

TWO NEW SPECIES OF *WEDELIA* (ASTERACEAE:  
HELIANTHEAE), WITH A CONSPECTUS OF THE GENUS  
FOR MEXICO

B. L. Turner

Plant Resources Center  
University of Texas  
Austin, TX, 78712-0471, USA

ABSTRACT

Two new species of *Wedelia* are described from Mexico: **W. elottiana** from the state of Jalisco, and **W. juxtlahuacana** from the state of Oaxaca. Additionally, a new combination, **Wedelia xylopoda** (Greenm.) B. L. Turner is proposed. A conspectus of the 27 species currently recognized for Mexico is presented, along with a key to the taxa.

**KEY WORDS:** Asteraceae, *Wedelia*, Mexico, Jalisco, Oaxaca.

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As noted below, Strother (1991) provided a taxonomic account of *Wedelia* for North America. Turner (1992a,b) subsequently provided an assessment of the Mexican species, this in connection with his forthcoming treatment of the Heliantheae of Mexico (cf. Comps of Mexico 5: Eupatorieae, *Phytologia Memoirs* 11. 1997). The following account of *Wedelia* will acquaint the interested reader with this formidable enterprise. Both of the new taxa are described and keyed in this treatment, and will appear as such in the final product, except for a shortening of their descriptive accounts. Additionally, all of the taxa will be mapped, much as for taxa of the tribe Eupatorieae, as alluded to in the foregoing.

**WEDELIA Jacq.**

*Aspilia* Thouars

*Complaya* Strother

*Thelechitonia* Cuatrecasas

Suffruticose perennial herbs, shrublets or shrubs 1-3 m high. Stems erect, procumbent or prostrate, arising from branched ligneous roots or woody crowns, rarely rhizomatous. Leaves mostly opposite, rarely alternate above, simple or 3-lobed, 3-nervate or rarely pinnately nerved. Heads mostly radiate, 1-several, terminal or rarely axillary, mostly 1-4 cm across the extended rays. Involucres 2-3 seriate, subequal or rarely graduate, the outer series often green and somewhat foliate. Receptacle plane to convex, paleate. Ray florets mostly 5-21 (rarely absent), pistillate or neuter, fertile or sterile, the ligules yellow, white or rarely purple. Disk florets 15-150, the corollas yellow. Achenes, those of the ray, either 2- or 3-sided, when 3-sided usually somewhat tangentially compressed and winged, those of the disk radially compressed, with or without apical wings; pappus a sessile or raised narrow crown of minute scales arising from the center of a clavate body, the borders of which may or may not possess 1-3 rather delicate bristles. Base chromosome numbers,  $x = 10, 11, 12, 14$  and 15.

Type species, *Wedelia fruticosa* Jacq.

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- 1992a. New Species of *Wedelia* (Asteraceae, Heliantheae) from Mexico and critical assessment of previously described taxa. *Phytologia* 72: 115-126.
- 1992b. New names and combinations in New World *Wedelia* (Asteraceae, Heliantheae). *Phytologia* 72: 389-395.

A large complex genus of perhaps 200 or more species, widely distributed throughout the tropical world, but largely centered in South America. It is closely related to *Zexmenia* but the latter can be distinguished by its thin-winged, flatter, disk achenes which mostly possess rather persistent awns at maturity, these usually broadened at the base and arising from the corner of the achenes (as opposed to a cup-like boss at the apices). I follow McVaugh (1984) and Turner (1988, 1992a,b) in treating *Aspilia* within the broad fabric of *Wedelia*. Strother (1991) revised *Wedelia* for North America; in this he excluded *W. trilobata*, placing it in a newly erected genus, *Complaya* (=*Sphagneticola*, if accepted, the earliest name; cf. Pruski 1996), which is largely distinguished by its style branches and indistinct carpopodium, among other characters. Since the phyletic position of *W. trilobata* is moot, I have retained this in *Wedelia*, pending further elucidation. Robinson (1992: *Phytologia* 72: 144) recently agreed that *Aspilia* is synonymous with *Wedelia*, although his earlier work (1984) suggested otherwise.

### KEY TO SPECIES

1. Ray florets without style branches (neuter), or rays absent.....(2)
1. Ray florets with style branches (pistillate and fertile).....(16)
  2. Ray florets present.....(4)
  2. Ray florets absent.....(3)
    3. Leaves markedly lacerate; vestiture of stem softly hirsute; Mic.....*W. keilii*

