

## NEW TAXA, NEW COMBINATIONS, AND NOMENCLATURAL COMMENTS ON THE GENUS *ACOURTIA* (ASTERACEAE, MUTISIEAE)

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### ABSTRACT

Eleven new species of *Acourtia* are described from México and Guatemala: *A. caltepecana* B.L. Turner from southern Puebla, México; *A. durangensis* B.L. Turner from central Durango, México; *A. guatemalensis* B.L. Turner from Guatemala; *A. hidalgoana* B.L. Turner from Nuevo León, Querétaro, Hidalgo, and closely adjacent Veracruz, México; *A. macvaughii* B.L. Turner from Michoacán, México; *A. queretarana* B.L. Turner from Querétaro, México; *A. rzedowskii* B.L. Turner from Puebla, México; *A. sinaloana* B.L. Turner from northern Sinaloa, México; *A. souleana* B.L. Turner from southern Puebla and closely adjacent Oaxaca, México; *A. veracruzana* B.L. Turner from northern and central Veracruz and closely adjacent Puebla, Hidalgo, and Querétaro, México; and *A. zacatecana* B.L. Turner from Zacatecas, México. Two new Mexican varieties are proposed: *Acourtia reticulata* (Lag. ex D. Don) Reveal & King var. *maculata* B.L. Turner from Michoacán and Guanajuato, and *A. wislizeni* (A. Gray) Reveal & King var. *subscaposa* B.L. Turner from southern Durango; in addition *A. dugesii* (A. Gray) Reveal & King var. *pilulosa* (Bacig.) Reveal & King is raised to specific rank as *A. pilulosa* (Bacig.) B.L. Turner, *comb. & stat. nov.* Several early specific names were found to predate those used by Bacigalupi in his monograph of 1931, and new nomenclatural combinations consequently proved necessary: *Acourtia cordata* (Cerv. in La Llave & Lex.) B.L. Turner, *comb. nov.*, an earlier name for *Acourtia hebeclada* DC.; *A. humboldtii* (Less.) B.L. Turner, *comb. nov.*, an earlier name for both *A. alamanii* (DC.) Reveal & King and *A. mexicana* (Lag. ex D. Don) H. Rob., the latter not synonymous with *A. thurberi* (A. Gray) Reveal & King as proposed by H. Robinson; *A. moschata* (La Llave & Lex.) DC., an earlier name for *A. thyrsoides* A. Gray; *A. fruticosa* (La Llave & Lex.) B.L. Turner, an earlier name for *A. ridgia* DC.; and *A. patens* (A. Gray) Reveal & King, an earlier name



for *A. montana* (Rose) Reveal & King. In addition, when necessary, typifications for sundry species of *Acourtia* are established, including *A. carpholepis* (Sch.-Bip. ex A. Gray) Reveal & King, *A. dugesii*, *A. macrocephala* Sch.-Bip. ex Seemann, and *A. reticulata*.

KEY WORDS: Asteraceae, Mutisieae, *Perezia*, *Acourtia*, México, Guatemala

Preparation of a treatment of *Acourtia* for the Asteraceae of México has necessitated description of the following novelties, new combinations, and nomenclatural comments. The study is based upon the examination of approximately 2,900 specimens on loan from 18 institutions (cf. Acknowledgments). This material was borrowed initially for study by Dr. R.L. Cabrera (1992), but she opted to study for her doctoral work only the scapose taxa of *Acourtia* (ca. 15 species) which she segregated as a distinct genus, leaving the remaining 50 or more species essentially unexamined. In returning the latter loans, I took it upon myself to complete the task initially set before Ms. Cabrera, examining in detail all of the sheets concerned, working out matters of typification and priority, composing a key, and preparing a detailed distributional map for all of the Mexican taxa. The complete synopsis (Turner & Nesom, in prep.) should be forthcoming shortly.

***Acourtia caltepecana*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Puebla: Mpio. Caltepec, Cerro El Tambor, al NE de Caltepec, 1960-2300 m, 10 Oct 1984, *P. Tenorio* L. 7634, with C. Romero de T. (HOLOTYPE: TEX!; Isotype: MEXU).

*Acourtiae carpholepi* (Sch.-Bip. ex A. Gray) Reveal & King similis sed involucris minoribus (6-7 mm altis vs. 9-11 mm), bracteis exterioribus ac mediis plerumque scariosis apicibus acutis reflexisque (vs. aliquantum crassis apicibus late obtusis vel rotundatis erectisque) differt.

