1. Global range: Endemic to Texas. State range: Known only from pools in Little Aguja Creek in the Davis Mountains, Jeff Davis County (Haynes, 1974; Rowell, 1983; Kennedy, 1994). Element code: PMPOT03040.

### Poaceae Grass Family

*Allolepis texana* (Vasey) Soderstrom & Decker. *Distichlis texana* (Vasey) Scribner. Texas false saltgrass. G2S1. Global range: West Texas south to Chihuahua, Coahuila, Durango and perhaps Tamaulipas. State range: Brewster, El Paso, Jeff Davis and Presidio counties, in deep silty or sandy soil (Powell, 1994), occurring in cultivated and waste meadow lands or sand flats (Silveus, 1933), perhaps locally in saline or strongly alkaline soil. Element code: PMPOA06010.

*Andropogon spadicus* Swallen. Reddish-brown bluestem. G3S1. Global range: Coahuila and west Texas. State range: Dry limestone slopes in the desert mountains of Brewster County (Johnston, 1981; Powell, 1994). Johnston (1981) noted that the resemblance of this species to *Schizachyrium scoparium* probably leads to its being ignored by collectors and thus creates an "illusion of uncommonness." Element code: PMPOA5D0J0.

*Blepharidachne bigelovii* (Wats.) Hack. Bigelow's desert-grass. G3S3. Global range: Endemic to the Chihuahuan Desert, ranging from southern Coahuila north to Texas (Henrickson & Johnston, in prep.). State range: Brewster, Culberson, El Paso, Hudspeth, Pecos, Presidio, Reeves, and Terrell counties, restricted to xeric limestone or various gypsum-influenced habitats (Henrickson & Johnston, in prep.; Powell, 1994). Element code: PMPOAOX010.

*Bothriochloa exaristata* (Nash) Henr. Awnless bluestem. G3S3. Global range: Four parishes in coastal Louisiana and eastern Texas; disjunct in Brazil and Paraguay (Gould, 1975; MacRoberts, 1989). State range: Coastal prairies on black clay in Aransas, Brazoria, Chambers, Fort Bend, Galveston Harris, Jefferson and Wharton counties (BRIT/SMU, 1999; TEX-LL, 1998). Note that information about the status of this species in South America could raise the G rank to G4 or G5. Element code: PMPOA0Z080.

*Bouteloua kayi* B. Warnock. Kay's grama. G1S1. Global range: Endemic to Trans-Pecos Texas. State range: A poorly known species, collected to date from only a few locations in Brewster County (Warnock, 1955; Powell, 1994). Element code: PMPOA100C0.

*Chloris texensis* Nash. Texas windmillgrass. G2S2. Global range: Endemic to the coastal prairies of Texas. State range: Brazoria, Chambers, Galveston, Harris, and Nueces counties, with a questionable report from Brazos County; reported from Hidalgo and Refugio counties were based on misidentified specimens of *Chloris andropogonoides*. In the Houston area, *C. texensis* occurs in relatively bare areas in coastal prairie grassland remnants on sandy to sandy loam soils. Element code: PMPOA1E0J0.

*Festuca ligulata* Swallen. Guadalupe fescue. G1S1. Global range: Texas and Coahuila. State range: Woodlands on mesic slopes and in creekbottoms above 6000 feet in the Chisos and Guadalupe Mountains, Brewster and Culberson counties (Poole, 1989). Element code: PMPOA2V0K0.

*Festuca versuta* Beal. Texas fescue. G3S2S3. Global range: Small portions of Arkansas, Oklahoma and Texas. (Note: the treatment followed by NatureServe (Feb 2004) indicates that the range of the species also includes Kansas, Nebraska and Tennessee and that the global rank is G5.) State range: Mostly on eastern edge of the Edwards Plateau, with records from Bandera, Bell, Bexar, Blanco, Fayette, Hays, Kendall, Kerr, Medina and Travis counties, occurring in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes. Element code: PMPOA2V0Y0.

*Muhlenbergia villosa* Swallen. Villous muhly. G3QS2. There has been some question about the distinctness of this species, hence its 3B federal status and its G3Q rank. However, Morden (1995) continued to recognize it as a distinct entity, albeit at the varietal level, making the new combination *Muhlenbergia villifera* A. Hitchc. var. *villosa* (Swallen) Morden. If one accepts Morden's notion, the rank would probably be G4T3S2. Global range: southern New Mexico and western Texas (Morden, 1995). State range: Trans-Pecos, western Edwards Plateau

- and southern High Plains, with records from Glasscock, Howard, Hudspeth and Presidio counties. Element code: PMPOA48341.
- Poa strictiramea* Hitchcock. *Poa involuta* Hitchc. Chisos bluegrass. G3S1. Global range: Trans-Pecos Texas, Chihuahua, Coahuila, Durango, Nuevo León and Zacatecas. State range: Grasslands on rocky igneous soils above 6000 feet in the Chisos Mountains of Brewster County. Elsewhere in its range this grass occurs in nondescript habitats at lower elevations (Soreng, 1991) and, given its broad range, might better be ranked G4. Element code: PMPOA4Z2Z0.
- Sporobolus tharpii* Hitchcock. Padre Island dropseed. G3S3. Global range: Endemic to coastal Texas. State range: Deep sandy soils of coastal dunes and the South Texas Sand Sheet, with records from Aransas, Brazoria, Calhoun, Cameron, Harris, Kenedy, Kleberg, Matagorda, San Patricio and Willacy counties (GH; TEX-LL, 1998; McAlister, 1999; Negrete et al., 1999). Element code: PMPOA5V0W0.
- Stipa curvifolia* Swallen. Guadalupe needlegrass. G3S2. Global range: Apparently endemic to the Guadalupe Mountains and adjacent ranges of southeastern New Mexico and adjacent Texas (Hatch & Bearden, 1983). State range: Culberson and Hudspeth counties. Element code: PMPOA5X0A0.
- Tridens buckleyanus* (L. H. Dewey) Nash. *Triodia buckleyana* (L. H. Dewey) Vasey. Buckley tridens. G3G4S3S4. Global range: Endemic to Texas. State range: Southern and eastern Edwards Plateau, with records from Bandera, Bexar, Hays, Kendall, Kerr, Kinney, Medina, Real, San Saba, Travis and Uvalde counties, occurring in juniper-oak woodlands on rocky limestone slopes. Element code: PMPOA65030.
- Vaseyochloa multinervosa* Hitchcock. Texasgrass. G3G4S3S4. Global range: Endemic to South Texas. State range: Grasslands and woodland margins on deep sandy soils of coastal South Texas, with records from Aransas, Atascosa, Brooks, Kenedy, Kleberg, Nueces, San Patricio and Willacy counties (TAES, 1998; TEX-LL, 1997). Element code: PMPOA6C010.
- Willkommia texana* Hitchc. var. *texana*. Texas willkommia. Global rank: G3G4T3S3. Global range: Endemic to Texas (plants of the Paraná Basin of northern Argentina are presumably all var. *stolonifera*). Texas range: Mostly in sparsely vegetated shortgrass patches within taller prairies on alkaline or saline soils on the Coastal Plain of southeast and south Texas, with records from Aransas, Brazoria, Bee, Calhoun, Cameron, Harris, Kenedy, Kleberg, Refugio and San Patricio counties (Hill, 1982; TEX-LL, 1997; US; WWF per TAMU browser, 2000). The type specimen is reportedly from Ellis County. Element code: PMPOA6G011.
- Zizania texana* Hitchcock. Texas wild-rice. G1S1. Global range: Known only from a segment of the San Marcos River in Hays County, where it is rooted in flowing water emanating from strong perennial springs. Element code: PMPOA6J020.

#### Cyperaceae Sedge Family

- Carex decomposita* Muhl. Cypress-knee sedge. G3S1. Global range: New York west to Michigan, south to Florida and Texas (Godfrey & Wooten, 1979). State range: Jasper, Liberty, Marion and Wood counties (Stanley Jones, pers. comm.), where it occurs in shallow water or on baldcypress stumps and logs in wooded ponds or swamps (Ostlie, 1990). Element code: PMCYP033K0.
- Carex lupuliformis* Sartw. False hop sedge. G3G4S1. Global range: Vermont and Quebec to Minnesota, south to Virginia, Kentucky and Texas (Gleason, 1952; Jones & Hatch, 1990); apparently rare throughout its range (Jones & Hatch, 1990). Texas range: Bowie, Brazoria, Houston and Marion counties (Jones, Jones & Wipff, 1990), where it occurs in swampy woodlands, often where water is intermittently ponded. Element code: PMCYP037T0.
- Cyperus cephalanthus* T. & H. Giant sharpstem umbrella-sedge; cryptic flatsedge. G2QS1. Global range: Louisiana and Texas. State range: Long known in Texas solely from a collection by Thomas Drummond in 1835 from the Galveston Bay area; rediscovered in Harris County in 1999 (Larry Brown, pers. comm.). In Louisiana *Cyperus cephalanthus* occurs in remnant coastal prairies in poorly to moderately drained sites (Carter & McInnis, 1993). Element code: PMCYP060D0.
- Cyperus grayioides* Mohlenbrock. Mohlenbrock's sedge. G3S3. Arkansas, Illinois, Louisiana, Missouri and Texas (Bowles et al., 1986; Bridges & Orzell, 1989; Carter & Bryson, 1991; Logan, 1994; McKenzie, 1993). State range: Deep sand and sandy loam in dry, almost barren openings in upland longleaf pine savannas, mixed pine-oak forests, and post oak woodlands, with records from Anderson, Angelina, Burleson, Colorado, Franklin, Freestone, Hardin, Henderson, Leon, Nacogdoches, Newton, Robertson, Rusk, San Augustine, Shelby, Smith, Tyler, Upshur, Van Zandt and Wood counties (Orzell, 1990; TEX-LL, 1997). Element code: PMCYP061G0.
- Cyperus onerosus* M. C. Johnston. Dune umbrellasedge. G2S2. Global range: Endemic to the Pleistocene sand sheet of Trans-Pecos Texas. State range: Monahans and Kermit sandhills of Andrews, Ward and Winkler counties,

where it occurs in moist to wet sand in depressions among active or partially stabilized sand dunes (Johnston, 1964; Carr, 1991). Element code: PMCYP062E0.

*Eleocharis austrotexana* M. C. Johnston. South Texas spikesedge. G3S3. Global range: Endemic to Texas. State range: occurring in miscellaneous wetlands at scattered locations on the coastal plain, with records from Atascosa, Cameron, Guadalupe, Kenedy, Kleberg, Matagorda, San Patricio and Wharton counties (Johnston, 1964; TEX-LL, 1997). Element code: PMCYP09050.

*Eleocharis brachycarpa* Svenson. Short-fruit spikesedge. G1SH. Global range: South Texas and Tamaulipas. State range: Known in Texas only from a specimen collected by Berlandier in 1834 "between Matamoras and Nueces." Element code: PMCYP090B0.

*Rhynchospora indianolensis* Small. Indianola beakrush. G3S3. Global range: Endemic to Texas. State range: Moist coastal prairies and drainage ditches in Aransas, Calhoun, Colorado, Goliad, Harris, Jackson, Matagorda, Refugio, San Patricio and Victoria counties (BRIT/SMU, 1999; CCM, 1998; TEX-LL, 2003; TAES, 1999; SBSC, 1999). Considered by some to be indistinct from *Rhynchospora scutellata* Griseb., a species ranging from Argentina through Central America to the West Indies (Thomas, 1992). Element code: PMCYPON130.

*Rhynchospora macra* (Clarke) Small. Large beakrush. G3S1. Global range: Coastal Plain from Georgia and Florida west to Texas (Godfrey & Wooten, 1979). State range: Angelina, Freestone, Henderson, Jasper, Leon, Newton and Robertson counties (TEX-LL; J. Singhurst, pers. comm 2004); (Gale, 1949) reported a specimen from Houston County. Found by Bridges & Orzell (1989) in ombrotropic quaking peat bogs. Element code: PMCYPON1C0.

*Schoenoplectus hallii* (Gray) S. G. Smith. *Scirpus hallii* Gray; *Scirpus supinus* L. var. *hallii* (Gray) Gray. Hall's baby bulrush. G2S1. Global range: Known from numerous states in the eastern half of the United States. NatureServe (October 2003) reported the species from Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Missouri, Nebraska, Ohio, Oklahoma, South Carolina and Wisconsin. PLANTS database (October 2003) added Alabama and Georgia. State range: Recently discovered on mudflat around ponds in Wise County, where it occurred with *Eleocharis coloradoensis* and *Pilularia americana* (Bob O'Kennon, pers. comm., October 2003). Element code: PMCYP0Q0R0.

#### Xyridaceae Yellow-eyed Grass Family

*Xyris chapmanii* Bridges & Orzell. Placed in synonymy under *X. scabrifolia* by Kral in his treatment for the Flora of North America yet still recognized by many botanists. Chapman's yellow-eyed grass. G2S2. Global range: deep muck seepage bogs in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Texas (Bridges & Orzell, 1990; Edwin Bridges pers. comm., 2003). State range: Freestone, Henderson, Leon, Van Zandt and Wood counties (Bridges & Orzell, 1990; Jason Singhurst pers. comm., Jan 2004). Element code: PMXYR010T0.

*Xyris drummondii* Malme. Drummond's yellow-eyed grass. G3S2. Global range: Gulf Coastal Plain of southern Alabama, northwestern Florida, southeastern Georgia, Louisiana, southern Mississippi, and eastern Texas. State range: Angelina, Jasper, Newton and Tyler counties, in wet sand or peaty sand in hillside seepage bogs. Texas sites lie exclusively over the Catahoula Formation (Orzell, 1990). Element code: PMXYR01070.

*Xyris scabrifolia* Harper. Roughleaf yellow-eyed grass. G3S2. Global range: Coastal Plain from North Carolina, Georgia and Florida west through Alabama, Mississippi and Louisiana to east Texas. State range: Angelina, Jasper, Newton and Sabine counties (Orzell, 1990; Jason Singhurst, pers. comm., 1999). Usually in wet sand and/or peat in acid seepage areas or hillside seepage bogs on the Catahoula Formation (Miocene) or near the contact of the Catahoula and the Willis Formations (Quaternary), in open areas and in partial shade of evergreen shrub thickets, often on hummocks of sphagnum moss (Bridges & Orzell, 1989). Element code: PMXYR010H0.

#### Eriocaulaceae Pipewort Family

*Eriocaulon koernickianum* Van Heurck & Muell. Arg. Smallhead pipewort. G2S1. Global range: Arkansas, Georgia, Oklahoma and Texas. State range: Anderson, Brazos, Gillespie, Henderson, Limestone and Van Zandt counties (MacRoberts & MacRoberts, 1999; MacRoberts & MacRoberts, 2002); mostly in wet acid sands of seeps and bogs, usually in areas with little other vegetative cover, within landscapes containing post oak woodlands and xeric sandhills. In Gillespie County the species occurs in sand and gravel on a seep on an exposed granite slope. Element code: PMERI01040.

*Lachnocaulon digynum* Korn. Tiny bog buttons, tiny bug-bottoms. G3S1. Global range: Gulf Coastal Plain of the southeastern United States from Florida east to Texas. State range: Jasper and Newton counties, usually among other low-growing graminoids in wet acid exposed sands or sphagnum mats of hillside seepage bogs (primarily on the Catahoula Formation), occasionally in wetland pine savannahs (Bridges, 1986; MacRoberts, 1989). Element code: PMERIO2030.

Bromeliaceae Bromeliad Family

*Tillandsia baileyi* Small. Bailey's ballmoss. G2G3S2. Global range: Texas and Tamaulipas; reports from Central America and southern Mexico were apparently based on specimens of *Tillandsia pseudobaileyi* (Gardner, 1984). State range: Brooks, Cameron, Hidalgo, Jim Wells, Kenedy, Kleberg and Willacy counties (Smith, 1944; Texas BCD, 1997), mostly in subtropical woodlands of the Lower Rio Grande Valley but also in live oak woodlands on the South Texas Sand Sheet. Element code: PMBRO09020.

Commelinaceae Spiderwort Family

*Callisia micrantha* (Torr.) Hunt. *Tradescantia micrantha* Torr. Littleflower spiderwort. G3G4S3. Global range: Southern Texas and [northern?] Mexico (Faden, 2000). State range: Lower Rio Grande Valley and South Texas Plains, where it often occurs in moist disturbed sites; specimens from Bee, Bexar, Cameron, Dewitt, Hidalgo, Jim Wells, Kenedy, Kleberg, McMullen, Nueces, Refugio, San Patricio and Zapata counties (TEX-LL, 1998; TAES, 1998). Element code: PMCOM01070.

*Tradescantia buckleyi* (I. M. Johnston) D. R. Hunt. *Setcreasea buckleyi* I. M. Johnston; *Setcreasea brevifolia* (Torr.) Schum. & Sydow. var. *buckleyi* (I. M. Johnston) Faruqi & Mehra. Buckley's spiderwort. G3S3. Global range: South Texas to northern Tamaulipas (Faruqi & Mehra, 1970; Hunt, 1975; Faden, 2000). State range: Coastal Bend of South Texas, inland to Webb County, east to Gonzales County and south to extreme northern Tamaulipas (Correll & Johnston, 1970; Hunt, 1975). In Jan 1998, TEX-LL had specimens from only Cameron and Webb counties; a 1997 specimen from Nueces County was unprocessed. Element code: PMCOM0B030.

*Tradescantia leiandra* Torr. *Setcreasea leiandra* (Torr.) Pilger, including var. *glandulosa* Correll. A spiderwort. G3S2. Global range: West Texas south to Coahuila and Nuevo León (Faden, 2000); essentially endemic to the Chihuahuan Desert Region (D. Hunt in Henrickson & Johnston, in prep.). State range: Mountain canyons in Brewster, Jeff Davis and Presidio counties (TEX-LL, 1998). Element code: PMCOM0B0C1.

*Tradescantia pedicellata* Celerier. Granite spiderwort. G2QS2. Global range: Endemic to central Texas. State range: Restricted to grasslands and early successional open areas on sand and gravel derived from granite, gneiss and similar substrates in the Llano Uplift, with records from Blanco, Burnet, Llano and Mason counties (TEX-LL, 1998). Note that Jones, Wipff & Montgomery (1997) placed this species in synonymy under *Tradescantia x diffusa* Bush, a hybrid between *Tradescantia humilis* Rose and *Tradescantia occidentalis* (Britt.) Smyth; and that Faden (2000) declared it a "most unsatisfactory species." Element code: PMCOM0B0S0.

Pontederiaceae Pickerelweed Family

*Heteranthera mexicana* Wats. *Eurystemon mexicanum* (Wats.) Alex. Mexican mud-plantain. G2G3S1. Global range: Quintana Roo, Yucatán, Coahuila, Nuevo León and Tamaulipas (Lot, Novelo y Ramirez-Garcia, 1986) north to South Texas; disjunct on the Texas Panhandle. State range: Of bimodal distribution, known from resacas and other wet areas in Cameron, Hidalgo and Nueces counties in South Texas and from the margins of playa lakes in Carson, Hockley, Swisher and an unspecified county (east of Amarillo, 27 Jul 1927, B. C. Tharp 4316) on the Texas Panhandle. Few recent collections from either part of the state. Element code: PMPON03070.

Liliaceae Lily Family  
(see also Agavaceae)

*Allium canadense* L. var. *ecristatum* (M. E. Jones) Ownbey. *Allium reticulatum* var. *ecristatum* M. E. Jones; *Allium canadense* L. subsp. *ecristatum* (M. E. Jones) Traub & Ownbey. Crestless wild-onion. G5T3S3. Global range: Endemic to Texas. State range: Poorly drained sites on sandy substrates within coastal prairies of the Coastal Bend area, with records from Goliad, Matagorda(?), Nueces(?), Refugio, San Patricio and Wilson(?) counties (Ownbey, 1950; TAES, 1999; TEX-LL, 1998); question marks indicate county record based on specimens of uncertain identity. A collection attributed to Bee County was probably taken from a site in San

- Patricio County (Ownbey, 1950). This is a poorly-understood taxon which either doesn't exist in a discrete fashion or, if so, may well be more common than collections indicate. Element code: PMLIL020F2.
- Allium elmendorffii* M. Ownbey. Elmendorf's onion. G2S2. Global range: Endemic to Texas. State range: Aransas, Atascosa, Bee, Bexar, Gonzales, Guadalupe, Kenedy, Llano, Nueces, Refugio, San Patricio and Wilson counties, where it occurs in grasslands other open habitats in deep loose sands. Element code: PMLIL020V0.
- Allium perdulce* Fraser var. *sperryi* M. Ownbey. Sperry's pink onion. G5T3S3. Global range: Endemic to west Texas. State range: Rocky slopes in Brewster, Jeff Davis, Presidio and Reeves counties (Henrickson & Johnston, in prep.); perhaps also Culberson County (files of TxCDC). Element code: PMLIL021S2.
- Cooperia jonesii* Cory. *Zephyranthes jonesii* (Cory) Traub. Jones' rainlily. G3QS3. *Cooperia jonesii*, *Cooperia smallii* and *Cooperia traubii* as a group are poorly understood and are scantily represented in Texas herbaria, perhaps because of the unpredictable and extremely ephemeral nature of their above-ground appearance. Correll & Johnston (1970) and Flagg, Smith & Flory (2002) suggested that *Cooperia jonesii* might be the result of hybridization between *Zephyranthes pulchella* and *Cooperia drummondii* (*Zephyranthes chlorosolen*). Global range: Endemic to Texas. State range: Bee, Cameron, Goliad, Nueces, Refugio, San Patricio and Victoria counties (Correll & Johnston, 1970). In Jan 1998, TEX-LL had only one specimen, from Refugio County. Element code: PMLIL0L020.
- Cooperia smallii* Alex. *Zephyranthes smallii* (Alex.) Traub. Small's rainlily. G1QS1. As with *Cooperia jonesii*, Correll & Johnston (1970) and Flagg, Smith & Flory (2002) postulated a hybrid origin for this species, with *Zephyranthes pulchella* and *Cooperia drummondii* (*Zephyranthes chlorosolen*) the putative parents. All of the species of this group merit additional study prior to conservation efforts. Global range: Endemic to Texas. State range: Known only from Cameron County, Texas. Element code: PMLIL0L040.
- Cooperia traubii* Hayward. *Zephyranthes traubii* (Hayward) Moldenke. Traub's rainlily. G3QS3. Another poorly-known, supposedly endemic *Cooperia* species that needs additional study. Global range: Endemic to Texas. State range: southeast Texas, including (at least) Aransas, Brazoria, Colorado, Galveston and Refugio counties. Element code: PMLIL0L050.
- Echeandia chandleri* (Greenm. & Thomps.) M. C. Johnston. *Anthericum torreyi* Greenm. & Thomps. Lila de los llanos. G3S3. Global range: Endemic to South Texas; to be expected in coastal northern Tamaulipas. A report from mountains of southern Coahuila (Villareal Q., 1994) may be based on another species of *Echeandia*. State range: Cameron, Kleberg and Nueces counties; occurring in nonsaline clay in coastal prairie grassland remnants and among shrubs or in unshaded openings in subtropical woodlands or shrublands; locally frequent on slightly saline clay dunes at the mouth of the Rio Grande (Poole, 1985; Carr, 1995). Element code: PMLIL2B040.
- Echeandia texensis* R. W. Cruden. Green Island echeandia. G1S1. Global range: apparently endemic to coastal South Texas. State range: a recently-described entity known only from a few sites in Cameron County, where it apparently occurs in habitat like that of *Echeandia chandleri*, i.e., among shrubs or in grassy openings in subtropical thorn shrublands on somewhat saline clay of lomas along the Gulf Coast near the mouth of the Rio Grande (Cruden 1999). Element code: PMLIL2B070.
- Schoenolirion wrightii* Sherman. *Schoenolirion texanum* (Scheele) Gray, misapplied. Texas sunnybell. G3S2. Global range: Northeastern Alabama, south-central Arkansas, Louisiana and east Texas (Louisiana Natural Heritage Program, 1995; Orzell, 1990). State range: Rocky barrens in the Post Oak region near College Station, with a few disjunct populations on the Catahoula Formation of southeast Texas (Orzell, 1990); records from Austin, Brazos, Burleson, Fayette, Grimes, Hardin, Jasper, Tyler and Walker counties. Element code: PMLIL1S030.
- Trillium pusillum* Buckl. var. *texanum* (Buckl.) Reveal & Broome. *Trillium texanum* Buckl. Texas trillium. G3T2T3S2S3. Global range: Northwest Louisiana and northeast Texas (Freeman, 1994). State range: Angelina, Cass, Cherokee, Harrison, Houston, Jasper, Marion, Nacogdoches, Panola, Rusk, Smith and Wood counties (Singhurst, 1996; BCD, 2004); a rare component of the ground layer in acid hardwood bottoms and lower slopes, often in or downslope from acid sphagnum hillside seeps. Element code: PMLIL200X0.
- Zephyranthes refugiensis* F. B. Jones. Refugio rainlily. G2G3S2S3. Global range: Endemic to Texas. State range: Goliad, Refugio and San Patricio counties, in open swales on tight sandy loam (Jones, 1961; Jones, 1977). Element code: PMLIL27090.