3. Leaves remotely serrulate to nearly entire; vestiture  
roughly hispid or hispidulous; Jal.....*W. aggregata*
4. Rays white or yellow.....(6)  
4. Rays red or purplish.....(5)
5. Leaves mostly elliptical to oblanceolate, widest  
above the middle; Gue, Oax, Cps.....*W. purpurea*
5. Leaves mostly lanceolate (to rarely lanceolate-  
elliptic), widest below the middle; Sin, Dur, Nay.....*W. xylopoda*
- 6(4). Lower surfaces of leaves minutely appressed-  
strigose; leaves linear-lanceolate, 5-10 cm long, with only a  
single well-defined mid-vein; Son, Chi, Sin.....*W. greenmanii*
6. Lower surfaces of leaves variously pubescent,  
but not as described in the above, the leaves various,  
3-nervate if linear-lanceolate, then pilose or scabrous  
beneath with coarse hairs.....(7)
7. Leaves spatulate, 1.0-1.5 cm wide; rays white; Nay,  
Jal, Zac.....*W. grayi*
7. Leaves ovate to ovate-lanceolate; rays yellow,  
salmon-colored or pinkish (white in *W. mexicana*).....(8)
8. Well-developed leaves on primary branches with blades  
mostly 35-100 mm long; stems erect or suberect.....(11)
8. Well-developed leaves on primary branches  
with blades mostly 15-30 mm long.....(9)
9. Heads aggregate, sessile or nearly so, if solitary then  
peduncles 1-8 mm long; vicinity of El Tuito, Jal.....*W. talpana*
9. Heads solitary, not aggregate, the peduncles  
mostly 10-40 mm long.....(10a)

- 10a. Ray corollas salmon-colored, pinkish or white; Mex,  
Gue.....*W. hintoniorum*
- 10a. Ray corollas yellow or yellow-orange; Sin, Dur,  
Nay.....(10b)
- 10b. Rays yellow; leaves widest at or above the middle;  
Oax.....*W. juxtlahuacana*
- 10b. Rays white; leaves widest above the middle;  
Sin, Dur, Nay.....*W. mexicana*
- 11(8). Leaves broadly ovate, 1.5-2.5 times as long as wide;  
stems lax or recumbent; Chi.....*W. chihuahuana*
11. Leaves ovate-lanceolate, elliptic-ovate to lanceolate,  
3-8 times as long as wide.....(12)
12. Leaves markedly lacerate, the lower surface  
bestowed with few to numerous minute uncinate  
hairs, Chi.....*W. pimana*
12. Leaves remotely serrulate to entire, the lower  
surfaces without uncinate hairs; Sin, Dur, Nay, Jal.....(13)
13. Primary leaves lanceolate-ovate to elliptic-ovate, those  
at mid-stem mostly (6)10-20 mm wide; involucres  
mostly 8-12 mm high.....(15)
13. Primary leaves linear-lanceolate, those at mid-stem mostly  
3-10 mm wide, the margins enrolled; involucres  
mostly 6-8 mm high; Dur, Jal.....(14)
14. Divaricately branched low shrublets 10-30 cm high;  
leaves and stems with erect or ascending hairs;  
s Dur.....*W. gonzaleziarum*

14. Stiffly erect shrublets 30-100 cm high; leaves and stems with appressed hairs, or if erect then numerous and very short, superficially strigose; Jal.....*W. cronquistii*
- 15(13). Hairs on achenes mostly 0.1-0.2 mm long;  
Col, Mic, Gue.....*W. strigosa*
15. Hairs on achenes mostly 0.2-0.5 mm long;  
Nay, Jal, Zac, Agu.....*W. rosei*
- 16(1). Stems prostrate or trailing, rooting at the nodes, forming loose, but copious ground-cover; leaves, at least some of them, neatly 3-lobed.....*W. trilobata*
16. Stems erect, not normally rooting at the nodes; leaves not neatly 3-lobed.....(17)
17. Erect to recumbent herbs or shrublets, not normally rhizomatous; style branches gradually acuminate.....(19)
17. Stiffly erect, rhizomatous, coarsely hispid herbs to 1 m high, forming clumps in wet meadows; style branches abruptly apiculate; Nay, Jal.....(18)
18. Leaves sessile, the blades cordate or subcordate at base.....*W. cordiformis*
18. Leaves with winged petioles, the blades otherwise .....*W. simsoides*
- 19(17). Leaves with hairs predominantly alike, if of two kinds then the finer hairs not uncinate.....(23)
19. Leaves with two kinds of hairs on the undersurface, a longer group of straight hairs and below these at least a few uncinate or recurved hairs.....(20)
20. Stems suffruticose, stiffly erect, to 1.5 m high, sparsely branched; achenes of the ray and disk similar, unwinged, or rarely the ray achenes winged; Nue, Tam, San, (Gulf Slopes).....*W. ayerscottiana*

20. Stems variously procumbent to erect, the plants often divaricately-branched, shrubby, and up to 2 m high; achenes often heteromorphic, those of the ray and disk winged or not; Pacific slopes and central Ver southwards.....(21)
21. Leaves elliptic to lance-linear, sessile or nearly so;  
Pacific slopes, Nay, Jal.....*W. vexata*
21. Leaves ovate to lanceolate, clearly petiolate.....(22a)
- 22a. Perennials; ray corollas bright yellow, the ligules mostly 5 mm long or more; widespread.....*W. scabra*
- 22a. Annuals with slender tap-roots; ray corollas pale yellow to white, the ligules 1-5 mm long; Jal, Cps.....(22b)
- 22b. Leaves lanceolate; disk florets mostly sterile; Jal.....*W. elottiana*
- 22b. Leaves oval to ovate; disk florets mostly fertile; Cps.....*W. iners*
- 23(19). Erect, coarse, suffruticose, shrubs or shrublets mostly 1-2 m high; Ver, Oax, Cps (Isthmus of Tehuantepec).....*W. tehuantepecana*
23. Perennial herbs or suffruticose shrublets 0.2-0.9 m high; Son to Hid northwards.....(24)
24. Stems stiffly erect, suffruticose, becoming a bushy shrublet; leaves commonly lacerately-lobed at the base; widespread, e Chi, Coa, Nue, Tam to Mex.....*W. hispida*
24. Stems procumbent, recumbent, or erect suffruticose herbs; leaves mostly ovate and evenly serrate; Son, w Chi, Pacific slopes.....(25)
25. Leaves mostly 2.5-6.0(8.0) cm long; herbs 30-60 cm high; w Chi and adjacent Son.....*W. chihuahuana*
25. Leaves mostly 6-12 cm long; shrubs or shrublets to 1.5 m high; Pacific Slopes, Jal to Gue.....*W. strigosa*

