

**CHROMOSOME COUNTS OF *BIDENS*, *COSMOS* AND  
*THELESPERMA* SPECIES (ASTERACEAE, COREOPOSIDINAE)**

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**ABSTRACT**

Chromosome counts are presented for *Bidens*, *Cosmos*,  
*Thelesperma* species. *Phytologia* 92(3): 312-333 (December 1, 2010).

**KEY WORDS:** *Bidens*, *Cosmos*, *Thelesperma*, chromosome counts,  
Coreopsidinae.

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The chromosome counts presented here were made from pollen mother cell squashes of materials collected throughout Mexico, the southwestern U.S. (primarily Arizona and New Mexico), and Central America (primarily Guatemala). Nos. 6006-6240 were collected by T. E. Melchert and P. D. Sørensen in 1965; Nos. 6251-6504 by T. E. Melchert, P. D. Sørensen and D. J. Crawford in 1966; Nos. 67-1 through 67-182 by T. E. Melchert, D. J. Crawford and J. E. Averett in 1967; Nos. 68-1 through 68-46 by N. J. Carman in 1968; Nos. 68-48 through 68-138 by N. J. Carman and D. E. Giannasi in 1968; Nos. 71-1 through 71-21 by C. R. Hart in 1971; Nos. 71-22 through 71-308½ by T. E. Melchert, C. R. Hart and R. E. Ballard in 1971; and those with a (R-) prefix by R. R. Roseman in 1976.

The methods used to obtain and document these counts are those of Melchert (1968). In the following tables counts obtained from individual plants are distinguished by letters (A, B, C, D) appended to the population collection number. Counts obtained from progeny grown from seed in The University of Iowa greenhouses are marked by the symbol (GH). The chromosome numbers presented here for the populations comprising the "*Bidens pilosa* species complex" (B.

*odorata*, *B. alba*, *B. pilosa* and *B. clavata*) collected in 1971 were determined by Ballard (1975, 1986, 1988).

Voucher specimens are deposited in The University of Texas Herbarium (TEX). These studies were supported by N.S.F. grants GB-3851 and GB-6684.

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<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens acrifolia</i> Sherff		
MEXICO:		
Jalisco:	$n = 10$	6376, 6385, 68-113
<i>Bidens aequisquama</i> (Fernald) Sherff		
MEXICO:		
Jalisco:	$n = 36$	6407
	$n = ca\ 36$	6389, 68-59
Michoacán:	$n = 36$	68-126, 68-128, 247
<i>Bidens aequisquama</i> var. <i>guanajuatensis</i> Melchert		
MEXICO:		
Guanajuato:	$n = 36$	71-94 (Type collection)
<i>Bidens alba</i> (L.) DC. var. <i>alba</i>		
MEXICO:		
Veracruz:	$n = 24$	71-127, 71-130, Cruden 1893
<i>Bidens alba</i> var. <i>radiata</i> (Sch.-Bip.) Ballard		
MEXICO:		
Campeche:	$n = 24$	71-143B, Cruden 1912
Oaxaca:	$n = 24$	68-35, 71-137
Tamaulipas	$n = 24$	King 4058
Veracruz	$n = 24$	71-124, 71-125B, 71-128, 71-129, 71-130, 71-131, 71-133, 71-134, 71-136, Cruden 1913

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens angustissima</i> H. B. K.		
MEXICO:		
Durango:	$n = 10$	6290, Cruden 1855
Guanajuato:	$n = 10$	71-100
Hidalgo:	$n = 10$	*Beaman 2763 (TEX)
San Luis Potosi:	$n = 10$	71-72
<i>Bidens anthemoides</i> (DC.) Sherff		
MEXICO:		
Mexico D. F.:	$n = 11$	67-126
Mexico:	$n = 11$	71-115 (GH), 71-234
<i>Bidens aurea</i> (Ait.) Sherff		
MEXICO:		
Mexico:	$n = 17$ or $18$	67-164
Chiapas:	$n = 23$	6460A, 6460B, Cruden 1543C, Cruden 1543D, Cruden, 1537, Cruden 1548, Cruden 1549
Durango	$n = 23$	6291, 68-85
Guanajuato:	$n = 23$	67-175
Hidalgo:	$n = 23$	67-41, 67-38
Jalisco:	$n = 23$	71-81A, 71-267, 71-277A, 71-277B, 71-277C