Perennial sprawling suffruticose herbs 1.0-1.5 m high. Stems puberulent to glabrescent, purple to green. Midstem leaves sessile, 5-7 cm long, 2.0-2.5 cm wide, ovate to trullate in outline, gradually reduced upwards, minutely glandular-pubescent beneath to nearly glabrous, rarely somewhat viscid, the major veins sparsely puberulent, the margins denticulate, entire or clearly lobate, sometimes throughout. Heads sessile or nearly so, numerous in terminal or lateral congested cymules, the ultimate peduncles mostly 1-2 mm long. Involucres narrowly campanulate, 6-7 mm high, the bracts 3-5 seriate, graduate, erect to markedly reflexed, glabrate dorsally, the margins ciliate with soft



hairs, the mid-bracts decidedly obtuse, mostly mucronate. Receptacle somewhat convex, glabrous. Florets 9-10 per head, the corollas reportedly white or rose-colored, bilabiate, glabrous, 5-6 mm long, both the anterior and posterior lips or limbs longer than the tube. Achenes (immature) fusiform, ca. 2 mm long, densely glandular-pubescent, 8-9 costate; pappus of numerous tawny to tawny-white, barbellate bristles 5-6 mm long.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Puebla: Rincón de la Hierba, la Mesa Chica al W de Caltepec, ca. 2120 m, 17 Oct 1983, *Tenorio L. 4706* (MEXU,TEX); 5 km al NO de Caltepec, por el camino a Los Reyes Metzontla, ca. 3 km al SE de los Reyes Metzontla, 10 Nov 1983, *Villaseñor & Tenorio 588* (MEXU,TEX); Cerro El Gavilan, ca. 4 km al SE de Caltepec, por el camino a San Luis Atolotitlán, 12 Nov 1983, *Villaseñor & Tenorio 623* (MEXU,TEX).

According to label data on type material and *Tenorio L. 4706*, the species is said to be locally abundant, occurring with *Beaucarnea* and other xerophilics. The leaves on the holotype are lacking lobes; *Villaseñor 623* has a few lobed leaves; those of *Villaseñor 588* are markedly lobed throughout. The extremes among the four sheets might be considered two species, but taken together and considering their close proximity, these all appear to belong to a single variable species.

*Acourtia caltepecana* is clearly related to *A. carpholepis*, *A. lobulata* (Bacig.) Reveal & King, and *A. souleana* B.L. Turner, but is readily distinguished from all of these by its smaller, tightly congested, fewer-flowered heads (9-10 florets vs. 11 or more) and usually reflexed, markedly scarious outer involucre bracts. The species was apparently first collected by Sessé and Moçino between 1787-1804 (no. 3089, fragment F!) and given the unpublished name "*Perdium scariosum*", presumably by Cervantes at Madrid.

*Acourtia carpholepis* (Sch.-Bip. ex A. Gray) Reveal & King, *Phytologia* 27:229. 1973. BASIONYM: *Perezia carpholepis* Sch.-Bip. ex A. Gray, *Proc. Amer. Acad. Arts* 19:60. 1883. TYPE: MEXICO. Puebla: "Chapulco", Dec 1841, *Liebmann 351* (LECTOTYPE [selected here]: GH!; Fragment of lectotype and sketch of lectotype: GH!; Isolectotypes: G!,US!). As noted by Bacigalupi (1931), Gray adopted the name *P. carpholepis* from an unpublished annotation on a Liebmann sheet by Schultz-Bipontinus which had been sent to him from Europe. Gray based his description upon several sheets (*Liebmann 351*, from Puebla; *Ghiesbreght 525*, from Chiapas; *Linden 439*, also from Chiapas. Specimens from Puebla and closely adjacent states tend to have fewer, less graduate, and more narrowly obtuse involucre bracts than those from Chiapas, which are more numerous and rounded apically. The Liebmann specimen fits well the description concerned, Gray specifically noting the heads to be ca. 10-



flowered and the bracts with obtuse apices.

So far as known *Acourtia carpholepis* occurs in Puebla, Veracruz, and again in Chiapas. Material from Guatemala heretofore referred to as *A. carpholepis* is described below as *A. guatemalensis* B.L. Turner. Material of the former from Chiapas approaches the latter in having mostly rounded involucre bracts, but otherwise is closer to what I call *A. carpholepis*. *Acourtia lobulata* is closely related to *A. carpholepis*, the former distinguished by its acute involucre bracts, lobed leaves, and more numerous florets per head (18-20 vs. 9-11).

***Acourtia cordata*** (Cerv. in La Llave & Lex.) B.L. Turner, *comb. nov.* **BA-  
SYNONYM:** *Perdium cordatum* Cerv. in La Llave & Lex., *Nov. Veg.*  
*Descr.* 1:27. 1824. **TYPE:** MEXICO. D.F.(?) "montibus del De-  
sierto Mexico vicinis", 1787-1804, *Sessé & Mocino 3736* (LECTOTYPE  
[selected here]: M; Probable fragment of lectotype: F!; Isolectotypes:  
G-BOISS!). De Candolle, in his description of *Acourtia hebeclada* DC.,  
cited *Perdium cordatum* as a questionable synonym. The lectotype  
fragment examined here differs not at all from the lectotype fragment of  
*Acourtia hebeclada* at GH.