WEDELIA AGGREGATA (Greenm.) B. L. Turner, *Phytologia* 65: 348. 1988.

*Aspilia aggregata* Greenm.

Known only by the type, Jal, between Bolanos and Guadalajara; Sep.

Superficially resembling *W. rosea* but the heads rayless, sessile and the involucres narrowly campanulate with graduate purple bracts.

Turner (1988), not having examined the type, treated this taxon as encompassing *W. rosea*. Thanks to Strother's study of the group (1991) in which the two taxa are treated as distinct species, Turner (1992a,b) reevaluated the group and agreed with Strother's assessment.

WEDELIA AYERSCOTTIANA B. L. Turner, *Phytologia* 60: 125.

1986.

*Wedelia acapulcensis* var. *ayerscottiana* (B. L. Turner) Strother

Nue, Tam, San, mostly Gulf slopes, pine-oak forests, 400-2000 m; Jun-Oct.

Stiffly erect, simple-stemmed, suffruticose herbs to 1 m high; much resembling *W. scabra* but the fruits of both ray and disk florets similar, maculate, wingless and the leaves often rather lacerate and sparsely pubescent beneath.

This species has the leaf-vestiture of *W. scabra* but otherwise looks like *W. hispida*; the involucres are quite narrow with striate bracts, resembling those of *Aldama dentata*. It usually occurs in low cloud forests with the cycad genus *Dioon* along the eastern flanks of the Sierra Madre Oriental.

WEDELIA CHIHUAHUANA B. L. Turner, *Phytologia* 65: 348. 1988.

w Chi canyons in pine-oak forests, 1700-2100 m; Jun-Sep.

Trailing or weakly ascending perennial herbs to 60 cm high; leaves mostly 2-8 cm long, 1-5 cm wide; petioles 1-4 mm long; blades ovate, 3-nervate, moderately to sparsely pubescent beneath with straight hispid hairs, the margins serrate to somewhat irregularly lacerate; heads campanulate, radiate, 1-2 cm across the extended rays, the ultimate

peduncles 2-8 cm long; involucres 6-10 mm high, 2-3 seriate, the bracts subequal or the outer somewhat longer. Ray florets 8-13, the ligules 5-10 mm long. Disk florets 30-50, the corollas yellow, 4.5-5.0 mm long. Achenes unwinged, the pappus a crown of scales ca 0.5 mm high and 1 or 2 lateral bristles, 1.0-1.5 mm long.

Much-resembling the more eastern *W. hispida* but the leaves evenly serrate, pubescent principally along the veins beneath, the heads borne 2-3 in lax corymbs. It might also be mistaken for *W. strigosa*, but the latter is a shrub or shrublet confined to the Pacific slopes from 0-300 m.

WEDELIA CORDIFORMIS McVaugh, Contr. Univ. Michigan Herb. 9: 460. 1972.

Known only from the type (Jal, ca 12 km wnw Tototlan towards Zapotlanejo), poorly drained meadows, ca 1800 m; Aug.

Perennial herbs, growing in clumps to 1 m high; stems stiffly erect, very coarsely hispid, 4-5 mm thick at mid-stem; leaves opposite, 6-10 cm long, 2-4 cm wide, sessile or nearly so; blades lance-ovate, somewhat clasping, pinnately-veined, roughly hispid, the margins serrulate; heads radiate, 4-5 cm across the extended rays, the ultimate peduncles 5-15 cm long; involucres 13-17 mm high, the bracts subequal; ray florets 13-18, the ligules 15-20 mm long; achenes pubescent, the pappus of a single awn ca 1.5 high and a crown of scales ca 0.7 mm high.

A very distinct species, not easily confused with another. McVaugh (1984) provided an excellent illustration of the taxon.

WEDELIA CRONQUISTII B. L. Turner, *Phytologia* 65: 350. 1988.

Known only from Jal (ca 23 km mi n of Guadalajara), oak woodlands, 1500-1600 m; Nov.

Suffruticose perennial herbs to 1 m high; leaves opposite throughout, 3-6 cm long, 2-6 mm wide; petioles 0-1 mm long; blades linear to linear-

lanceolate, pinnately nerved, densely strigose beneath with coarse hispid hairs; heads radiate on ultimate peduncles 3-10 cm long; involucres campanulate, 3-4 seriate, 10-12 mm high, the bracts subgraduate to nearly equal; ray florets 5-11, the ligules yellow, 6-9 mm long; disk florets 30-50; achenes clavate 4.0-4.5 mm long.