#### Agavaceae Agave Family

- Agave glomeruliflora* (Engelm.) Berger. *Agave chisosensis* C. H. Muller. Chisos agave, hybrid agave. G2QS2. Global range: Mountains of Trans-Pecos Texas and adjacent Coahuila. State range: Brewster, Culberson and Hudspeth counties; known from the Chisos, Glass, and Guadalupe mountains, mostly in high elevation

- grasslands or pine-oak-juniper woodlands but also on lower bajada slopes (Higgins, 1989). Element code: PMAGA01080.
- Hesperaloe funifera* (K. Koch) Trelease subsp. *funifera*. Mexican hesperaloe; samandoque (Johnston, 1944). G3T3S1. Global range: Coahuila, Nuevo León, Tamaulipas (Johnston, 1944; Henrickson & Johnston, in prep.), and one location in Texas. [Note: plants from San Luis Potosí have been segregated as subsp. *chiangii* G. D. Starr (Starr, 1997).] State range: Devils River watershed in Val Verde County, where it occurs on dry rocky limestone slopes (Butterwick & Poole, 1980). Element code: PMAGA06010.
- Hesperaloe parviflora* (Torr.) Coult. Including var. *engelmannii* (Krauskopf) Trel. *Hesperaloe engelmannii* Krauskopf. Red-flower yucca. G3S2. Global range: Texas and northern Coahuila (Henrickson & Johnston, in prep.). State range: Shrublands on dry limestone slopes in Edwards, Kinney, and Val Verde counties; specimens from Mills, Brown, San Saba and Collin counties (Diggs, Lipscomb & O'Kennon, 1999; Starr, 1997; TEX-LL, 2000) represent either disjunct populations or escapes from cultivation. Element code: PMAGA06020.
- Manfreda longiflora* (Rose) Verhoek. *Polianthes runyonii* Shinners. Runyon's huaco, St. Joseph's staff. G2S2. Global range: South Texas and northern Tamaulipas. State range: Cameron, Hidalgo, Starr and Zapata counties (with an unconfirmed reports from Jim Hogg County), often on gravelly slopes in thorn shrublands dominated by *Acacia rigidula* and on saline clay flats in low succulent shrublands dominated by *Varilla texana*. Element code: PMAGA07010.
- Manfreda sileri* Verhoek-Williams. Major Siler's huaco. G3S3. Global range: South Texas and near the Rio Grande in Tamaulipas (Verhoek, 1978). State range: Bexar, Cameron, Starr and Webb counties (Verhoek, 1978; TEX-LL, 1998), where it is rare in a variety of grasslands and shrublands on dry sites. Element code: PMAGA07030.
- Manfreda virginica* (L.) Rose subsp. *lata* (Shinners) O'Kennon. Wide-leaf false-aloe. G5T2QS2. Global range: Endemic to the Crosstimbers and Southern Tallgrass Prairie Ecoregion of North Texas and adjacent Oklahoma (Shinners, 1951; Diggs, Lipsomb & O'Kennon, 1999). State range: Grayson, Hunt, Kaufman, Parker and Tarrant counties (Diggs, Lipsomb & O'Kennon, 1999), mostly in clay Vertisols of blackland prairie sites. Element code: PMAGA07051. Note: Not recognized by Verhoek (2002) in her treatment of the genus for the Flora of North America.
- Nolina arenicola* I. M. Johnston. Sand sacahuista. G2QS2. Global range: Endemic to Trans-Pecos Texas. State range: Culberson and Hudspeth counties. Mostly on windblown Quaternary sand in dune areas east of Van Horn, but also in shrublands on steep Permian limestone slopes in the Guadalupe Mountains, where it is difficult to distinguish from *Nolina micrantha* I. M. Johnston (Poole, 1989). Element code: PMAGA08010.
- Yucca cernua* Keith. Nodding yucca. G1G2S1S2. Global range: Endemic to Texas. State range: Known from a six square kilometer area in west-central Newton County and adjacent eastern Jasper County, where it is restricted to open or partially shaded upland sites on brownish acid clays of the Redco Series (Keith, 2003). Element code: PMAGA0B150.
- Yucca necopina* Shinners. Glen Rose yucca. G1G2S1S2. Global range: Endemic to Texas. State range: Once thought to be restricted to sandy terraces of the Brazos River in Somervell County, but recently reported from Hood, Parker and Tarrant counties by Diggs, Lipsomb & O'Kennon (1999), who considered it to be the common yucca of sandy soils in the Western Cross Timbers. Karen Clary (pers. comm.) has also found the species on shallow stony soils over limestone. A lower G rank (G3?) may be more appropriate. Element code: PMAGA0B0K0.
- Yucca tenuistyla* Trel. White-rim yucca. G3S3. Global range: Endemic to Texas. State range: Southern Edwards Plateau and South Texas Plains; reported by McAlister (1999) from Matagorda Island in Calhoun County. Distribution unknown due to lack of voucher specimens. Element code: PMAGA0B0S0.

#### Orchidaceae Orchid Family

- Cypripedium kentuckiense* C. F. Reed. Treated in Correll & Johnston (1970) as *Cypripedium calceolus* L. var. *pubescens* (Willd.) Correll. Southern lady's-slipper. G3S1. Global range: Alabama, Arkansas, Georgia (S. Commack, pers. comm., 2000), Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas and Virginia (Medley, 1985; Weldy et al., 1996). State range: Cass, Harrison, Nacogdoches, Newton, Red River, Sabine, San Augustine, Shelby and Tyler counties, where it occurs in mostly deciduous forests on wooded seepage areas, stream floodplains, and mesic ravines (Liggio & Liggio, 1999; Orzell, 1990). Element code: PMORC0Q0F0.
- Epipactis gigantea* Dougl. ex Hook. Chatterbox orchid. G3S3. [Added May 2001 after re-ranking-- by whom in what state?-- from G4 to G3.] Global range: Much of western North America from southern British Columbia south

- to Baja California and Hidalgo, from the Pacific coast eastward to southwestern South Dakota and central Texas (Henrickson & Johnston, in prep.; Luer, 1975). State range: Moist soils in and along streams, mostly on the Edwards Plateau and Trans-Pecos, with records from Austin, Bandera, Blanco, Brewster, Culberson, Dallas, Edwards, Garza, Gillespie, Gonzales, Hays, Kendall, Kerr, Presidio, Real, San Saba, Sutton, Travis, Uvalde, Val Verde and Wise counties (Liggio & Liggio, 1999). Element code: PMORC11010.
- Hexalectris nitida* L. O. Williams. Glass Mountains coral-root, shining coral-root. G3S3. Global range: Central and west Texas south to Coahuila. State range: Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under *Juniperus ashei* in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain, where it has been collected from Bandera, Bell, Bexar, Blanco, Bosque, Comal, Coryell, Dallas, Hays, Kendall, Kerr, Real, Somervell, Taylor, Travis and Uvalde counties (Carr, 1995). Element code: PMORC1C020.
- Hexalectris revoluta* Correll. Chisos coral-root. G1G2S1. Global range: Texas, Arizona, Nuevo León and San Luis Potosí. State range: Brewster and Culberson counties, occurring in humus in oak groves along rocky creekbeds in mountain canyons (Luer, 1975). Element code: PMORC1C030.
- Hexalectris warnockii* Ames & Correll. Warnock's coral-root; Texas purple-spike. G2G3S2. Global range: Arizona, New Mexico, Texas south into Coahuila and Baja California Sur (Salazar Chavez, 1991). State range: Brewster, Culberson, Dallas, Gillespie, Hays, Jeff Davis, Presidio, Real, Taylor and Terrell counties; occurring in leaf litter and humus in oak-juniper woodlands in mountain canyons in the Trans-Pecos and in oak-juniper woodlands on the Edwards Plateau (Liggio & Liggio, 1999; Luer, 1975). Element code: PMORC1C050.
- Malaxis wendtii* G. Salazar. Wendt's malaxis. G2S1. Global range: Coahuila, Nuevo León and west Texas (Salazar, 1993; Liggio & Liggio, 1999). State range: known only oak-juniper-pinyon woodlands in moist canyons and north-facing slopes in the Chisos Mountains of Brewster County (Liggio & Liggio, 1999). Plants of this area were previously assigned to *M. ehrenbergii*. Element code: PMORC1R0R0.
- Platanthera chapmanii* (Small) Luer. Treated by some as *Platanthera x chapmanii* (Small) Luer [*Habenaria x chapmanii* (Small) Ames], a hybrid between *Platanthera ciliaris* (L.) Lindl. and *Platanthera cristata* (Michx.) Lindl. Chapman's orchid. G2S1. Global range: Southeastern Georgia, northern Florida and eastern Texas. State range: Restricted to wetland pine savannas in Hardin, Jefferson, Orange and southern Tyler counties (Liggio & Liggio, 1999). Element code: PMORC1Y100.
- Platanthera integra* (Nutt.) Gray ex Beck. *Habenaria integra* (Nutt.) Spreng. Golden frog arrow. G3G4S1. Global range: New Jersey south to north-central Florida, west to southeast Texas; also in middle Tennessee (Orzell, 1990). State range: Currently known only from a few bog sites in Angelina, Jasper and Newton counties, with one historical collection presumed to be from Hardin County (Bridges & Orzell, 1989; Orzell, 1990). Other ref.: Kral, 1983; Luer, 1975. Element code: PMORC1Y0C0.
- Spiranthes longilabris* Lindl. Giant spiral-orchid. G3S1. Global range: Coastal plain of southeastern US from Virginia south to Florida and west to Texas (Sheviak & Brown, 2002); also in the Virgin Islands (NatureServe Explorer, 30 July 2003). State range: Restricted to wetland pine savannas in Hardin and Newton counties (Liggio & Liggio, 1999). Element code: PMORC2B0G0.
- Spiranthes parksii* Correll. Navasota ladies'-tresses. G3S3. Global range: Endemic to Texas. State range: Mostly in the post oak belt of east central Texas, with records from Brazos, Burleson, Fayette, Freestone, Grimes, Jasper, Leon, Madison, Milam, Robertson and Washington counties (Texas BCD, 1997); somewhat disjunct in the Catahoula Barrens of Jasper County (Bridges & Orzell, 1989; MacRoberts, MacRoberts & Evans, 1997). Element code: PMORC2B0R0.

#### Leitneriaceae Corkwood Family

- Leitneria floridana* Chapm. Corkwood. G3S1. Global range: Scattered locations on the Coastal Plain: Southern Georgia and northern Florida, extreme southeast Missouri and northeast Arkansas, east-central Arkansas, and coastal southeast Texas (Bogle, 1977; Kral, 1983). State range: Brazoria, Chambers, Fort Bend, Harris, Jefferson and Matagorda counties, where it occurs in wet or saturated silty soils along brackish or fresh water swamps and thickets (Correll & Johnston, 1970). Element code: PDLEI01010.

#### Betulaceae Birch Family

- ~*Ostrya chisoensis* Correll. Big Bend hop-hornbeam. G2S1. Global range: Chisos Mountains of Brewster County, Texas and Sierra Madera del Carmen in northern Coahuila (Henrickson & Johnston, in prep.). State range: Mixed woodlands on mesic rocky igneous slopes at high elevations in the Chisos Mountains. Note: the

trinomial *Ostrya virginiana* (Mill.) K. Koch var. *chisosensis* (Correll) Henrickson comb. nov. in ed. has not yet been published; see Furlow, 1997. Element code: PDBET05031.

#### Fagaceae Oak Family

- Quercus arkansana* Sarg. Arkansas oak. G3S1. Global range: scattered locations in southwestern Georgia, northwestern Florida, southwestern Arkansas, northwestern Louisiana and east Texas (Hunt, MacRoberts & MacRoberts, 1995). State range: Cass and Jasper counties; at the Cass County location, it occurs with *Quercus stellata*, *Q. marilandica* and *Q. incana* in a young pine plantation on deep sandy soils (Hunt, MacRoberts & MacRoberts, 1995). Element code: PDFAG05040.
- Quercus boyntonii* Beadle. Boynton's oak. G1QSH. Global range: Angelina County, Texas and Etowah County, Alabama (Muller, 1956; Vines, 1977). State range: No reports other than the historic record from Angelina County. Element code: PDFAG052F0.
- Quercus carmenensis* C. H. Muller. Sierra del Carmen oak. G2S1. Global range: Sierra del Carmen of northern Coahuila, north into Texas (Nixon, 1997). State range: SE slope of Casa Grande in the Chisos Mountains (Powell, 1998), presumably on igneous substrates; occurs on limestone in Coahuila (Nixon, 1997). Element code: PDFAG05360.
- Quercus depressipes* Trel. Mexican dwarf oak, depressed oak. G2S1. Global range: Chihuahua, Durango and Zacatecas north to Trans-Pecos Texas (Nixon, 1997). State range: Woodlands on upper slopes of Mount Livermore in the Davis Mountains of Jeff Davis County. Element code: PDFAG050B0.
- Quercus graciliformis* C. H. Muller. Chisos oak, slender oak. G1S1. Global range: Usually considered endemic to Texas (Jensen, 1997), but central BCD (1997) adds Sonora to the distribution. [I was unaware of this significant range extension and would like more information if possible.] State range: Canyons in the Chisos Mountains of Brewster County. Element code: PDFAG050S0.
- Quercus hinckleyi* C. H. Muller. Hinckley's oak. G2S2. Global range: Trans-Pecos Texas; rumors of its occurrence in Chihuahua were not substantiated in a recent treatment (Nixon, 1997). State range: arid limestone slopes in Brewster and Presidio counties, mostly in the vicinity of the Solitario and the town of Shafter. Element code: PDFAG050X0.
- Quercus robusta* C. H. Muller. Robust oak. G1QS1. Global range: Endemic to the Chisos Mountains of Brewster County, Texas, occurring in mixed evergreen-deciduous woodlands in mesic canyons. A hybrid origin is suspected (Jensen, 1997). Element code: PDFAG05300.
- Quercus tardifolia* C. H. Muller. Lateleaf oak. G1S1. Global range: Chisos Mountains of Brewster County and the Sierra del Carmen of adjacent Coahuila (Powell, 1988). State range: Mixed evergreen-deciduous woodlands in moist canyon bottoms at about 7000 feet elevation in the Chisos Mountains. Element code: PDFAG05240.

#### Ulmaceae Elm Family

- Celtis lindheimeri* Engelm. Lindheimer's hackberry; palo blanco (Vines, 1960). G3QS3? Global range: Central Texas and northern Mexico (Sherman-Broyles, Barker & Schulz, 1997); the map in Elias (1989) indicates three localities in Coahuila. State range: Reported by Sargent (1949) from the cities of San Antonio (Bexar County), New Braunfels (Comal County), San Marcos (Hays County), Goliad (Goliad County) and near Austin (Travis County); Vines (1960) added Kerrville (Kerr County) to the list of cities. In Feb 2001, TEX-LL had reliably annotated specimens from Gonzales, Live Oak, and San Patricio counties. Difficult to identify with certainty; the complete range of this species has yet to be fully elucidated. Element code: PDULM01030.

#### Loranthaceae Mistletoe Family

- Phoradendron hawksworthii* (Wiens) Wiens. *Phoradendron bolleanum* (Seem.) Eichler subsp. *hawksworthii* Wiens. Hawksworth's mistletoe. G3S3. Global range: Endemic to the Chihuahuan Desert region, ranging from southern New Mexico and west Texas south to northern Coahuila (Henrickson & Johnston, in prep.). State range: Parasitic on *Juniperus* in the mountains of the Trans-Pecos and at lower elevations on the western Edwards Plateau, with records from Brewster, Culberson, Edwards, El Paso, Hudspeth, Pecos, Presidio, Terrell and Val Verde counties (Powell, 1988; TEX-LL, Jan 2001). Element code: PDVIS02130.

#### Polygonaceae Knotweed Family

- Eriogonum correllii* Reveal. *Eriogonum jamesii* Benth. var. *flavescens* S. Wats. of Texas auth. Correll's wild-buckwheat. G3S3. Global range: Oklahoma and Texas (McGregor et al., 1986). State range: Rolling Plains of Armstrong, Briscoe, Floyd, Hardeman and Oldham counties (Reveal, 1968; TEX-LL, 1998), where it occurs on sparsely vegetated gypsum and other rock outcrops. Element code: PDPGN081D0.
- Eriogonum greggii* T. & G. Gregg's wild-buckwheat. G2S1. Global range: Texas, Coahuila and Nuevo León. State range: Hidalgo and Starr counties, occurring in sparse grasslands and low shrublands on shallow sandy soils over caliche. Element code: PDPGN082L0.
- Eriogonum hemipterum* (T. & G.) Stokes var. *hemipterum*. Chisos wild-buckwheat. G4T3S2. Global range: Mountains of extreme southern Trans-Pecos Texas and at the north end of the Sierra del Carmen in adjacent Coahuila (Reveal, 1968; Reveal in Henrickson & Johnston, in prep.). State range: Locally common in pine-oak woodlands in the Chisos Mountains of Brewster County. Note that var. *griseum* I. M. Johnston (G4T2T3), also endemic to the Chihuahuan Desert region, occurs in open pine forests in portions of Coahuila and Chihuahua (Reveal, 1968; Reveal in Henrickson & Johnston, in prep.). Element code of *Eriogonum hemipterum* (no var.): PDPGN082Q0; need code for var. *hemipterum*.
- Eriogonum nealleyi* Coult. Irion County wild-buckwheat, Nealley's wildbuckwheat. G2S2. Global range: Endemic to the northwestern Edwards Plateau of Texas. State range: Coke, Howard, Irion, Pecos, Reagan, Runnels and Sterling counties, occurring in grasslands in shallow stony soils over limestone and indurated caliche, often collected from ungrazed but sparsely vegetated roadsides, particularly where limestone or caliche is exposed on hilltops (Rowell, 1983). Element code: PDPGN08430.
- Eriogonum suffruticosum* Wats. Bushy wild-buckwheat. G2S2. Global range: endemic to the Chihuahuan Desert region (Reveal in Henrickson & Johnston, in prep.). State range: Brewster, Pecos and Presidio counties, found most often on sparsely vegetated rocky limestone slopes, low hills and clay flats (Clark & Powell, 1983). Element code: PDPGN085N0.
- Eriogonum tenellum* Torr. var. *ramosissimum* Benth. Basin wild-buckwheat. G5T3S3. Global range: Endemic to the Llano Uplift (Central Mineral Basin) of central Texas. State range: Burnet, Gillespie, Llano and Mason counties (Reveal, 1968), Usually rooted in crevices of sparsely vegetated, unshaded granite and gneiss outcrops or associated deposits of dry sand and gravel. Element code: PDPGN085Q2.
- Polygonella parksii* Cory. Parks' jointweed. G2S2. Global range: Endemic to Texas. State range: Early successional grasslands and openings in post oak woodlands on deep loose whitish sands in south-central Texas, with records from Atascosa, Bexar, Bureson, Guadalupe, Leon, Milam, Robertson and Wilson counties (Horton, 1963; Mahler, 1980; Mahler 1981; Texas BCD, 1999). Element code: PDPGN0K080.

#### Chenopodiaceae Goosefoot Family

- Atriplex klebergorum* M. C. Johnston. Kleberg saltbush. G2S2. Global range: Endemic to South Texas. State range: A halophyte of sparsely vegetated saline areas along the coast in Kleberg County and at a few inland sites in La Salle, Starr and Webb counties (Johnston, 1961; Turner, 1981). Element code: PDCHE040Y0.

#### Amaranthaceae Amaranth Family

- Tidestromia carnososa* (Steyerm.) I. M. Johnst. *Tidestromia lanuginosa* (Nutt.) Standl. var. *carnososa* (Steyerm.) Cory. Fleshy tidestromia. G3S2. Global range: Endemic to the Chihuahuan Desert of Trans-Pecos Texas and adjacent northern Coahuila and northern Chihuahua (Henrickson & Johnston, in prep.). State range: Brewster, El Paso and Presidio counties (Henrickson & Johnston, in prep.), where it occurs in saline or gypseous soils in open situations. Element code: PDAMA0J050.

#### Nyctaginaceae Four O'Clock Family

- Abronia ameliae* Lundell. Amelia's sand-verbena. G3S3. Global range: endemic to South Texas. State range: Mostly on deep loose sand on the South Texas Sand Sheet, with records from Brooks, Hidalgo, Jim Hogg, Kenedy, Kleberg and Starr counties (Galloway, 1975; Reed, 1969). A student collection from Live Oak County may be erroneous as to location. Element code: PDNYC01030.
- Abronia macrocarpa* Galloway. Large-fruited sand-verbena. G2S2. Global range: Endemic to Texas. State range: Restricted to the post oak belt of east-central Texas, with records from Freestone, Leon and Robertson counties, where it occurs among sparse herbaceous vegetation in deep, somewhat excessively drained sands in openings

- in post oak woodlands, sometimes in active blowouts (Corlies, 1991; Galloway, 1975; Kennedy, Poole & Orzell, 1990). Element code: PDNYC010D0.
- Acleisanthes acutifolia* Standl. Havard trumpets. G3S3. Global range: Northern Durango and Zacatecas through Coahuila to Trans-Pecos Texas (Poole in Henrickson & Johnston, in prep.). State range: Brewster, Pecos and Presidio counties, in xeric limestone or gypseous habitats (Poole in Henrickson & Johnston, in prep.). Element code: PDNYC02010.
- Acleisanthes crassifolia* Gray. Texas trumpets. G2S2. Global range: Texas and Coahuila. State range: Kinney, Maverick and Val Verde counties, usually among cenizo (*Leucophyllum frutescens*) and various thorny shrubs in shallow, well drained, calcareous gravelly loams over caliche (Poole, 1989; Smith; 1976). Known Texas populations occur over Austin Chalk or Uvalde Gravel. Element code: PDNYC02030.
- Acleisanthes wrightii* (Gray) Benth. & Hook. Wright's trumpets. G2S2. Global range: West Texas and Coahuila. State range: Open semi-desert grasslands and shrublands on shallow stony soils over limestone on low hills and flats, with records from Brewster, Pecos, Reeves, Terrell and Val Verde counties (Smith, 1976; Texas BCD, 1997). Element code: PDNYC02060.
- Anulocaulis leiosolenus* (Torr.) Standl. var. *lasianthus* I. M. Johnst. Chihuahuan ringstem. G4T3S2. Global range: Trans-Pecos Texas and immediately adjacent Chihuahua. State range: Brewster, Culberson and Presidio counties, where it occurs on xeric gypseous clay or limestone outcrops and flats (Spellenberg, 1993). Element code: PDNYC05041.
- Anulocaulis reflexus* I. M. Johnst. Ojinaga ringstem. G2SH. Global range: Chihuahua and Trans-Pecos Texas. State range: Jeff Davis and Presidio counties, occurring primarily on shaly gypseous clays at elevations ranging from 800 to 1150 meters, often with *Larrea tridentata* (Spellenberg, 1993). Element code: PDNYC05050.
- Boerhavia mathisiana* F. B. Jones. Mathis spiderling. G2S1. Global range: South Texas, Tamaulipas and San Luis Potosí (Corral, 1988). State range: Open thorn shrublands on limestone or caliche outcrops in the Lake Corpus Christi area of Live Oak and San Patricio counties (Gardener & O'Brien, 1986; Jones, 1977). Element code: PDNYC06080. Note: In the upcoming treatment of Nyctaginaceae for FNA, R. Spellenberg submerges this species within *B. ciliata* Brandegee, a species of xeric rock outcrops that ranges as far south as Querétaro (J. Poole, pers. comm., 2002). Information is needed about the global rank and range of this species.
- Selinocarpus parvifolius* (Torr.) Standl. Littleleaf moonpod. G3S3. Global range: NE corner of Chihuahua and adjacent Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Brewster and Presidio counties (Henrickson & Johnston, in prep., Reed, 1969), on xeric clay or shale exposures. Element code: PDNYC0F050.

#### Aizoaceae Carpetweed Family

- Sesuvium trianthemoides* Correll. Texas sea-purslane; roughseed sea-purslane. GHSH. Global range: Apparently endemic to Texas. State range: Known only from the type collection taken in 1947 from "dunes" in an unspecified location in Kenedy County (Correll, 1966). Element code: PDAIZ0E060.

#### Caryophyllaceae Pink Family

- Arenaria livermorensis* Correll. Livermore sandwort. G1S1. Global range: Known only from igneous rock outcrops at higher elevations in the Davis Mountains of Jeff Davis County, Texas (Miller & Powell, 1983). Element code: PDCAR040G0.
- Paronychia congesta* Correll. Bushy nailwort. G1S1. Global range: Endemic to South Texas. State range: Known only from Jim Hogg County, where it occurs in openings in blackbrush (*Acacia rigidula*) shrublands on shallow soils over xeric caliche or calcareous sandstone outcrops (Damude & Poole, 1990; Turner, 1983). Element code: PDCAR0L070.
- Paronychia jonesii* M. C. Johnston. Jones' nailwort. G3S3. Global range: Endemic to South Texas. State range: Aransas, Brooks, Hidalgo, Kenedy, Kleberg, Nueces and Starr counties (Johnston, 1963; Turner, 1983), occurring in early successional open areas on deep well-drained sand. Element code: PDCAR0L0F0.
- Paronychia lundellorum* B. L. Turner. Lundells' nailwort. G1S1. Global range: Endemic to South Texas. State range: Brooks, Kenedy and Kleberg counties, occurring on dune sands or in *Spartina* grasslands on low slightly saline sites (Turner, 1983). Element code: PDCAR0L0U0.
- Paronychia maccartii* Correll. McCart's nailwort. G1S1. Global range: Known only from the type specimen collected in 1962 from a site in Webb County (Damude & Poole, 1990). Element code: PDCAR0L0H0.

- Paronychia monticola* Cory. Including *Paronychia nudata* Correll. A nailwort. G3S3. Global range: West Texas and northern Coahuila (R. Hartman in Henrickson & Johnston, in prep.). State range: Various habitats in the Chisos, Glass and Davis mountains of Brewster and Jeff Davis counties in the Trans Pecos, but also in lower elevation limestone canyons in Crockett, Pecos and Terrell counties (Turner, 1983; TEX-LL, 2000). Element code: PDCAR0L0K0.
- Paronychia setacea* T. & G. Bristle nailwort. G3S3. Global range: Endemic to Texas. State range: Largely in the post oak belt of south-central Texas, from Atascosa, Medina and Bexar counties northeast to Robertson and Nacogdoches counties (map in Turner, 1983; BRIT/SMU, 1999; TEX-LL, 1999; TAES, 1999). Element code: PDCAR0L0R0.
- Paronychia wilkinsonii* Wats. Wilkinson's nailwort. G2S2. Global range: Endemic to the Chihuahuan Desert, ranging from Trans-Pecos Texas and the northwestern edge of Coahuila south to Ciudad Chihuahua (Henrickson & Johnston, in prep.). State range: Brewster County, where it occurs in shallow rocky soils in crevices on sparsely vegetated novaculite outcrops. Element code: PDCAR0L0T0.
- Silene plankii* Hitchc. & Maguire. Plank's catchfly. G3S1. Global range: Mountains of southeastern New Mexico and adjacent Texas. State range: Franklin Mountains of El Paso County, occurring in crevices on shaded igneous cliff faces above ca. 5000 ft. (Hitchcock & Maguire, 1947; New Mexico Native Plant Protection Advisory Committee, 1984; Worthington, 1981). Element code: PDCAR0U1D0.
- Silene subciliata* Robinson. Scarlet catchfly. G3S3. Global range: Western Gulf Coastal Plain of southeast Texas and southwestern Louisiana. State range: sandy areas of the Pineywoods of East Texas, with records from Hardin, Jasper, Liberty, Newton, Polk, Sabine, Shelby, and Tyler counties; a report from Jefferson County remains to be verified (Carr, 1991). Element code: PDCAR0U1V0.