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens aurea</i> (Ait.) Sherff (cont'd)		
MEXICO (cont'd):		
Mexico:	$n = 23$	6115, 67-138, 67-147, 67-166, 67-150, 6230, 71-109
Michoacán:	$n = 23$	67-167A, 67-167B, 67-167C, 67-168, 6402, 67-174B, 67-175, 6413
Oaxaca:	$n = 23$	6191, 67-107, 68-32, 68-32B, 68-37
Puebla:	$n = 23$	6150
San Luis Potosi:	$n = 23$	67-16
Tlaxcala:	$n = 23$	67-46
Veracruz:	$n = 23$	67-114
Michoacán:	$n = 34$ or $35$	6098, 71-244
(Mirador:	$n =$ ca 35 (34-36)	67-170
Mil Cumbres:)	$n =$ ca 35 (or 36)	71-244
<i>Bidens balsana</i> Melchert		
MEXICO:		
Guerrero:	$n = 11$	67-154, 71-206
<i>Bidens bicolor</i> Greenm.		
MEXICO:		
Chiapas:	$n = 12$	6455, 71-150, 71-154

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<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens bicolor</i> Greenm. (cont'd)		
MEXICO (cont'd):		
Oaxaca:	$n = 12$	71-172
GUATEMALA:	$n = 12$	6477, R-580
<i>Bidens bigelovii</i> A. Gray		
MEXICO:		
Chiapas:	$n = 24$	6454
Durango:	$n = 24$	6287
Guanajuato:	$n = 24$	71-96, 71-97, 71-98
Jalisco:	$n = 24$	71-274 (GH)
Querétaro:	$n = 24$	67-27
San Luis Potosi:	$n = 24$	67-21, 71-55, 71-56A, 71-56B
UNITED STATES:		
Arizona:	$n = 24$	71-12, 71-15
New Mexico:	$n = 24$	71-4, 71-6, 71-8
<i>Bidens carpodonta</i> Sherff		
MEXICO:		
Nuevo Leon:	$n = 12$	6 counts, Hart 1979
<i>Bidens chiapensis</i> Brandegees		
MEXICO:		
Chiapas:	$n = 12$	6466, 71-148

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens chiapensis</i> Brandegee (cont'd)		
GUATEMALA:	$n = 12$	6436
<i>Bidens chrysanthemifolia</i> (H. B. K.) Sherff		
MEXICO:		
Chiapas:	$n = 24$	71-146A, 71-146B
GUATEMALA:	$n = 24$	R-581, 6440A, 6442, 6445
<i>Bidens clavata</i> Ballard		
MEXICO:		
San Luis Potosi:	$n = 12$	71-52, 71-57, 71-60, 71-62, 71-63A, 71-64A, 71-64B
San Luis Potosi:	$n = 12 +$ ( $n = 14$ )	71-63B (71-63A is $n = 12$ )
<i>Bidens cronquistii</i> (Sherff) Melchert		
MEXICO:		
Guerrero:	$n = 12$	71-210
<i>Bidens ferulaefolia</i> (Jacq.) DC.		
MEXICO:		
8 states:	$n = 12$	22 counts, Hart 1979
<i>Bidens laevis</i> (L.) B. S. P. Presl.		
MEXICO:		
Jalisco:	$n = 12$	6345
<i>Bidens lemmonii</i> A. Gray		
MEXICO:		
Chihuahua:	$n = 12$ (GH)	71-307 ½