Resembling *W. rosei* but the leaves markedly appressed-strigose beneath and the heads larger (involucres 10-12 mm high vs 6-10 mm). Strother (1991) placed *W. cronequistii* in synonymy under his concept of *W. greenmanii*, a view with which Turner (1992a,b) disagreed, the characters given in his key being compelling, not to mention their geographic disparities.

**WEDELIA ELOTTIANA B. L. Turner, sp. nov.**

Similis *Wedeliae iners* (S. F. Blake) Strother sed foliis tenioribus, integris vel paene integris, habentibus capitula fructifera parviora (4-6 mm alta vice capitulorum 7-10 mm altorum) et flores discorum steriles pro parte maxima.

Stiffly erect tap-rooted annual herbs to 50 cm high. Stems moderately pilose with an array of short to long hairs 0.2-1.0 mm long. Leaves alternate throughout; petioles 1-3 cm long; larger leaves with blades broadly lanceolate to ovate, thin, pinnately veined, 5-7 cm long, 1.5-2.0 cm wide, pubescent below and above with scattered coarse hairs to 1 mm long, below these a minute array of mostly uncinate hairs; margins entire or nearly so. Heads borne on ultimate peduncles 3-7 cm long; involucres composed of ca 8 subequal bracts in 2-3 series. Receptacles small, plane, the bracts lanceolate, ca 5 mm long. Ray florets 5-6, pistillate, fertile; tubes ca 1 mm long; ligules ovate, ca 5 mm long, 3.5 mm wide, weakly 2-nervate; achenes ovoid, markedly winged, ca 5 mm long, 4 mm wide, the body of the achene enclosed within broad corky wings, the latter 0.6-1.0 mm wide. Disk florets yellow, 3-4 mm long; tubes 1.0-1.5 mm long; lobes 5, deltoid, ca 0.5 mm long, mostly sterile (the style branches seemingly fused ventrally, but a few of the outermost florets apparently producing clavate wingless fertile achenes 3-4 mm long, 0.6-1.0 mm wide).

**TYPE:** MEXICO. JALISCO: Mpio. La Huerta, Rancho Cuixmala, Gargollo farm, on E side of Cerro de la Alborada. "Tropical deciduous Forest on slopes of Cerro de la Alborada, following the water main which reaches main Cuixmala entrance road. Uncommon perennial, apparently flowering first year from seed; uncommon on rocky slope along pipeline trail in partial shade. Flowers yellow." Elevation "below 50 m." 4 Nov 1991. *Emily J. Lott 4135* (HOLOTYPE: TEX; ISOTYPES: UCR).

This taxon is apparently closely related to the more southern *W. iners*, with which it is compared to in the above diagnosis, and which I identified it as, upon receipt of type material. While Emily thought the species to be a perennial in its first year of growth, the specimen appears to be an annual, much as she noted. At least I know of no other perennials of a similar nature from the area concerned.

It is a pleasure to name this striking plant for my friend of many years; she has a long history of field work in both Texas and Mexico. Emily currently resides in Austin, Texas with her family.

**WEDELIA GENTRYI** B. L. Turner, *Phytologia* 66: 500. 1989.

Chi, and n Sin, pine-oak woodlands, 1800-2300 m; Jul-Sep.

Much-resembling *W. greenmanii* but readily distinguished by its roughly hispid hairs on the lower leaf surfaces, stems and involucres, the hairs spreading or ascending (vs minutely strigose and closely appressed throughout in *W. greenmanii*).

Strother (1991) submerged this taxon in his concept of *W. greenmanii*, this refuted by Turner (1992a,b).

**WEDELIA GONZALEZIARUM** B. L. Turner, *Phytologia* 65: 349. 1988.

Known only from se Dur (Mpio. Mezquital), pine-oak forests, ca 2400 m; Oct-Nov.

Much-resembling *W. rosei* but the stems mostly short and ascending to procumbent (10-25 cm high vs 100-150 cm), the leaves coarsely hispid beneath (vs softly silky pilose), the heads single at the apices of branches (vs 2-4 on short peduncles (mostly 1-2 cm long vs mostly 2-8 cm).

The specific name was originally spelled, in error, *W. gonzalezorum*, as noted by Strother (1991).

WEDELIA GRAYI McVaugh, Contr. Univ. Michigan Herb. 9: 462.  
1972.

*Aspila albiflora* A. Gray, not *Wedelia albiflora* Hiern.

Nay, Jal, and s Zac, pine-oak woodlands, grassy areas, 1500-2500 m; Aug-Oct.

Much-resembling *W. mexicana* but the leaves longer, the blades mostly elliptic to oblanceolate, stems ligneous and branched so as to form low mats; those of *W. mexicana*, while decumbent, appear to arise from a well-defined, woody, corm-like, caudex or rootstock; in addition, the rays of *W. mexicana* are yellow and the heads are smaller.

WEDELIA GREENMANII B. L. Turner, Phytologia 65: 352. 1988.  
*Aspilia stenophylla* Greenm., not *Wedelia stenophylla* Merrill

Son, w Chi and ne Sin, pine-oak woodland, 1000-2000 m; Jul-Nov.

