CHROMOSOME NUMBERS OF MISCELLANEOUS ANGIOSPERM TAXA

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ABSTRACT

Chromosome counts are reported for 68 individuals in 64 taxa (including one interspecific hybrid) in 36 genera of 15 families. Of these, 11 taxa are counted for the first time.

RESUMEN

Se recontaron los números cromosómicos de 68 individuos en 64 taxones (incluyendo un híbrido interspecífico) pertenecientes a 36 géneros de 15 familias. De estos, 11 taxones se han contado por primera vez aquí.

METHODS

Meiotic counts (*n*) were obtained from microsporogenesis in flower buds according to methods of Pinkava et al. (1998); mitotic counts (2*n*) were obtained from root tips according to Cota et al. (1994).

RESULTS

First counts are reported for: *Agave felgeri*, *A. margaritae*, *A. mckelveyana* (Agavaceae); *Cylindropuntia anteojoensis* × *C. leptocaulis*, *Escontria chiotilla*, *Stenocactus multicostatus*, *Stenocereus beneckei* (Cactaceae); *Mosiera ehrenbergii* (Myrtaceae), *Eriogonum ripleyi* (Polygonaceae), *Nemeranthus validulus* (Portulacaceae) and *Ivesia multifoliolata* (Rosaceae). A new count was made for *Prunus virginiana* var. *demissa* (Rosaceae). Other counts are listed below (Table 1).

TABLE 1. Vouchered chromosome number reports of miscellaneous angiosperms. Counts were determined by the collector of the numbered specimen unless in brackets with initials of an author of this paper. Vouchers are deposited in herbaria whose acronyms (Holmgren, P. K. et al. 1990) appear in parentheses. Asterisks (*) denote first counts; (**) denote a new chromosome number for a taxon.

Taxon	Chromosome number	Locality, notes
	DICOTYLEDONAE	
Apocynaceae		
Amsonia tomentosa Torr. & Frémont var. *tomentosa*	*n* = 11	USA, Arizona, Mohave Co.: NNW of Alamo Lake, jctn. Signal and Alamo Rds., *Parfitt 4181B* & *Christy* (ASU).
Asteraceae / Compositae		
Coreocarpus parthenioides Benth. var. *parthenioides*	*n* = 12	MEX, Baja California: 5.3 km S of town of Bahia de Los Angeles, *Rebman 957* & *Marsh* (ASU)

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TABLE 1. (continued)