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens leptcephala</i> Sherff		
MEXICO:		
Chihuahua:	$n = 11$	6254A, 6254B
UNITED STATES:		
Arizona:	$n = 11$	71-9, 71-14, 71-16
<i>Bidens longistyla</i> Hart		
MEXICO:		
Coahuila:	$n = 12$	5 counts, Hart 1979
<i>Bidens mollifolia</i> Sherff		
MEXICO:		
Durango:	$n = \text{ca } 24$	6310
	$n = 36$	6307, 68-23, 71-291
Jalisco:	$n = 24$	71-266
Mexico:	$n = 36$	71-232
Michoacán:	$n = 24$	68-27, 68-29, 71-245
Oaxaca:	$n = 24$	6188A, 6188B, 67-78, 67-101, 67-104, 71-184
	$n = 36$	71-173
<i>Bidens oaxacana</i> Melchert		
MEXICO:		
Oaxaca:	$n = 12$	67-87
<i>Bidens ocellatus</i> (Greenm.) Melchert		
MEXICO:		
Mexico D. F.:	$n = 12$	6485, 6485A, 67-131, 71-222



<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY:</b> <b>State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens odorata</i> Cav. var. <i>chilpancingensis</i>		
MEXICO:		
Guerrero:	$n = 12$	71-217
	$n = 12, 13$	71-207
<i>Bidens odorata</i> Cav. var. <i>odorata</i>		
MEXICO:		
Aguascalientes:	$n = 12$	68-97, 71-85
Chiapas:	$n = 12$	6461A, 6461C, 71-152, 71-158
Chihuahua	$n = 12$	6253A, 6253B, 6257, 6262A, 6262B, 68-72, 68- 73, 68-74, 68-75
Coahuila:	$n = 12$	71-23, 71-25, 71-32
Durango:	$n = 12$	67-76, 68-94, 68-95, 71- 289, 71-294, 71-297
Guanajuato:	$n = 12$	67-22, 67-24
Guerrero:	$n = 12$	67-153
Hidalgo:	$n = 12$	67-33, 67-36
Mexico:	$n = 12$	6114, 6127, 6491, 67-118, 67-134, 67-159, 67-162A, 67-162B, 68-52, 68-53, 71- 229, 71-231, 71-241
Michoacán:	$n = 12$	6420, 71-242

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<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens odorata</i> Cav. var. <i>odorata</i> (cont'd)		
MEXICO (cont'd):		
Morelos:	<i>n</i> = 12	67-30
Nuevo Leon:	<i>n</i> = 12	71-35, 71-40, 71-47
Puebla:	<i>n</i> = 12	71-118, 71-120, 71-204
Querétaro:	<i>n</i> = 12	67-24, 67-30, 68-104, 71-103, 71-105, 71-107
San Luis Potosi:	<i>n</i> = 12	68-103, 71-48, 71-49, 71-70
Tlaxcala	<i>n</i> = 12	67-47
Zacatecas:	<i>n</i> = 12	71-26, 71-77, 71-281, 71-283
GUATEMALA:		
Huehuetenango:	<i>n</i> = 12	6450
Quezaltenango:	<i>n</i> = 12	6448
UNITED STATES:		
New Mexico:	<i>n</i> = 12	71-3
<i>Bidens odorata</i> var. <i>rosea</i> Melchert = <i>B. o.</i> var. <i>calcicola</i> (Greenm.) Ballard		
MEXICO:		
Chiapas:	<i>n</i> = 12	71-139, 71-141
Colima:	<i>n</i> = 12	71-258

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY:</b> <b>State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens odorata</i> var. <i>rosea</i> Melchert (cont'd)		
= <i>B. o.</i> var. <i>calvicola</i> (Greenm.) Ballard (cont'd)		
MEXICO (cont'd):		
Durango:	$n = 12$	6278, 71-295, 71-296
Guanajuato:	$n = 12$	67-176A
Jalisco:	$n = 12$	6361, 6366A, 71-88, 71-264, 71-268, 71-280
	$n = 12 +$ $n = \text{ca } 13$	6061, 6392
	$n = 12, 13 +$ (13 + I)	71-278
Mexico:	$n = 12$	67-151, 71-226
Michoacán:	$n = 12$	6403, 68-26, 68-125, 71-246, 71-253, 71-254, 71-255A, 71-255B
Morelos	$n = 12$	71-221
Nayarit	$n = 12$	6334, 6334A
Oaxaca:	$n = 12$	71-138, 71-164, 71-170
San Luis Potosi:	$n = 12$	71-638
	$n = 12 + 14$	71-63B
<i>Bidens odorata</i> var. <i>oaxacensis</i> Ballard		
MEXICO:		
Guerrero:	$n = 12$	71-211, 71-218, 71-220