Suffruticose herbs or shrublets 50-70 cm high; stems brittle, erect, much-branched from the base; leaves opposite throughout, 5-14 cm long, 3-12 mm wide; petioles 0-5 mm long; blades linear to linear-lanceolate, pinnately nerved or weakly 3-nervate below, minutely appressed-hispid throughout, the margins remotely serrulate to nearly entire; heads radiate, 2-5 in slender terminal open corymbbs, the ultimate peduncles 3-8 cm long; involucres campanulate, 6-7 mm high, 2-3 seriate, the bracts subequal, the outer series with acute or acuminate apices, the inner series obtuse or rounded; ray florets 5-8, neuter, the ligules yellow, 5-6 mm long; disk florets 20-30, the corollas yellow; achenes broadly clavate,

ca 5 mm long, wingless, pubescent, the pappus a short narrow crown of scales ca 0.7 mm high.

Strother (1991) recognized specimens from Jal as belonging to this taxon, but these appear to belong to a distinct species, *W. cronicostata* (Turner 1992a,b).

**WEDELIA HINTONIORUM** B. L. Turner, *Phytologia* 65: 352. 1988.

sw Mex and e Gue, pine-oak forests, 2000-2300 m; Jun-Aug.

Perennial herbs to 25 cm high; stems suffruticose erect or recumbent from a woody, corm-like, root or crown; leaves 1.3-3.0 cm long, 3-7 mm wide; petioles absent or nearly so (0-1 mm long); blades narrowly ovate to oblanceolate, weakly 3-nervate, hispidulous above and below, the margins somewhat serrulate apically; heads single on peduncles 3-12 mm long; involucres 8-12 mm high, 2-3 seriate, the bracts subequal, the outermost 3-5, mostly linear-oblanceolate, leaf-like; receptacular bracts linear-lanceolate in outline, 3-fid, about as long as the florets; ray florets 8, the ligules reportedly salmon-colored but drying white, 6-9 mm long; disk florets ca 30, ca 5 mm long, glabrous.

This species superficially resembles *W. grayi* and *W. mexicana*; it differs from both in possessing nearly sessile, hispidulous leaves.

**WEDELIA HISPIDA** H.B.K., Nov. Gen. & Sp. 4: 216. 1820.

*Aspilia potosina* Brandegee

*Lipochaeta texana* Torrey & Gray

*Seruneum hispidum* (H.B.K.) Kuntze

*Viguiera longipes* J. Coulter

*Viguiera pauciflora* Brandegee

*Wedelia acapulcensis* var. *hispida* (H.B.K.) Strother

*Wirtgenia texana* (Torrey & Gray) Sch.-Bip.

*Zexmenia hispida* (H.B.K.) A. Gray

*Zexmenia texana* (Torrey & Gray) A. Gray

eChi, Coa, Nue, Tam, San, Que, Hid, Mex and adjacent U.S.A., dry calcareous hills, and rocky slopes 300-2000 m; Apr-Sep.

Much resembling *W. scabra* but the plants more branched from the base and the leaves mostly smaller, narrower and lacking the minute uncinate hairs on the undersurface which distinguish that species; the heads are also borne singly on very elongate peduncles (mostly 15-30 cm long); chromosome number,  $n = \text{ca } 26$  pairs.

Strother (1991) considered this taxon to be a variety of his *W. acapulcensis* (= *W. scabra* in the present account) but it appears to be amply distinct, at least I discern no intergradation of the characters which distinguish between these. *Wedelia hispida* superficially resembles *W. chihuahuana* of w Chi but the former is readily distinguished by its coarsely and evenly pubescent leaves and larger solitary heads.

WEDELIA INERS (Blake) Strother, Syst. Bot. 33: 72. 1991.

*Zexmenia iners* Blake

Cps, e Oax?, and Guatemala southwards, tropical forests, often weedy along streams and wet thickets, 50-900 m; all seasons.

Erect annuals to 60 cm high, the stems arising from rather delicate well-defined tap-roots; leaves mostly 3-11 cm long, 1-4 cm wide; petioles 0.5-1.5 cm long; blades broadly ovate to lanceolate; ray florets 5, pistillate, fertile, the ligules white to pale yellow, mostly 1-4 mm long; chromosome numbers,  $n = 11$ , ca 22 pairs (Strother, 1991).

A very distinct taxon, having the vestiture of *W. scabra* but readily distinguished by its annual habit and heads with small ray florets.

WEDELIA JUXTLAHUACANA B. L. Turner, sp. nov.

Similis *Wedeliae hintoniorum* B. L. Turner, sed radii lutei sunt (vice alborum aut salmoneorum), et folia ovalia sunt (latissima prope medium vice oblanceolatorum vel linearium-oblanceolatorum, latissimorum super medium).

Prostrate rhizomatous perennials forming clumps 20-50 cm across (label data). Stems purplish, bearing up-turned appressed hairs. Leaves opposite; blades narrowly to broadly oval, 1.5-2.2 cm long, 0.6-1.0 cm wide, 3-nervate from near the base, pubescent above and below like the stems; margins weakly serrulate. Heads terminal, single, ca 3.5 cm across the extended rays. Peduncles 3-5 cm long. Involucres 8-9 mm high, ca 10 mm wide (pressed); outermost bracts 3-5, lanceolate, eciliate; inner bracts 5-8, oblanceolate, ca as long as the outer bracts, their apices scarious, rounded, ciliate. Receptacular bracts lanceolate, somewhat longer than the subtended florets. Ray florets 7-8, neuter; ligules yellow, ca 1.5 cm long, 0.3-0.5 cm wide. Disk florets ca 20, fertile; corollas yellow, glabrous, 6-7 mm long. Anthers black, their appendages eglandular, linear-lanceolate, ca 1 mm long. Achenes (immature) ca 3 mm long, appressed-pubescent, the pappus a short erose crown.