*Acourtia hebeclada* DC., *Delessert Icon. Select.* 4:41. 1838. *Perezia  
hebeclada* (DC.) A. Gray, *Pl. Wright.* 1:127. 1852. **TYPE:** MEX-  
ICO. w/o specific locality, 1831, *Alaman s.n.* (LECTOTYPE [se-  
lected here]: G-DC; Xerolectotype: TEX!; Fragment of lectotype:  
GH!). In his protologue, De Candolle also cited a specimen collected  
by Mairet.

*Perezia hebeclada* (DC.) A. Gray var. *urolepis* B.L. Rob., *Proc. Amer.*  
*Acad. Arts* 44:625. 1909. **TYPE:** MEXICO. Hidalgo: Sierra de  
Pachuca, 2900 m, *C.G. Pringle 13975* (HOLOTYPE: GH!).

*Acourtia matudae* Rzed., *Bol. Soc. Bot. Mex.* 45:107. 1983. **TYPE:**  
MEXICO. D.F.: Sierra de Guadalupe, 2450-2750 m, 1 Nov 1953,  
*E. Matuda 29536* (HOLOTYPE: MEXU!).

*Acourtia cordata* is apparently a relatively common species in southcen-  
tral México, especially in the vicinity of México City. The earliest name for  
the taxon is clearly *Perdium cordatum*, to judge from both the description  
and fragment of the lectotype. Bacigalupi (1931) listed this name among his  
"Doubtful or Uncertain Species", not having access to type material, which  
was apparently collected by Sessé & Mocino in the mountainous areas about  
or near México City.

*Acourtia matudae* appears to be a form of *A. cordata* with peculiar involu-  
cre bracts, appropriately described as "cochleate-fimbriate" by Rzedowski.



This plant is known only by a single collection from Sierra de Guadalupe, a relatively small mountainous area just north of México City. Upon this same sierra, numerous collections of *A. cordata* have been made, nearly all of which show a range of involucre types. While none of these is as bizarre as "*A. matudae*," Rzedowski 37117 (IPN) clearly possesses semi-cochleate inner bracts, some of which are lacerate. More or less similar variation in involucre bracts can be found elsewhere in the range of the taxon (e.g., Pringle 13975, Sierra de Pachuca, Hidalgo, the type of var. *urolepis*), but on the localized Sierra de Guadalupe all of the 15 or more specimens examined have very elongated inner involucre bracts with apices tortuous or variously reflexed to cochleate. The involucre bracts found in *A. cordata* over most of its distribution are like those found in type material: linear-lanceolate, glandular, with inner bracts appressed, the latter mostly 14-20 mm long. Regardless, I can find no other character other than bract shape to distinguish *A. matudae* from *A. cordata* and reluctantly relegate the name to synonymy here.

*Acourtia dugesii* (A. Gray) Reveal & King, *Phytologia* 27:229. 1973. BASIONYM: *Perezia dugesii* A. Gray, *Proc. Amer. Acad. Arts* 19:60. 1883. TYPE: MEXICO. Guanajuato: "Guanaxuato", w/o date *A. Duges* s.n. (HOLOTYPE: GH!). In his protologue Gray noted the species to be known by "A flowering branch only." and has annotated the sheet concerned as "*Perezia Dugesii* n. sp." Apparently, at the time of his description he did not have available another sheet with 2 sprigs from this locality (*Duges* 430, collected in 1883, GH!), which matches closely that of the holotype. Duges also collected the species again at the same locality in 1905 (*Duges* 20, NY).

*Acourtia dugesii* is a sprawling suffrutescent shrub or shrublet 2-5 m high. As treated by previous workers (e.g., McVaugh 1984) it was a very heterogeneous assemblage. I have restricted the name to plants of the above habit from western México having sessile heads, each containing 5 or 6 florets, the latter producing mostly glandular-pubescent achenes. From out of this complex several taxa have been described herein, including *A. macvaughii*, *A. queretarana*, and *A. veracruzana*.

Bacigalupi (1931) recognized two varieties under *Acourtia dugesii* (s.l.): a widespread var. *dugesii* and var. *pilulosa* Bacig. from Oaxaca. The latter is treated as a species in the present account.

*Acourtia durangensis* B.L. Turner, *sp. nov.* TYPE: MEXICO. Durango: Cienega bottomland near small lake 40 mi N of Cd. Durango in scattered colonies on open bottomland, ca. 2000 m, 3 Oct 1948, Howard S. Gentry 8594 (HOLOTYPE: MICH!; Isotypes: ARIZ!, GH!, US!).



*Acourtiae dieringeri* Cabrera R. similis sed foliis ellipticis (vs. obovatis) valde glanduliferis in paginis inferioribus (vs. sparsim glandi-punctatis) et acheniis dense pubescentibus trichomatibus hispidulis ac glandulosis (vs. sparsim hispidulis eglandulosis) differt.

