

DOCUMENTED CHROMOSOME NUMBERS 2017:1. MISCELLANEOUS COUNTS  
MOSTLY FROM WESTERN TEXAS (U.S.A.), ONE EACH FROM  
NEW MEXICO (U.S.A.) AND MEXICO

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ABSTRACT

Thirty meiotic chromosome counts are reported for 18 species in six families of plants from western Texas, mostly the Trans-Pecos region, and one count each from New Mexico and Mexico. The counts for *Perityle microcephala*, *Echinocereus coccineus* var. *paucispinus* from Bandera County (= subsp. *roemerii*), *Dayia havardii*, and the tetraploid counts for *Solanum tenuipes* var. *tenuipes* are first reports. The chromosome numbers listed here for other species are consistent with previous reports.

RESUMEN

Se publican treinta [30] recuentos cromosómicos en meiosis de 18 especies en seis familias de plantas del oeste de Texas, la mayoría de la región de Trans-Pecos, un recuento de Nuevo México, y uno de México. Los recuentos de *Perityle microcephala*, *Echinocereus coccineus* var. *paucispinus* del Condado de Bandera (= subsp. *roemerii*), *Dayia havardii*, y los recuentos tetraploides de *Solanum tenuipes* var. *tenuipes* son los primeros realizados. Los números cromosómicos enumerados aquí para las otras especies son consistentes con los informes anteriores.

Miscellaneous chromosome counts were accumulated during the course of floristic studies mostly in Trans-Pecos Texas and adjacent areas. Contributed plant materials were the source of some counts, as indicated in the Acknowledgments. New and noteworthy counts for four taxa listed below are marked with an asterisk (\*) placed to the right of the chromosome number. Brief discussion mostly of meiotic chromosome configurations or taxonomy, or both, is associated with the new reports, and also with *Grindelia nuda* var. *aphanactis*, *Leucosyris parviflora*, *Peganum mexicanum*, *Glandularia pubera*, and *G. wrightii*. Unless otherwise noted chromosome numbers for all taxa are consistent with previous reports, as can be seen in online databases (CCDB accessed 2017; IPCN accessed 2017) and in various print sources including Federov (1969) and IOPB Chromosome Number Reports in issues of the journal *Taxon*.

Meiotic chromosome counts were obtained by A.M. Powell, using techniques described in Turner and Johnston (1961). Vouchers are deposited at SRSC. All collections are from the U.S.A. except for the one from Mexico. Collectors A.M. Powell and S.A. Powell are listed below as P. & P.

**Asteraceae**

*Amphiachyris dracunculoides* (DC.) Nutt. **2n = 5 II**. Texas. Brewster Co.: 14 km SE of Alpine, 2 Aug 2015, P. & P. 7350.

*Grindelia nuda* var. *aphanactis* (Rydb.) G.L. Nesom. **2n = ca. 24**. Texas. Jeff Davis Co.: 26.8 km NW of Alpine along TX 118, across from Musquiz Swamp, 22 Aug 2015, P. & P. 7355. Mostly bivalents and some apparent multivalents were observed at diakinesis of meiosis I.

*Gutierrezia sphaerocephala* A. Gray. **2n = 4 II**. Texas. Brewster Co.: near end of Mile High Road, 18.5 road km SE of Alpine (via TX 118 and Mile High), 26 Jul 2015, P. & P. 7344.

*Helianthus petiolaris* var. *canescens* A. Gray. **2n = 17 II**. Texas. Presidio Co.: along Casa Piedra Road, ca. 61 km S of jct. FM 169-US 67, 20 Oct 2015, C. Jackson 959.

*Hymenoxys odorata* DC. **2n = 11 II**. Texas. Brewster Co.: ca. 68 km S of Alpine, then ca. 1 km E of TX 118, 31 May 2015, C. Jackson 751. **2n = 11 II**. Presidio Co.: silty flats just below Sierra Vieja and Indian Peak Canyon,

NE side of mountains, 21 May 2010, P. & P. 6865 (with J. & J. Mussey). **2n = 11 II**. Presidio Co.: silty flats NE of Sierra Vieja, Clay Miller ranch W of Valentine, 21 May 2010, P. & P. 6896 (with J. & J. Mussey).