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<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens odorata</i> var. <i>oaxacensis</i> Ballard (cont'd)		
MEXICO (cont'd):		
Mexico:	$n = 12$	71-225, 71-237
Oaxaca:	$n = 12$	67-51, 67-52, 67-57, 67-58, 67-74, 67-105, 67-109, 71-171, 71-181, 71-183, 71-187, 71-192
Puebla:	$n = 12$	67-51, 67-51B, 71-205
<i>Bidens ostruthiodes</i> (DC.) Sch.-Bip.		
MEXICO:		
Chiapas:	$n = 23$	6465
Mexico:	$n = 23$	6222, 67-135, 68-31
Michoacán:	$n = 23$	6429, 68-28
Oaxaca:	$n = 23$	67-100
GUATEMALA:	$n = 23$	6435, Cruden 1556, Cruden 1576
<i>Bidens pilosa</i> L.		
MEXICO:		
Chiapas:	$n = 36$	Cruden 1932, R-521 ("var.." <i>minor</i> )
Durango:	$n = 36$	6315, 6317, Cruden 1866
Guanajuato:	$n = 36$	*67-176B, *67-176C, 67-177, 68-108

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<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens pilosa</i> L. (cont'd)		
MEXICO (cont'd):		
Jalisco:	$n = 36$	63-66
Michoacán:	$n = 36$	6082, 6087, 6094, 6416
Oaxaca:	$n = 36$	68-38, 71-175, 71-180A
Querétaro:	$n = 36$	68-106
COSTA RICA:	$n = 36$	R-533 ("var.." minor)
<i>Bidens pringlei</i> Greenm.		
MEXICO:		
Michoacán:	$n = 12$	6418, 67-173
<i>Bidens pueblensis</i> (Sherff) Melchert		
MEXICO:		
Mexico:	$n = 12$	71-228
Oaxaca:	$n = 12$	71-185
<i>Bidens purpusorum</i> Biter & Peters		
MEXICO:		
Puebla:	$n = 11$ (GH)	67-115, 71-121, 71-122
	$n = 11$	Powell & Edmundson 641 (originally reported as <i>B. f. reptans</i> )
<i>Bidens riparia</i> H. B. K.		
MEXICO:		
Jalisco:	$n = 12$	71-261, 263
PANAMA:	$n = 12$	R-59

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens rostrata</i> Melchert		
MEXICO:		
Jalisco:	$n = 12$	71-273
Michoacán:	$n = 12$	R-508
<i>Bidens schaffneri</i> (A. Gray) Sherff		
MEXICO:		
Aguascalientes:	$n = 11$	71-86
Jalisco:	$n = 11$	6356, 71-80, 71-90
Mexico:	$n = 11$	67-158
San Luis Potosí:	$n = 11$	71-86, 71-75A, 71-75B
<i>Bidens schaffneri</i> var. <i>wrightii</i> (Sherff) Melchert		
MEXICO:		
Chihuahua	$n = 11$	6270A, 6270B, 6261
<i>Bidens schaffneri</i> var. <i>scaffneri</i> x var. <i>wrightii</i>		
Artificial Hybrid	$n = 11$	67-158 ♂ x 6261 ♀ (GH) (meiotic pairing normal)
<i>Bidens serrulata</i> (Poir.) Desf.		
MEXICO:		
Mexico:	$n = 12$	67-45A, 67-45B, 67-45C, 67-148, 71-111, 71-113, 71-114, 71-230, 71-239
Mexico D.F.:	$n = 12$	67-117, 67-120, 67-125A, 67-125B
Morelos:	$n = 12$	71-223