Stiffly erect unbranched suffruticose herbs to 1 m high. Stems moderately puberulent to glabrescent. Midstem leaves sessile, clasping, ovate-elliptic to elliptic, mostly 12-20 cm long, 5-8 cm wide, the undersurfaces both atomiferous-glandular and eglandular-puberulent, the latter mainly along the veins, the margins irregularly serrate-prickly. Heads sessile or nearly so, arranged in terminal congested cymules of 5-(8)-15, the entire collection of 100 or more heads forming a rather tightly congested pyramidal capitulescence. Involucres turbocylindric, 6-8 mm high, the bracts 3-4 seriate, eglandular, the margins pilose-ciliate, the apices obtuse to rounded, usually minutely apiculate. Florets 5 per head. Achenes 4.5-5.5 mm long, pubescent with an even mixture of both hispid and minute glandular hairs, the pappus of numerous tawny bristles ca. 9 mm long, their apices somewhat expanded.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Durango: 19 mi W of Cd. Durango, canyon slope with pine and oak, 8000 ft., 28 Sep 1943, *Gentry 6905* (ARIZ,GH,MICH,NY); Santiago Papasquiaro, Apr-Aug 1896, *Palmer 611*, in part (US).

*Acourtia durangensis* is apparently closely related to the recently described *A. dieringeri* from west-central Chihuahua, having most of the vegetative features of that taxon but the leaves more nearly elliptical (vs. obovate) with markedly glandular-pubescent undersurfaces, the heads subsessile, arranged in congested glomerules, the capitulescence more nearly tightly pyramidal (vs. arranged in rather openly branched rounded paniculate cymes), and achenes both densely hispidulous and glandular-pubescent (vs. sparsely hispidulous).

The species apparently occurs with or near *Acourtia fruticosa* (La Llave & Lex.) B.L. Turner in the vicinity of Cd. Durango since *Palmer 611* is a mixture of both of these taxa. Thus a sheet of *A. fruticosa* (*Palmer 611*, F) has the flowering stalk of the latter, but a large packet attached to this contains late-flowering heads of *A. durangensis*, upon which some unknown worker has perceptively written, "this material does not belong to the pressed specimen."

***Acourtia fruticosa*** (La Llave & Lex.) B.L. Turner, *comb. nov.* BASIONYM: *Perezia fruticosa* La Llave & Lex., *Nov. Veg. Descr.* 1:24. 1824. TYPE: MEXICO. Michoacán: Mountains about Morelia, w/o date, *Lexarza s.n.* (HOLOTYPE: G-DEL, not located; NEOTYPE [selected here]: MEXICO. Michoacán: "Hills, Jesus del Monte near Morelia, 6500 ft.", 29 Nov



1907, *C.G. Pringle 10410* (NEOTYPE: LL!; Isonotypes: ENCB!, G!, GH!, LL! [3 sheets], MICH!, US!). For additional discussion, see below.

*Trixis latifolia* Hook. & Arn., *Bot. Beech. Voy.* 300. 1838. TYPE: MEXICO. Nayarit: "Tepic", Dec 1837, *A. Sinclair s.n.* (HOLOTYPE: K!; Fragment of holotype: GH!).

*Acourtia formosa* D. Don, *Trans. Linn. Soc.* 16:204. 1830. *Perezia formosa* (D. Don) A. Gray, *Proc. Amer. Acad. Arts* 19:58. 1883. TYPE: MEXICO. w/o specific locality, 1788-1804, *Sessé & Moçino s.n.* (HOLOTYPE: G!; Isotype: G-BOISS!; Photoisotype: F!).

*Acourtia formosa* Hook. & Arn., *Bot. Beech. Voy.* 437. 1838. Not *Acourtia formosa* DC. or *Acourtia formosa* D. Don. TYPE: MEXICO. Nayarit: Tepic, Dec-Jan 1837-38, *Sinclair s.n.* (HOLOTYPE: K!).

*Acourtia rigida* DC., *Prodr.* 7:66. 1838. *Perezia rigida* (DC.) A. Gray, *Pl. Wright.* 1:127. 1852. TYPE: MEXICO. Guanajuato: León, 1829, *Mendez s.n.* (HOLOTYPE: G-DC microfiche!; Fragment holotype: GH!; Photoholotypes: F!, MICH!, TEX!; Photoisotypes: F!, MICH!).

*Perezia seemannii* A. Gray, *Pl. Wright.* 1:127. 1852. *Trixis seemannii* (A. Gray) Sch.-Bip. ex Seem., *Bot. Voy. Herald* 315. 1856. *Acourtia seemannii* Sch.-Bip. in Seem., *Bot. Voy. Herald* 315. 1856. (Cited in synonymy but illustrated as t. 54). TYPE: MEXICO. Durango(?): w/o specific locality, Dec-Jan 1839-40, *Seemann 2033* (HOLOTYPE: GH!; Isotype: K!; Photoisotype: MICH!). Seemann's collection data is taken from the isotype label at K.

*Perezia rigida* (DC.) A. Gray var. *acuminata* Bacig., *Contr. Gray Herb.* 97:46-1931. *Acourtia rigida* DC. var. *acuminata* (Bacig.) Reveal & King, *Phytologia* 27:231. 1973. TYPE: MEXICO. Jalisco: barranca near Guadalajara, 1525 m, 9 Dec 1902, *C.G. Pringle 9950* (HOLOTYPE: GH!; Isotypes: F!, GH!, NY!, US!).