#### Ranunculaceae Crowfoot Family

- Aquilegia chrysantha* Gray var. *chaplinei* (Payson) Lott. *Aquilegia chaplinei* Payson. Guadalupe Mountains columbine. G4T2S2. Global range: In and near the Guadalupe Mountains of Texas and New Mexico. State range: Culberson and Presidio counties, restricted to mesic canyon woodlands and wet limestone canyon walls (Lott, 1979). Element code: PDRAN05061.
- Aquilegia chrysantha* Gray var. *hinckleyana* (Munz) Lott. *Aquilegia hinckleyana* Munz. Hinckley's columbine. G4T1S1. Global range: Endemic to west Texas. State range: Known only from Presidio County, where it occurs in cooler, wetter areas near waterfalls, perennial seeps, and springs in desert canyons (Lott, 1979; Clark & Powell, 1983). Element code: PDRAN05063.
- Aquilegia longissima* Gray. Longspur columbine. G3S2. Global range: Chihuahua, Coahuila, Nuevo León and Trans-Pecos Texas (Lott, 1979). State range: Brewster, Jeff Davis and Presidio counties, occurring in cooler, wetter areas near perennial seeps and springs in mesic mountain canyons (Lott, 1979). Element code: PDRAN050F0.
- Clematis texensis* Buckley. *Clematis coccinea* Engelm., *Viorna coccinea* (Engelm.) Small. Scarlet leatherflower. G3G4S3S4. Global range: Endemic to the Edwards Plateau of central Texas (Pringle, 1997). State range: Mesic wooded canyons of the Edwards Plateau, with records from Bandera, Bell, Blanco, Bosque, Comal, Coryell, Gillespie, Hays, Kendall, Kerr, Lampasas, Llano, Medina, Real, Travis and Uvalde counties, usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams. Element code: PDRAN080W0.
- Thalictrum arkansanum* Boivin. Arkansas meadow-rue. G2QS1. Global range: Arkansas, Oklahoma and Texas; in 1992 no extant populations were known in Arkansas or Oklahoma. State range: Bowie, Delta, Grayson, Lamar and Red River counties, occurring in mesic, mostly deciduous woodlands or forests, often on alluvial terraces (Mahler, 1983; Mahler, 1988; MacRoberts & MacRoberts, 1998). Element code: PDRAN0M020.
- Thalictrum texanum* (Gray) Small. Houston meadow-rue. G2QS2. Global range: Endemic to Texas. State range: Austin, Brazos, Fayette, Grimes, Harris, Waller and Washington counties (Mahler, 1983; Texas BCD, 2003), found mostly along margins of woodlands on claypan savannas and alluvial terraces. Element code: PDRAN0M0N0.

#### Berberidaceae Barberry Family

- Mahonia swaseyi* (Buckl.) Fedde. *Berberis swaseyi* Buckl. Texas barberry. G3S3. Global range: Endemic to Texas. State range: Essentially restricted to the Edwards Plateau (Bandera, Blanco, Comal, Hays, Kerr, Real and Travis counties), with one report from Bailey County in the Texas Panhandle (Rowell, 1949), occurring in

shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces. Element code: PDBER060G0.

#### Brassicaceae Mustard Family

- Cardamine macrocarpa* Brandege var. *texana* Rollins. Texas largeseed bittercress. G3T2S2. Global range: Western Texas and Coahuila (Henrickson & Johnston, in prep.; Rollins, 1993); the inclusion of Nuevo León by Texas BCD may be unsubstantiated. State range: Brewster, Jeff Davis, Kinney and Uvalde counties, occurring in seasonally (hibernally or vernal) moist loamy soils in pine-oak woodlands at high elevations in the Chisos and Davis Mountains and in pinyon-oak-juniper woodlands at moderate elevations on the western Edwards Plateau. Element code: PDBRA0K0N2.
- Draba standleyi* Macbride & Payson. Standley's draba, Standley's whitlow-wort. G2G3S1. Global range: Mountains of southeastern Arizona, southern New Mexico, Trans-Pecos Texas and northern Coahuila. State range: Known only from higher elevations in the Davis Mountains of Jeff Davis County, where it occurs in crevices of sparsely vegetated igneous boulders and rock outcrops. Element code: PDBRA112G0.
- Leavenworthia aurea* Torr. var. *texana* (Mahler) Rollins. *Leavenworthia texana* Mahler; treated in Correll & Johnston (1970) as *Leavenworthia aurea* Torr. which, as presently delimited, does not occur in Texas. Texas golden glade-cress. G2T1S1. Global range: Endemic to Texas. State range: Sabine and San Augustine counties; experimentally introduced to one site in Nacogdoches County; restricted to early-successional herbaceous communities in shallow calcareous soils in vernal wet glades on Weches Formation ironstone outcrops (George & Nixon, 1990; Mahler, 1981). Element code: PDBRA1L022.
- Lesquerella angustifolia* (Nutt.) Wats. *Physaria angustifolia* (Nutt.) O'Kane & Al-Shehbaz. Thread-leaf bladderpod. G3S1. Global range: Four counties in southeastern Oklahoma (Watson, 1988) and one county in adjacent northeast Texas. State range: Collected to date only from Red River County (Gentry et al., 1978). Element code: PDBRA1N020.
- Lesquerella engelmannii* (Gray) Wats. subsp. *engelmannii*. *Physaria engelmannii* (Gray) O'Kane & Al-Shehbaz. Engelmann's bladderpod. G4T3S3. Global range: Endemic to Texas. State range: Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as north as far as the Red River but not, according to Clark (1975), into Oklahoma; records from Bandera, Brown, Burnet, Caldwell, Collin, Cooke, Dallas, Ellis, Erath, Guadalupe, Hays, Kerr, Lampasas, Montague, Parker, San Saba, Tarrant, Travis and Wise counties (Clark, 1975; Stanford, 1971; TEX-LL, 1997). Element code: PDBRA1N0H0.
- Lesquerella mcvaughiana* Rollins. *Physaria mcvaughiana* (Rollins) O'Kane & Al-Shehbaz. McVaugh's bladderpod. G3S3. Global range: Trans-Pecos Texas and adjacent Coahuila (Henrickson & Johnston, in prep.). State range: Grasslands on rocky limestone uplands at moderate elevations in Brewster and Pecos counties. Element code: PDBRA1N140.
- Lesquerella pallida* (T. & G.) Wats. *Physaria pallida* (T. & G.) O'Kane & Al-Shehbaz. White bladderpod. G1S1. Global range: Endemic to Texas. State range: Known only from San Augustine County; restricted to seasonally wet, comparatively high pH sandy soils in natural openings or glades within pine-oak forests over Weches Formation ironstone/glaucconite (Mahler, 1985; Nixon, 1984; Poole & Riskind, 1987). Element code: PDBRA1N1W0.
- Lesquerella thamnophila* Rollins & Shaw. *Physaria thamnophila* (Rollins & Shaw) O'Kane & Al-Shehbaz. Zapata bladderpod. G1S1. Global range: Tamaulipas and South Texas. State range: Starr and Zapata counties, found in open evergreen thorn shrublands on gravelly to sandy loams derived from various Eocene formations (Poole, 1989). Element code: PDBRA1N1M0.
- Lesquerella valida* Greene. *Physaria valida* (Greene) O'Kane & Al-Shehbaz. Strong bladderpod. G3S1. Global range: South-central New Mexico and west Texas; recently reported from Coahuila (Wood, Harper, Muldavin & Neville, 1999). State range: Culberson and Hudspeth counties, occurring in open gravelly limestone areas in pinyon-juniper woodlands above ca. 6000 ft. in the Sierra Diablo and Guadalupe Mountains (Wagner & Sabo, undated). Element code: PDBRA1N1P0.
- Rorippa ramosa* Rollins. Durango yellow-cress. G2S1. Global range: Restricted to the Chihuahuan Desert, where it is rare, known from a few collections from northeastern Durango, southern Coahuila, eastern Chihuahua, and along the Rio Grande near the Texas-Chihuahua-Coahuila borders (Henrickson & Johnston, in prep.; Stuckey, 1972). State range: Brewster and Terrell counties, presumably in moist, fine-textured alluvial soils on floodplains and in beds of intermittent streams. Element code: PDBRA270H0.

- Selenia grandis* R. Martin. Large selenia. G3S3. Global range: Endemic to South Texas. State range: Cameron, Dimmit, Hidalgo, La Salle, McMullen, Nueces and San Patricio counties (Martin, 1940; TAES, 1998; TEX-LL, 2203), occurring in seasonally wet clayey soils in open areas. Element code: PDBRA29030.
- Selenia jonesii* Cory. Including *Selenia jonesii* Cory var. *obovata* Rollins. Jones' selenia. G3S3. Global range: Endemic to Texas. State range: wet clayey soils of stream margins, playa lakes, and roadsides, mostly in the western Edwards Plateau; Mahler (1981) cited specimens from Crockett, Dawson, Dimmit, Glasscock, Mitchell, Nolan, Reagan and Scurry counties. Considered potentially weedy by Mahler (1981), an opinion not supported by the dearth of recent collections. Element code: PDBRA29040.
- Sibara grisea* Rollins. Gray sibara. G3S1. Global range: Known only from the Sacramento Mountains in New Mexico and the Guadalupe Mountains of New Mexico and Texas (Cully & Knight, 1987). State range: Limestone cliff faces, talus slopes and oak-juniper woodlands in mesic canyons of the Guadalupe Mountains. Element code: PDBRA2A060.
- Streptanthus bracteatus* Gray. Bracted twistflower. G2S2. Global range: Endemic to Texas. State range: Edwards Plateau, with records from Bandera, Bexar, Comal, Medina, Real, Travis and Uvalde counties; an unvouchered report from Caldwell County is presumed to be false. Occurs in low numbers in a broad spectrum of habitats on limestone slopes supporting a mosaic of juniper-oak woodlands and grassland openings, most often on mesic woodland margins (Damude & Poole, 1990; Zippin, 1997). Element code: PDBRA2G080.
- Streptanthus carinatus* Wright ex Gray subsp. *carinatus*. Lyreleaf twistflower. G4T3S3. Global range: The species as a whole ranges from Baja California east to Coahuila and north to Arizona, New Mexico and west Texas (Henrickson & Johnston, in prep.). Kruckeberg, Rodman & Spellenberg (1982) recognized two subspecies but did not provide information about the global range of either beyond the southwestern United States. Subsp. *carinatus* occurs in at least New Mexico and west Texas, but also presumably adjacent Coahuila. State range: Brewster, Culberson, El Paso, Hudspeth, Presidio and Reeves counties (Worthington, 1981), occurring on igneous and limestone slopes and alluvial fans. Element code: PDBRA2G0C2.
- Streptanthus cutleri* Cory. Cutler's twistflower. G2S2. Global range: Trans-Pecos Texas and Coahuila. State range: Brewster County, occurring in open shrublands or grasslands on calcareous gravel, talus slopes, rocky hillsides, and in gravelly stream beds at moderate elevations in the Chihuahuan Desert (Henrickson & Johnston, in prep.). Element code: PDBRA2G0E0.
- Streptanthus maculatus* Nutt. subsp. *maculatus*. Clasping twistflower. G3T2T3S2. Global range: Oklahoma and Texas; reports from Arkansas were evidently based on *Streptanthus obtusifolius* (Smith, 1988). Stage range: Primarily on seasonally moist barrens on the Weches Formation in Nacogdoches and San Augustine counties. Element code: PDBRA2G0R0.
- Streptanthus platycarpus* Gray. Broadpod twistflower. G3S4S3S4. Global range: West Texas and adjacent Coahuila (Henrickson & Johnston, in prep.). State range: Western Edwards Plateau and the Trans-Pecos, seemingly disjunct in Llano Uplift area, occurring sparingly in various habitats. Known from at least Brewster, Crockett, Gillespie, Llano, Pecos, Terrell and Val Verde counties; specimens on loan from most Texas herbaria, and thus complete county distribution is not currently available. Element code: PDBRA2G0W0.
- Streptanthus sparsiflorus* Rollins. Fewflower jewelflower; Guadalupe twistflower; sparsely-flowered jewelflower. G2S2. Global range: Endemic to the Guadalupe Mountains of New Mexico and Texas. State range: Shaded areas in dry gravelly limestone canyons and arroyos in various canyons in the Guadalupe Mountains of Culberson County (Burgess & Northington, 1981; Higgins, 1989). Element code: PDBRA2G0Y0.
- Thelypodopsis shimmersii* (M. C. Johnston) Rollins. *Sisymbrium shimmersii* M. C. Johnston; *Thelypodium shimmersii* (M. C. Johnston) Rollins. Shimmers' rocket. G2S2. Global range: Lower Rio Grande Valley and adjacent Tamaulipas (Rollins, 1982). State range: Cameron and perhaps Starr counties, where it occurs along margins of shrub thickets on clay soils. Element code: PDBRA2M080.
- Thelypodium tenue* Rollins. Fresno Creek thelypody. G1QS1. Global range: Apparently endemic to Texas. State range: Known only from Fresno Creek, Presidio County (Hanks & Powell, 1983), where recent efforts to relocate an extant population have been unsuccessful. Element code: PDBRA2N0G0.
- Thelypodium texanum* (Cory) Rollins. Texas thelypody. G3S3. Global range: Reportedly endemic to Trans-Pecos Texas. State range: Brewster, Culberson, El Paso, Hudspeth, Jeff Davis and Presidio counties (TEX-LL, 2002), where it occurs in gravelly creek bottoms and on open rocky slopes at lower elevations. Element code: PDBRA2N0H0.

*Cleome multicaulis* DC. Many-stem spiderflower. G2G3S1. Global range: Arizona, Colorado, New Mexico, Texas and Wyoming, south to Chihuahua, Durango, Jalisco, México, Michoacán and Sonora. State range: Known from edges of cienegas in Presidio County (Johnston & Warnock, 1959; Jackie Poole, pers. comm. 2003). Element code: PDCPP03080.

#### Crassulaceae Stonecrop Family

*Lenophyllum texanum* (J. G. Smith) Rose. *Sedum texanum* J. G. Smith. Texas stonecrop. G3S3. Global range: Southern Coastal Plain of Texas and adjacent Tamaulipas and Nuevo León. State range: Brooks, Cameron, Hidalgo, Kleberg, Nueces, Starr and Webb counties (Turner, 1983; Moran, 1994); unvouchered reports from Willacy and Matagorda counties (Moran, 1994). (A specimen from Galveston County (TAMU), reported on the Flora of Texas Website, was recently annotated to *Cakile* sp.) Found in shrublands on clay dunes (lomas) at the mouth of the Rio Grande and on xeric calcareous rock outcrops at scattered inland sites. Element code: PDCRA08010.

*Sedum havardii* Rose. Havard's stonecrop. G2S2. Global range: West Texas and Coahuila (Henrickson & Johnston, in prep.). State range: Crevices on rock ledges and talus at high elevations in the Chisos and Davis Mountains of Brewster and Jeff Davis counties. Element code: PDCRA0A0E0.

*Sedum robertsianum* Alex. Roberts' stonecrop. GHQSH. Global range: Endemic to Trans-Pecos Texas (Clausen, 1975). State range: Brewster County, where Warnock (1977) found it to be frequent in the Del Norte and Glass Mountains. Element code: PDCRA0A1Q0.

#### Saxifragaceae Saxifrage Family

*Fendlera rigida* I. M. Johnst. *Fendlera linearis* of Texas authors, misapplied (Johnston, 1990). Stiff fendlerbush. G3S1. Global range: Much of Coahuila, west to one location in Chihuahua and north to Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Pummel and Chilicotal mountains in the Chisos Mountains of Brewster County and the Solitario of Presidio County (TEX-LL, 1998). Element code: PDHDR07020.

*Philadelphus crinitus* (C. L. Hitchcock) Hu. *Philadelphus microphyllus* Gray subsp. *crinitus* C. L. Hitch. Bearded mockorange. G2QS1. Global range: Arizona and Texas. State range: Known only from talus slopes at higher elevations in the Davis Mountains, Jeff Davis County (Powell, 1988). Element code: PDHDR09080.

*Philadelphus ernestii* Hu. Canyon mock-orange. G2S2. Global range: Endemic to the Edwards Plateau of central Texas. State range: Blanco, Comal, Hays, Kendall and Travis counties (Mahler, 1981; Texas BCD, 1997), on solution-pitted limestone outcrops in mesic wooded canyons. Element code: PDHDR09090.

*Philadelphus texensis* Hu. Including var. *coryanus* Hu (see Hu, 1954-1956). Texas mock-orange. G2G3S2S3. Global range: Essentially endemic to the southern portion of the Edwards Plateau of central Texas, with disjunct populations in limestone mountains of central Coahuila (Henrickson & Johnston in prep.). State range: Bandera, Comal, Edwards, Kendall, Medina, Real and Uvalde counties, on limestone outcrops and slopes in mesic wooded canyons (Mahler, 1982). Element code: PDHDR090X0.

#### Crossosomataceae Crossosoma Family

*Glossopetalon texense* (Ensign) St. John. *Forsellesia texensis* Ensign. Texas greasebush. G1S1. Global range: Endemic to Texas. State range: Known from a small portion of the southwestern edge of the Edwards Plateau, with records from the Chalk Bluff and Montell areas of Uvalde County and the Devils River watershed of Val Verde County. Element code: PDCRO04050.

#### Rosaceae Rose Family

*Agrimonia incisa* T. & G. Incised groovebur. G3S2. Global range: Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Texas. State range: Anderson, Angelina, Jasper, Newton and Sabine counties, occurring in well drained sandy soils in longleaf pine or mixed pine-oak forests and forest borders, sometimes in fire-maintained upland longleaf pine savannas but also in more mesic open forests (MacRoberts & MacRoberts, 1997). Element code: PDROS03040.

*Crataegus anamesa* Sarg. Coast hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: Prairies in south-central Texas (Correll & Johnston, 1970). Reported by Vines (1960) from Fort Bend County;

- represented at TEX-LL by specimens from a woodland in Marion County and a wet coastal prairie in Brazoria County. Element code: PDROS0H060.
- Crataegus brazoria* Sarg. Brazoria hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: East Texas, Blackland prairies (Correll & Johnston, 1970). Vines (1960) mentions its occurrence on bottomlands of the Brazos River in Brazoria and Matagorda counties. Enquist (1990) was unable to relocate plants in this area and suggested that the species may be a hybrid of the complex including *C. mollis*, *C. texana* and *C. viburnifolia*. No specimens at TEX-LL, Feb 1998 or Feb 2001. Element code: PDROS0H0Q0.
- Crataegus dallasiana* Sarg. Dallas hawthorn. G3QS3. Global range: Endemic to north Texas (Enquist, 1990). State range: Along creeks in the Blackland Prairie regions of Dallas and Ellis counties (Enquist, 1990). Taxon not universally recognized; not mentioned, for example, in Jones, Wipff & Montgomery (1997). Element code: PSROS0H6B0.
- Crataegus nananixonii* J. B. Phipps & R. J. O'Kennon. Nixon's dwarf hawthorn. G1S1. Global range: Endemic to east Texas. State range: open upland post oak - bluejack oak or pine - oak woodlands on deep sands of the Carrizo and other formations in Nacogdoches and Upshur counties (Phipps & O'Kennon, 1997; Turner et al., 2003). Element code: PDROS0H810.
- Crataegus poliophylla* Sarg. Rosemary hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: South-central Texas (Correll & Johnston, 1970). Vines (1960) reported the species from Brazoria and Fort Bend counties, where it usually occurs "in thickets in drained soil." No specimens at TEX-LL, Feb 1998 or Feb 2001. Element code: PDROS0H3Y0.
- Crataegus stenosepala* Sarg. Narrow-sepal hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: South-central Texas (Correll & Johnston, 1970). Vines (1960) reported the species only from Fort Bend County; in Feb 1998, TEX-LL had specimens from Marion and Angelina counties. Element code: PDROS0H4U0.
- Crataegus sutherlandensis* Sarg. Sutherland Springs hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: Described from specimens collected along the Cibolo River near Sutherland Springs in Wilson County (Vines, 1960). Mahler (1982) did not consider this species distinct from *Crataegus viridis*. No specimens at TEX-LL, Feb 1998 or Feb 2001. Element code: PDROS0H4Z0.
- Crataegus turnerorum* Enquist. *Crataegus secreta* Phipps. Turners' hawthorn. G3QS3. Global range: Endemic to Texas (Enquist, 1990). State range: Concho, Crockett, Edwards, Jeff Davis, Mason, Menard, Schleicher, Sutton, Tom Green and Val Verde counties (Enquist, 1990; TEX-LL, 1999). Note: the names *Crataegus turnerorum* and *Crataegus secreta* were both published in 1990 to describe the same plants (compare Enquist, 1990 and Phipps 1990); apparently *Crataegus turnerorum* was published first. Element code: PDROS0H6L0.
- Crataegus viburnifolia* Sarg. Viburnumleaf hawthorn. G3QS3. Global range: Endemic to Texas (central BCD, 1997). State range: Wooded bottomlands along the Brazos and Colorado Rivers in Brazoria and Wharton counties (Vines, 1960); also from Brackenridge Park in San Antonio, Bexar County (TEX-LL, 2001). Element code: PDROS0H5C0.
- Crataegus warneri* Sarg. Warner's hawthorn. G3QS3. Global range: Endemic to East Texas. State range: Anderson, Cherokee, Franklin, Freestone, Houston, Smith, Upshur, Walker and Wood counties, found along margins of upland oak-hickory and oak-hickory-pine woodlands or forests, mostly on sandy soils (Mahler, 1985; Texas BCD, 1997). Element code: PDROS0H5G0.
- Prunus havardii* (W. Wight) W. Wight. Havard plum. G3S3. Global range: Endemic to Trans-Pecos Texas. State range: Brewster, Crockett and Presidio counties, where local in limestone canyons, on igneous talus slopes and novaculite outcrops (Powell, 1998). Element code: PDROS1C0M0.
- Prunus minutiflora* Engelm. Texas almond. G3S3. Global range: Texas and Chihuahua (Vines, 1960). State range: Edwards Plateau, Llano Uplift, and South Texas Plains, with records from Bell, Bexar, Burnet, Comal, Edwards, Frio, Irion, Kimble, Kinney, Live Oak, Mason, McMullen, Medina, Real, Travis, Uvalde, Val Verde, Williamson and Zavala counties (Wilkinson, 1977; TEX-LL, 1997); wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite. Element code: PDROS1C0X0.
- Prunus texana* Dietr. *Prunus glandulosa* (Hook.) T. & G. Texas peachbush. G3S3. Global range: Endemic to Texas. State range: Mostly in sandy areas of the South Texas Plains, post oak belt on Eocene sands of the Coastal Plain, and the Llano Uplift, with records from Aransas, Atascosa, Bastrop, Bexar, Brooks, Goliad, Gonzales, Hidalgo, Kenedy, Kleberg, Llano, Mason, Refugio, San Patricio, Starr, Victoria, and Wilson counties, occurring at scattered sites in various well drained sandy situations. Element code: PDROS1C1B0.

*Rosa stellata* Woot. subsp. *mirifica* (Greene) W. H. Lewis var. *erlansoniae* W. H. Lewis. *Rosa stellata* Woot. var. *erlansoniae* W. H. Lewis. Erlanson's desert rose. G4T1S1. Global range: Endemic to McKittrick Canyon in the Guadalupe Mountains (Lewis, 1965; Burgess & Northington, 1981). Element code: PDROS1J154.

Fabaceae Legume Family  
(including Mimosaceae, Caesalpinaceae)

*Acacia schottii* Torr. Schott's acacia. G3S3. Global range: Perhaps endemic to the Chihuahuan Desert region of Trans-Pecos Texas; Isely (1973) also attributes the species to "adjacent Mexico." State range: Limestone and gypsum hills and flats in southern Brewster and Presidio counties. Element code: PDFAB020Z0.

*Amorpha laevigata* Nutt. Smooth indigobush. G3S1. Global range: Oklahoma, east Texas and northern Louisiana. State range: Mapped by Turner (1959) from Cass and Van Zandt counties; the map in Wilbur (1975) consists of two dot clusters, one suggesting Cass and Morris counties and the other of four counties in deep East Texas (vicinity of Jasper and Hardin counties and east). In Jan 1998, TEX-LL had a single specimen from Morris County; in Sep 1998, the Flora of Texas Herbarium Specimen Browser cited one specimen from Harris County. Louisiana range: Ouachita and Winn parishes (Thomas & Allen, 1998).

*Amorpha paniculata* T. & G. Panicked indigobush. G2G3S2S3. Global range: Oklahoma (central BCD, 1997), southeastern Arkansas, northern Louisiana and east Texas. Apparently rare in Arkansas (Hempstead County mapped in Smith, 1988, following Wilbur, 1975) and Oklahoma (S1 per central BCD, 1997). State range: Wide-ranging across East Texas, but probably uncommon in most of the counties in which it has been collected. The map in Turner (1959) indicates collections from Anderson, Angelina, Camp, Gregg, Harrison, Henderson, Morris, Newton, Robertson, Smith, Titus, Tyler and Upshur counties. Element code: PDFAB080C0.

*Amorpha roemerana* Scheele. *Amorpha texana* Buckley. Texas amorpha. G3S3. Global range: Endemic to the Edwards Plateau of central Texas. State range: Bandera, Bexar, Comal, Gillespie, Hays, Kendall, Kerr, Kinney, Medina, Travis and Uvalde counties, found in juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks (Mahler, 1982; TEX-LL, 1995). Element code: PDFAB080D0.

*Astragalus giganteus* Wats. Giant milkvetch. G3S1. Global range: Trans-Pecos Texas and central New Mexico south to the Sierra Madre Occidental of Chihuahua (R. Barneby in Henrickson & Johnston, in prep.). State range: Wooded zones in Chinati and Davis mountains in Presidio and Jeff Davis counties (TEX-LL, 1998). Element code: PDFAB0F3P0.

*Astragalus gypsodes* Barneby. Gyp groundplum; gyp locoweed. G2S2. Global range: New Mexico and west Texas. State range: Culberson, Hudspeth and Reeves counties, mostly on gypsum or stiff gypseous clay soils along creeks and on low rolling foothills of the Guadalupe Mountains; many of the known locations are on the Castile Formation (Burgess & Northington, 1981; Higgins, 1989). Element code: PDFAB0F3W0.

*Astragalus mollissimus* Torr. var. *coryi* Tidestr. Cory's woolly loco. G5T3S3. Global range: Endemic to Texas. State range: Grasslands over limestone on the western Edwards Plateau, with records from Crockett, Irion, Martin, Reagan, Sterling and Upton counties (Barneby, 1964; Turner, 1959; TEX-LL, 2001). Element code: PDFAB0F5L2.