Taxon	Chromosome number	Locality, notes
	DICOTYLEDONAE	
Lasthenia coronaria (Nutt.) Ornduff	$n = 4$	MEX, Baja California: 4.8 km S of Punta Baja W of El Rosario, *Rebman 927 & Marsh* (ASU).
Perityle crassifolia Brandegee var. *robusta* (Rydb.) Everly	$n = 19$	MEX, Baja California Sur: 3 km S of San Gregorio, *Baker 8767 & Johnson* (ASU).
Perityle lobata (Rydb.) I.M. Johnst.	$n = 17$	MEX, Baja California Sur: 0.8 km E of San José, Comondú, *Baker 8748 & Johnson* (ASU).
Senecio californicus DC.	$n = 20$	MEX, Baja California: 4.8 km S of Punta Baja W of El Rosario, *Rebman 930 & Marsh* (ASU).
Stephanomeria schottii A. Gray	$n = 8$	USA, Arizona, Yuma Co.: Mohawk Dunes, T9S R15W S2, *Salywon 557 & Shohet* (ARIZ, ASU, DES, SD).
Viguiera laciniata A. Gray	$n = 18$	MEX, Baja California: N of El Junco, between Ensenada and Tijuana, *Rebman 2156 & Hirales* (ASU).
Brassicaceae / Cruciferae		
Cakile maritima Scopoli	$n = 9$	MEX, Baja California: Punta Morro, N of Ensenada, *Rebman 2153* (ASU).
Hesperidanthus linearifolius (A. Gray) Rydb.	$n = 11$	USA, Arizona, Coconino Co.: 32 km N of Flagstaff on Hwy 180, *Salywon 256* (ASU).
Cactaceae		
Cleistocactus cf. *baumannii* Lem.	$n = 11$	Origin unknown; cultiv. at Univ. of Tennessee and Arizona State Univ., *Christy s.n.* (ASU).
**Consolea corallicola* Small	$2n = 66$	USA, Florida, Monroe Co.: Torchwood Hammock, Little Torch Key, Bob Ehrig, TNC. Cultiv. Fairchild Tropical Gardens (FTG 90-04), Miami, and Arizona State Univ., Tempe; recollected 14 June 1990 by Pinkava (ASU). [JHC] Previously published (Austin et al. 1998) without details.
Consolea rubescens (Salm-Dyck ex DC.) Lem.	$2n = 132$	West Indies, Guadeloupe: Pointe de la Grand Vigie, Grand Terre (R. Moyround); cultiv. in GeminiGardens, Manalapan, Florida, and at ASU. Greenhouse, Tempe, *Pinkava s.n.* (ASU). [JHC]
**Cylindropuntia anteojoensis* (Pinkava) E.F. Anderson × *C. leptocaulis* (DC.) F.M. Kunth	$n = 22$	MEX, Coahuila: S side of Sierra de la Fragua, near Cuatro Cienegas, *Salywon 153 & Tiller* (ASU).
Cylindropuntia imbricata (Haw.) F.M. Knuth var. *imbricata*	$n = 11$	MEX, S.L.P.: Municipio Santa Catarina, *Puente 1258* (ASU).
Echinocereus pensilis (K. Brandegee) Purpus [*Morangaya pensilis* (K. Brandegee) C.D. Rowley]	$n = 11$	Origin unknown; cultiv. in Scottsdale, Arizona, *Zimmerman 2665* (ASU). [BP]
Echinocereus scheeri (Salm-Dyck) Scheer subsp. *gentryi* (Clover) N.P. Taylor	$n = 11$	Origin unknown; cultiv. in Tucson, Arizona, *Zimmerman 2774* (ASU).
Echinocereus viridiflorus Engelm. var. *viridiflorus*	$n = 11$	USA, Colorado, Lincoln Co.: Punkin Center, Highway 71, *Salywon 110a* (ASU).
Echinomastus intertextus (Engelm.) Britton & Rose var. *intertextus*	$n = 11$	USA, Arizona, Pima Co.: Cienega Creek, *Salywon 115 & Tiller.*
Echinomastus johnsonii (Engelm.) E.M. Baxter	$n = 11$	USA, Arizona, Mohave Co.: vicinity of Lake Mead, purple flowers, *Chamberland 58* (ASU). [?BP]
Eriosyce subgibbosa (Haw.) Katt. subsp. *clavata* (Söhrens ex Schum.) Katt. var. *nigrihorrida* (Backeb.) Katt.	$n = 11$	Chile, Coqimbo, Ritter 218, [Dr. J. Barrow's collection No. 36] Atlanta Bot. Gard., then cultiv. in Desert Bot. Gard., Arizona (DBG 1992-0203-01-01), recollected by E.F. Anderson (DES). [BP]

Table 1. (continued)