*Perezia rigida* (DC.) A. Gray var. *linearifolia* Bacig., *Contr. Gray Herb.* 97:46. 1931. *Acourtia rigida* DC. var. *linearifolia* (Bacig.) Reveal & King, *Phytologia* 27:231. 1973. TYPE: MEXICO. Guanajuato: hillsides near Guanajuato, Nov 1988, *C.G. Pringle 1860* (HOLOTYPE: GH!; Isotypes: BM!, F!, MEXU!, NY!, US!).

*Perezia kuhnioides* M.E. Jones, *Contr. West. Bot.* 118:73. 1933. TYPE: MEXICO. Jalisco: La Barranca, Guadalajara, 25 Nov 1930, *M.E. Jones 27693* (HOLOTYPE: POM; Photoholotype: US!; Isotype: BM!).



*Acourtia fruticosa* was relegated to the "Doubtful or Uncertain Species" in the treatment of Bacigalupi (1931), but a careful reading of the original description and geographical considerations show this to be an earlier name for what has been called *A. rigida*. Unfortunately most authors have followed Bacigalupi's treatment; which was presumably based upon Gray's (1883) synopsis of *Perezia*.

Lexarza, as reported by La Llave & Lexarza (1824), collected three of the five species of what is now regarded as *Acourtia* that are known to occur in the immediate vicinity of Morelia, Michoacán: *Perezia fruticosa*, *P. moschata* La Llave & Lex., and *P. turbinata* La Llave & Lex. He apparently did not collect *Acourtia humboldtii* (Less.) B.L. Turner or *A. pringlei* (B.L. Robins. & Greenm.) Reveal & King, both of which are relatively rare in the region concerned, the former three being much more common to judge from the number of collections available in the herbaria consulted for the present study.

Bacigalupi (1931) not having examined type material, rejected all of the names of La Llave & Lexarza except that of *Perezia turbinata*, largely because of rather technical misdescriptions of corolla shape in the taxa concerned, otherwise the descriptions are surprisingly detailed and unquestionably refer to species of what is today recognized as *Acourtia*. Further, all of these by their descriptions alone can be referred to species of *Acourtia*, which are relatively common in the area of Morelia, even today. These are: *Acourtia fruticosa*, *A. moschata* (La Llave & Lex.) DC. and *A. turbinata* (La Llave & Lex.) Reveal & King, as noted in the above. The latter taxon is readily characterized by its turbinate involucres with lanceolate involucral bracts, as described by La Llave & Lexarza (vs. cylindric with ovate bracts in *A. fruticosa*, not to mention the glabrous lustrous or shiny leaves of the latter, also mentioned in the original description). Bacigalupi (1931) retained *Acourtia turbinata* (as *Perezia*) with reservation, although he misapplied the name as to species. His concept of *A. turbinata* applies to what I call *A. cordata*; type material of the latter hails from the vicinity of México City, as indicated elsewhere in the present paper. The characters which distinguish *A. moschata* are discussed under *A. cordata*, and this latter name hardly qualifies as a competitor for either *A. fruticosa* or *A. turbinata*. Comparisons of the original descriptions of these several taxa clearly indicate that these cannot be confused with either *A. humboldtii* or *A. pringlei*.

Unfortunately, I have not been able to locate type material of any of Lexarza's collections. These were not located in the various herbaria housed at G, where his collections would normally be found. Regardless, I have no hesitation, from the descriptions rendered by La Llave & Lexarza, and from what is known of the distributions of *Acourtia* species, in taking up these early names. Thus *Acourtia fruticosa* must replace Bacigalupi's *A. hebeclada*; *A. moschata* must replace his use of *A. thyrsoides*, and *A. turbinata* his use of *A. formosa*. Material which Bacigalupi assigned to his *A. turbinata*, actually



belong to *A. cordata*, as noted in the above.

To legitimize these new nomenclatural applications I have established neotypes for these three names so as to provide adequate typification for each, as necessitated by the current *International Code of Botanical Nomenclature*.

McVaugh (1984) aptly noted that *Acourtia fruticosa* is a widespread highly variable species but easily recognized by its coriaceous, glabrous leaves and small involucre, the bracts to some extent glandular. He also noted, correctly I think, that the name var. *acuminata* has been applied to forms from near Guadalajara with rather narrowly acute involucral bracts, and the name var. *linearifolia* to forms with somewhat narrow leaves. It is likely that some of this variation is due to occasional hybridization with associated taxa. McVaugh (1984) noted that *Perezia rigida* (= *A. fruticosa*) is largely allopatric with *A. platyphylla* (A. Gray) Reveal & King, which has a more northern distribution; the latter has somewhat larger involucres (mostly 8-11 mm high vs. 6-8 mm), broader, somewhat orbicular leaves, and nearly always a mixture of both hispidulous and glandular hairs on its achenes (vs. eglandular or nearly so).