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<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens serrulata</i> (Poir.) Desf. (cont'd)		
MEXICO (cont'd):		
Puebla:	$n = 12$	71-117
<i>Bidens sharpii</i> (Sherff) Melchert		
MEXICO:		
Oaxaca:	$n = 11$	6481, 6482, 6483, 67-64, 67-66, 67-106, 68-39, 71- 178, 71-179, 71-186, 71- 199, 71-201
	$n = 11$	King 2517 (TEX) (reported as <i>B. serrulata</i> var. <i>sharpii</i> )
<i>Bidens subspiralis</i> McVaugh		
MEXICO:		
Michoacán:	$n = 12$	R-509
<i>Bidens tenuisecta</i> A. Gray		
UNITED STATES:		
Arizona:	$n = 12$	H-71-1
New Mexico:	$n = 12$	H-71-18
<i>Bidens triplinervia</i> H. B. K.		
MEXICO:		
Chiapas:	$n = 24$	71-151
	$n = ca 24$	King 2990
Durango:	$n = 24$	6300
Guerrero:	$n = 12$	Cruden 1631 (Cal)
Hidalgo:	$n = 24$	67-37, 67-42, 68-56

<b>TABLE 1. CHROMOSOME COUNTS OF <i>BIDENS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Bidens triplinervia</i> H. B. K. (cont'd)		
MEXICO (cont'd):		
Mexico:	$n = 24$	6103, 6432A, 67-128, 67-133
Michoacán:	$n = 24$	6424, 67-169, 68-30B
Nuevo Leon:	$n = 24$	67-7A, 67-7B
San Luis Potosi:	$n = 24$	67-18, 71-58
Oaxaca:	$n = 24$	6196, 68-41
Veracruz:	$n = 24$	Rock 391
GUATEMALA:	$n = 12$	Beaman 3743
	$n = 24$	Beaman 2916 (MSC)
	$n = 36$	Beaman 3283 (MSC), Cruden 1583, Cruden 1575



<b>TABLE 2. CHROMOSOME COUNTS OF <i>COSMOS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Cosmos</i> section <i>Cosmos</i> :		
<i>Cosmos bipinnatus</i> Cav.		
MEXICO:		
Hidalgo:	$n = 12$ II	67-39
Querétaro:	$n = 12$ II	67-31
Tlaxcala:	$n = 12$ II	67-48
<i>Cosmos caudatus</i> H. B. K.		
MEXICO:		
Veracruz:	$n = 24$ II	71-126, 71-132
PANAMA:	$n = 24$ II	R-538
<i>Cosmos pacificus</i> Melchert		
MEXICO:		
Colima:	$n = 12$ II	71-259
Michoacán:	$n = 12$ II	71-124, 71-248, 71-251A, 71-251B
Mexico:	$n = 12$ II	71-236
<i>Cosmos pacificus</i> var. <i>chiapensis</i> Melchert		
MEXICO:		
Chiapas:	$n = 12$ II	71-161
<i>Cosmos parviflorus</i> (Jacq.) Pers.		
MEXICO:		
Hidalgo:	$n = 12$ II	67-49
Mexico:	$n = 12$ II	67-161 ½

<b>TABLE 2. CHROMOSOME COUNTS OF <i>COSMOS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Cosmos parviflorus</i> (Jacq.) Pers. (cont'd)		
MEXICO (cont'd):		
San Luis Potosi:	$n = 12$ II	67-20
<i>Cosmos sulphureus</i> Cav.		
MEXICO:		
Chiapas:	$n = 12$ II	71-162A, 71-162B
Colima:	$n = 12$ II	71-257
Mexico:	$n = ca$ 12 II	71-238
Michoacán:	$n = 12$ II	71-249A, 71-249B, 71-252
Oaxaca:	$n = 12$ II	67-83
<i>Cosmos sulphureus</i> x <i>C. pacificus</i> F <sub>1</sub> Hybrids		
MEXICO:		
Chiapas:	$n = ca$ 12 (8II, 1IV, 1III, 1I)	71-160
Colima:	$n = 12$ II (very irregular)	71-260
Michoacán:	$n = 12$ II (very irregular)	71-250
<i>Cosmos</i> section <i>Discopoda</i> :		
<i>Cosmos deficiens</i> (Sherff) Melchert		
MEXICO:		
Jalisco:	$n = 12$	68-114