**TYPE:** MEXICO. OAXACA: SANTIAGO JUXTLAHUACA. Mpio. San Martin Peras, "Km 18 de la desviacion a Canada de Lobos sobre el nuevo camino a campos de fresas." 2000 m, 24 Oct 1994, *J. L. Panero* 5274 (HOLOTYPE: MEXU; ISOTYPES: MSU, TEX!).

This novelty is closely related to *W. hintoniorum*, having most of the attributes of that species. When the latter was first described I took its ligules to be yellow, although, as noted in the description, this was not clear in the holotype. Subsequent collections prove the corollas to be white (*Panero* 7352, 5 Oct 1997, TEX), this also noted by Strother (1991).

The species is named for Santiago Juxtlajuaca, where first collected.

**WEDELIA KEILII** B. L. Turner, *Phytologia* 65: 353. 1988.

Known only from the type (ca 25 km s of Uruapan, Mich.), grassy hillsides, ca 1000 m; Aug.

Perennial herbs to 25 cm high; much-resembling *W. mexicana* but the leaves with markedly lacerate margins and the plants densely soft-pilose throughout; chromosome number,  $n = 22$  pairs.

This species superficially resembles the widespread *W. scabra* but differs in its smaller, herbaceous, habit, softly pubescent foliage, lacerate leaves, etc.

WEDELIA MEXICANA (Sch.-Bip.) McVaugh, Contr. Univ. Michigan Herb. 9: 462. 1972.

*Aspilia mexicana* (Sch.-Bip.) Hemsl.

*Wedelia tegetis* Strother (in part)

*Wirtgenia mexicana* Sch.-Bip.

Sin and adjacent Dur, pine-oak woodland along hiway 40, talus slopes, 1500-2500; Oct-Nov.

Perennial herbs 15-30 cm high; stems weakly ascending to procumbent, hirsutulous; leaves opposite throughout, mostly 2-3 cm long, 8-12 mm wide; petioles 5-10 mm long; blades ovate, weakly 3-nervate, roughly hispid above and below, the hairs recurved but not uncinate; the margins serrulate to nearly entire; heads radiate, single and terminal, the peduncles 1-3 cm long; involucres 5-6 mm high, 2-3 seriate, the bracts subequal; ray florets 5-8, the ligules 5-8 mm long; achenes 3.0-3.5 mm long, pubescent, the pappus a crown of scales ca 0.5 mm high; chromosome number  $n = 12$  pairs (Mayfield 1061 TEX).

McVaugh (1984) knew this taxon only from the type collection; several additional collections have been examined from the Sin-Dur border (TEX) along highway 40, west of Durango City. Strother (1991) applied the name *W. tegetis* to all of this material, except for the type of *W. mexicana*, which he retained as distinct, although its type was probably collected in the same region as his *W. tegetis* (Turner 1992a,b). Strother also included in his concept of *W. tegetis*, white-rayed specimens with relatively large heads from n Nay. I include these within my concept of *W. grayi*.

WEDELIA PIMANA B. L. Turner, *Phytologia* 72: 116. 1992.

Chi, waterfall at Nabogame, grassy areas, 1800 m; Aug.

Much resembling *W. scabra* but the ray florets neuter and the leaves markedly lacerate.

*Wedelia pimana* might also be compared with *W. chihuahuana* but the latter has recumbent or sprawling stems and a very different, merely hispid vestiture.

WEDELIA PURPUREA (Greenm.) B. L. Turner, *Phytologia* 65: 354.  
1988.

*Aspilia purpurea* Greenm.  
*Aspilia scabrida* Brandegee

Gue, Oax and Cps, pine-oak forests, 900-2100 m; Jun-Nov.

Perennial, often suffruticose, herbs 15-50 cm high; stems prostrate to recumbent, arising from an enlarged woody crown; leaves opposite throughout, 2-4 cm long, 0.5-2.0 cm wide; petioles 1-4 mm long; blades ovate-elliptic to elliptic-ob lanceolate, 3-nervate, sparsely to moderately hispidulous beneath; heads radiate, single, terminal, the peduncles mostly 4-20 cm long; involucres campanulate, 2-3 seriate, 8-10 mm high, the bracts subequal; rays 8-11, the ligules deep purple or maroon; disk florets 20-40; n = ca 12 or 13 pairs.

Because of its purple rays, this species is readily distinguished from most of the Wedelias in southern Mexico.

WEDELIA ROSEI (Greenm.) McVaugh, Contr. Univ. Michigan Herb.  
9: 462. 1972.

*Aspilia angusta* Blake  
*Aspilia angustifolia* A. Gray (not *A. angustifolia* Oliv. & Hiern.)  
*Aspilia rosei* Greenm.  
*Aspilia xylopoda* Greenm.