*Astragalus mollissimus* Torr. var. *marcidus* (Rydb.) Barneby. *Astragalus bigelovii* Gray var. *marcidus* (Rydb.) Isely. Withered woolly loco. G5T2S2. Global range: Endemic to Texas. State range: Jeff Davis and Presidio counties (Barneby, 1964), found on gravelly hillsides and grasslands at mid to higher elevations, mostly on igneous substrates in mountains of the Trans-Pecos. Element code: PDFAB0F5L4.

*Astragalus reflexus* T. & G. Texas milkvetch. G3S3. Global range: Endemic to Texas. State range: Scattered locations in the eastern half of Texas, with records from Bell, Brown, Cameron, Dallas, Fayette, Gonzales, Hill, Kleberg, Johnson, McLennan, Somervell, Tarrant, Travis, Walker and Zavala counties (Turner, 1959; Correll & Johnston, 1970; Diggs, Lipsomb & O'Kennon, 1999; TEX-LL, 1998), usually in grasslands on calcareous substrates. Element code: PDFAB0F7H0.

*Astragalus soxmaniorum* Lundell. Soxmans' milkvetch. G3S3. Global range: East Texas, Louisiana and Arkansas (Orzell & Bridges, 1987). State range: Anderson, Cass, Freestone, Hardin, Henderson, Houston, Leon, Nacogdoches, Rusk, Smith, Titus, Van Zandt, Walker and Wood counties (Turner, 1959; TEX-LL, 1998), primarily in deep sandy soils of sandhills, fallow fields, and open scrub oak-pine woodlands (Orzell & Bridges, 1987). Occurs in only three parishes in Louisiana and four counties in southern Arkansas (Orzell & Bridges, 1987). Element code: PDFAB0F8C0.

- Astragalus waterfallii* R. Barneby. Waterfall's milkvetch. G3S3. Global range: Rocky limestone slopes in southern New Mexico, west Texas and adjacent Coahuila (Henrickson & Johnston, in prep.). State range: Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Presidio, Reagan and Terrell counties (Turner, 1959; TEX-LL, 1998). Element code: PDFAB0F9H0.
- Bauhinia lunarioides* Wats. *Bauhinia congesta* (Britt.) Lundell; *Casparea jermyana* Britt. Anacacho orchid; Texas plume; Texas bauhinia. G3S1. Global range: South Texas and adjacent Coahuila and Nuevo León (Wunderlin, 1983). State range: Southwestern Edwards Plateau, with certain records from the Anacacho Mountains in Kinney County and the Devils River area in Val Verde counties. Historical collections from other localities in Texas (near Eagle Pass in Maverick County, near Laredo in Webb County, and at Enchanted Rock in Gillespie County) have all been questioned by at least one authority; see discussions in Turner (1959) and Wunderlin (1983). Known sites are in shrublands in draws on rocky limestone slopes and on limestone ledges along rivers. Element code: PDFAB0J010.
- Brongniartia minutiflora* Wats. Little-leaf brongniartia. G2S1. Global range: Texas, Chihuahua and Sonora. State range: Lower elevation Chihuahuan Desert shrublands in Brewster County, occurring in sand, gravel, volcanic ash and other substrates, often in or along arroyos or shallow drainages (Miller & Powell, 1983). Element code: PDFAB0K010.
- Caesalpinia phyllanthoides* Standl. South Texas rushpea. G2S1. Global range: South Texas and northern Tamaulipas. State range: Jim Wells and Live Oak counties; Isely (1975) was probably correct in his speculation that the Bexar County record was based on a cultivated specimen. Tamaulipan thorn shrublands or grasslands on very shallow sandy to clayey soil over calcareous sandstone or caliche. Element code: PDFAB0L0J0.
- Calliandra biflora* Tharp. Two-flower stickpea. G3S3. Global range: Known from two small, widely separated areas, one in northern Tamaulipas (11 mi W of Loreto) and the other in south-central Texas. State range: Dewitt, Goliad and Victoria counties, primarily in open areas on caliche outcrops or in shallow sandy soils over caliche (Mahler, 1980). Element code: PDFAB0N010.
- Dalea bartonii* Barneby. Cox's dalea. G1S1. Global range: Endemic to Texas. State range: Known from specimens collected by Barton Warnock on 31 July 1953 from on the Cox Ranch near Longfellow in Brewster County, Texas, and from a 1958 specimen from along a highway north of Dryden in Terrell County. In Brewster County, it occurs in shortgrass semi-desert grasslands with scattered pinyon pine and juniper in gravelly soils on limestone hills at an altitude of about 3600 feet (Howell, 1986). Element code: PDFAB1A040.
- Dalea hallii* Gray. Hall's prairie-clover. G3S3. Global range: Endemic to Texas. State range: North-central Texas, south to a few spots on the Edwards Plateau; records from Brown, Burnet, Comanche, Dallas, Erath, Fannin, Hays, Hood, Johnson, Kendall, Kerr, Mills, Parker and Tarrant counties (Turner, 1959; TEX-LL, 1998; BRIT/SMU, 1999), in grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides (Barneby, 1977). Element code: PDFAB1A0R0.
- Dalea reverchonii* (Wats.) Shinners. *Petalostemum reverchonii* Wats. Comanche Peak prairie-clover. G2S2. Global range: Endemic to north-central Texas. State range: Hood, Parker and Wise counties, found in grasslands or openings in post oak woodlands, often among sparse vegetation in barren exposed sites, often on shallow gravelly calcareous soils over Goodland Limestone (Mahler, 1984). Element code: PDFAB1A1E0.
- Dalea sabinalis* (Wats.) Shinners. *Petalostemum sabinale* Wats. Sabinal prairie-clover. GHSH. Global range: Endemic to Texas. State range: Historical records from Bandera, Uvalde and Val Verde counties, presumably taken from rocky soils on limestone outcrops or grassland openings in juniper-oak woodlands (Mahler, 1985). Element code: PDFAB1A1F0.
- Desmanthus reticulatus* Benth. Netleaf bundleflower. G3S3. Global range: Endemic to Texas. State range: Mostly on clay prairies of the coastal plain of central and south Texas, with reports from Bexar, Comal, Gonzales, Kerr, Kleberg, Live Oak, San Patricio, Travis, Uvalde and Wilson counties (Luckow, 1993; Turner, 1959; TEX-LL, 1997). Element code: PDFAB1C070.
- Desmodium lindheimeri* Vail. Lindheimer's tickseed. G3G4S1. Global range: Mountains of Coahuila, Nuevo León and San Luis Potosí; disjunct on the Edwards Plateau of south-central Texas (Nesom, 1993). State range: Comal and Uvalde counties (TEX-LL, 1998), in mixed woodlands on canyon slopes, in creekbeds and on partially shaded adjacent roadsides (Enquist, 1995). Enquist (1995) suggested that *Desmodium lindheimeri* might have been introduced to Texas during the 18th or early 19th century via commerce with northeastern Mexico. Element code: PDFAB1D0S0.
- Eysenhardtia spinosa* Gray. Spiny kidneywood. G2S2. Global range: Chihuahua south to extreme northern Durango; disjunct in Trans-Pecos Texas (R. Barneby in Henrickson & Johnston, in prep.). State range: Grasslands or shrublands on igneous outcrops or limestone hills in and around the Sierra Vieja Mountains of Presidio County (R. Barneby in Henrickson & Johnston, in prep.). Element code: PDFAB1N020.

- Genistidium dumosum* I. M. Johnston. Brush pea. G1S1. Global range: Trans-Pecos Texas and Coahuila. State range: Southern Brewster County, occurring in low-elevation Chihuahuan desert scrub on xeric rocky limestone hills (Clark & Powell, 1983). Element code: PDFAB1S010.
- Hoffmannseggia drummondii* T. & G. *Caesalpinia drummondii* (T. & G.) Fisher; *Caesalpinia texensis* (Fisher) Fisher; *Hoffmannseggia texensis* Fisher. Drummond's rushpea. G3S2. Global range: South Texas and eastern Tamaulipas. State range: Open areas on sandy clay in Atascosa, Bee, Goliad, Gonzales, Karnes, Jim Wells, McMullen, San Patricio and Wilson counties (Simpson, 1999; Correll & Johnston, 1970; Isely, 1975; Jones, 1977). Element code: PDFAB0L080.
- Hoffmannseggia tenella* Tharp & L. O. Wms. Slender rushpea. G1S1. Global range: Endemic to South Texas. State range: Kleberg and Nueces counties, occurring in grasslands on heavy clay soils (U. S. Fish & Wildlife Service, 1988). Element code: PDFAB20050.
- Indigofera miniata* Ort. var. *texana* (Buckl.) B. L. Turner. Texas scarlet-pea. G5T3T4S3S4. Global range: Endemic to central Texas, primarily on sand and gravel over igneous substrates in the Llano Uplift in Burnet, Gillespie, Llano and Mason counties; a Kerr County report (Turner, 1959) suggests it may also occur in sand derived from other sources. Element code: PDFAB22084.
- Nissolia platycalyx* S. Wats. Broadsepal nissolia. G3S1. Global range: More or less endemic to mountains of the Chihuahuan Desert region, from Trans-Pecos-Texas and Coahuila south to northern Zacatecas, with one record from Nuevo León (Henrickson & Johnston, in prep.). State range: Known only from the Chisos Mountains. Element code: PDFAB2Q010.
- Pediomelum cyphocalyx* (Gray) Rydb. *Psoralea cyphocalyx* Gray. Turnip-root scurfpea. G3G4S3S4. Global range: Endemic to Texas. State range: Edwards Plateau and north-central Texas, with records from Bandera, Bexar, Blanco, Burnet, Comal, Coryell, Gillespie, Hamilton, Hays, Kendall, Kerr, Lampasas, Parker, Travis and Wise counties. Element code: PDFAB5L0A0.
- Pediomelum humile* Rydberg. *Psoralea rydbergii* Cory. Rydberg's scurfpea. G1S1. Global range: Near Piedras Negras, Coahuila and in southwest Texas (Grimes, 1990). State range: Known only from Val Verde County, in shortgrass grasslands and shrublands on xeric limestone uplands. Element code: PDFAB5L020.
- Pediomelum pentaphyllum* (L.) Grimes. *Pediomelum trinervatum* Rydb.; *Psoralea trinervata* (Rydb.) Standl.; not *Pediomelum pentaphyllum* sensu Rydb. Chihuahua scurfpea, three-nerve scurfpea, Chihuahua scurfpea. G1SH. Global range: Arizona, New Mexico, Texas and Chihuahua; rare and local throughout range. State range: Known in Texas from a single specimen collected in the 1850's from "fields near the Presidio del Norte." Element code: PDFAB5L070.
- Pediomelum reverchonii* (S. Wats.) Rydb. *Psoralea reverchonii* S. Wats. Reverchon's scurf-pea. G3S2. Global range: Four counties in south-central Oklahoma and six counties in north-central Texas (Grimes, 1990). State range: Cooke, Hood, Johnson, Montague, Parker, Tarrant and Wise counties (Grimes, 1990; TEX-LL, 1998), mostly in prairies on shallow rocky calcareous substrates. Element code: PDFAB5L0J0.
- Pomaria austrotexana* B. B. Simpson. Stinking rushpea. G3S3. Global range: South Texas and northern Tamaulipas (Simpson, 1998). State range: Brooks, Hidalgo, Kenedy, Jim Hogg, Starr and Zapata counties, in open areas on deep well drained sands (Simpson, 1998). Element code: PDFAB0L0V0.
- Pomaria brachycarpa* (Gray) B. B. Simpson. *Caesalpinia brachycarpa* (Gray) Fisher. Broadpod rushpea. G2S2. Global range: Endemic to the Edwards Plateau of central Texas. State range: Crockett, Edwards, Kinney, Llano and Sutton counties, where it occurs in grasslands, live oak savannas and open mesquite woodlands on shallow stony clay soils over limestone (Mahler, 1981). Element code: PDFAB0L020.
- Senna orcuttii* (Britt. & Rose) Irwin & Barneby. *Cassia orcuttii* (Britt. & Rose) B. L. Turner. Orcutt's senna. G2S2. Global range: New Mexico, west Texas and northern Coahuila. State range: Brewster and Terrell counties; primarily in the Del Norte and Altuda Mountains (Isely, 1975), found in gravelly soil on open limestone slopes and in beds of intermittent streams. Element code: PDFAB491M0.
- Sophora gypsophila* Turner & Powell var. *guadalupensis* Turner & Powell. Gyp mountain-laurel; Guadalupe Mountains mescal-bean. G2G3T2S1. Global range: Endemic to the Guadalupe Mountains of New Mexico and Texas, where it occurs in oneseed juniper (*Juniperus monosperma*) shrublands on dry limestone or gypsum slopes above 5000 feet elevation (Turner & Powell, 1972; Higgins, 1989). State range: Culberson County. Element code: PDFAB3N041.

#### Zygophyllaceae Caltrop Family

- Kallstroemia perennans* B. L. Turner. *Kallstroemia hirsuta* L. Williams; not *Kallstroemia hirsuta* (Benth.) Engler & Prantl. Perennial caltrop. G1S1. Global range: Endemic to Texas. State range: Trans-Pecos and the semi-arid

western edge of the Edwards Plateau, with records from Brewster, Presidio and Val Verde counties; usually in somewhat barren gypseous clays or limestone soils. Element code: PDZYG03060.

#### Rutaceae Citrus Family

*Zanthoxylum parvum* Shinn. Shinn's tickle-tongue. G2S2. Global range: Endemic to Trans-Pecos Texas. State range: Middle to upper elevations in the Davis Mountains, Jeff Davis County, with one historic location in Brewster County; maple-oak woodlands and *Quercus hypoleucoides* shinnery on steep rocky igneous slopes (Poole, 1989; Carr, 1997). Element code: PDRUT0L0G0.

#### Polygalaceae Milkwort Family

*Polygala hookeri* T. & G. Hooker's milkwort. G3S2. Global range: Alabama, Florida, Louisiana, Mississippi, South Carolina and Texas (central BCD, 1997). State range: Low pinelands in East Texas (Correll & Johnston, 1970). Additional information unavailable at present. Element code: PDPGL020N0.

*Polygala maravillasensis* Correll. Maravillas milkwort. G2S1. Global range: Texas and Coahuila (T. Wendt in Henrickson & Johnston, in prep.). State range: Brewster and Terrell counties, occurring in crevices of limestone exposed on canyons walls along the Rio Grande and its tributaries. Element code: PDPGL020Y0.

*Polygala palmeri* Wats. Palmer's milkwort. G3QS2. Global range: West Texas to eastern Coahuila, west-central Nuevo León; perhaps also in central Tamaulipas (T. Wendt in Henrickson & Johnston, in prep.). State range: Limestone slopes in Val Verde County. Element code: PDPGL02160.

*Polygala rimulicola* Steyermark var. *rimulicola*. Rock-crevice milkwort. G3T3S2. According to Wendt (in Henrickson & Johnston, in prep.) the only other variety of *Polygala rimulicola*-- var. *mescalorum* Wendt & Todson-- occurs only in the San Andres Mountains of Dona Ana County, New Mexico. Global range: Known only from the Guadalupe Mountains of New Mexico and Texas. State range: Shaded to partially shaded limestone cliffs and ledges in pine-oak-juniper woodlands in the Guadalupe Mountains, mostly above 5000 feet. Element code: PDPGL021F2.

#### Euphorbiaceae Spurge Family

*Adelia vaseyi* (Coul.) Pax & K. Hoffm. Vasey's adelia. G2G3S2S3. Global range: Texas and Tamaulipas. State range: Cameron, Hidalgo, Starr and Willacy counties, mostly in subtropical evergreen/deciduous woodlands on loamy soils of the Rio Grande Delta but occasionally in shrublands on more xeric sandy to gravelly upland sites. Element code: PDEUP02020.

*Andrachne arida* (B. Warnock & M. C. Johnston) G. L. Webster. *Savia arida* Warnock & Johnston. Trans-Pecos maidenbush. G2S1. Global range: Chihuahuan Desert endemic known from four sites in Chihuahua, Coahuila and Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Collected to date from fractured limestone on middle-western slopes of the Dead Horse Mountains of Brewster County and the Solitario in Presidio County (Johnston, 1962; Powell, 1988; Warnock & Johnston, 1960). Element code: PDEUP06010.

*Argythamnia aphoroides* Muell. Arg. *Ditaxis aphoroides* (Muell. Arg.) Pax. Hill Country wild-mercury. G2S2. Global range: Endemic to the Edwards Plateau of central Texas. State range: Bandera, Bexar, Blanco, Brown, Comal, Gillespie, Hays, Kendall, Kerr, Kimble, Menard, Mills, Tom Green and Uvalde counties, occurring mostly in grasslands associated with plateau live oak (*Quercus fusiformis*) woodlands on limestone uplands (Mahler, 1981; Texas BCD, 1997; Diggs, Lipscomb & O'Kennon, 1999). Element code: PDEUP08010.

*Argythamnia argyrea* Cory. Silvery wild-mercury. G2S2. Global range: Endemic to South Texas. State range: Kinney, La Salle and Maverick counties, among shortgrasses on whitish clay soils in shrub-invaded grasslands, particularly over the Yegua Formation (Mahler, 1981). Element code: PDEUP08020.

*Chamaesyce astyla* (Boiss.) Millsp. *Euphorbia astyla* Boiss. G2S1. Alkali spurge. Global range: Coahuila, Durango, Nuevo León and one location in west Texas. State range: Known in Texas from alluvial flats near a desert spring in Pecos County; elsewhere in the Chihuahuan Desert this species is associated with gypsum dunes and flats (Henrickson & Johnston, in prep.). Element code: PDEUP0D090.

*Chamaesyce chaetocalyx* (Boiss.) Woot. & Standl. var. *triligulata* (Wheeler) Mayfield. *Euphorbia fendleri* T. & G. var. *triligulata* Wheeler; *Euphorbia chaetocalyx* (Boiss.) Tidestr. var. *triligulata* (Wheeler) M. C. Johnston; *Chamaesyce triligulata* (Wheeler) B.L. Turner. Three-tongue spurge. G5T1S1. Global range: Mostly in the Chihuahuan Desert of western Coahuila and adjacent Texas (Henrickson & Johnston, in prep.). State range:

- Brewster and Culberson counties, on steep limestone cliffs and adjacent colluvium. A report from Randall County is almost certainly erroneous. Element code: PDEUP0D312.
- Chamaesyce geyeri* (Engelm.) Small var. *wheeleriana* (Warnock & M. C. Johnston) Mayfield. *Euphorbia geyeri* Engelm. var. *wheeleriana* Warnock & M. C. Johnston. G5T2S1. Wheeler spurge. Global range: Texas, New Mexico and northern Chihuahua. State range: El Paso and Hudspeth counties, restricted to sparsely vegetated loose reddish sand of dunes or coppice mounds. Element code: PDEUP0D0Y1.
- Chamaesyce golondrina* (Wheeler) Shinnars. *Euphorbia golondrina* Wheeler. Swallow spurge, Boquillas spurge. G2S2. Global range: northern Chihuahua, northern Coahuila and Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Brewster, Hudspeth and Presidio counties, mostly in alluvial or eolian sand along the Rio Grande but occasionally on adjacent shale or limestone slopes (Miller & Powell, 1983; Henrickson & Johnston, in prep.). Element code: PDEUP0D100.
- Chamaesyce jejuna* (Johnston & Warnock) Shinnars. *Euphorbia jejuna* Warnock & M. C. Johnston. Dwarf broomspurge. G2S2. Global range: Apparently endemic to southwestern Texas. State range: Brewster, Mitchell, Nolan, Pecos, Terrell, and Val Verde counties, where it occurs in open situations on dry limestone and caliche slopes and uplands (Warnock & Johnston, 1960). Element code: PDEUP0D1A0.
- Chamaesyce perennans* Shinnars. *Euphorbia perennans* (Shinnars) Warnock & M. C. Johnston. Perennial broomspurge. G3S3. Global range: Endemic to a small portion of the Chihuahuan Desert of southern Trans-Pecos Texas and adjacent extreme northwestern Chihuahua (Henrickson & Johnston, in prep.). State range: Southern Brewster and Presidio counties, occurring in sparsely vegetated low elevation sites on gypseous or calcareous substrates (Henrickson & Johnston, in prep.; Howell, 1986). Element code: PDEUP0D1V0.
- Chamaesyce polycarpa* (Benth.) Millsp. var. *simulans* (Wheeler) Shinnars. *Euphorbia simulans* (Wheeler) B. Warnock & M. C. Johnston; *Chamaesyce simulans* (Wheeler) M. Mayfield. Big Bend spurge. G5T3S3. Global range: Endemic to the Chihuahuan Desert of southern Trans-Pecos Texas and adjacent northeastern Chihuahua. State range: Southern Brewster and southern Presidio counties (Henrickson & Johnston, in prep.). Element code: PDEUP03D320.
- Croton alabamensis* Chapman var. *texensis* S. Ginzburg. Texabama croton. G3T2S2. Global range: Endemic to central Texas. State range: Bell, Coryell and Travis counties, occurring in large numbers in a few localized sites, usually in mesic limestone canyons but also in deep friable soils of uplands (Aplet et al., 1994; Diggs, Lipsomb & O'Kennon, 1999; Ginzburg, 1992). Element code: PDEUP0H011.
- Croton coryi* Croizat. Cory's croton. G3S3. Global range: Endemic to Texas. State range: Grasslands and woodland openings on barrier islands and coastal sands of South Texas, inland on South Texas Sand Sheet, with records from Brooks, Jim Hogg, Kenedy, Kleberg, Nueces and Willacy counties (Johnston, 1958; TEX-LL, 1998). Element code: PDEUP0H090.
- Croton pottsii* (Kl.) Muell. Arg. var. *thermophilus* (M. C. Johnston) M. C. Johnston. *Croton corymbulosus* Engelm. var. *thermophilus* M. C. Johnston; *Croton thermophilus* M. C. Johnston) B. L. Turner. Leatherweed croton. G5T2S1. Global range: Chihuahuan Desert of Texas and Coahuila. State range: Brewster County, found on sandy substrates in hottest lowland portions of the desert (Johnston, 1958). Element code: PDEUP0H0V2.
- Croton suaveolens* Torr. Scented croton. G3S2. Global range: Chihuahua, Coahuila, Nuevo León and Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Grasslands at middle elevations in mountains of Brewster, Culberson and Jeff Davis counties. Element code: PDEUP0H100.
- Euphorbia innocua* Wheeler. Velvet spurge. G3S3. Global range: Endemic to Texas (Wheeler, 1939). State range: Open or brushy areas on coastal sands and the South Texas Sand Sheet, with records from Aransas, Calhoun, Kenedy, Kleberg, Nueces, Refugio, San Patricio and Willacy counties (TEX-LL, 1998; McAlister, 1999). Element code: PDEUP0Q0Y0.
- Euphorbia peplidion* Engelm. *Tithymalus peplidion* (Engelm.) Small. Low spurge. G3S3. Global range: Endemic to Texas. State range: Scattered locations in the southern half of Texas, with specimen records from Atascosa, Bee, Bexar, Dimmit, Goliad, Gonzales, Guadalupe, Karnes, Jim Wells, Live Oak, McMullen, San Patricio, Travis, Uvalde and Wilson counties (TAES, 1999; TEX-LL, 1999; SBSC, 1999); reports from Duval, Pecos, Tom Green and Val Verde counties (files of Rare Plant Study Center) need verification. Occurs in a variety of vernal-moist situations in a number of natural regions. Element code: PDEUP0Q1M0.
- Euphorbia strictior* Holzinger. Tall plains spurge. G3S2. Global range: East-central New Mexico and western Texas. State range: Armstrong, Deaf Smith and Oldham counties in the Panhandle and Crockett and Sutton counties on the Stockton Plateau, occurring in shortgrass grasslands on dry rocky or, more commonly, deep sandy sites (Naumann, 1986). The Crockett and Sutton county records, Cory 29702 (TAES) and Cory s.n. (TAES) respectively, merit close examination (Naumann, 1986). Element code: PDEUP0Q1Y0.

*Manihot walkerae* Croizat. Walker's manioc. G1S1. Global range: South Texas, Tamaulipas and Nuevo León. State range: Duval, Hidalgo and Starr counties, usually occurring in mixed shrublands on shallow sandy soils over caliche or calcareous sandstone or conglomerate (U. S. Fish and Wildlife Service, 1993). Element code: PDEUP0Z050.

*Phyllanthus abnormis* Baill. var. *riograndensis* G. L. Webster. Rio Grande leaf-flower. G5T3S3. Global range: Endemic to South Texas (Webster, 1970); perhaps in adjacent Mexico, but there were no such voucher specimens at TEX-LL in Jan 1998. State range: Semi-desert scrub of deep South Texas; records from Brooks, Hidalgo, Starr, Webb and Zapata counties. Element code: PDEUP13012.

*Phyllanthus ericoides* Torr. Heather leaf-flower. G2S1. Global range: Texas, Chihuahua (Johnston & Warnock, 1963; Webster, 1970) and Coahuila (Miller & Powell, 1984). State range: Brewster and Terrell counties, found in crevices on dry limestone canyon walls and other rock outcrops. Element code: PDEUP13080.

*Tragia nigricans* (L. H. Dewey) Nash. Darkstem noseburn. G3S3. Global range: Endemic to the Edwards Plateau of central Texas. State range: Bandera, Comal, Kendall, Kerr, Medina, Real and Uvalde counties, in oak-juniper woodlands on mesic limestone slopes and canyon bottoms (Miller & Webster, 1967; Mahler, 1981). Element code: PDEUP1D080.

#### Celastraceae Staff-tree Family

*Mortonia sempervirens* Gray var. *sempervirens*. Smooth mortonia. G4T3S3. Global range: West Texas and presumably adjacent Chihuahua and Coahuila (B. Prigge in Henrickson & Johnston, in prep.). State range: Brewster, Hudspeth, Pecos and Val Verde counties, usually on rocky limestone slopes (B. Prigge in Henrickson & Johnston, in prep.; Powell, 1998). Element code: PDCEL09022.

#### Sapindaceae Soapberry Family

*Cardiospermum dissectum* (Wats.) Radlk. Chihuahua balloon-vine; slashleaf heartseed. G2S2. Global range: Chihuahua, Durango, Tamaulipas and South Texas (TEX-LL, 2002). State range: Hidalgo, Starr and Zapata counties, occurring in thorn shrublands on xeric uplands in the Lower Rio Grande Valley. Element code: PDSPN03020.