Taxon	Chromosome number	Locality, notes
	DICOTYLEDONAE	
**Escontria chiotilla* (F.A.C. Weber) Rose	*n* = 11	Origin unknown; cultiv. at Desert Bot. Gard., Arizona (Bed D, DBG #1950-2731-01-01), *Chamberland s.n.* (ASU). [DP, JR]
Hatiora salicornioides (Haw.) Britton & Rose	*n* = 11	Origin unknown; cultiv. in ASU greenhouse, Tempe, *Rebman s.n.* (ASU, SD).
Opuntia aciculata Griffiths	*n* = 22	Origin unknown; in Desert Bot.Gard., Arizona (Bed 57W, DBG 76-73), *Hodgson 3644* (ASU photo, DES). [DP]
Opuntia elatior P. Miller	*n* = 44	Origin from International Succulent Institute, possibly in Colombia; cultiv. at Desert Bot. Gard., Arizona (DBG 168-9268-01-01) recollected by *J. Ward s.n.* (DES, 2 sheets). [JR; meiosis irregular]
Opuntia humifusa (Raf.) Raf.	2*n* = 22	USA, Florida: pineland remnant (from Montgomery Foundation). Cultiv. in Fairchild Tropical Garden, Florida (FTG 90-107) and in ASU Greenhouse, Arizona, *Pinkava s.n.* (originally labeled as var. *austrina* (Small) Dress [JHC].
Opuntia humifusa (Raf.) Raf.	*n* = 11	USA, Georgia, Bullock Co.: 3.2 km N of Lotts Creek Bridge, 9.7 km S of Statesboro, *Christy 2741b* (ASU, DES, SD). Richmond Co.: Augusta, 3.2 km SW of jctn. I-20 & I-520, *Christy 2748-A1* (ASU), *-A12* (ASU, NY, US). South Carolina, Lexington Co.: 48 km W of Columbia, *Christy 2745B* (ASU, NY, US).
Opuntia megarhiza Rose [*O. pachyrrhiza* Gómez-Hin. & Bárcenas]	*n* = 11	MEX, S.L.P.: Mpio. Zaragoza, 1 km N of Valley de Los Fantasmas, *Puente 601* (ASU, two sheets).
Opuntia salmiana Parm. ex Pfeiff.	*n* = ca. 22 (irreg. tetrads)	Origin unknown; cultiv. in Scottsdale, Arizona, *Zimmerman s.n.* (ASU).
Opuntia stricta (Haw.) Haw.	*n* = 22	Origin unknown; cultiv. (as var. *dillenii*) in Scottsdale, Arizona, *Zimmerman 2667* (ASU). [BP]
Stenocactus crispatus (DC.) A. Berger ex A.W. Hill [*Echinofossulocactus crispatus* DC.) Lawrence]	*n* = 11	MEX, S.L.P.,13 km S of Huizache Junction, Rod *McGill s.n.*; then cultiv., Desert Bot. Gard., Arizona (DBG 1962-7221-01-01). Recollected by J. Ward (DES). [BP]
Stenocactus multicostatus (Hildeman ex K. Schum.) A. Berger [*Echinofossulocactus multicostatus* (K. Schum.) Britton & Rose]	*n* = 11	Origin unknown. Cultiv. in Mesa, Arizona, *Puente 538* (ASU, two sheets, one box). [RP & JR]
**Stenocereus beneckei* (Ehrenb.) A. Berger & F. Buxbaum	*n* = 11	Origin unknown; cultiv. in Desert Bot. Gard. Arizona (Webster Patio near Library), *Parfitt s.n.* (ASU).
Stenocereus pruinosus (Otto) F. Buxbaum	*n* = 11	MEX, Colima: Manzanillo, C. Meig & F. G. Hermann, in 1955. Cultiv. in Desert Bot. Gard., Arizona (DBG 5143-01-01), *Chamberland s.n.* (ASU, DES).
Stenocereus stellatus (Pfeiff.) Riccobono	*n* = 11	MEX, PUEBLA: near Tehuacan, *Lindsay s.n.*; cultiv., Desert Bot. Gard., Arizona (DBG 139-0628-0104); recollected by J. Ward. (ASU, DES).
Crassulaceae		
Dudleya arizonica Rose	*n* = 17	MEX, Baja California: 3.2 km SE of San Matias Pass, San Pedro Mártir, *Baker 3716* (ASU).
Dudleya ingens Rose	*n* = 34	MEX, Baja California: 3.2 km W of Camalu on Rte. 1, *Gallagher 82-40* (ASU). [MB]
Fabaceae / Leguminosae		
Astragalus nutriosensis Sanderson	*n* = 11	USA, Arizona, Apache Co.: SE of Eager, Picnic Hill just W of Rte. 666, *Baker 11431.2 & Wright* (ASU).

Table 1. (continued)