Sin, Dur, Nay, Jal, s Zac and Agu, pine-oak woodlands, 800-2500 m;  
Aug-Nov.

Suffruticose herbs or shrublets 1.0-1.5 m high; stems coarsely hispidulous, stiffly erect, arising from a woody root-crown from which arise several thick, seemingly fibrous, roots; leaves opposite throughout, mostly 8-12 cm long, 0.6 -2.5 cm wide; petioles 1-10 mm long; blades narrowly lanceolate to elliptic-lanceolate, coarsely hispid above, rather softly silky-pilose beneath, pinnately nerved or weakly 3-nerved below, the margins serrulate to entire; heads mostly 2-4 in strict terminal cymes, the ultimate peduncles mostly 2-15 cm long; involucres campanulate, 6-10 mm long, the bracts subgraduate to subequal, strigose, loosely arranged and often recurved at the apices; ray florets 8-11, the ligules yellow or rarely white to purplish, 7-16 mm long; disk florets 20-60, yellow; achenes 3.5-5.0 mm long, pubescent, the pappus a lacerate crown 0.6-1.0 mm high.

As noted by McVaugh (1984), this is a highly variable species. Turner (1988) accepted McVaugh's suggestion that the type of *Aspilia aggregata* is an aberrant individual of *W. rosei* with nearly sessile heads; since the name concerned predates *W. rosei*, priority required taking up the former name. Strother (1991) accepted *W. rosei* as distinct from *W. aggregata*, the latter known only from the type and differing markedly from *W. rosei* in having rayless, sessile heads. Turner (1992a,b) subsequently examined the types concerned and agreed with Strother's assessment.

#### WEDELIA SCABRA (Cav.) B. L. Turner, *Phytologia* 65: 354. 1988.

*Buphtalmum scabrum* Cav.

*Serineum acapulcense* (H.B.K.) Kuntze

*Wedelia acapulcensis* H.B.K.

*Wedelia acapulcensis* var. *cintalapanana* Strother

*Wedelia acapulcensis* var. *parviceps* (Blake) Strother

*Wedelia acapulcensis* var. *ramosissima* (Greenm.) Strother

*Wedelia hispida* var. *ramosissima* (Greenm.) K. Becker

*Wedelia parviceps* Blake

*Zexmenia epapposa* M. E. Jones

*Zexenia hispida* var. *ramosissima* (Greenm.) Greenm.

Sin, Nay, Jal, Mic, Mex, Ver, Gue, Oax, Tab, Cps, Yuc, Cam, Qui and Guatemala southwards, 0-1300 m; all seasons.

Perennial suffruticose herbs or shrublets 0.5-3.0 m high; stems stiffly erect and divaricate to arching or sprawling; leaves opposite, 3-10 cm long, 1-4 cm wide; petioles 0-6 mm long; blades ovate to elliptic-lanceolate, 3-nervate, the undersurface with stout, erect or ascending hairs and below these another layer of rather short, weak, hairs with recurved apices; heads radiate, terminal, 1-several on ultimate peduncles 1-15 cm long; involucres 5-15 mm high, 2-3 seriate, the outer series shorter or longer than the inner; ray florets 5-11, the ligules, 5-14 mm long; disk florets 10-40; chromosome numbers,  $n =$  ca 11, 12 and 23 pairs.

A widespread highly variable species, presumably divisible into several infraspecific geographical varieties. The larger-headed, longer-peduncled, more prominently shrubby or divaricately-branched plants from Jal to Cps are perhaps properly called var. *scabra*, regardless of the disposition of yet other taxa, although Strother (1991) adopted the name *W. acapulcensis* for the entire complex, feeling that the earlier name, *W. scabra*, was inadequately typified for his nomenclatural purposes. I can not agree with Strother's widely inclusive treatment, especially his submergence of the well-known, long-established, *W. hispida*, as a varietal element of *W. acapulcensis*. He also recognized the varieties *parviceps* and *ramosissima*, which appear to be reasonably organized populational phases, having mostly smaller heads on shorter peduncles. Strother cited and mapped two collections of *W. s.* var. *ramosissima* as occurring in Tam and San. I include both of these in my concept of *W. ayerscottiana*.

WEDELIA SIMSIOIDES McVaugh, Contr. Univ. Michigan Herb. 9:  
462. 1972.

Known only by collections from s Nay, marshy meadows, oak zone,  
800-900 m; Aug-Sep.

Perennial rhizomatous herbs to 1 m high; leaves opposite throughout, 6-10 cm long, 3-7 cm wide; petioles markedly winged, 1-2 cm long; blades ovate to deltoid, 3-nervate, roughly hispid, the margins irregularly serrate, lacerate or lobe.

A very distinct species, presumably closest to *W. cordiformis*. McVaugh (1984) provides an excellent illustration of the taxon.

WEDELIA STRIGOSA Hook. & Arn., Bot. Beechy Voy. 435. 1841.

*Aspilia strigosa* (Hook. & Arn.) Benth. ex Hemsl.

Jal, Col, Mic, and Gue, lower Pacific slopes in tropical deciduous forests, 1-300 m; Jun-Jan.

Much resembling *W. scabra* but the vestiture of the leaves without an understory of short uncinate hairs, and the ray florets neuter (vs pistillate).