#### Rhamnaceae Buckthorn Family

*Colubrina stricta* M. C. Johnston. Comal snakewood. G2S1. Global range: Coahuila, Nuevo León and Texas (Johnston, 1969). State range: Comal and El Paso counties. A small population of plants is extant at Hueco Tanks in El Paso County. The Comal County record is based on several specimens collected by Ferdinand Lindheimer between 1849 and 1851; the location provided on the printed herbarium labels is the same that appears on many or most of Lindheimer's specimen from that period: "Comanche Springs, New Braunfels, etc." Element code: PDRHA05090.

#### Vitaceae Grape Family

*Vitis rupestris* Scheele. Sand grape. G3S1. Global range: Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Maryland, Missouri, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia and West Virginia (central BCD, 1997). State range: Mostly on the Edwards Plateau, with records from Burnet, McCulloch, Taylor, Tom Green, Travis, and Val Verde counties, where it occurs on rocky limestone slopes and in streambeds (Correll & Johnston, 1970). Element code: PDVIT040J0.

#### Malvaceae Mallow Family

*Batesimalva violacea* (Rose) Fryxell. *Gaya violacea* Rose. Purple gay-mallow. G2S1. Global range: Coahuila, Nuevo León and Trans-Pecos Texas (Fryxell, 1988). State range: Brewster County, occurring among boulders in woodlands in seasonally moist igneous rock canyons (Clark & Powell, 1983). Element code: PDMAL09010.

*Callirhoe scabriuscula* Robins. Texas poppy-mallow. G2S2. Global range: Endemic to Texas. State range: Coke, Mitchell and Runnels counties, apparently restricted to grasslands or open oak or mesquite woodlands on deep sands of ancient and modern Colorado River terraces (Poole, 1990). Element code: PDMAL0A070.

*Fryxellia pygmaea* (Correll) Bates. *Anoda pygmaea* Correll. Small Fryxell-wort. G1SH. Global range: West Texas and Coahuila (Fryxell & Valdes R., 1991). State range: Known only from an 1854 specimen, the label of which reads "Texas." Element code: PDMAL0D010.

*Hibiscus dasycalyx* Blake & Shiller. Neches River rose-mallow. G1S1. Global range: Endemic to Texas. State range: Cherokee, Harrison, Houston and Trinity counties, usually swamps or along margins of riparian woodlands, most often near standing rather than flowing water, in soils that are usually wet in winter and surficially dry in summer (Warnock, 1993). Element code: PDMAL0H0E0.

#### Sterculiaceae Cacao Family

*Ayenia limitaris* Cristóbal. *Nephropetalum pringlei* Robins. Texas ayenia. G2S1. Global range: Coahuila, Durango and Tamaulipas north to the Lower Rio Grande Valley. State range: Cameron, Hidalgo and Willacy counties, occurring in subtropical evergreen/deciduous woodlands on alluvial deposits on floodplains and terraces (Damude & Poole, 1990). Element code: PDSTE01060.

#### Frankeniaceae Frankenia Family

*Frankenia johnstonii* Correll. Johnston's frankenia. G3S3. Global range: South Texas, Nuevo León and Tamaulipas. State range: Starr, Webb and Zapata counties, in thorn shrublands on flats or rocky slopes, often in saline sandy to clayey soils with high gypsum content (U. S. Fish and Wildlife Service, 1988; Texas BCD, 1997). Element code: PDFRA01030.

#### Cistaceae Rockrose Family

*Lechea mensalis* Hodg. Chisos pinweed. G1QS1. Global range: Chisos Mountains of Brewster County and Sierra Maderas del Carmen in adjacent northern Coahuila (Henrickson & Johnston, in prep.). State range: Known only from open pine-oak woodlands over igneous rock outcrops at high elevations in the Chisos Mountains. Element code: PDCIS04070.

#### Violaceae Violet Family

*Viola guadalupensis* A. M. Powell & B. Wauer. Guadalupe Mountains violet. G1S1. Global range: Endemic to the Guadalupe Mountains of Culberson County, Texas, found in "bullet hole" openings in dolomitized limestone rock faces within open Douglas fir (*Pseudotsuga menziesii*) woodlands at about 8000 feet (Powell & Wauer, 1990). Element code: PDVIO042X0.

#### Loasaceae Loasa Family

*Mentzelia mexicana* Thomps. & Zavortink. Mexican stickleaf. G3G4S3. Global range: Endemic to desert scrub from southern Coahuila north to Trans-Pecos Texas (Henrickson & Johnston, in prep.); also eastern Chihuahua (Correll & Johnston, 1970). State range: Open areas on various substrates near the Rio Grande in Brewster County. Element code: PDLOA030X0.

*Mentzelia strictissima* (Woot. & Standl.) Darl. A stickleaf. G3S3. Global range: West Texas and eastern New Mexico (Henrickson & Johnston, in prep.). State range: Open areas in grasslands on dunes and other sandy substrates, with records from Andrews, Crane, Gaines, Loving, Midland, Ward and Winkler counties (TEX-LL, 2001; BRIT/SMU, 2001). Element code: PDLOA031P0.

#### Cactaceae Cactus Family

*Astrophytum asterias* Lemaire. *Echinocactus asterias* Zucc. Star cactus, sea-urchin cactus. G1S1. Global range: South Texas, Coahuila, Nuevo León and Tamaulipas. State range: Known (at least historically) from Cameron, Hidalgo, Jim Hogg, Starr and Zapata counties; extant populations are in thorn shrublands on gravelly clays or loams over the Catahoula and Frio Formations (Damude & Poole, 1990). Element code: PDCAC0Y010.

*Coryphantha macromeris* (Engelm.) Britt. & Rose var. *runyonii* (Britt. & Rose) L. Benson. *Mammillaria runyonii* Britt. & Rose. Runyon's cory-cactus. G5T2T3S2. Global range: Nuevo León, Tamaulipas and South Texas. State range: Primarily in Starr County, where it is locally common under shrubs or in sparsely vegetated areas on low

- caliche hills and on silty flats; also reported from Hidalgo County (Richardson, 1995). A specimen mailed from Brownsville by Robert Runyon has been attributed to Cameron County; it may have been collected elsewhere. Element code: PDCAC04052.
- Coryphantha nickelsiae* (K. Brandegee) Britt. & Rose. *Coryphantha sulcata* (Engelm.) Britt. & Rose var. *nickelsiae* (K. Brandegee) L. Benson; *Mammillaria nickelsiae* K. Brandegee. Nickels' coryphantha. G2SH. Global range: Coahuila, Nuevo León, Tamaulipas, and perhaps Texas. State range: Attributed to Texas on the basis of a single 1906 specimen, the label of which reads "Laredo." According to Benson (1982), this specimen might have been collected near Mt. La Mita in Nuevo León rather than in Texas. Element code: PDCAC040HO.
- Coryphantha ramillosa* Cutak. subsp. *ramillosa*. *Mammillaria ramillosa* (Cutak) Weniger. Bunched cory-cactus. G2G3T2T3S2S3. Global range: Chihuahua, Coahuila and Trans-Pecos Texas. State range: Brewster and Terrell counties, occurring on rocky slopes, ledges, and flats in the Chihuahuan Desert, most frequently on exposures of Santa Elena Limestone or the Boquillas Formation at 2500-3500 feet elevation (Heil, Brack & Porter, 1985). Element code: PDCAC04080.
- Coryphantha robustispina* (Schott) Britt. subsp. *robustispina*. *Coryphantha scheeri* Lemaire var. *robustispina* (Schott) L. Benson. Pima pineapple cactus. G4T2S1. Global range: Arizona, Sonora and Texas (central BCD, 1997). State range: Creosote scrub on bajada slopes in the Franklin Mountains of El Paso County (R. D. Worthington, pers. comm., 2000). Roller (1996) and Benson (1982) described the range of this listed endangered taxon as limited to extreme southeastern Arizona and northern Sonora, but it has been collected in El Paso County, Texas. It is also reported from the state in Benson (1982). Element code: PDCAC040C1.
- Coryphantha robustispina* (Schott) Britt. subsp. *uncinata* (L. Benson) N. Taylor. *Coryphantha scheeri* Lemaire var. *uncinata* L. Benson. Scheer cory-cactus. G4T3S3. Global range: Chihuahuan Desert or Arizona, New Mexico, west Texas and Chihuahua (Anderson, 2001). State range: Rocky hillsides in El Paso County (Benson, 1982). Element code: PDCAC040C3.
- Cylindropuntia imbricata* (Haworth) Knuth var. *argentea* (Anthony) Backeberg. *Opuntia imbricata* (Haworth) DC. var. *argentea* Anthony. Silver cholla; Big Bend cane cholla. G5T1S1. Global range: Endemic to Brewster County, Texas, where it occurs in deep soils of mesquite thickets and creosote flats on desert bottomlands and washes (Benson, 1982) and in rocky limestone soil (Heil, Brack & Porter, 1985). Element code: PDCAC0D0L1.
- Echinocereus chisoensis* W. T. Marshall var. *chisoensis*. *Echinocereus reichenbachii* (Terscheck) Haage f. var. *chisoensis* (W. T. Marshall) L. Benson; epithet sometimes spelled "chisosensis." Chisos hedgehog cactus; Chisos pitaya. G2T1S1. Global range: Endemic to Trans-Pecos Texas; not known from adjacent Mexico (Heil & Anderson, 1982). State range: Southern Brewster County, occurring in desert grasslands or open shrublands on unconsolidated gravelly fan and terrace deposits on desert flats and low hills at moderate elevations (Heil & Anderson, 1982). Element code: PDCAC060G1.
- Echinocereus chloranthus* Engelm. var. *neocapillus* Weniger. Note: Anderson (2001) did not recognize this taxon, placing it tentatively in synonymy under *Echinocereus viridiflorus* Engelm. subsp. *davisii* (A. D. Houghton) N. Taylor. Golden-spine hedgehog cactus; long-haired green-flowered pitaya. G4T1S1. Global range: Endemic to Trans-Pecos Texas. Sparsely vegetated desert grasslands over novaculite outcrops in Brewster and Presidio counties. Element code: PDCAC06022.
- Echinocereus coccineus* Engelm. var. *paucispinus* (Engelm.) Ferguson. *Echinocereus triglochidiatus* Engelm. var. *paucispinus* (Engelm.) L. Benson. Note that Anderson (1982) did not recognize subspecific taxa within *E. coccineus*. Red-flower hedgehog cactus. G5T3S3. Global range: Texas (Benson, 1982). State range: Davis Mountains east to Val Verde and Kimble counties (Benson, 1982). Element code: PDCAC060K4.
- Echinocereus papillosus* Linke var. *angusticeps* (Clover) W. T. Marshall. *Echinocereus berlandieri* (Engelm.) Engelm. var. *angusticeps* (Clover) L. Benson; includes some plants treated by some authors as *Echinocereus blanckii* (Polseger) F. Palmer var. *angusticeps* (Clover) L. Benson. Not recognized by Anderson (2001), who submerged the variety within the species. Small yellow-flower alicocha. G3T1S1. Global range: Endemic to South Texas. State range: Hidalgo, Jim Hogg and Starr counties, found in grasslands and thorn shrublands on various substrates, usually shallow reddish sandy loams over limestone or caliche. Element code: PDCAC060H1.
- Echinocereus papillosus* Linke var. *papillosus*. *Echinocereus berlandieri* (Engelm.) Engelm. var. *berlandieri*. Yellow-flower alicocha. G3T3S3. Global range: South Texas and northern Mexico (Benson, 1982). State range: Cameron, Hidalgo, Jim Wells, McMullen, Starr and Webb counties (Benson, 1982; Weniger, 1984), under shrubs or in open areas on various substrates. Element code: PDCAC060H2.
- Echinocereus reichenbachii* (Terscheck) Haage f. var. *albertii* L. Benson. *Echinocereus melanocentrus* Lowry. Note that Taylor (1985) placed this taxon in synonymy under *Echinocereus reichenbachii* var. *fitchii* (Britt. & Rose) L. Benson; this view was followed by Anderson (2001). Black lace cactus. G5T1QS1. Global range: Endemic to

- South Texas. State range: Jim Wells, Kleberg and Refugio counties, in grasslands, thorn shrublands, and mesquite woodlands on sandy, possibly somewhat saline soils, sometimes growing at ecotone between this upland type and lower areas dominated by halophytic grasses and forbs (U. S. Fish & Wildlife Service, 1986). Element code: PDCAC060C1.
- Echinocereus reichenbachii* (Terscheck) Haage f. subsp. *baileyi* (Rose) N. Taylor. *Echinocereus reichenbachii* (Terscheck) Haage f. var. *baileyi* (Rose) N. Taylor. Treated by Benson (1982) as *Echinocereus reichenbachii* (Terscheck) Haage f. var. *albispinus* (B. Lahman) L. Benson. Bailey's hedgehog cactus. G5T3S1. Global range: Great Plains grasslands of New Mexico, Oklahoma and Texas (Anderson, 2001; central BCD, 1997). State range: Benson (1982) reported *Echinocereus reichenbachii* var. *albispinus* from Childress County in the Texas Panhandle. Element code: PDCAC060C5.
- Echinocereus reichenbachii* (Terscheck) Haage f. subsp. *fitchii* (Britt. & Rose) N. Taylor. *Echinocereus fitchii* Britt. & Rose; *Echinocereus reichenbachii* (Terscheck) Haage f. var. *fitchii* (Britt. & Rose) L. Benson. Fitch's hedgehog cactus. G5T3S3. Global range: South Texas and adjacent Nuevo León and Tamaulipas. State range: Jim Hogg, Starr, Webb, and Zapata counties, in openings or sometimes partly under shrubs in low-stature thorn shrublands on gravelly limestone soils, calcareous sandy loams, or somewhat saline clays. Element code: PDCAC060C4.
- Echinocereus viridiflorus* Engelm. subsp. *correllii* (L. Benson) Blum & Lange. *Echinocereus viridiflorus* Engelm. var. *correllii* L. Benson. Correll's green pitaya. G5T2S2. Global range: Endemic to West Texas. State range: Brewster, Coke, and Pecos counties, among grasses on rock crevices on low hills in desert or semi-desert grassland, occasionally on novaculite outcrops. Element code: PDCAC060E1.
- Echinocereus viridiflorus* Engelm. subsp. *davisii* (A. D. Houghton) N. Taylor. *Echinocereus davisii* A. D. Houghton; *Echinocereus viridiflorus* Engelm. var. *davisii* (A. D. Houghton) W. T. Marshall. Davis' green pitaya. G5T1S1. Global range: Endemic to a small portion of Brewster County, Texas, where it occurs on novaculite outcrops in full sun among sparse Chihuahuan Desert scrub, usually hidden in mats of spikemoss (*Selaginella* sp.) (Poole & Riskind, 1987; U. S. Fish & Wildlife Service, 1984). Element code: PDCAC060E3.
- Echinomastus mariposensis* Hester. *Echinocactus mariposensis* (Hester) Weniger; *Neolloydia mariposensis* (Hester) L. Benson; *Pediocactus mariposensis* (Hester) Halda; *Sclerocactus mariposensis* (Hester) N. Taylor. Lloyd's mariposa cactus. G2S2. Global range: Chihuahuan Desert region of Texas and Coahuila. State range: Brewster County, occurring among low shrubs and rosette-forming perennials in gravelly soils on arid limestone slopes, mostly on the Boquillas Formation (Heil, Brack & Porter, 1985; McKinney, 1995). Element code: PDCAC0J0J0.
- Echinomastus warnockii* (Benson) Glass & Foster. *Neolloydia warnockii* Benson; *Echinocactus warnockii* (Benson) Weniger; *Sclerocactus warnockii* (Benson) N. Taylor. Warnock's neolloydia. G3S3. Global range: Endemic to the Chihuahuan Desert in Trans-Pecos Texas and west of Ojinaga in adjacent Chihuahua (Zimmerman, Glass, Foster & Pinkava in Henrickson & Johnston, in prep.). State range: Shortgrass grasslands and creosote scrub on low hills and gravel slopes of varied composition; in Brewster, Culberson, Hudspeth and Presidio counties (Zimmerman, Glass, Foster & Pinkava in Henrickson & Johnston, in prep.). Element code: PDCAC0J0N0.
- Epithelantha bokei* Benson. *Epithelantha bokei* Engelm. var. *bokei* (Benson) Glass & Foster. Boke's button-cactus. G3S3. Global range: Southern Trans-Pecos Texas south to near El Chiflon northwest of Saltillo, Coahuila (Zimmerman, Glass, Foster & Pinkava in Henrickson & Johnston, in prep.). State range: Sparsely vegetated sedimentary rock outcrops in southern Brewster and Presidio counties. Element code: PDCAC07021.
- Escobaria albicolumnaria* Hester. *Coryphantha albicolumnaria* (Hester) D. A. Zimmerman; *Coryphantha strobiliformis* (Polseger) Moran var. *durispina* (Quehl) L. Benson; *Mammillaria albicolumnaria* (Hester) Weniger. White column cactus; hardspine cob cory-cactus. G2G3S2S3. Global range: Texas and Chihuahua. State range: Chihuahuan Desert of Brewster, Pecos and Presidio counties, in succulent shrublands on rocky hills or limestone outcrops at lower elevations (Worthington, 1993). Element code: PDCAC0X050.
- Escobaria dasyacantha* (Engelm.) Britt. & Rose subsp. *chaffeyi* (Britt. & Rose) N. Taylor. *Escobaria chaffeyi* Britt. & Rose; *Coryphantha chaffeyi* (Britt. & Rose) Fosberg; *Escobaria dasyacantha* (Engelm.) Britt. & Rose var. *chaffeyi* (Britt. & Rose) N. Taylor. Chaffey's cory-cactus. G3T2S1. Global range: Texas, Coahuila, San Luis Potosí and Zacatecas. (Anderson (1981) restricts the range to Zacatecas only.) State range: Mountains of Brewster County, in evergreen woodlands on rocky limestone slopes at ca. 5800-7000 feet (Heil, Brack & Porter, 1985). Element code: PDCAC0X071.
- Escobaria dasyacantha* (Engelm.) Britt. & Rose subsp. *dasyacantha*. *Coryphantha dasyacantha* (Engelm.) Orcutt var. *dasyacantha*; *Mammillaria dasyacantha* Engelm. Dense cory-cactus. G3T3S2. Global range: Trans-Pecos Texas and adjacent Chihuahua (Benson, 1982); as well as New Mexico and Coahuila (Anderson, 1981). State

- range: Brewster, El Paso, Hudspeth, Jeff Davis and Pecos counties, in grasslands and open oak woodlands over igneous soils and perhaps limestone at moderate elevations (2500-6000 ft.) in Chihuahuan Desert Mountains (Heil, Brack & Porter, 1985). Element code: PDCAC0X072.
- Escobaria duncanii* (Hester) Backeberg. *Escobaria dasyacantha* (Engelm.) Britt. & Rose var. *duncanii* (Hester) N. Taylor; *Coryphantha duncanii* (Hester) L. Benson; *Mammillaria duncanii* (Hester) Weniger. Duncan's cory-cactus, Duncan's snowball cactus. G1G2S1S2. Global range: New Mexico and Texas. State range: Brewster and Presidio counties, mostly on outcrops of Boquillas Formation limestone in the Chihuahuan Desert (Heil & Anderson, 1982). Element code: PDCAC0X073.
- Escobaria guadalupensis* Brack & Heil. Guadalupe Mountains pincushion cactus. G1S1. Global range: Endemic to the Guadalupe Mountains of TX and NM. On exposed slabs and fractured limestone rock on steep, mostly south-facing slopes, open coniferous woodlands above 6500 ft. (Heil & Brack, 1986). Note: Jones, Wipff & Montgomery place this taxon in synonymy under *Coryphantha sneedii* (Britt. & Rose) Berger var. *sneedii*. Heil & Brack might not agree. Element code: PDCAC0X030.
- Escobaria hesteri* (Y. Wright) F. Buxbaum. *Coryphantha hesteri* Y. Wright; *Mammillaria hesteri* (Y. Wright) Weniger. Hester's cory-cactus. G2S2. Global range: Endemic to west Texas. State range: Brewster, Pecos and Terrell counties, found in grasslands on dry gravelly limestone hills and alluvial fans at ca. 4000-5000 feet; often on novaculite outcrops (Heil & Anderson, 1982). Element code: PDCAC0X090.
- Escobaria minima* (Baird) D. Hunt. *Coryphantha nelliae* Croizat; *Escobaria nelliae* (Croizat) Backeberg; *Mammillaria nelliae* (Croizat) Croizat; *Coryphantha minima* Baird. Nellie's cory-cactus. G1S1. Global range: Endemic to a small portion of Brewster County, Texas, apparently restricted to novaculite outcrops (Poole & Riskind, 1987; U. S. Fish & Wildlife Service, 1984). Element code: PDCAC0X0A0.
- Escobaria sneedii* Britt. & Rose subsp. *sneedii*. *Coryphantha sneedii* (Britt. & Rose) Berger var. *sneedii*; *Mammillaria sneedii* (Britt. & Rose) Cory. Sneed's pincushion cactus. G2T2S2. Global range: Florida Mountains of New Mexico and Franklin Mountains of New Mexico and Texas (Heil & Brack, 1986). State range: Chihuahuan Desert succulent shrublands or grasslands on dry limestone outcrops on rocky slopes in the Franklin Mountains, El Paso County (Heil & Brack, 1986). Element code: PDCAC0X0E2.
- Mammillaria wrightii* Engelm. subsp. *wrightii*. Wright's fishhook cactus. G4T3S1. Global range: New Mexico, eastern Arizona, Trans-Pecos Texas (Benson, 1982) as well as Chihuahua and Sonora (Anderson, 2001). State range: Franklin Mountains of El Paso County (Benson, 1982). Element code: PDCAC0A0E2.
- Opuntia aureispina* (Brack & Heil) Pinkava & Parfitt. *Opuntia macrocentra* Engelm. var. *aureispina* Brack & Heil. Golden-spine pricklypear. G1S1. Global range: Chihuahuan Desert of [northern?] Coahuila and west Texas. State range: Brewster County, on Boquillas Limestone flats near the Rio Grande (Heil & Brack, 1988; Pinkava & Parfitt, 1988). Element code: PDCAC0D1Z0.
- Opuntia engelmannii* Salm-Dyck var. *linguiformis* (Griffiths) Parfitt & Pinkava. *Opuntia lindheimeri* Engelm. var. *linguiformis* (Griffiths) L. Benson. Cow-tongue pricklypear. G5T1QS1. Global range: According to Benson (1982), occurring naturally near San Antonio, Bexar County, Texas; escaped from cultivation elsewhere. Element code: PDCAC0D226.
- Opuntia polyacantha* Haworth var. *arenaria* (Engelm.) Parfitt. *Opuntia arenaria* Engelm. Sand pricklypear. G2S2. Global range: Along the Rio Grande in New Mexico, Texas and adjacent Chihuahua. State range: Deep loose sands in sparsely vegetated dune or sandhill areas in El Paso and Hudspeth counties (Sabo, 1981). Element code: PDCAC0D030.
- Peniocereus greggii* (Engelm.) Britt. & Rose var. *greggii*. *Cereus greggii* Engelm. var. *greggii*. Desert night-blooming cereus; Arizona queen-of-the-night. G3G4T2S2. Global range: Arizona, New Mexico, Texas, Chihuahua and Zacatecas. State range: Brewster, El Paso, Hudspeth, Jeff Davis, Pecos, Presidio, Reeves and Terrell counties, usually concealed among desert shrubs in lower-elevation flats and washes. Element code: PDCAC0V011.
- Sclerocactus brevihamatus* (Engelm.) Hunt subsp. *tobuschii* (W. T. Marshall) N. Taylor. *Ancistrocactus tobuschii* W. T. Marshall; *Echinocactus tobuschii* (W. T. Marshall) Weniger. Tobusch fishhook cactus. G5T3S3. Global range: Essentially endemic to the Edwards Plateau of central Texas. State range: Bandera, Edwards, Kerr, Kimble, Kinney, Real, Uvalde and Val Verde counties, occurring most frequently in low-stature grasslands or woodland openings on very shallow stony clay soils over flaggy limestone (U. S. Fish & Wildlife Service, 1987). Element code: PDCAC0J0S1.
- Sclerocactus papyracanthus* (Engelm.) N. Taylor. *Pediocactus papyracanthus* (Engelm.) L. Benson; *Toumeyia papyracantha* Britt. & Rose. Paperspine cactus; grama-grass cactus. G3G4S1. Global range: Arizona, New Mexico and Trans-Pecos Texas. State range: Known only from Hudspeth County, where it occurs in red sandy soils of open flats in desert grasslands, often among perennial bunchgrasses such as blue grama (*Bouteloua gracilis*) and galleta (*Hilaria jamesii*) (Heil, Armstrong & Schleser, 1981). Element code: PDCAC0J0K0.

*Thelocactus bicolor* (Galeotti) Britt. & Rose subsp. *flavidispinus* (Backeberg) N. Taylor. *Echinocactus flavidispinus* (Backeberg) Weniger; *Thelocactus bicolor* (Galeotti) Britt. & Rose var. *flavidispinus* Backeberg. Yellowspine glory-of-Texas; strawspine glory-of-Texas. G4T2S2. Global range: West Texas; reports from Tamaulipas may be based on misidentifications. State range: Brewster County; a report from Starr County (Benson, 1982) probably represents a clerical error. In the Marathon Basin of Brewster County this taxon is apparently restricted to soils derived from Caballos Novaculite (Anderson & Heil, 1982). Element code: PDCAC0K011.

#### Lythraceae Loosestrife Family

*Lythrum ovalifolium* Koehne. Plateau loosestrife. G3G4S3S4. Global range: Central Texas and central Coahuila (S. Graham in Henrickson & Johnston, in prep.). State range: Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain, with records from Bandera, Bexar, Blanco, Burnet, Comal, Edwards, Kerr, Kimble, Kinney, McCulloch, Real, Terrell, Travis, Uvalde, Williamson and Zavala counties (Mahler, 1982; TEX-LL, 2003). Element code: PDLYT09090.

*Nesaea longipes* Gray. *Heimia longipes* (Gray) Cory. Longstalk heimia; stalkflower heimia. G2G3S2. Global range: South-central and west Texas, extreme southeastern New Mexico and northern and central Coahuila (Graham, 1977). State range: Southern Edwards Plateau and eastern Trans-Pecos, with records from Bandera, Brewster, Kerr, Pecos and Val Verde counties; restricted to wet sedgy areas along creekbanks and around desert springs. Element code: PDLYT0A010.