***Acourtia guatemalensis* B.L. Turner, sp. nov. TYPE: GUATEMALA.**

Dept. Solola: Mountain slopes above Lake Atitlán, ca. 3-5 km W of Panojachel, 2100 m, 6-7 Dec 1963, *L.O. Williams, A. Molina R., & T.P. Williams 75318* (HOLOTYPE: F!; Isotypes: GH!, NY!, US!, WIS!).

*Acourtiae carpholepi* (Sch.-Bip. ex A. Gray) Reveal & King similis sed capitulis cylindricis (vs. turbocampanulatis) flosculis paucioribus (5-7 vs. 10-18), bracteis involucri paucioribus apicibus plerumque late rotundatis (vs. plerumque anguste obtusis vel acutis), et acheniis glanduliferis et hispidulis (vs. minute penitusque glanduliferis) differt.

Trailing or reclining shrublets, or clambering vines 1-2 m high. Stems straw-colored, sparsely puberulent to glabrous, the terminal portions somewhat fractiflex. Midstem leaves sessile, clasping, thin, ovate-elliptic to elliptic-obovate, sparsely and minutely glandular-pubescent on the undersurfaces, the major veins sparsely puberulous, the margins denticulate. Heads both terminal and axillary, arranged mostly 5-10 in corymbose clusters, the ultimate peduncles mostly 1-5 mm long. Involucres cylindric, 8-9 mm high, ca. 4 mm wide, the bracts ca. 12, 3-4 seriate, graduate, the middle bracts glabrous dorsally, the margins scarious and sparsely ciliate, the apices mostly obtuse or rounded. Florets 5-7 per head, the corollas bilabiate, lilac. Achenes fusiform, 5-6 mm long, densely and minutely glandular-pubescent, but scattered, much longer, hispidulous hairs also occur; pappus of numerous tawny weakly barbellate bristles ca. 9 mm long.



ADDITIONAL SPECIMENS EXAMINED: GUATEMALA. Dept. Jalapa: La Laguna, Volcán Jumay, 1 mi N of Jalapa, 1400-1600 m, 30 Nov 1939, *Steyermark 32301* (F). Dept. Sacatepequez: Finca El Hato, NE of Antigua, 1950-2040 m, 28 Dec 1938, *Standley 61149* (F); near Antigua, 1500-1600 m, Nov 1938-Feb 1939, *Standley 61746* (F).

*Acourtia guatemalensis* is obviously related to *A. carpholepis* of México, and was so treated as a synonym of the latter by Nash (1976) in her account for the Flora of Guatemala. It is readily distinguished from the *A. carpholepis* in having more numerous cylindric heads (vs. turbocampanulate), the nearly glabrous involucrel bracts having rounded apices; in addition the heads have only 5-7 florets (vs. 10-18), and the achenes possess both minute, glandular hairs and much longer, scabrid hairs (vs. predominately glandular). *Acourtia guatemalensis* is probably more closely related to *A. dugesii* than to *A. carpholepis*, having the habit, and floret number of the latter, but possessing less congested corymbs, somewhat smaller involucres with rounded involucrel bracts and achenes equally pubescent with both glandular and hispid hairs.

***Acourtia hidalgoana*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Hidalgo: 7 km al NE de Mesquititlán, sobre la carretera a Zacualtipán, "ladera de roca ignea con vegetacion de matorral xerofilo," 1750 m, 17 Nov 1974, *Rzedowski 32510* (HOLOTYPE: MEXU!; Isotypes: ENCB!, MEXU!).

*Acourtiae humboldtii* (Less.) B.L. Turner similis sed foliis mid-caulinis eglandulosis amplis ellipticis abrupte redactisque versus apicem caulis (vs. plerumque glandulosis minoribus ovatis gradatim redactisque) et bracteis involucri aliquantum glandulosis (vs. puberulis vel fere glabris sed eglandulosis) differt.

Stiffly erect suffruticose herbs 0.8-1.5 m high. Stems puberulent to glabrescent. Midstem leaves sessile, clasping, mostly 6-14 cm long, 4-9 cm wide, ovate-elliptic to elliptic-obovate, eglandular-puberulent beneath along the major veins, otherwise glabrous, the margins spinulose-dentate. Heads arranged 3-10 in terminal mostly erect glomerules, 2-10 glomerules to a capitulescence, the ultimate peduncles 1-10 mm long. Involucres turbocampanulate, 8-11 mm high, the bracts 4-7 seriate, the inner bracts linear-lanceolate, to some extent glandular-pubescent, at least along the margins, rarely markedly brown-tomentose along margins, their apices acute, usually apiculate. Florets mostly 11-20 per head. Achenes 4.5-5.5 mm long, minutely glandular-granuliferous throughout, the pappus of numerous white bristles 9-11 mm long in 2-3 series, their apices somewhat expanded.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Hidalgo: 2 km N of San Miguel Regla, 2100 m, 18 Nov 1977, *Medrano et al. 10727* (MEX).