Taxon	Chromosome number	Locality, notes
	DICOTYLEDONAE	
Astragalus oophorus S. Watson var. *caulescens* (M.E. Jones) M.E. Jones	$n = 11$	USA, Arizona, Coconino Co.: 5 km N of Jacob Lake, *Baker 4387* & *Trushell* (ASU).
Astragalus trichopodus (Nutt.) A. Gray var. *lonchus* (M.E. Jones) Barneby	$n = 15$	MEX, Baja California; 2 km E of Rosalallita, Santo Domingo Wash, *Baker 8701* & *Johnson*, Hwy 1, 86 km S of San Quintin, *Rebman 1646* & *Delgadillo* (ASU).
Astragalus troglodytus S. Watson	$n = 11$	USA, Arizona, Yavapai Co.: NW of Prescott, 0.8 km SW of Lone Pine Tank, *Baker 10652* (ASU).
Lupinus latifolius Agardh subsp. *leucanthus* (Rydb.) Kenny & Dunn	$n = 24$	USA, Arizona, Yavapai Co.: NW of Prescott, 1.4 km WNW of Stinson Mtn., *Baker 11023.1* & *Wright* (ASU).
Psoralidium tenuiflora (Pursh) Rydb.	$n = 11$	USA, Arizona, Yavapai Co.: NW of Prescott, 3.7 km SW of Connell Mtn. summit, *Baker 10843* (YCH).
Lamiaceae / Labiatae		
Salvia dorrii (Kellogg) Abrams subsp. *mearnsii* (Britton) McClintock	$n = 15$	USA, Arizona, Yavapai Co.: 4 km WSW of confluence of Hell Canyon and Verde River, 1.5 km NW of Verde Ranch Headquarters, *Baker 15697* (ARIZ, ASC, ASU, DES).
Loasaceae		
Eucnide rupestris (Baillon) Thompson & Ernst	$n =$ ca. 21	MEX, Baja California, S of La Ventana between Mexicali and San Felipe, *Rebman 2091* & *Hirales* (ASU).
Mentzelia multiflora (Nutt.) A. Gray	$n = 10$	USA, Arizona. Yavapai Co.: S of Ash Fork, 6 km SSE of Rock Butte, *Baker 11394.1* (ASU, two sheets).
Myrtaceae		
**Mosiera ehrenbergii* (Berg) Landrum	$2n = 22$	MEX, S.L.P.: Guadalcazar; cultiv. in ASU Greenhouse, Tempe, *Landrum 7375* (ASU). [JHC]
Polygonaceae		
**Eriogonum ripleyi* J.T. Howell	$n = 16$	USA, Arizona, Yavapai Co.: NW of Jerome, 4.2 km SSE of Red Butte, *Baker 11803* & *Wright* (ASU).
Portulacaceae		
**Phemeranthus validulus* (Greene) Kiger [*Talinum validulum* Greene]	$n = 24$	USA, Arizona, Yavapai Co.: ca. 9 km W of Jerome, W base of Woodchute Mtn., *Baker 9388* (ASU).
Rosaceae		
**Ivesia multifoliolata* (Torr.) Keck	$n = 14$	USA, Arizona, Coconino Co.: T19N R3E S15, Tule Tank Wash, *Baker 9847*.
***Prunus virginiana* L. var. *demissa* (Nutt.) Torr.	$n = 16$	USA, Arizona, Yavapai Co.: Woodchute Wilderness Area, 5 km NW of Jerome, *Baker 9823* (ASU, two sheets, second collection from same individual). Previously counted as $2n = 16$ (Wilken 1993).
Scrophulariaceae		
Penstemon superbus A. Nelson	$n = 8$	USA, Arizona, Graham Co.: 2 km NNW of Solomon Pass W of Rock Tank, *Baker 11626* & *Kertell* (ASU).
Penstemon albomarginatus M.E. Jones	$n = 8$	USA, California, San Bernardino Co.: N34.8145E W116.4065E, 55 km W of Barstow, *Baker 16674.1* & *Silverman* (ASU).
	MONOCOTYLEDONAE	
Agavaceae		
Agave ×*arizonica* Gentry & J. H. Weber, pro sp. (*A. chrysantha* Peebles × *A. toumeyana* var. *bella*)	$n = 30$	USA, Arizona: cultiv. in Desert Botanical Garden, Arizona (Bed #40), *Hodgson 4526* (ASU, DES). [MB]

TABLE 1. (continued)

Taxon	Chromosome number	Locality, notes
	MONOCOTYLEDONAE	
Agave aff. *chrysantha* Peebles	$n = 30$	USA, Arizona, Yavapai Co.: 5 km N of Camp Verde, just W of Montezuma Castle Natl. Mon. boundary, *Baker 11854* et al. (with morphological intermediacy to *A. delamateri* Hodgson & Slauson (ASU, DES).
Agave felgeri Gentry	$n = 30$	MEX, Sonora: San Carlos Bay, *Felger 637* [topotype] (ASU, DES). [AS]
Agave glomeruliflora (Engelm.) A. Berger	$n = 60$	MEX, Coahuila, Los Cojos Minas, SW of limestone slopes of Sierra del Carmen, Gentry & Engard s.n., since cultiv. in Desert Bot. Gard., Arizona (DBG 1972-0159-01-07), *Hodgson 10196* (DES). [MB]
Agave margaritae Brandegee	$n = 30$	MEX, Baja Calif. Sur: Santa Margarita Island, *Glass s.n.* et al. [topotype] (DES). [AS]
**Agave mckelveyana* Gentry	$n = 30$	USA, Arizona, Yavapai Co.: 15 km SW of Bagdad, *Baker 10813* (ASU, DES); Rugar Ranch, SW of Kirkland Jct., W of Hwy. 89, N34E 21.765'W112E 44.816', *C.D. Avis s.n. et al.* (DES). [AS & Turcott]
Agave toumeyana Trel. var. *bella* Breitung	$n = 30$.	USA, Arizona, Yavapai Co.: ca. 5 km N of Camp Verde, *Wright 1538* et al.(ASU) [MB]
Agave utahensis Engelm. var. *kaibabensis* (McKelvey) Gentry	$n = 30$	USA, Coconino Co.: Grand Canyon Natl. Pk., E of Hance Creek, *Hodgson 9725* (DES). [MB]
Yucca glauca Nutt.	$n = 30$	USA, New Mexico, Colfax Co.: N36.781° W104.861°, *Baker 12530* & *Wright* (ASU, DES).
Nolinaceae		
Nolina bigelovii (Torr.) S. Watson	$n = 19$	USA, Arizona, Mohave Co.: Devil's Canyon, 15 km S of Wickieup, *Baker 10764* et al.. Yavapai Co.: 15 km SW of Bagdad, *Baker 10814* (ASU).

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