#### Onagraceae Evening-primrose Family

*Gaura boquillensis* Raven & Gregory. Boquillas butterfly-weed. G2S2. Global range: West Texas, Chihuahua, Coahuila and Nuevo León (Henrickson & Johnston, in prep.). State range: Brewster and Presidio counties, occurring in sandy soils in arroyos and dry gravelly limestone soils in low-elevation Chihuahuan Desert scrub. Given its rather broad global range, this species might more appropriately be ranked G3; details about its status in Mexico are needed. Element code: PDONA08030.

*Gaura triangulata* Buckley. Prairie butterfly-weed. G3G4S3. Global range: North-central Texas to northeastern Oklahoma (Raven & Gregory, 1972). State range: Open sandy areas in Archer, Baylor, Callahan, Clay, Coleman, Crosby, Eastland, Erath, Jones, Montague, Taylor, Throckmorton, Tom Green, Wichita, Wilbarger and Young counties (Raven & Gregory, 1972). Element code: PDONA080K0.

*Oenothera coryi* Wagner. Cory's evening-primrose. G3S3. Global range: Endemic to Texas. State range: Calcareous prairies of Baylor, Callahan, Knox, Nolan, Taylor and Throckmorton counties in the Plains Country of north Texas and Crosby and Garza counties on the Panhandle (Wagner, 1986). A recent segregate from *Oenothera brachycarpa* Gray; true *Oenothera brachycarpa* occurs in west Texas (Wagner, 1986). Element code: PDONA0C1Z0.

*Oenothera neomexicana* (Small) Munz. New Mexico evening-primrose. G3G4S?. Global range: Arizona and New Mexico (Henrickson & Johnston, in prep.); also Texas? State range: Uncertain; reported for Texas by Jones, Wipff & Montgomery (1997) but not Johnston (1990). Element code: PDONA0C0V0.

*Oenothera pilosella* Raf. subsp. *sessilis* (Penn.) Straley. *Oenothera sessilis* (Penn.) Munz. Grand Prairie evening primrose. G5T2SH. Global range: Eastern Arkansas, northeastern Louisiana, and Texas (Straley, 1977; Tucker, 1983). State range: Known only from a specimen collected by Ferdinand Lindheimer, probably during the 1840's, from Galveston Island. Element code: PDONA0C112.

#### Apiaceae Carrot Family

*Aletes filifolius* Math., Const. & Theobold. Threadleaf aletes. G3S3. Global range: Endemic to Chihuahuan Desert mountains of Trans-Pecos Texas and adjacent New Mexico (Martin & Hutchins, 1981; M. Mathias & L. Constance in Henrickson & Johnston, in prep.). State range: Mesic woodlands and forests in the mountains of Brewster, Culberson and Jeff Davis counties (Mathias, Constance & Theobold, 1969). Element code: PDAPI03030.

*Eurytaenia hinckleyi* Math. & Const. Hinckley's spreadwing. G3S3. Global range: Endemic to Texas. State range: Loose sandy soils of the Monahans/Kermit Sandhills, with records from Andrews, Crane, Reeves, Ward and Winkler counties (Mathias & Constance, 1951; SRSC). Element code: PDAPI10010.

*Osmorhiza mexicana* Griseb. subsp. *bipatriata* (Const. & Shan) Lowry & Jones. *Osmorhiza bipatriata* Const. & Shan. Livermore sweet cicely. G5T1S1. Global range: Coahuila and Nuevo León north to Trans-Pecos Texas (M.

Mathias & L. Constance in Henrickson & Johnston, in prep.). State range: Known only from Madera Canyon in the Davis Mountains of Jeff Davis County. Element code: PDAPI1K091.

*Pseudocymopterus longiradiatus* Math., Const. & Theobold. Long-ray pseudocymopterus. G3S3. Global range: Endemic to Chihuahuan Desert mountains of Trans-Pecos Texas and adjacent New Mexico (M. Mathias & L. Constance in Henrickson & Johnston, in prep.). State range: Various mountain ranges in Brewster, Culberson and Jeff Davis counties (Mathias, Constance & Theobold, 1969; TEX-LL, 1998). Element code: PDAPI1V010.

*Tauschia texana* Gray. Texas tauschia. G3S3. Global range: Endemic to Texas. State range: Austin, Brazoria, Caldwell, Dewitt, Fayette, Fort Bend, Goliad, Gonzales, Grimes, Harris, Lavaca, Victoria, Waller, Washington and Wharton counties (Mathias & Constance, 1951; SBSC, 1999; TEX-LL, 2003), where it occurs in loamy soils in deciduous forests or woodlands on river and stream terraces. Element code: PDAPI270A0.

#### Styracaceae Storax Family

*Styrax platanifolius* Engelm. subsp. *platanifolius*. Sycamore-leaf snowbells. G3T3S3. Global range: Endemic to Texas. State range: Mostly on eastern Edwards Plateau and adjacent Lampasas Cutplain, but also in Central Mineral Basin (Llano Uplift). Fritsch (1997) cited specimens from Blanco, Burnet, Caldwell, Edwards, Kendall, Kerr, Kimble, Kinney, Llano, Real and Travis counties; also reported from Bexar, Comal, Gillespie and Hays counties. Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture. Element code: PDSTY01043.

*Styrax platanifolius* Engelm. subsp. *stellatus* (Cory) P. W. Fritsch. Hairy sycamore-leaf snowbells. G3T3S3. Global range: Endemic to Texas. State range: Mostly on the western and southern Edwards Plateau; Fritsch (1997) cited specimens from Bandera, Kendall, Real, and Uvalde counties. Rare throughout range, in habitats similar to those of var. *platanifolius*. Element code: PDSTY02042.

*Styrax platanifolius* Engelm. subsp. *texanus* (Cory) P. W. Fritsch. *Styrax texanus* Cory. Texas snowbells. G3T1S1. Global range: Endemic to the Edwards Plateau of Texas. State range: Edwards, Real, and Val Verde counties; introduced at a site in Uvalde County. Limestone bluffs, boulder slopes, and cliff faces, usually along perennial streams in canyon bottoms, in full sun or in partial shade of evergreen-deciduous woodland (U. S. Fish & Wildlife Service, 1986). Element code: PDSTY02060.

*Styrax platanifolius* Engelm. subsp. *youngiae* (Cory) P. W. Fritsch. *Styrax youngiae* Cory. Young's snowbells. G3T1SH. Global range: Coahuila, Nuevo León and Trans-Pecos Texas. State range: Known in Texas from a single specimen collected in 1914 by Mary Sophie Young "in a canyon, Davis Mts., Texas." This population has not been relocated. Plants in Mexico are found primarily or entirely on limestone substrates (Fritsch, 1997), which in the Davis Mountains are limited to a few areas. Element code: PDSTY02070.

#### Oleaceae Olive Family

*Fraxinus papillosa* Lingelsh. Chihuahua ash, Mexican white ash. G3S1. Global range: Northeastern Sonora, northwestern Chihuahua, southeastern Arizona and southwestern New Mexico (Henrickson & Johnston, in prep.). State range: Some plants in the canyons of the Chinati Mountains in Presidio County have been attributed to this species (TEX-LL, 1998); see also Henrickson & Johnston (in prep.). Element code: PD0LE040C0.

#### Loganiaceae Logania Family

*Emorya suaveolens* Torr. Emorybush. G3S1. Global range: A Chihuahuan Desert endemic (Henrickson & Johnston, in prep.), known from several locations in Coahuila, eastern Nuevo León and Trans-Pecos Texas (Norman, 1964; Norman & Moore, 1968; Warnock, 1964). State range: Known from several collections from limestone cliffs in Maravillas Canyon, Brewster County; a specimen collected during the Emory boundary survey may also be from Texas: Rio Grande above the Pecos, Oct 1852, C. C. Parry s.n. (Norman & Moore, 1968). Element code: PDBUD03010.

*Spigelia texana* (T. & G.) A. DC. Texas pinkroot. G3S3. Global range: Endemic to Texas. State range: Woodlands on loamy soils in Austin, Brazoria, Burleson, Colorado, Dewitt, Fort Bend, Gonzales, Lee, Matagorda, Polk, Victoria, Waller and Washington counties (Henrickson, 1996; TAMU, 1998). Note that Henrickson (1996)

submerged this taxon within *Spigelia loganioides* (T. & G.) A. DC., but Gould & Jansen (1999) resurrected it. Element code: PDLOG08060.

#### Gentianaceae Gentian Family

*Bartonia texana* Correll. Texas screwstem. G2S2. Global range: East Texas and western Louisiana. State range: Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, San Augustine, San Jacinto and Tyler counties, found in and around acid seeps in pine-oak forests on gentle slopes, often on clumps of bryophytes on logs and exposed tree roots (Nixon, 1979; Nixon & Ward, 1981). Element code: PDGEN01020.

#### Apocynaceae Dogbane Family

*Amsonia tharpii* Woodson. Tharp's blue-star. G1S1. Global range: New Mexico and Texas. State range: Known only from Pecos County, where it occurs in open areas in shortgrass grasslands or shrublands on shallow clay soils over limestone (Poole & Riskind, 1987). Element code: PDAPO030K0.

#### Asclepiadaceae Milkweed Family

*Asclepias prostrata* Blackwell. Prostrate milkweed. G1G2S1S2. Global range: South Texas and Tamaulipas. State range: Starr and Zapata counties, where it has been usually found among sparse early-successional vegetation on loamy fine sands and fine sandy loams (Damude & Poole, 1990). Ref: Blackwell, 1964. Element code: PDASC021G0.

*Matelea brevicoronata* (B. L. Robinson) Woodson. Shortcrown milkvine. G3S3. Global range: Endemic to South Texas. State range: Brooks, Duval, Hidalgo, Kenedy, Starr, Webb and Zapata counties, primarily in grasslands on sandy substrates. Element code: PDASC0A060.

*Matelea edwardsensis* Correll. Plateau milkvine. G3G4S3S4. Global range: Endemic to central Texas. State range: Edwards Plateau and adjacent Lampasas Cutplain, with records from Bandera, Bexar, Bosque, Comal, Dallas, Edwards, Kendall, Medina, Real, Terrell and Travis counties (Rowell, 1983; TEX-LL, 2001); a Reverchon specimen has been attributed to San Saba County but could have been collected elsewhere. Occurs in various types of juniper-oak and oak-juniper woodlands. Element code: PDASC0A0B0.

*Matelea parviflora* (Torr.) Woodson. Smallflower milkvine. G3G4S3S4. Global range: Endemic to Texas. State range: Open areas in mesquite savanna on sandy soils in Atascosa, Brooks, Dimmit, Duval, Frio, Hidalgo, Jim Hogg, Jim Wells, Karnes, Kleberg, La Salle, Live Oak, Starr, Webb and Zapata counties (TEX-LL, 2001; BCD, 2003). Reports from Brewster County are based on the similarly spelled *Matelea parvifolia*. Element code: PDASC0A0H0.

*Matelea radiata* Correll. Falfurrias milkvine. GHSH. Global range: Endemic to South Texas. State range: Brooks and Hidalgo counties. Until recently, known only from the type collection (Falfurrias, 24 Jun 1909, F. L. Lewton 828); a 1942 Runyon specimen from Hidalgo County was recently annotated to this species. Neither specimen is accompanied by information about habitat. Element code: PDASC0A0N0.

*Matelea sagittifolia* (Gray) Woods. Arrowleaf milkvine. G3S3. Global range: south half of Texas; also Nuevo León. State range: Small populations in various habitats in widely scattered locations including Hidalgo, Jeff Davis, McMullen, Real, San Patricio, Starr, Travis, Val Verde and Zapata counties. Element code: PDASC0A0Q0.

*Matelea texensis* Correll. Texas milkvine. G1S1. Global range: Apparently endemic to Brewster County, Texas, where it has been collected in desert grasslands or shrublands over igneous substrates at elevations between 4000 and 5000 feet (Hanks & Powell, 1983). Element code: PDASC0A0S0.

#### Convolvulaceae Morning-glory Family

*Bonamia ovalifolia* (Torr.) Hallier f. Bigpod bonamia. G1S1. Global range: Along the Rio Grande Brewster County, Texas (Myint & Ward, 1968); the site of a 19th century specimen from Coahuila ("Rio Grande below San Carlos", Parry s.n.) has not been relocated (Austin, 1990). State range: Known in Texas from a single population in Big Bend National Park, occupying deep alluvial sands over limestone outcrops in Boquillas Canyon. Element code: PDCON03030.

*Bonamia repens* (I. M. Johnston) Austin. *Petrogenia repens* I. M. Johnston. Creeping petrogenia. G3S2. Global range: Chihuahuan Desert endemic ranging from Trans-Pecos Texas south through Coahuila, eastern Chihuahua, Nuevo León and Tamaulipas south to Durango, Zacatecas and San Luis Potosí (Austin & Staples, 1985). State

- range: Mostly in open xeric habitats on limestone in Brewster, Presidio, Terrell and Val Verde counties (Austin, 1990; TEX-LL, 1998). Element code: PDCON03060.
- Cressa nudicaulis* Griseb. Leafless alkali-weed. G3G4S3S4. Global range: Texas and Tamaulipas (Austin, 1990; TEX-LL, 1998); Correll & Johnston (1970) included Argentina within range, but Austin (1990) did not. State range: Aransas, Cameron, Kenedy, Nueces, San Patricio, Starr and Willacy counties (TEX-LL, 1998), mostly in somewhat saline clayey soils along Laguna Madre beaches but also on inland saline flats. Element code: PDCON06030.
- Cuscuta attenuata* Waterfall. Marsh-elder dodder. G2S2. Kansas, Oklahoma and Texas. State range: Cameron, Jackson, Liberty, Rains and Van Zandt counties; apparently parasitizes only *Iva annua* (Tyril & Prather, 1990), and thus usually found in silty clays or various loams on disturbed floodplains. Element code: PDCUS01040.
- Cuscuta exaltata* Engelm. Tree dodder, oak dodder. G3S3. Global range: Texas and Florida. State range: Scattered across the eastern half of the state, with records from Aransas, Bell, Bexar, Comal, Coryell, Dallas, Hays, Johnson, Kendall, Kerr, Kinney, Llano, McLennan, San Patricio, Travis, Uvalde and Val Verde counties (TEX-LL, 1998; Yuncker, 1966; Diggs, Lipscomb & O'Kennon, 1999); parasitic on various *Quercus*, *Juglans*, *Rhus*, *Vitis*, *Ulmus*, and *Diospyros* species (Yuncker, 1966) as well as *Acacia berlandieri* and other woody plants. Element code: PDCUS010N0.
- Ipomaea shumardiana* (Torr.) Shinnery. Shumard's morning-glory; narrowleaf morning-glory. G2G3S1. Global range: Eastern Kansas through central Oklahoma to north Texas (McGregor et al., 1977). State range: Known only from two specimens, both collected in 1941 by R. W. Strandtmann, from one site along the Red River in Cooke County (Shinnery, 1961; TEX-LL, 1998). Element code: PDCON0A1E0.

#### Polemoniaceae Phlox Family

- Gilia ludens* Shinnery. South Texas gilia. G3S3. Global range: Endemic to South Texas. State range: Duval, Jim Hogg, Jim Wells, Live Oak, Uvalde and Webb counties (Shinnery, 1963; Texas BCD, 1998), where it occurs in open areas in shrublands on shallow sandy loam over rock outcrops. Element code: PDPLM040Y0.
- Ipomopsis havardii* (Gray) V. Grant. Havard's ipomopsis. G3S3. Global range: Trans-Pecos Texas south to northeastern Chihuahua and western Coahuila (Henrickson & Johnston, in prep.). State range: Various open habitats at lower elevations in the mountains of Brewster, Hudspeth and Presidio counties (Henrickson & Johnston, in prep.; Wherry, 1966). Element code: PDPLM06060.
- Phlox drummondii* Hook. subsp. *johnstonii* (Wherry) Wherry. Johnston's phlox. G5T3S3. Global range: Endemic to northwest Texas. State range: Found on sandy soils in Fisher, Kent, and Stonewall counties (Wherry, 1961; Wherry, 1966). Element code: PDPLM0D0R2.
- Phlox nivalis* Lodd. subsp. *texasensis* Lundell. Texas trailing phlox. G4T2S2. Global range: Endemic to the Pineywoods of the West Gulf Coastal Plain of east Texas. State range: Hardin, Polk and Tyler counties (Mahler, 1980; U. S. Fish & Wildlife Service, 1994), occurring in deep sandy soils in fire-maintained openings in upland longleaf pine savannas or post oak-bluejack oak woodlands. Element code: PDPLM0D1D3.
- Phlox oklahomensis* Wherry. *Phlox bifida* Beck var. *induta* Shinnery (Shinnery, 1961). Oklahoma phlox. G3S1. Global range: Arkansas, Kansas, Nebraska, Oklahoma and Texas (central BCD, 1997). State range: Known from a 1958 collection from oak woodland 4 miles E of Garland, Dallas County (Taylor & Taylor, 1980; Tyril et al., 1978). Element code: PDPLM0D1E0.
- Polemonium pauciflorum* Wats. subsp. *hinckleyi* (Standl.) Wherry. Hinckley's Jacob's-ladder. G3T2QS1. Note that Henrickson & Johnston (in prep.) do not recognize subspecific taxa, and include *Polemonium stenocalyx* Standl. in their concept of the species. Global range of *Polemonium pauciflorum* sensu Henrickson & Johnston: Mountains of southeastern Arizona and Trans-Pecos Texas south through the Sierra Madre Occidental in Chihuahua and the Sierra Madre Oriental in Nuevo León to Querétaro; central BCD (1997) adds Sonora to the global range of the species. Plants of Arizona, Texas, northern Chihuahua, Nuevo León (Arizona Natural Heritage Program, pers. comm.), and Sonora (central BCD, 1997) are apparently referable to subsp. *hinckleyi*. State range: Known only from woodlands at higher elevations in the Davis Mountains of Jeff Davis County. Element code: PDPLM0E0G1.

#### Hydrophyllaceae Waterleaf Family

- Nama xylopodium* (Woot. & Standl.) C. L. Hitchc. Cliff nama. G3S3. Global range: Mountains of Trans-Pecos Texas and adjacent New Mexico. State range: Limestone and dolomite cliff faces and outcrops in the Guadalupe Mountains and Sierra Diablo of Culberson County (TEX-LL, 1998). Element code: PDHYD0A0N0.

*Phacelia pallida* I. M. Johnston. Pale phacelia. G2S1. Global range: Texas, Chihuahua and Coahuila. State range: Low elevation Chihuahuan Desert scrub on gypsum or limestone soils in southern Brewster County (Clark & Powell, 1984). Element code: PDHYD0C3E0.

#### Boraginaceae Borage Family

*Cryptantha crassipes* I. M. Johnston. Terlingua Creek cats-eye. G1S1. Global range: Endemic to the Chihuahuan Desert of Trans-Pecos Texas. State range: Brewster County, restricted to barren xeric gypseous clay or chalky shales on low rounded hills and gentle slopes (Poole, 1989). Element code: PDBOR0A0N0.

*Cryptantha paysonii* (Macbr.) I. M. Johnston. Payson's hiddenflower. G3S1. Global range: New Mexico and Trans-Pecos Texas. State range: Rocky limestone slopes in the mountains of Culberson and El Paso counties. Element code: PDBOR0A2C0.

*Onosmodium helleri* Small. Heller's marbleseed. G3S3. Global range: Endemic to the Edwards Plateau of central Texas. State range: Bandera, Bexar, Comal, Hays, Kendall, Kerr, Travis and Uvalde counties (Turner, 1995; Mahler, 1981), occurring in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons. Element code: PDBOR0S010.

#### Verbenaceae Vervain Family

*Citharexylum spathulatum* Moldenke & Lundell. *Citharexylum brachyanthum* Gray var. *glabrum* C. L. Hitchc. & Moldenke; weakly distinguished from *Citharexylum brachyanthum* and submerged within it by some authors, e.g., Jones, Wipff & Montgomery (1997). Mission fiddlewood; smooth fiddlewood. G3QS3. Global range: Endemic to the Lower Rio Grande Valley of Texas; not yet reported from adjacent Mexico. State range: Hidalgo, Starr and Zapata counties; locally common between La Joya and Rio Grande City in mixed thorn shrublands on shallow sandy to gravelly soils underlain by the Goliad Formation. Element code: PDVER06060.

#### Lamiaceae Mint Family

*Brazoria arenaria* Lundell. Sand brazos-mint. G3S3. Global range: Endemic to Texas. State range: Sandy areas in South Texas, with records from Aransas, Brooks, Hidalgo, Jim Hogg, Jim Wells, Kenedy, Kleberg, Refugio and San Patricio counties (Lundell, 1969; TEX-LL, 1998). Element code: PDLAM07010.

*Brazoria enquistii* M. W. Turner. Enquist's sandmint. G2S2. Global range: Endemic to central Texas. State range: Apparently restricted to Burnet, Llano and Mason counties in the Llano Uplift (Central Mineral Basin), where it occurs primarily on sand banks along granitic streambeds (Turner, 2003). Element code:

*Brazoria truncata* (Benth.) Engelm var. *pulcherrima* (Lundell) M. W. Turner. *Brazoria pulcherrima* Lundell. Centerville brazos-mint. G3S3. Global range: Endemic to east-central Texas. State range: Open areas on deep loose sands in the post oak belt, with records from Anderson, Freestone, Henderson, Houston, Leon and Robertson counties (Lundell, 1969; Mahler, 1979). Element code: PDLAM07041.

*Hedeoma apiculatum* W. S. Stewart. McKittrick pennyroyal. G3S2. Global range: Endemic to the Guadalupe Mountains of New Mexico and Texas. State range: Open limestone rock surfaces, boulders, cliffs, and ledges, in oak-maple woodlands in canyons in the Guadalupe Mountains (Sivinski & Lightfoot, 1992). Element code: PDLAM0M020.

*Hedeoma molle* Torr. Hairy false-pennyroyal. G3S3. Global range: endemic to mountains of Trans-Pecos, Texas. State range: various mountain ranges in Brewster, Jeff Davis and Presidio counties (TEX-LL, 1998). Note: quantity of specimens at SRSC in Aug 2000 suggest a rank of G4 may be more appropriate. Element code: PDLAM0M0R0.

*Hedeoma pilosum* Irving. Old Blue pennyroyal. GHSH. Global range: endemic to Texas. State range: known only from the type specimen collected in 1940 from Old Blue (Baldy) Mountain in the Glass Mountains, Brewster County (Irving, 1970; Miller, 1984). Element code: PDLAM0M0C0.

*Monarda punctata* L. var. *stanfieldii* (Small) Cory. *Monarda stanfieldii* Small; *Monarda punctata* L. subsp. *stanfieldii* (Small) Epling. Stanfield's horsemint. G5T3S3. Global range: Endemic to Texas. State range: Largely confined to sands along the middle course of the Colorado River and its tributaries (Turner, 1994), with records from Blanco, Burnet, Llano and Travis counties. Element code: PDLAM170N0.

- Monarda viridissima* Correll. Texas beebalm. G3S3. Global range: Endemic to Texas. State range: Bastrop, Caldwell, Colorado (or Lavaca?), Guadalupe, Lee and Wilson counties (Turner, 1994; TEX-LL, 2002), mostly in open areas on deep sands of the Post Oak Belt. Element code: PDLAM170M0.
- Physostegia correllii* (Lundell) Shinnars. *Dracocephalum correllii* Lundell. Correll's false dragonhead. G2S2. Global range: Louisiana and Texas south to Coahuila, Nuevo León and Sonora (Cantino, 1982). State range: Widely scattered across eastern and southern parts of Texas, with records from Bexar, Galveston, Montgomery, Travis, Val Verde and Zapata counties. Occurs in wet silty clay loams (Irving, 1980) on streamsides, in creekbeds, irrigation channels, and roadside drainage ditches. No known extant occurrences in Texas. Element code: PDLAM1G020.
- Physostegia longisepala* Cantino. Longsepal false dragonhead. G2G3S2. Global range: western Gulf Coastal Plain of Louisiana and East Texas. State range: Jasper, Hardin, Newton, Orange and Tyler counties; Singhurst (1996) added Jefferson County but provided no specimen citations or locational information. Originally found in moist acid loams in the fire-maintained transition zone between pine flatwoods and coastal prairies; now found primarily in secondary habitats such as wet borrow ditches along roadsides and moist areas in man-made clearings in pine forests (Gilmore & Smith, 1988). Element code: PDLAM1G0B0.
- Rhododon angulatus* (Tharp) B. L. Turner. *Stachydeoma angulata* Tharp; included within *Rhododon ciliatus* (Benth.) Epling in recent floras such as Correll & Johnston (1970) and Jones (1977). Tharp's rhododon. G1QS1. Global range: Endemic to the Coastal Bend of South Texas. State range: Aransas, and Refugio (Jones, 1977) counties, known only from deep loose sand in sparsely vegetated areas on stabilized dunes of Pleistocene barrier islands; the report from Nueces County (map in Turner, 1995) is erroneous (B. L. Turner, pers. comm., 2004). Element code: PDLAM1P020.
- Rhododon ciliatus* (Benth.) Epling. Texas sandmint. G3S3. Global range: Endemic to Texas. State range: Open sandy areas in the Post Oak Belt of east-central Texas, with records from Anderson, Austin, Bastrop, Burleson, Caldwell, Freestone, Gonzales, Lee, Leon, Limestone, Milam, Montgomery, Robertson, Smith, Van Zandt and Waller counties (Turner, 1995; TEX-LL, 2002). Element code: PDLAM1P010.
- Salvia penstemonoides* Kunth & Bouché. Big red sage. G1G2S1S2. Global range: Endemic to Texas. State range: Edwards Plateau, with records from Bandera, Bexar, Gillespie, Guadalupe, Kendall, Kerr, Real and Wilson counties; introduced into Travis County. Occurs in moist to seasonally wet clay or silt soils in creekbeds and on seepage slopes of limestone canyons, in full sun or partial shade. Element code: PDLAM1S1A0.
- Salvia summa* A. Nelson. Great sage. G3S2. Global range: Endemic to the Guadalupe Mountains and the San Andres-Organ-Franklin range of eastern New Mexico and Trans-Pecos Texas (Sivinski & Lightfoot, 1992). State range: Limestone cliffs and slopes in the Guadalupe and Franklin Mountains. Element code: PDLAM1S1Q0.
- Scutellaria laevis* Shinnars. Smoothstem skullcap. G1S1. Global range: Endemic to mountains of Trans-Pecos Texas. State range: Known from the Beach and Guadalupe Mountains of Culberson and Hudspeth counties, where it occurs on slopes and in arroyos along dry streambeds (Higgins, 1989). Element code: PDLAM1U0P0.