Nuevo León: Mpio. Zaragoza, Cerro El Viejo, 1850 m, 16 Oct 1992, *Hinton et al.* 22530 (TEX). Querétaro: Mpio. Cadereyta, ca. El Doctor, 2600 m, 11 Oct 1988, *Rzedowski* 45063 (TEX); Mpio. San Joaquin, 2 km N de San Joaquin, 2300 m, *Fernández* 3618 (NY,TEX). Veracruz: Huayacocotla, 2100 m, 21 Dec 1970, *Hernández M. & Yolando de Hernández* 961 (GH,MEX,US).

*Acourtia hidalgoana* superficially resembles *A. platyphylla*, type material having been identified as such by the original collector. The new species appears closest, however, to *A. humboldtii*, from which it differs in having elliptical much larger midstem leaves which are eglandular. As conceived here, *A. hidalgoana* has either glandular or eglandular involucre bracts and rather well-extended terminal cymes, the ultimate peduncles mostly 2-10 mm long (vs. sessile heads in terminal rounded glomerules mostly overlapped by the leaves in *A. humboldtii*).

Occasional plants of *Acourtia humboldtii* from Guanajuato superficially resemble *A. hidalgoana* (e.g., *Ventura* 7683, TEX; from Mpio. Victoria), but the former are readily distinguished by their glandular-pubescent leaf surfaces (vs. eglandular). It is possible, however, that more extended study will show the Guanajuato material to be a distinct taxon. Collections from Querétaro and Nuevo León differ in having more numerous florets per head (14-20 vs. 11-12) and involucre bracts with margins densely brown-tomentose, otherwise these look very much like typical *A. hidalgoana*.

***Acourtia humboldtii* (Less.) B.L. Turner, comb. nov.** BASIONYM: *Dumerilia humboldtii* Less., *Linnaea* 5:13. 1830 [Jan]. *Perezia humboldtii* (Less.) A. Gray, *Pl. Wright.* 1:128. 1852. TYPE: MEXICO. w/o specific locality or date, *Humboldt s.n.* (HOLOTYPE: Willdenow Herbarium 16095, microfiche!).

*Proustia mexicana* Lag. ex D. Don., *Trans. Linn. Soc.* 16:203. 1830 [May]. *Acourtia mexicana* (Lag. ex D. Don) H. Rob., *Phytologia* 69:106. 1990. TYPE: MEXICO. w/o specific locality or date, *Sessé & Mocino s.n.* (HOLOTYPE: G-DC, microfiche!; Isotype: G-BOISS!).

*Dumerilia alamanii* DC., *Prodr.* 7:67. 1838. *Perezia alamanii* (DC.) Hemsl., *Biol. Centr. Amer. Bot.* 2:255. 1881. *Acourtia alamanii* (DC.) Reveal & King, *Phytologia* 27:229. 1973. TYPE: MEXICO. w/o specific locality or date, *L. Alaman s.n.* (HOLOTYPE: G-DC, microfiche!; Fragment of holotype: GH!; Photoholotypes: F!,MICH!,US!).

*Perezia adnata* A. Gray, *Pl. Wright.* 1:127. 1852. *Perezia alamanii* (DC.) Hemsl. var. *adnata* (A. Gray) Bacig., *Contr. Gray Herb.* 97:



64. 1931. TYPE: MEXICO. Michoacán: Morelia, pine forests, Sep 1844, *Ghiesbreght 378* (HOLOTYPE: GH!).

*Perezia adnata* A. Gray var. *oolepis* Bartlett, Proc. Amer. Acad. Arts 44:637. 1909. *Perezia alamanii* (DC.) Hemsl. var. *oolepis* (Bartlett) Bacig., Contr. Gray Herb. 97:65. 1931. TYPE: MEXICO. México: rocky hills, Tultenango, 2500 m, 3 Sep 1890, *C.G. Pringle 3244* (LECTOTYPE [selected here]: GH!; Isolectotypes: BM!, F!, G!, GH!, MEXU!, MU!, NY!, US!). In his protologue Bartlett cited two specimens of *Pringle (3244 and 9945)*, both from the same locality. I follow Cabrera R. (by annotation) in selecting as lectotype the sheet concerned.

Bacigalupi (1931), not having examined type material of *Dumerilia humboldtii*, referred this to his list of "Doubtful or Uncertain Species". In its place he took up the name *Perezia alamanii*, largely following the precepts of Gray (1883). Harold Robinson (1991) further complicated the nomenclature of this group by taking up the name *Acourtia mexicana*, asserting this to be the earliest available name for what Bacigalupi called *A. alamanii*. At the same time he proclaimed the long-accepted species *A. thurberi* (A. Gray) Reveal & King, which is restricted to northern México and adjacent U.S.A., to be synonymous with his concept *A. mexicana*.