*Leucosyris parviflora* (A. Gray) Pruski & R.L. Hartm. **2n = 5 II**. Texas. Hudspeth Co.: edge of salt lake near US 62-180, 13.8 km W of jct. 62-180/54, 17 Sep 2016, P. & P. 7500. Synonyms of *L. parviflora* include *Machaer-anthera parviflora* A. Gray and *Arida parviflora* (A. Gray) D.R. Morgan & R. L. Hartm. (Pruski & Hartman, 2012).

*Packeria millelobata* (Rydb.) W.A. Weber & Á. Löve. **2n = 23 II**. Texas. Brewster Co.: ca. 14 km SE of Alpine, 26 Apr 2015, P. & P. 7216.

*Perityle microcephala* A. Gray. **2n = 17 II**.\* Mexico. Chihuahua. Mpio. Batopilas.: on road to San Ignacio, 7.5 road km W of Batopilas, 25 Sep 2012, R. Spellenberg & W. Anderson 14478. The count was from seed progeny grown at the Biology greenhouses. The chromosome number was interpreted as  $2n = 17 II$ ; bivalents heteromorphic, one consistently larger and possibly a trivalent or quadrivalent, but behaving at diakinesis and metaphase I as a bivalent. The chromosome number of *P. microcephala* is consistent with the base number postulated for a white-rayed species group of the genus in northwestern Mexico (Powell 1974).

*Psilactis brevilingulata* Sch. Bip. ex Hemsl. **2n = 9 II**. Texas. Brewster Co.: ca. 68 km S of Alpine, then ca. 5 km W of TX 118, 11 Aug 2015, C. Jackson 877.

*Senecio warnockii* Shinners. **2n = 20 II**. Texas. Culberson Co.: along FM 2185, 58.9 road km NE of jct. TX 54-2185, 1 Oct 2010, P. & P. 6917.

### Cactaceae

*Echinocereus coccineus* var. *paucispinus* D.J. Ferguson. **2n = ca. 22 II**.\* Texas. Bandera Co.: roadside FM 187, 1.2 km N of entrance to Lost Maples State Natural Area, 27 Dec 1999, J.F. Weedin 2154. Chromosome configurations included mostly bivalents and, possibly, some multivalents. Bandera County populations of *E. coccineus* also have been treated as subsp. *roemeri* (Muehlenpf.) W. Blum, Mich. Lange & Rutow.

### Nitrariaceae

*Peganum mexicanum* A. Gray. **2n = 12 II**. Texas. Brewster Co.: near TX 118, ca. 70.8 km S of Alpine, 15 Oct 2016, P. & P. 7532 (with C. Jackson). Two counts of  $2n = 12 II$  are known from Mexico (Keil 1979; Ward 1984). Apparently, this is the first report from the United States. *Peganum* was long included in Zygophyllaceae (e.g., Correll & Johnston 1970); current data place the genus in Nitrariaceae, in the separate order Sapindales (Stevens 2001 onwards).

### Polemoniaceae

*Dayia havardii* (A. Gray) J.M. Porter. **2n = 18**.\* Texas. Presidio Co.: near FM 170, 30 km NW of Presidio, 1 Oct 2016, P. & P. 7517. Chromosomal configurations at late diakinesis and early metaphase I showed  $7 II + 1 IV$  (ring); at anaphase I nine chromosomes segregated to both poles in some cells, and unequal segregation was observed in some other cells. This is the first report for the species, and it supports alignment of *D. havardii* with the genus *Dayia* ( $x = 9$ ; Porter & Patterson 2015), and not with *Ipomopsis* ( $x = 7$ ), where previously it was placed.

### Solanaceae

*Solanum citrullifolium* A. Braun var. *citrullifolium*. **2n = 12 II**. Texas. Jeff Davis Co.: roadside FM 505, 150 m N of US 90, 27 Sep 2014, P. & P. 7154.