#### Solanaceae Potato Family

- Lycium puberulum* Gray var. *berberoides* (Correll) Chiang. *Lycium berberoides* Correll. Silvery wolfberry. G4T3S3. Global range: Endemic to Trans-Pecos Texas. State range: Brewster and Presidio counties, occurring in Chihuahuan Desert grasslands and shrublands on gravel and clay hills and in creosote shrublands on gravel flats. Element code: PDSOL0G0E1.
- Lycium texanum* Correll. Texas wolfberry. G2S2. Global range: Endemic to Trans-Pecos Texas. State range: Brewster, Culberson and Hudspeth counties, where it is found in semi-desert grasslands and thorn shrublands on sandy, gravelly, and/or loamy soils, on very gently sloping terrain as well as in rocky areas in canyons, often over limestone at moderate elevations. Element code: PDSOL0G0J0.
- Solanum davisense* M. D. Whalen. Davis Mountains horse-nettle. G3S2. Global range: Texas and northern Coahuila (Whalen, 1976). State range: Chisos, Davis and Chinati mountains of Brewster, Jeff Davis and Presidio counties; strictly montane (Whalen, 1976) but sometimes weedy where it occurs. Element code: PDSOL0Z0E0.
- Solanum leptosepalum* Correll. Tigna potato; feral spud. G2S1. Global range: Apparently restricted to oak-pinyon zones in mountains of the Chihuahuan Desert region; reported by Henrickson & Johnston (in prep.) from the Sierra Rica of Chihuahua, the Sierra de la Madera and Sierra de la Gloria in Coahuila, and Texas. State range: Mountains of Jeff Davis and Presidio counties, mostly in rocky igneous soils. Element code: PDSOL0Z170. [Note: The upcoming treatment of *Solanum* in the Flora of North America will place this specie in synonymy under a more widespread species.]

Scrophulariaceae Figwort Family

- Agalinis auriculata* (Michx.) Blake. *Gerardia auriculata* Michx.; *Tomanthera auriculata* (Michx.) Raf. Earleaf false-foxglove. G3SH. Global range: Known at least historically from 21 states in the eastern half of the United States, from Maryland to Michigan south to Texas and South Carolina (Rawinski, 1990; central BCD, 1997). State range: known in Texas solely from a specimen collected in the late nineteenth century by J. Reverchon, the label of which reads only "Benbrook," presumably the Benbrook of Tarrant County. In Oklahoma the habitat is described as degraded prairies and floodplains, fallow fields, borders of upland sterile woods (Watson, 1989). Element code: PDSCR01130.
- Agalinis calycina* Penn. *Gerardia calycina* (Penn.) Penn. Leoncita false-foxglove. G1S1. Global range: Restricted to cienegas and other desert wetlands in Coahuila and adjacent Trans-Pecos Texas. State range: Brewster and Pecos counties. Element code: PDSCR01050.
- Agalinis densiflora* (Benth.) Blake. *Tomanthera densiflora* (Benth.) Penn.; *Gerardia densiflora* Benth. Denseflower false-foxglove. G3S2. Global range: Central Kansas south through Oklahoma to central Texas (McGregor et al., 1977). State range: Known at least historically from Bell, Bexar, Blanco, Bosque, Brown, Comal, Dallas, Hays, Hood, Shackelford, Tarrant and Wise counties (Pennell, 1921; Stanford, 1971; TEX-LL, 1997); also Cooke, Coryell, Montague, Palo Pinto and Parker counties (Diggs, Lipscomb & O'Kennon, 1999). Most records are from grasslands on shallow, gravelly, well drained, calcareous soils. Element code: PDSCR01140.
- Agalinis navasotensis* Dubrule & Canne-Hilliker. Navasota false-foxglove. G1S1. Global range: Endemic to Texas. State range: Originally described from Grimes County, where it occurs in sparsely vegetated areas on sandy soils on a calcareous sandstone outcrop of the Oakville Formation (Canne-Hilliker & Dubrule, 1993); recently reported from Tyler County (Jason Singhurst pers. comm., Jan 2004). Element code: PDSCR01180.
- Castilleja ciliata* Pennell. Fringed paintbrush. G1QS1. Global range: Endemic to the Davis Mountains of Jeff Davis County, Texas, where it is found on steep rocky barren to grassy igneous slopes (Clark & Powell, 1983). According to Nesom (1992), these plants are conspecific with plants of the Sacramento and White Mountains of southeastern New Mexico, where they are known by the earlier name *Castilleja wootonii* Standl. *Castilleja wootonii*, even with this expanded range, might still be G3. Element code: PDSCR0D0G0.
- Castilleja elongata* Pennell. Tall paintbrush. G2QS2. Global range: Endemic to mountains of Trans-Pecos Texas. State range: Brewster County, found in grasslands, shrublands and woodlands on rocky igneous soils at high elevations, most commonly in the Chisos Mountains. According to Nesom (1992), these plants are not distinct from *Castilleja integra* Gray, a species known from Brewster, Culberson, El Paso, and Jeff Davis Counties as well as Arizona, Colorado, New Mexico, Chihuahua, Coahuila, Durango, Nuevo León, and Sonora. Element code: PDSCR0D0V0.
- Mimulus dentilobus* Robinson & Fernald. Fringed monkeyflower. G2S1. Global range: Baja California, Sonora and Arizona east to Chihuahua, New Mexico and Texas (Wiggins, 1980; Kearney & Peebles, 1960). State range: Presidio County, occurring in perennially wet areas near springs, on wet cliff-faces at waterfalls, and in creekbeds. Element code: PDSCR1B0Y0.
- Penstemon alamosensis* Penn. & Nisbet. Alamo beardtongue. G3S1. Global range: New Mexico and Texas. State range: El Paso County, where it occurs in semi-desert grassland on rocky soils, usually on sheltered, often N-facing slopes and in mesic canyon bottoms, occasionally in rock crevices or among unbrowsed shrubs (Spellenberg, 1981; Worthington, 1991). Note however that Straw in Henrickson & Johnston (in prep.) includes *Penstemon alamosensis* in synonymy under *Penstemon havardii* Gray, which is probably a G4 species. Element code: PDSCR1L040.
- Penstemon cardinalis* Woot. & Standl. subsp. *regalis* (Nelson) Nisbet & Jackson. Royal red penstemon. G3T2S2. Global range: Mountains of southeastern New Mexico and Trans-Pecos Texas. State range: Culberson and Jeff Davis counties, in pine-oak woodlands at higher elevations in the Sierra Diablo and the Guadalupe and Davis Mountains. Element code: PDSCR1L152.
- Penstemon guadalupensis* Heller. Guadalupe penstemon. G3S3. Global range: Endemic to Texas. State range: Scattered in calcareous prairies on the Lampasas Cutplain and Edwards Plateau, with specimen records from Brown, Coke, Comanche, Gillespie, Irion, Kerr, Llano, McCulloch, Mitchell, Nolan, San Saba, Scurry, Tom Green and counties (BRIT/SMU, 1999; TAES, 1999; TEX-LL, 1998). A specimen attributed to Travis County (Edwards Plateau, 30 Mar 1935, B. C. Tharp s.n., TEX-LL) was probably collected elsewhere. Element code: PDSCR1L2V0.
- Penstemon triflorus* Heller subsp. *integrifolius* Penn. Threeflower penstemon. G3T3S3. The taxa in this complex represent a serious taxonomic problem. B. L. Turner at TEX-LL recognizes no subspecific taxa, including both

subsp. *triflorus* and subsp. *integrifolius* within a single entity; this taxonomic decision has not yet been published. Nonetheless, the species remains G3, and with the two combined varieties it is S3 in Texas. Global range (of *Penstemon triflorus* sensu lato): Central and west Texas to Coahuila. State range (of *Penstemon triflorus* sensu lato): Bandera, Bexar, Coleman, Crockett, Edwards, Gillespie, Hays, Kerr, Reagan, Real, Schleicher, Tom Greene, Uvalde and Val Verde counties (TEX-LL, 1998), occurring sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands. Element code: PDSCR1L6B1.

*Penstemon triflorus* Heller subsp. *triflorus*. G3T3SR. See above. Element code: PDSCR1L6B2.

*Penstemon wrightii* Hook. Wright's penstemon. G3S3. Global range: Trans-Pecos Texas and eastern Chihuahua, where apparently uncommon (Straw in Henrickson & Johnston, in prep.). State range: Brewster, Jeff Davis, Presidio and Reeves counties (TEX-LL per RPSC), occurring mostly in montane grasslands and woodlands. Element code: PDSCR1L6R0.

*Schwalbea americana* L. American chaffseed. G2SR. Global range: Extant in New Jersey, North Carolina, South Carolina, Georgia, Florida, and Mississippi; apparently extirpated from Massachusetts, Connecticut, New York, Delaware, Maryland, Virginia, Kentucky, Tennessee and Alabama (Peters, 1994); recently discovered in Louisiana (Latimore Smith, pers. comm., 1999). State range: Reported from East Texas in Correll & Johnston (1970), but the basis of this report is unknown. No specimens have been found in Texas herbaria, nor has mention of its Texas occurrence been found in sources (e.g., Small, various works by Pennell) from which Correll & Johnston may have taken their information. Element code: PDSCR1Q010.

*Seymeria texana* (Gray) Penn. Texas seymeria. G3S3. Global range: Endemic to the Edwards Plateau of central Texas. State range: Bandera, Bexar, Comal, Gillespie, Hays, Kendall, Kerr, Kimble, Travis, Uvalde and Val Verde counties (Turner, 1982; TEX-LL, 1998; BRIT/SMU, 2001), where it is found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons. Element code: PDSCR1T050.

#### Martyniaceae Unicornplant Family

*Proboscidea sabulosa* Correll. Dune unicornplant. G3S2. Global range: New Mexico, Texas and Chihuahua. State range: Andrews, Crane, Loving, Ward and Winkler counties, found in sparsely vegetated area, fallow fields and openings in Havard oak shinneries on deep sand of the Monahans and Kermit sandhills (Sivinski & Cully, 1990). Element code: PDPED06050.

*Proboscidea spicata* Correll. Manyflower unicornplant. G1S1. Global range: Trans-Pecos Texas and southwestern Coahuila (Henrickson & Johnston, in prep). State range: Brewster, Jeff Davis and Presidio counties; historical specimens are mostly from dry sandy alluvial and/or eolian soils on terraces along Rio Grande or from disturbed sandy soils along roadsides. Element code: PDPED06060.

#### Acanthaceae Acanthus Family

*Justicia runyonii* Small. Runyon's water-willow. G2S2. Global range: South Texas, Tamaulipas and San Luis Potosí. State range: Cameron, Hidalgo and Willacy counties; reports from Brazoria and Goliad counties are questionable. Mostly in openings in subtropical woodlands on calcareous silts and clays of the Rio Grande delta (Poole, 1989; Wasshausen, 1966). Element code: PDACA0E0G0.

*Justicia warnockii* B. L. Turner. Warnock's justicia. G3S3. Global range: Trans-Pecos Texas and adjacent Coahuila and Chihuahua (Daniel, 1980; TEX-LL, 1998). State range: Brewster, Crockett, Hudspeth, Pecos and Presidio counties (TEX-LL, 1998; Powell, 1998), occurring mostly on xeric limestone uplands and rock outcrops. Element code: PDACA0E0H0.

*Justicia wrightii* Gray. Wright's justicia. G2S2. Global range: West Texas and New Mexico (Daniel, 1980). State range: Brewster, Pecos and Val Verde counties, in shortgrass grasslands and shrublands on dry gravelly clay soils over limestone on flats and low hills. Element code: PDACA0E0J0.

*Yeatesia platystegia* (Torr.) Hilsenbeck. *Tetramerium platystegium* Torr. Texas shrimp-plant. G3G4S3S4. Global range: Coahuila, Nuevo León, Tamaulipas and south and southwest Texas (Hilsenbeck, 1989). State range: Duval, Kinney, McMullen, Starr, Terrell, Uvalde, Val Verde and Webb counties (Hilsenbeck, 1989; Mase, 1979, Texas BCD, 2002), occurring very sparingly in a variety of shrublands and canyon woodlands at widely scattered locations. Element code: PDACA0Q020.

#### Rubiaceae Madder Family

- Galium correllii* Dempster. Cliff bedstraw. G2S1. Global range: Known from a few sites along the Rio Grande and its tributaries in West Texas and adjacent northern Coahuila, (Dempster, 1968; Dempster, 1978; Poole, 1985). State range: Brewster and Val Verde counties, occurring mostly or exclusively on dry, steep or vertical limestone cliff faces. Element code: PDRUB0N0N0.
- Houstonia correllii* (W. H. Lewis) Terrell. *Hedyotis correllii* W. H. Lewis. Correll's bluet. G1S1. Global range: Apparently endemic to South Texas. State range: Collected to date only from Zapata County, where it occurs in sandy soils in openings in mesquite woodlands or thorn shrublands (Terrell, 1996). Element code: PDRUB1T0B0.
- AHoustonia croftiae* Britt. & Rusby. *Hedyotis croftiae* (Britt. & Rusby) Shinnery. Croft's bluets. G3S3. Global range: Endemic to south Texas. State range: Duval, Hidalgo, Jim Wells, Refugio, San Patricio, Starr, Webb and Zapata counties (Terrell, 1996), where it occurs in sparsely vegetated areas in grasslands or among shrubs. Element code: PDRUB1T0C0.
- Stenaria butterwickiae* (Terrell) Terrell. *Houstonia butterwickiae* Terrell; *Hedyotis butterwickiae* (Terrell) Nesom. Mary's bluets, Butterwick's bluets. G1S1. Endemic to Trans-Pecos Texas. State range: Brewster County, found in shallow pockets or crevices in limestone bedrock on ridgetops. Element code: PDRUB0W1G0.
- Stenaria mullerae* (Fosb.) Terrell var. *pooleana* (B. L. Turner) Terrell. *Hedyotis pooleana* B. L. Turner. Jackie's bluets. G2T1QS1. Described as a new species in 1995 (Turner, 1995); placed in synonymy under *Hedyotis mullerae* Fosb. by Terrell in 1996 (Terrell, 1996); resurrected by Turner in 1997 (Turner, 1997). Global range: Known only from the Dead Horse Mountains in the Chihuahuan Desert of eastern Brewster County, Texas, where it occurs on vertical limestone cliff faces in canyons (Turner, 1995). Element code: PDRUB0W1T0.

#### Caprifoliaceae Honeysuckle Family

- Symphoricarpos guadalupensis* Correll. McKittrick snowberry. GHQSH. Global range: A questionable taxon thought to be endemic to the Guadalupe Mountains of Texas (Poole, 1987; Higgins, 1989). Powell (1988) reported seeing similar plants in the Sierra del Carmen of northern Coahuila. Element code: PDCPR05030.

#### Valerianaceae Valerian Family

- Valeriana texana* Dyal. Guadalupe valerian. G3S2. Global range: Guadalupe, Sacramento and Capitan mountains of New Mexico and Trans-Pecos Texas (Sivinski & Lightfoot, 1992; Meyer, 1951). State range: Pine-oak-juniper woodlands and moist crevices in limestone boulders and cliff faces in higher canyons of the Guadalupe Mountains. Element code: PDVAL030G0.
- Valerianella florifera* Shinnery. Largeflower cornsalad. G3S3. Global range: Endemic to Texas. State range: Grasslands and early-successional openings in the post oak belt of east-central Texas, with records from Fayette, Franklin, Lee, Robertson and San Jacinto counties (Eggers, 1969; TEX-LL, 1997). Element code: PDVAL04050.
- Valerianella stenocarpa* (Engelm.) Krok. [*Sensu stricto*; plants treated in Correll & Johnston (1970) as *Valerianella stenocarpa* var. *parviflora* S. Dyal are, according to Jones, Wipff & Montgomery (1997), now lumped under *Valerianella radiata* (L.) Dufur. and are not included here.] Bigflower cornsalad. G3S3. Global range: Endemic to Texas. State range: Comal, Dallas, Kerr, Medina, San Saba, Tarrant and Travis counties, usually along creekbeds or in vernal moist grassy open areas. Diggs, Lipscomb & O'Kennon (1999) indicate that reports from north and north-central Texas. i.e., Dallas, San Saba, Tarrant and Travis counties, may be erroneous [based on var. *parviflora* = *V. radiata*?]; the species would thus be limited to the southern Edwards Plateau. Element code: PDVAL040C0.
- Valerianella texana* Dyal. Llano corn-salad. G2S2. Global range: Endemic to the Llano Uplift (Central Mineral Basin) of central Texas. State range: Burnet, Gillespie and Llano counties (Mahler, 1981), occurring in shallow, well drained but seasonally moist gravelly soils derived from igneous or metamorphic rocks, often along the downslope margin of rock outcrops, in full sun or in partial shade of oak-juniper woodland. Element code: PDVAL040D0.

#### Cucurbitaceae Gourd Family

- Cucurbita texana* (Scheele) Gray. *Cucurbita pepo* L. subsp. *ovifera* (L.) Decker var. *texana* (Scheele) Decker. Texas gourd. G3S3. Global range: Long considered endemic to Texas, but recently reported from Eddy County, New Mexico (Sivinski & Lightfoot, 1992). State range: Widespread, occurring in several natural regions in the

eastern half of the state, with records from Aransas, Bell, Bexar, Brazos, Burleson, Caldwell, Calhoun, Comal, Denton, Dewitt, Fayette, Goliad, Gonzales, Grimes, Hamilton, Jackson, Kinney, Kleberg, Lee, Llano, Madison, Menard, Milam, Navarro, Refugio, Robertson, San Jacinto, San Patricio, Sutton, Travis, Val Verde and Washington counties. Known historically from all major drainage systems in Texas; much of its bottomland habitat has presumably been lost to impoundments, agriculture and urban development, but a thorough assessment of its current status is difficult due to the ephemeral nature of the plant (Wilson, 1992). Element code: PDCUC0A080.

*Sicyos glaber* Woot. Smooth bur-cucumber. G3S3. Global range: Mountains of southeastern New Mexico and Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Mesic canyons in the Chisos and Guadalupe Mountains (Henrickson & Johnston, in prep.). Element code: PDCUC0N060.

#### Campanulaceae Bellflower Family

*Campanula reverchonii* Gray. Basin bellflower. G2S2. Global range: Endemic to central Texas. State range: Primarily in Burnet, Gillespie, Llano and Mason counties of the Llano Uplift, but also collected in 1938 and 1940 in Travis County from unknown locations and in 1935 from Kendall County. Known populations are on sandy/gravelly substrates associated with outcrops of Precambrian igneous and metamorphic rocks; historical collections from beyond the Llano Uplift may have come from sandy river terraces. Element code: PDCAM020R0.

#### Asteraceae Sunflower Family

*Ambrosia cheiranthifolia* Gray. South Texas ambrosia. G2S2. Global range: South Texas and Tamaulipas. State range: Cameron, Jim Wells, Kleberg and Nueces counties, occurring in coastal prairies on various substrates (Turner, 1983). Element code: PDAST0C070.

*Arida blepharophylla* (Gray) Morgan & Hartman. *Aster blepharophyllus* Gray; *Machaeranthera gypsitherma* G. L. Nesom, Vorobik & R. L. Hartman; see Morgan and Hartman, 2003. Gypsum hot-spring aster. G1S1. Global range: endemic to the Chihuahuan Desert of west Texas, New Mexico and Chihuahua. State range: seepy areas in gypsum canyons in Presidio County (Turner & Nesom, 2003). Element code: PDAST64170.

*Arida mattturneri* B. L. Turner & G. Nesom. Matt Turner's aster. G1S1. Global range: apparently endemic to the Chihuahuan Desert of west Texas. State range: Known only from gypsum walls of Blumberg Canyon north-northwest of Ruidosa, Presidio County (Turner & Nesom, 2003). Element code:

*Aster laevis* L. var. *guadalupensis* A. G. Jones. Guadalupe Mountains aster. G5T1QS1. Nesom (1994) submerged this taxon within *Symphyotrichum laeve* Löve & Löve var. *geyeri* (A. Gray) Nesom (*Aster laevis* L. var. *geyeri* A. Gray); it is how this effects global range and T rank, which is T2Q in Texas BCD and T1Q in central BCD. Global range (of var. *guadalupensis* sensu Jones): Apparently endemic to the Guadalupe Mountains of Texas and adjacent New Mexico. State range (of var. *guadalupensis* sensu Jones): Limestone soils along streams and elsewhere in wooded canyons above 5000 feet in the Guadalupe Mountains. Element code: PDAST0T1N4.

*Aster puniceus* L. var. *scabricaulis* (Shinners) A. G. Jones. *Aster scabricaulis* Shinners; *Aster puniceus* L. subsp. *elliottii* (T. & G.) A. G. Jones var. *scabricaulis* (Shinners) A. G. Jones; *Symphyotrichum puniceum* (L.) Löve & Löve var. *scabricaule* (Shinners) Nesom. Rough-stem aster. G5T2S2. Global range: Mostly in East Texas, with collections from one parish in Louisiana and two counties in Mississippi (Nesom, 1997). State range: Anderson, Franklin, Henderson, Hopkins, Smith, Van Zandt and Wood counties (Nesom, 1997). Occurs in wet unshaded habitats including sphagnum bogs, marshes, pond margins, open streambanks and roadside ditches, usually in areas underlain by deep Eocene sands. Element code: PDAST0T2L4.

*Brickellia baccharidea* Gray. Resin-leaf brickellbush. G2S1. Arizona, New Mexico, Sonora and Trans-Pecos Texas. State range: Known only from the Franklin Mountains of El Paso County, occurring in mixed desert shrublands on gravelly soils derived from limestone and perhaps also from igneous rocks, on bajada slopes and in arroyos. Element code: PDAST1H040.

*Brickellia dentata* (DC.) Sch. Bip. *Brickellia riddellii* (T. & G.) Gray. Gravelbar brickellbush. G3S3. Global range: Endemic to Texas. State range: Bexar, Blanco, Comal, Edwards, Hays, Real, Travis, Uvalde, Val Verde and Williamson counties (TEX-LL, 1997); a specimen attributed to Trinity County (TEX-LL) is probably erroneous as to location. Essentially restricted to frequently scoured gravelly alluvial beds in creek and river bottoms (Mahler, 1981). Element code: PDAST1H0E0.

*Brickellia eupatorioides* (L.) Shinners var. *gracillima* (Gray) Turner. *Kuhnia leptophylla* Scheele; *Brickellia leptophylla* (Scheele) Shinners. Narrowleaf brickellbush. G5T3S3. Global range: Endemic to Texas. State range: Mostly

- on the Edwards Plateau, with reports from Bexar, Blanco, Comal, Edwards, Gillespie, Kerr, Kimble, Kinney, Travis, Uvalde, Val Verde and Zavala counties, usually occurring in moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes (Correll & Johnston, 1970; Turner, 1989, TEX-LL, 2000). Element code: PDAST1H0G6.
- Brickellia hinckleyi* Standl. var. *hinckleyi*. *Brickellia brachyphylla* (Gray) Gray var. *hinckleyi* (Standl.) Flyr. Hinckley's brickellbush. G2T2QS2. Global range: Endemic to Trans-Pecos Texas. State range: Brewster and Jeff Davis counties, found in rocky soils in higher elevation mountain canyons. Element code: PDAST1H062.
- Brickellia hinckleyi* Standl. var. *terlinguensis* (Flyr) B. L. Turner. *Brickellia brachyphylla* (Gray) Gray var. *terlinguensis* Flyr. Terlingua brickellbush. G2THSH. Global range: Endemic to Trans-Pecos Texas. State range: Chihuahuan Desert in Brewster and Hudspeth counties; collected from slopes in the Chisos and Eagle Mountains and along a creek bottom near Terlingua. Element code: PDAST1H063.
- Brickellia parvula* Gray. Mt. Davis brickellbush; dwarf brickellbush. G3S1. Global range: Mountains of southeastern Arizona, southern New Mexico and Trans-Pecos Texas (Henrickson & Johnston, in prep.). State range: Guadalupe Mountains (Culberson County), Franklin Mountains (El Paso County) and Sierra Diablo (Hudspeth County); apparently uncommon in all three ranges (TEX-LL, 1998). Element code: PDAST1H100.
- Brickellia viejensis* Flyr. Sierra Vieja brickellbush. G1G2QS1S2. Global range: Endemic to Trans-Pecos Texas. State range: Known only from Presidio County, occurring in shrublands on rocky soils in mountain canyon headers. Note that Turner (1990) placed this taxon in synonymy under *Brickellia lemmonii* Gray var. *lemmonii*; this view was not followed by Kartesz (1994). Element code: PDAST1H190.
- Chaetopappa effusa* (Gray) Shinnery. Spreading least-daisy. G3G4S3S4. Global range: Endemic to Texas. State range: Southern Edwards Plateau, with records from Bandera, Bexar, Blanco, Comal, Edwards, Gillespie, Hays, Kendall, Kerr, Medina, Real and Uvalde counties; a specimen from Travis County (*B. C. Tharp 7480*, TEX-LL) is probably erroneous as to location. Locally common in loamy soils in shade of oak-juniper woodlands on mesic rocky slopes or in limestone canyons. Element code: PDAST22030.
- Chaetopappa hersheyi* Blake. Mat leastdaisy. G3S2. Global range: Endemic to the Guadalupe Mountains of New Mexico and Texas. State range: Culberson and Hudspeth counties, occurring on dry limestone cliffs and ledges in open pinyon-oak-juniper woodlands at higher elevations in the Guadalupe Mountains (Higgins, 1989). Element code: PDAST22040.
- Chaetopappa imberbis* (Gray) Nesom. *Chaetopappa asteroides* (Nutt.) DC. var. *imberbis* Gray. Bristleless least-daisy. G3S3. Global range: Endemic to sandy regions of southern and south-central Texas. State range: Atascosa, Aransas, Bexar, Caldwell, Goliad, Gonzales, Guadalupe, Kenedy, Nueces and Wilson counties (Nesom, 1988), occurring in early successional openings in post oak and live oak woodlands on deep sands of the Carrizo and other Eocene formations as well as Pleistocene strata along the Gulf coast. Given its ability to colonize disturbed sites, a rank of G4 may be more appropriate. Element code: PDAST22090.
- Chaetopappa parryi* Gray. Parry's least-daisy. G3S1. Global range: Mountains of north-central Coahuila to southeastern Nuevo León and Tamaulipas (Henrickson & Johnston, in prep.; TEX-LL, 1998); also west Texas (Correll & Johnston, 1970). State range: Reported from Del Norte Mountains of Brewster County in Correll & Johnston (1970), but Texas is not mentioned in range by Henrickson & Johnston (in prep.). Element code: PDAST22050.
- Chrysothamnus nauseosus* (Pallas) Britt. subsp. *texensis* L. C. Anderson. Guadalupe Mountains rabbitbrush. G5T2S1. Global range: Endemic to the Guadalupe Mountains of New Mexico and Texas. State range: Limestone ledges and open gravel alluvial slopes in the Guadalupe Mountains of Culberson County (Anderson, 1980; Burgess & Northington, 1981). Element code: PDAST2C0G8.
- Chrysothamnus spathulatus* L. C. Anderson. Douglas rabbit-brush. G3S2. Global range: Mountains of southern New Mexico and adjacent Trans-Pecos Texas. State range: Guadalupe Mountains of Culberson County. Element code: PDAST2C0B0.
- Cirsium turneri* Warnock. Cliff thistle, Turner's crotch-thistle. G3S3. Global range: West Texas and adjacent Coahuila. State range: Brewster, Terrell and Val Verde counties, found mostly in fractures of vertical limestone cliff-faces in canyons along the Rio Grande (Warnock, 1960). Element code: PDAST2E2W0.
- Coreopsis intermedia* Sherff. Goldenwave tickseed. G3S3. Global range: East Texas; Caddo Parish, Louisiana; and Miller County, Arkansas (Singhurst, 1996). State range: In deep sandy soils of sandhills in openings in or along margins of post oak woodlands and pine-oak forests of east Texas, with records from Anderson, Cass, Cherokee, Franklin, Freestone, Harris, Harrison, Henderson, Houston, Leon, Limestone, Marion, Nacogdoches(?), Newton, Smith, Trinity, Upshur, Van Zandt, and Wood counties (Singhurst, 1996). Element code: PDAST2L0E0.