Strother (1991) recognized this taxon, correctly noting its relationship to *W. acapulcensis* (= *W. scabra* of the present treatment), the latter a widespread, mostly higher montane element in Mexico; *W. strigosa* is mostly confined to the lower montane slopes from near sea to ca 300 m, as noted by Strother. In the vicinity of Acapulco plants seemingly intermediate to *W. strigosa* and *W. scabra* occur, possessing uncinate hairs, but these not part of a smaller understory of smaller hairs as occurs in *W. scabra*.

WEDELIA TALPANA B. L. Turner, *Phytologia* 72: 117. 1992.

Jal, vicinity of El Tuito (Mpio. Talpa), 900-1800 m; Nov-Mar.

Brittle-stemmed shrubs or shrublets 30-50 cm high; resembling *W. rosei* but having smaller leaves (mostly 2-3 cm long vs 3-8 cm) and heads sessile or nearly so.

Strother (1991) called attention to some of the plants which comprise this taxon, noting that these might be deserving of specific recognition. Additional collections from the same region, in my opinion, has confirmed this observation.

WEDELIA TEHUANTEPECANA B. L. Turner, *Phytologia* 65: 355.

1988.

*Wedelia acapulcensis* var. *tehuantepecana* (B. L. Turner) Strother

e Oax, s Ver, and Cps, tropical deciduous forests, 50-700 m; Jul-Nov.

Much-branched erect or procumbent shrubs or shrublets 0.5-1.5 m high, leaves opposite, 4-10 cm long, 1.5-4.0 cm wide; petioles 0.5-1.5 cm long, the upper portion winged; blades ovate to subdeltoid, 3-nervate, coarsely hispid, uncinate hairs absent, the margins serrulate to coarsely and irregularly dentate; heads radiate, mostly 1-3 in terminal cymes, the ultimate peduncles mostly 2-8 cm long; involucres 10-12 mm high, narrowly campanulate, 2-3 seriate, the bracts subequal, the outer series greener and somewhat longer than the inner; ray florets 5-11, sterile (rarely fertile), the ligules 5-10 mm long; achenes, those of the ray, with a raised crown bounded by 3 bristles, those of the disk 5-6 mm long with a raised crown and usually 2 or 3 bristles 3-6 mm long, the margins markedly winged at maturity; n = ca 26 pairs.

Closely related to *W. scabra* but lacking the fine, uncinate, indument on the under-surface of the leaves of that species and possessing mostly larger heads with longer achenes with raised crowns having bristles 3-6 mm long.

WEDELIA TRILOBATA (L.) Hitchc., *Rep. Missouri Bot. Gard.* 4: 99.

1893.

*Complaya trilobata* (L.) Strother

*Sphagneticola trilobata* (L.) Pruski

*Thelechitonita trilobata* (L.) H. Rob. & Cuatrecasas

Ver, Oax, Tab, Cps, Yuc, Cam, Qui and Guatemala southwards, widely cultivated in Mexico and elsewhere as a ground cover and often escaping, 0-200 m; all seasons.

Easily recognized by its prostrate habit and long-trailing stems which root at the nodes; leaves often 3-lobed; relatively large, axillary or terminal, yellow-orange heads; chromosome numbers,  $n = 20-30$  pairs according to Strother (1991); Koyama (1985: *Acta Phytotax. Geobot.* 36:171) reports a count of  $2n = 56$ , or 23 pairs.

This species was treated as belonging to the genus *Sphagneticola* by Strother (who used the generic name *Complaya*, a synonym of *Thelechitonia*, as noted by Robinson and Cuatrecasas, 1992, the latter proving to be synonymous with *Sphageticola*, cf. Pruski 1996).

WEDELIA VEXATA Strother, *Syst. Bot.* 33: 67. 1991.

Nay and Jal, Pacific slopes, 0-100 m; Jul-Aug.

Much-resembling *W. scabra* but distinguished by its linear-elliptic to lance-elliptic, sessile leaves, with nearly clasping, blades.

Strother (1991) was clearly vexed by this taxon, hence its name. It has the pistillate ray florets and vestiture of *W. scabra*, but differs markedly in having more elongate, elliptical or lance-elliptic, nearly sessile leaves. *Wedelia vexata* might also be compared with *W. strigosa*, the latter possessing neuter ray florets and, in the region where it approaches *W. vexata* (Jal), non-uncinate hairs.

WEDELIA XYLOPODA (Greenm.) B. L. Turner, **comb. nov.**

Based upon *Aspilia xylopoda* Greenm., *Proc. Amer. Acad. Arts* 40: 40. 1904.

Nay, s Dur and closely adjacent Sin; pine-oak woodlands, ca 2000 m; Aug-Nov.

Much resembling *W. rosea* but semiprostrate shrublets having heads with lavender or purple rays and involucres 2-seriate, the outer series as long as or longer than the inner series, not at all graduate.

McVaugh (1984) noted that this taxon "may be merely a purple-flowered form of *Wedelia rosei*," although he retained it as *Aspilia xylopoda*. I know the species only by the type and several additional collections (LL, TEX) from along hiway 40 at the Sin-Dur border. Strother (1991) included this species within his broad concept of *W. rosea*.