*Solanum tenuipes* Bartlett var. *tenuipes*. **2n = 24 II**.\* Texas. Brewster Co.: along US 385, 21.5 km N of jct. 385-90 (jct. 1.8 km E of Marathon), 9 Jul 2016, P. & P. 7450. **2n = 24 II**.\* Brewster Co.: along US 385, 5.8 km N of jct. 385-90, 3 Sep 2016, P. & P. 7477. **2n = 24 II**.\* Brewster Co.: along US 385, 21.5 km N of jct. 385-90, 3 Sep 2016, P. & P. 7488. **2n = 24 II**.\* Brewster Co.: along US 385, 4.8 km N of jct. 385-90, 3 Sep 2016, P. & P. 7490. Previous reports for *S. tenuipes* are diploid ( $2n = 24$ ), from Mexico, for both var. *latisectum* Whalen and var. *tenuipes* (Whalen 1979). The chromosome number is tetraploid ( $2n = 48$ ) for all four collections of var. *tenuipes* from Brewster County, apparently the first polyploid counts for *Solanum* sect. *Androceras* (Whalen 1977).

## Verbenaceae

*Glandularia pubera* (Greene) G.L. Nesom. **2n = 10 II**. New Mexico. Eddy Co.: mile 11, Queen's hwy (hwy 137), Guadalupe Mountains, N of Dog Canyon, 7 Aug 2013, *J. Fenstermacher* 2437. **2n = 10 II**. Texas. Jeff Davis Co.: roadside TX 17, 34.9 km NE of Fort Davis, 9 May 2015, *P. & P.* 7233. **2n = 10 II**. Presidio Co.: Sierra Vieja, Indian Peak Canyon, NW side of mountains, Miller ranch, 21 May 2010, *P. & P.* 6844 (with *J. & J. Mussey*). Prior to the count for *Fenstermacher* 2437, the chromosome number was not known for plants assignable to *G. pubera* in the Guadalupe Mountains (Powell & Worthington in press).

*Glandularia wrightii* (A. Gray) Umber. **2n = 15 II**. Texas. Reeves Co.: roadside FM 3078, 5.3 km W of Toyahvale (jct. 17-3078), 9 May 2015, *P. & P.* 7237. **2n = ca. 15 II**. Brewster Co.: along TX 118, ca. 70.8 km S of Alpine, 20 Apr 2013, *P. & P.* 7003. **2n = 15 II**. Brewster Co.: roadside US 67, 51.5 km N of Alpine, 24 Apr 2013, *P. & P.* 7012. **2n = ca. 15 II**. Pecos Co.: roadside FM 1776, near jct. with FM 1450, a few km N of Coyanosa, 24 Apr 2013, *P. & P.* 7009. **2n = ca. 15 II**. Pecos Co.: roadside FM 1776, 30.5 km S of Coyanosa, 24 Apr 2013, *P. & P.* 7010. **2n = 15 II**. Pecos Co.: foothills of Glass Mountains, along US 385, 37 km N of jct. 385-90, 19 Jul 2014, *P. & P.* 7067. The chromosome numbers listed above for *G. pubera* and *G. wrightii* correspond with those reported by Turner and Powell (2005); in the latter publication *G. wrightii* ( $n = 10$  pairs) is now interpreted as *G. pubera* and the Trans-Pecos counts of *G. bipinnatifida* var. *bipinnatifida* ( $n = 15$  pairs) are now interpreted as for *G. wrightii* (Nesom 2010-46; Powell & Worthington in press); i.e., *G. pubera* in the Trans-Pecos and adjacent areas is consistently tetraploid ( $2n = 20$ ) and *G. wrightii* in the same geographic region is consistently hexaploid ( $2n = 30$ ).

*Glandularia verecunda* Umber. **2n = 10 II**. Texas. Reeves Co.: roadside FM 3078, 5.3 km W of Toyahvale (jct. 17-3078), 9 May 2015, *P. & P.* 7238.

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