<b>TABLE 2. CHROMOSOME COUNTS OF <i>COSMOS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Cosmos diversifolius</i> Otto		
MEXICO:		
Hidalgo:	$n = 24$	67-43
Oaxaca:	$n = 12$	67-93, 68-44
San Luis Potosi:	$n = ca\ 24$	67-19A, 67-19B, 67-19C, 67-19D
<i>Cosmos jaliscensis</i> Sherff		
MEXICO:		
Jalisco:	$n = 24$	68-16
<i>Cosmos modestus</i> Sherff		
MEXICO:		
Mexico:	$n = 12$	67-139A, 67-139B, 67-140
<i>Cosmos montanus</i> Sherff var. <i>pinnatus</i> Sherff		
MEXICO:		
Jalisco:	$n = 24$ (GH)	68-119
<i>Cosmos palmeri</i> B. L. Robinson		
MEXICO:		
Durango:	$n = 24$	68-19, 68-67, 6293 (GH)
<i>Cosmos pringlei</i> B. L. Robinson		
MEXICO:		
Chihuahua:	$n = 43-46$	6265 (GH)
Durango:	$n = ca\ 48$	68-68
<i>Cosmos purpureus</i> (DC.) Hemsl.		
MEXICO:		
Mexico:	$n = 24$	67-149A, 67-149B

<b>TABLE 2. CHROMOSOME COUNTS OF <i>COSMOS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Cosmos purpureus</i> (DC.) Hemsl. (cont'd)		
MEXICO (cont'd):		
Mexico (cont'd):	$n = \text{ca } 24$ (23 + 2 fragments)	67-150A, 67-150B
<i>Cosmos scabiosoides</i> H. B. K.		
MEXICO:		
Morelos:	$n = 12$	67-129
Veracruz:	$n = 12$	67-113
<i>Cosmos sessilis</i> Sherff var. <i>stellatus</i> (Sherff) Melchert		
MEXICO:		
Michoacán:	$n = 12$	68-123
<i>Cosmos</i> section <i>Mesinenia</i> :		
<i>Cosmos carvifolius</i> Benth.		
MEXICO:		
Sinaloa:	$n = 11$	68-24, 68-64, 68-65C
<i>Cosmos carvifolius</i> x <i>C. linearifolius</i> F <sub>1</sub> Hybrid		
MEXICO:		
Sinaloa:	$n = 11$	68-65B
<i>Cosmos crithmifolius</i> H. B. K.		
MEXICO:		
Oaxaca:	$n = 33$	67-99, Cruden 1533
	$n = \text{ca } 33$	67-70, 67-85
	$n = 33 + 13$ dots	67-112

<b>TABLE 2. CHROMOSOME COUNTS OF <i>COSMOS</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Cosmos intercedens</i> Sherff		
MEXICO:		
Jalisco:	$n = 11$	68-111, 68-118
<i>Cosmos landii</i> var. <i>achalconensis</i> Melchert		
MEXICO:		
Jalisco:	$n = 22$	68-63, 68-121
<i>Cosmos landii</i> var. <i>landii</i> Sherff		
MEXICO:		
Jalisco:	$n = 22$	68-61
<i>Cosmos linearifolius</i> (Sch.-Bip.) Hemsl.		
MEXICO:		
Sinaloa:	$n = 11$ (meiosis irregular)	68-65A
<i>Cosmos ochroleucoflorus</i> Melchert		
MEXICO:		
Durango:	$n = 22$	68-22, 68-66, 68-80, 68-86

<b>TABLE 3. CHROMOSOME COUNTS OF <i>THELESPERMA</i></b>		
<b>COUNTRY: State</b>	<b>Taxon</b>	<b>Collections</b>
<i>Thelesperma longipes</i> A. Gray		
MEXICO:		
Nuevo Leon:	$n = 20$	67-5, 67-9, 71-36
<i>Thelesperma megapotamicum</i> (Spreng.) Kuntze		
MEXICO:		
Chihuahua:	$n = 22$	6251
Coahuila:	$n = ca 22$	71-34
	$2n = 44$	
UNITED STATES:		
New Mexico:	$n = 11$	68-14
<i>Thelesperma simplicifolium</i> var. <i>macrocarpum</i> Melchert		
MEXICO:		
Coahuila	$n = 30$	71-33
Nuevo Leon:	$n = 30$	67-1A, 67-1B-, 67-1C, 67-1D, 67-3, 67-12, Cruden 1521
	$n = ca 30$	67-10