- Coreopsis nuecensis* Heller. Crown coreopsis. G3S3. Global range: Endemic to Texas. State range: Atascosa, Bastrop, Bee, Bexar, Brazos, Brooks, Burleson, Caldwell, Dewitt, Frio, Guadalupe, Karnes, San Patricio and Wilson counties, where it occurs in open areas on sandy substrates (Smith, 1974; Smith, 1976). The very similar *Coreopsis nuecensoides* E. B. Smith is ranked G4. Element code: PDAST2L0N0.
- Echinacea atrorubens* Nutt. Topeka purple-coneflower. G3S3. Global range: Kansas, Oklahoma and Texas, occurring mostly in tallgrass prairie of the southern Great Plains. State range: Cooke, Denton, Fannin, Galveston, Gonzales, Hunt, Kaufman, Navarro, Parker, Polk, Red River, Rockwall, Tarrant, Walker, Waller, Washington and Wise counties (Diggs, Lipscomb & O'Kennon, 1999; McGregor, 1968; TEX-LL, 2002) in blackland prairies but also in a variety of other sites. Element code: PDAST38020.
- Echinacea paradoxa* (Norton) Britt. var. *neglecta* R. L. McGregor. Neglected coneflower. G4T1T2SR. Global range: According to McGregor (1968), this variety is functionally endemic to the Arbuckle Mountains of south-central Oklahoma, although a Lindheimer specimen from 1843 (without locality) is attributed to Texas. State range: Unknown at present. Element code: PDAST39051.
- Echinacea sanguinea* Nutt. *Echinacea pallida* (Nutt.) Nutt. var. *sanguinea* (Nutt.) Gandhi & Thomas. Sanguine coneflower. G3S3. Global range: Arkansas and Oklahoma south to Louisiana and eastern Texas. State range: The common woodland coneflower in much of the eastern third of Texas; the G rank may be misleading. In June 2003, TEX-LL reported specimens from Anderson, Angelina, Bastrop, Brazos, Cass, Falls, Fayette, Gregg, Grimes, Hardin, Harris, Henderson, Houston, Jasper, Leon, Morris, Newton, Orange, Polk, Rusk, Sabine, San Jacinto, Trinity, Tyler, Van Zandt, Walker and Wood counties. Element code: PDAST38070.
- Encelia scaposa* (Gray) Gray. One-head encelia. G3S2. Global range: Trans-Pecos Texas and northeastern Chihuahua (Henrickson & Johnston, in prep.); also in New Mexico (central BCD, 1997). State range: Culberson, Hudspeth, Jeff Davis and Terrell counties, occurring on open gravelly clay flats (Henrickson & Johnston, in prep.; SRSC, 2000). Plants of Terrell County are sometimes distinguished as *Encelia scaposa* var. *stenophylla* Shinnery; others are then var. *scaposa*. Element code: PDAST3F040.
- Flyriella parryi* (Gray) R. King & H. Robinson. *Brickellia shineri* M. E. Jones; *Eupatorium parryi* Gray. Shiner's brickellbush. G3S2. Global range: Trans-Pecos Texas south through central Coahuila to Nuevo León and west to mountains of eastern Chihuahua (Henrickson & Johnston, in prep.; Baker & Turner, 1986). State range: Dry rocky limestone slopes in Brewster and Val Verde counties. Element code: PDASTCW010.
- Gaillardia aestivalis* (Walt.) Rock. var. *winkleri* (Cory) Turner. White firewheel, Winkler's firewheel. G5T2S2. Global range: Endemic to East Texas. State range: Apparently restricted to Hardin and Tyler counties, where it occurs in sandhill openings and clearings in longleaf pine-oak woodlands. Element code: PDAST3Y013.
- Grindelia oolepis* Blake. Plains gumweed. G2S2. Global range: Endemic to the Gulf Coastal Plain of South Texas. State range: Bee, Cameron, Nueces, Refugio and San Patricio counties, found in early successional patches in coastal prairie on heavy clay soils, sometimes in disturbed habitats along railroads and vacant lots in urban areas (Mahler, 1980; Mahler, 1981); collected by Robert Runyon from "crawfish lands" in Cameron County in 1923. Element code: PDAST470Q0.
- Helianthus neglectus* Heiser. Neglected sunflower. G2QS2. Global range: Texas and New Mexico. State range: Ector, Loving, Ward and Winkler counties, usually in deep sands on rolling hills and dunes. Element code: PDAST4N0Y0.
- Helianthus occidentalis* Riddell subsp. *plantagineus* (T. & G.) Heiser. Plantainleaf sunflower. G5T3QS3. Global range: Mostly in southeast Texas, with reports from one county in Arkansas (Smith, 1988) and one parish in Louisiana (MacRoberts, 1989). State range: Mostly in prairies on the coastal plain, with records from Austin, Bastrop, Caldwell, Colorado, Dewitt, Fayette, Goliad, Jackson, Lavaca, Lee, Victoria, Waller and Washington counties (TEX-LL, 1999; BRIT/SMU, 1999; SBSC, 1999); seemingly disjunct in Newton County in the Pineywoods. Element code: PDAST4N112.
- Helianthus paradoxus* Heiser. Puzzle sunflower. G2S1. Global range: Texas and New Mexico. State range: Pecos and Reeves counties, occurring in moist heavy alkaline/saline calcareous silty clays and loams in and around cienegas and associated wetlands (Poole, 1992). Element code: PDAST4N130.
- Helianthus praecox* Engelm. & Gray subsp. *hirtus* (Heiser) Heiser. *Helianthus debilis* Nutt. subsp. *hirtus* Heiser. Dimmit sunflower. G4T2QS2. Global range: Apparently endemic to South Texas. State range: Known only from Dimmit County, occurring in local abundance on well drained sandy soils in open shrublands. Element code: PDAST4N151.
- Helianthus praecox* Engelm. & Gray subsp. *praecox*. *Helianthus debilis* Nutt. subsp. *praecox* (Engelm. & Gray) Heiser. Galveston sunflower. G4T2S2. Global range: Endemic to Texas. State range: Sandy open areas along the upper Texas coast, with records from Brazoria, Chambers and Galveston counties (Correll & Johnston, 1970; TEX-LL, 1988. Element code: PDAST4N153.

- Hymenopappus biennis* B. L. Turner. Biennial woollywhite. G3S2. Global range: Mountains of New Mexico and Trans-Pecos Texas. State range: Known only from the Guadalupe Mountains, where it occurs in grasslands and open pine-juniper-oak woodlands on rocky calcareous soils above 6000 feet. Element code: PDAST51020.
- Hymenopappus carrizoanus* B. L. Turner. Sandhill woollywhite. G2S2. Global range: Endemic to south-central Texas. State range: Anderson, Atascosa, Bastrop, Bexar, Caldwell, Frio, Guadalupe, Leon, Medina and Robertson counties, in disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo and similar Eocene formations (Turner, 1989). Element code: PDAST510A0.
- Hymenoxys texana* (Coult. & Rose) Cockerell. Prairie-dawn. G2S2. Global range: Endemic to the Coastal Plain of southeast Texas. State range: Presently known from Fort Bend, Harris and Trinity counties; a report from La Salle County is probably based on a misattributed specimen. Restricted to sparsely vegetated areas on slightly saline soils that are sticky when wet but powdery when dry, often at the base of mima (pimple) mounds in open grasslands (Bridges, 1988; Mahler, 1983; U. S. Fish & Wildlife Service, 1989). Element code: PDAST530L0.
- Lepidospartum burgessii* Turner. Gypsum scalebroom. G2S1. Global range: Endemic to salt basin on west side of the Guadalupe Mountains in New Mexico and Texas. State range: Found only on gypsum dunes in the salt basin east of Dell City in northern Hudspeth County (Turner, 1977; Rowell, 1983; Worthington & Reid, 1985). Element code: PDAST5Q010.
- Liatris bracteata* Gaiser. Coastal gayfeather. G2G3S2S3. Global range: Endemic to the Coastal Plain of Texas. State range: Aransas, Brazoria, Colorado, Galveston, Harris, Live Oak, Matagorda, Refugio, San Patricio and Waller counties, occurring in coastal prairies on a variety of loamy substrates. Element code: PDAST5X040.
- Liatris cymosa* (H. Ness) K. Schum. Branched gayfeather. G2S2. Global range: Endemic to the post oak belt of south-central Texas. State range: Brazos, Burleson, Grimes, Lee, Madison, San Jacinto, Walker and Washington counties, where it occurs in somewhat barren grassland openings in post oak (*Quercus stellata*) woodlands on tight clay, chalky, or gravelly soils. Element code: PDAST5X070.
- Liatris tenuis* Shinners. Slender gayfeather. G3S3. Global range: Endemic to the Western Gulf Coastal Plain of east Texas and western Louisiana. State range: Pineywoods of East Texas, with records from Angelina, Hardin, Jasper, Newton, Orange, Sabine, San Augustine and Tyler counties, in fire-maintained dry upland longleaf pine savannas, mostly on the Catahoula Formation (Orzell, 1990; Singhurst, 1996). Element code: PDAST5X0X0.
- Packera texensis* R. J. O'Kennon & D. K. Trock. Llano butterweed, llano groundsel. G2S2. Global range: Endemic to Texas. State range: Known from Gillespie, Llano and Mason counties in the Llano Uplift area; evidently disjunct in Callahan County on the Rolling Plains. Most sites are open to partially shaded sites on soils derived from granite, gneiss or other igneous or metamorphic rocks (Trock & O'Kennon, 2003); collections from the Rolling Plains are from sandy soils of other derivation. Element code: PDASTE60G0.
- Perityle aglossa* Gray. Rockdaisy. G3S3. Global range: southern Trans-Pecos Texas and adjacent Coahuila (Henrickson & Johnston, in prep.). State range: Crevices in limestone outcrops along the Rio Grande in Brewster and Terrell counties (Henrickson & Johnston, in prep.). Element code: PDAST70010.
- Perityle angustifolia* (Gray) Shinners. Rayless rock-daisy. G3S3. Global range: Apparently endemic to west Texas (A. Powell in Henrickson & Johnston, in prep.). State range: Crevices of limestone bluffs and cliff-faces in Crockett, Pecos, Terrell and Val Verde counties (Powell, 1973). Element code: PDAST70020.
- Perityle bisetosa* (Gray) Shinners var. *appressa* Powell. Appressed two-bristle rockdaisy. G2T2S2. Global range: Texas and Coahuila. State range: Brewster County, occurring in crevices in limestone exposures on bluffs and other rock outcrops (Powell, 1973; Powell, 1988). Element code: PDAST70031.
- Perityle bisetosa* (Gray) Shinners var. *bisetosa*. Two-bristle rock-daisy. G2T2S2. Global range: Texas and Coahuila. State range: Brewster, Pecos and Terrell counties, usually in crevices in limestone bluffs (Powell, 1973; Powell, 1988; TEX-LL, 2000). Element code: PDAST70032.
- Perityle bisetosa* (Gray) Shinners var. *scalaris* Powell. Stairstep two-bristle rockdaisy. G2T1S1. Global range: known only from Brewster County, Texas, where it occurs in limestone crevice habitats similar to those of other varieties of the species (Powell, 1973; Powell, 1988). Element code: PDAST70033.
- Perityle cinerea* (Gray) Powell. Gray rockdaisy. G2S2. Global range: Endemic to west Texas. State range: Pecos, Reeves, Terrell and Upton counties, occurring in crevices in limestone caprock of mesas (Hanks & Powell, 1983). Element code: PDAST70070.
- Perityle dissecta* (Torr.) Gray. Slimlobe rock-daisy. G2S2. Global range: Southern Trans-Pecos Texas and northern Chihuahua. State range: Limestone outcrops and cliffs in southern Brewster and southern Presidio counties. Element code: PDAST700B0.
- Perityle fosteri* Powell. Foster's rock-daisy. G1S1. Global range: Apparently endemic to the Apache Mountains of Culberson County, Texas, where it occurs on rock faces on limestone boulders and bluffs in deep protected canyons (Powell, 1983). Element code: PDAST70110.

- Perityle huecoensis* Powell. Hueco Mountains rock-daisy. G1S1. Global range: El Paso County, Texas and the Sierra Juarez in adjacent Chihuahua (Powell & Yarborough, 1997). State range: Known only from limestone cliff-faces in the Hueco Mountains. Element code: PDAST70100.
- Perityle lindheimeri* (Gray) Shinnery var. *halimifolia* (Gray) Powell. Devils River rockdaisy. G4T3S3. Global range: Endemic to Texas. State range: Limestone cliff-faces in Val Verde County eastward to central Texas (A. Powell in Henrickson & Johnston, in prep.). Element code: PDAST700H1.
- Perityle quinqueflora* (Steyermark) Shinnery. Five-flower rock-daisy. G3S3. Global range: Eddy County, New Mexico and Trans-Pecos Texas (Powell, 1969; Henrickson & Johnston, in prep.). State range: Rock crevices and cliff faces in Culberson, Hudspeth, Jeff Davis and Presidio counties (Powell, 1969). Element code: PDAST700M0.
- Perityle rupestris* (Gray) Shinnery var. *albiflora* Powell. Whiteflower rock-daisy. G4T3S3. Global range: Endemic to Trans-Pecos Texas. State range: Locally common on igneous rock outcrops in Brewster, southern Jeff Davis and eastern Presidio counties (Powell, 1969). Element code: PDAST700N1.
- Perityle rupestris* (Gray) Shinnery var. *rupestris*. Leafy rock-daisy. G4T3S3. Global range: Endemic to Trans-Pecos Texas. State range: Igneous rock outcrops in Culberson, Jeff Davis and Presidio counties (Powell, 1969). This variety may well prove to be T4. Element code: PDAST700N2.
- Perityle vitreomontana* Warnock. Glass Mountains rockdaisy. G1S1. Global range: Trans-Pecos Texas. State range: Chisos and Glass mountains of Brewster County, occurring in crevices in limestone exposures on cliffs and rock outcrops (Poole, 1992; Powell, 1969; Powell, 1988). Element code: PDAST700W0.
- Perityle warnockii* Powell. Warnock's rockdaisy. G1S1. Global range: Known only from a few limestone cliff-faces in Val Verde County, Texas (Powell, 1973; Powell, 1988). Element code: PDAST700X0.
- Pinaropappus parvus* Blake. Little rock-lettuce. G3S3. Global range: Endemic to the Chihuahuan Desert Region of Trans-Pecos Texas, southern New Mexico and Coahuila (J. Poole in Henrickson & Johnston, in prep.). State range: Guadalupe Mountains in Culberson County and from Victorio Canyon in the Sierra Diablo of Hudspeth County (J. Poole in Henrickson & Johnston, in prep.; TEX-LL, 1998). Element code: PDAST78010.
- Porophyllum greggii* Gray. Gregg's poreleaf. G3S3. Global range: Trans-Pecos Texas and northern Chihuahua (Henrickson & Johnston, in prep.). State range: Apparently rare in a variety of habitats in desert grasslands and on limestone and igneous slopes in Brewster, Culberson, Jeff Davis and Presidio counties (TEX-LL, 1998). Element code: PDAST7H020.
- Prenanthes barbata* (T. & G.) Milstead. Barbed rattlesnake-root. G3S3. Global range: Alabama, Arkansas, Georgia, Louisiana, Kentucky, Tennessee, and Texas. State range: Mostly in the Pineywoods of East Texas, with records from Angelina, Cass, Cherokee, Hardin, Jasper, Lamar, Nacogdoches, Newton, Polk, Rusk, Sabine, San Augustine and Shelby counties. Plants of the Edwards Plateau (Bandera, Gillespie, Kerr and Real counties), once attributed to this species, are a distinct species (Singhurst & Holmes, in press). Element code: PDAST7K060.
- Pseudoclappia arenaria* Rydb. Cienega pseudoclappia. G3S2. Global range: West Texas and the White Sands area of southern New Mexico south to central Coahuila and Chihuahua. State range: Bailey, Culberson, Gaines, Hall, Hudspeth, Pecos and Reeves counties, mostly in alkali sacaton (*Sporobolus airoides*) grasslands on alkaline, gypseous or saline soils of alluvial flats around cienegas, playa lakes and other desert wetlands. Element code: PDAST7Q010.
- Pseudoclappia watsonii* Powell & Turner. Watson's pseudoclappia. G1S1. Global range: Endemic to Trans-Pecos Texas. State range: Brewster, Hudspeth and Presidio counties, in Chihuahuan Desert shrublands on dry rocky gypseous clay hills (Powell & Turner, 1976). Note: The collection attributed to Presidio County may actually have been taken from Jeff Davis County. Element code: PDAST7Q020.
- Psilactis heterocarpa* (Hartman & Lane) Morgan. *Machaeranthera heterocarpa* Hartman & Lane; only recently recognized as distinct from *Machaeranthera tenuis* (S. Wats.) Turner & Horne, under which it is discussed in Correll & Johnston (1970) and Jones (1977). Welder machaeranthera. G2G3S2S3. Global range: Endemic to the Coastal Plain of South Texas. State range: Goliad, Jackson, Karnes, Kleberg, Nueces, Refugio, San Patricio and Victoria counties, in coastal prairie grasslands and open mesquite-huisache woodlands on mostly gray-colored clayey to silty soils over the Beaumont and Lissie Formations (Carr, 1995). Element code: PDAST64120.
- Rayjacksonia aurea* (Gray) Hartman & Lane. *Machaeranthera aurea* (Gray) Shinnery. Houston daisy. G2S2. Global range: Endemic to the Gulf Coastal Plain of southeast Texas. State range: Known only from Galveston and Harris counties, most conspicuous on and around naturally barren or sparsely-vegetated slick spots or pimple mounds on coastal prairie, usually on loamy to sandy loam soils (Clodine, Gessner, and Wockley series); occasionally found in disturbed pastures and on roadsides in places where natural conditions are imitated (Mahler, 1980; Mahler, 1981; Mahler, 1983). Element code: PDAST64050.

- Rudbeckia scabrifolia* L. E. Brown. Bog coneflower. G2G3S2. Global range: Western Gulf Coastal Plain of Louisiana and Texas (Orzell, 1990). State range: Angelina, Jasper, Newton, Sabine and Shelby counties, a denizen of hillside seepage bogs and associated broadleaf semievergreen acid seep forests, most often those on the Catahoula Formation (Miocene) or near the Catahoula-Willis contact (Orzell, 1990). Element code: PDAST850M0.
- Senecio quaylei* T. M. Barkley. Quayle's butterweed. G1S1. Global range: Endemic to north-central Texas. State range: Known only from the type location in Parker County, where it occurs in a weedy roadside ditch (Barkley, 2001). Element code: PDAST8H470.
- Shinnersia rivularis* (Gray) King & Robinson. *Trichocoronis rivularis* Gray. Springrun whitehead. G3S1. Global range: Isolated aquatic systems in southwestern Texas, northern Coahuila and northern Nuevo León (King & Robinson, 1970; King & Robinson, 1987; Turner, 1997). State range: Spring-fed streams in Uvalde and Val Verde counties. Element code: PDAST9F020.
- Silphium reverchonii* Bush. Reverchon's rosin-weed. G1G3QSR. Placed in synonymy under *Silphium simpsonii* Greene var. *wrightii* Perry in Correll & Johnston (1970), which in turn was placed in synonymy under *Silphium gracile* Gray in Kartesz (1994) and Jones, Wipff & Montgomery (1997). However, Kartesz recognizes *Silphium reverchonii* as a separate entity, whereas Jones et al. do not. Global range: Texas (central BCD, 1997). State range: Unknown; all *Silphium* specimens have been on loan from TEX-LL for some time. Element code: PDAST8L0C0.
- Solidago mollis* F. Bartling var. *angustata* Shinners. Rolling Plains goldenrod. G5T3S2. Global range: Endemic to extreme south-central Oklahoma and north-central Texas (Shinners, 1951; Taylor & Taylor, 1984). State range: Briscoe, Childress, Hall, Hardeman, Wichita and Wilbarger counties, where it occurs on gypsum outcrops and other xeric habitats (Shinners, 1951; Taylor & Taylor, 1984; TEX-LL, 2001). Element code: PDAST8P111.
- Tetranneuris turneri* (Parker) Parker. *Hymenoxys turneri* Parker. Billie's bitterweed. G3S3. Global range: Mostly in South Texas, with one record from Coahuila (Mcpio. Allende, Hwy 47, 0.4 mi S of El Infante, 15 May 1982, L. J. Dorr & T. L. Atkins 2222, TEX-LL). State range: Grasslands on shallow sandy soils and caliche outcrops in Bee, Goliad, Karnes, Jim Wells, Live Oak and San Patricio counties (TEX-LL, 1998). Element code: PDASTDY0B0.
- Thelesperma burridgeanum* (Regel) Blake. Burrige greenthread. G3S3. Global range: Endemic to South Texas. State range: Sandy open areas in Atascosa, Bexar, Dimmit, Frio, Karnes, La Salle, Medina, Wilson and Zavala counties (TEX-LL, 1998). Element code: PDAST98020.
- Thurovia triflora* Rose. *Gutierrezia triflora* (Rose) M. A. Lane. Threeflower broomweed. G2G3S2S3. Global range: Endemic to Texas. State range: Aransas, Brazoria, Calhoun, Galveston, Harris, Jackson, Matagorda, Refugio, San Patricio and Waller counties, in sparsely vegetated slick spots in coastal salty prairies and along drier upper margins of ecotone between salty prairies and tidal flats. Element code: PDASTCZ010.
- Thymophylla tephroleuca* (Blake) Strother. *Dyssodia tephroleuca* Blake. Ashy dogweed. G2S2. Global range: Endemic to South Texas. State range: Starr, Webb and Zapata counties, occurring in mesquite savannas and openings in shrublands on sandy substrates mostly over the Laredo and Yegua formations, often where mantled by Holocene eolian sand deposits. Element code: PDASTDZ080.
- Trichocoronis wrightii* (T. & G.) Gray var. *wrightii*. Wright's trichocoronis. G4T3S2. Global range: California, southern Texas, Tamaulipas and San Luis Potosí (King & Robinson, 1970). State range: Aransas, Cameron, Hidalgo, Kleberg, Nueces, Willacy counties (King & Robinson, 1970); also Brooks, Gonzales, Karnes, Kenedy, Lavaca (or Dewitt?), Live Oak, Refugio, San Patricio, Victoria and Wilson counties (various herbaria). Most records from Texas are historical, perhaps indicating a decline as a result of alteration of wetland habitats. Element code: PDAST9F031.
- Verbesina oreophila* Woot. & Standl. Mountain crownbeard, cookie-loving crownbeard. G3S2. Global range: Southern Trans-Pecos Texas to Coahuila. State range: Pinyon-oak-juniper chaparral to pine forests in the Chisos, Davis and Guadalupe mountains of Brewster, Jeff Davis and Culberson counties, respectively (TEX-LL, 1998; SRSC, 2000). Element code: PDAST9R0E0.
- Xylorhiza wrightii* (Gray) Greene. *Machaeranthera wrightii* (Gray) Cronquist & Keck. Wright's machaeranthera. G3S3. Global range: Trans-Pecos Texas and Coahuila. State range: Desert grasslands in the Trans-Pecos, with records from Brewster, Hudspeth, Jeff Davis and Presidio counties (TEX-LL, 1998). Element code: PDASTA1070.

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## Explanation of Terms and Symbols

### Global Rank

- G1 = less than 6 occurrences known globally; critically imperiled, especially vulnerable to extinction
- G2 = 6-20 occurrences known globally; imperiled and very vulnerable to extinction throughout its range
- G3 = 21-100 occurrences known globally; either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single state or physiographic region), or because of other factors making it vulnerable to extinction throughout its range
- G4 = more than 100 occurrences known, apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery
- G5 = demonstrably secure globally, though it may be quite rare in parts of its range
- GH = of historical occurrence throughout its range, i.e., formerly part of the established biota, with expectation that it may be rediscovered

### State Rank

- S1 = less than 6 occurrences known in Texas; critically imperiled in Texas; especially vulnerable to extirpation from the state
- S2 = 6-20 known occurrences in Texas; imperiled in the state because of rarity; very vulnerable to extirpation from the state
- S3 = 21-100 known occurrences in Texas; either rare or uncommon in the state
- S4 = more than 100 occurrences in Texas; apparently secure in the state, though it may be quite rare in some areas of the state
- S5 = demonstrably secure in Texas
- SH = historical in Texas, not verified within the past 50 years but suspected to be extant
- SR = reported from Texas in literature but not verified via specimens or field observations
- SX = presumed extirpated from Texas

A global or state rank followed by "Q" indicates that the taxonomic status of the plant is a matter of conjecture. A rank followed by "?" indicates that the rank is not certain. A "T" subrank following a global rank denotes the rank for subspecific taxa. Two G or S ranks together (G2G3, S1S2, etc.) indicate that the plant is borderline between the ranks.