*Dumerilia humboldtii* has a well-preserved type in the Willdenow herbarium (microfiche TEX!) and its publication has priority over that of *Proustia mexicana*. Examination of types for the two names leaves little doubt that both of these belong to the same taxon. I cannot, however, agree that *Acourtia humboldtii* should encompass *A. thurberi*, the latter being quite distant from the range of *A. humboldtii* and readily distinguished from the latter by its smaller involucres and hispidulous achenes (vs. glandular), and yet other characters.

As I understand *Acourtia humboldtii*, it is a widespread, variable species occurring in San Luis Potosí, Guanajuato, Hidalgo, Jalisco, Michoacán, México, Morelos, Puebla, and Veracruz. Bacigalupi (1931) recognized three varieties under his concept of *Perezia alamanii* (= *Acourtia humboldtii*): 1) var. *alamanii* with involucres 12-14 mm high, their bracts glabrous or merely "sericeo-ciliate" along the margins; 2) var. *adnata* with involucres 9-10 mm high, their bracts glandular and midstem leaves ovate- to lance-oblong; and 3) var. *oolepis* with glandular involucres 9-10 mm high, and midstem leaves broadly oval to ovate-spatulate, and yet further distinguished by its more exserted capitulescence.

These several varieties may or may not deserve recognition. In general, plants referable to the first named variety are largely centered in the state of México and westwards; the second named variety is largely confined to Michoacán; and the last named variety appears to be merely a form with large



leaves. But exceptions to the several characters by which Bacigalupi identified the taxa are found here and there throughout the range of *Acourtia humboldtii*, and with the information and data before me at the present time it would seem best to recognize but a single variable species.

*Acourtia macrocephala* Sch.-Bip. ex Seemann, *Bot. Voy. Herald* 315, t. 55. 1856. TYPE: MEXICO. Durango(?): ("Sierra Madre", probably collected between Cd. Durango and northern Nayarit), Dec-Feb 1838-39, *Seemann s.n.* (HOLOTYPE: K!; Photoholotype: MICH!; Isotype: GH!). For an account of Seemann's travels in the region concerned see Turner (1992). Stafleu & Cowan (1979) contend that Seemann's types are located at BM, but careful search by myself for his types during the summer of 1992 at that institution proved futile.

*Acourtia acevedoi* M. González E., *Phytologia* 61:117. 1986. TYPE: MEXICO. Durango: Rincón de Las Mulas, a 3 km al SW de San Isidro, Mpio. Vicente Guerrero, 2180 m, 16 Feb 1985, *S. Acevedo 1326* (HOLOTYPE: CIIDIR; Isotype: TEX!).

Bacigalupi (1931) inexplicably positioned this species as a synonym of his concept of *Perezia formosa*, the latter typified by a Sessé & Mocino collection, probably from Michoacán. Sessé & Mocino presumably did not collect in the range of *Acourtia macrocephala*. Regardless, it is clear that Schultz-Bipontinus recognized both *A. formosa* and *A. macrocephala*, providing strikingly different illustrations for both of these. In addition, with his original description Schultz-Bipontinus established *A. macrocephala* as the probable type of his proposed subgenus *Macrocephalae* Sch.-Bip., which was presumably meant to include most of the large-headed taxa of *Acourtia*, including *A. turbinata*; and those subsequently described.

González, in her original description of *Acourtia acevedoi*, has provided an excellent account of *A. macrocephala* and its relationship to *A. longifolia* (S.F. Blake) Reveal & King. Unfortunately she had no help from Bacigalupi's confused treatment of the group and did not have access to the type of *A. macrocephala*, although it is nicely illustrated in Seemann's account of the species.

Part of the confusion with respect to the validity of *Acourtia macrocephala* rests with the interpretation by some authors (presumably Seemann himself, and perhaps followed by Bacigalupi) that *A. turbinata* and *A. macrocephala* are synonymous. But apparently Schultz-Bipontinus did not think them so when he provided the treatment of *Acourtia* for Seemann's account, hence the two appropriately labeled illustrations and the brief Latin description of *A. macrocephala* Sch.-Bip., presumably provided by Schultz-Bipontinus himself.



***Acourtia macvaughii*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Michoacán: steep limestone slopes near summits, 8-12 km SW of Aserradero Dos Aguas and nearly W of Aguililla, fir-forest zone, 2250-2400 m, 5-6 Mar 1965, *Rogers McVaugh 22789* (HOLOTYPE: LL!; Isotypes: MICH!, NY!).

*Acourtia dugesii* (A. Gray) Reveal & King similis sed habitu erecto 1.0-1.5 m elato, capitulis majoribus plus laxe fasciculatis in pedunculis ultimis 1-5 mm long (vs. sessilibus), et capitulis flosculis plerumque 8-10 (vs. 5-6) differt.

Erect suffruticose herbs 1.0-1.5 m high. Stems sparsely puberulent, green at first but purple and glabrescent with age. Midstem leaves mostly 10-18 cm long, 4-9 cm wide, sessile, clasping, gradually reduced upwards, elliptic to ovate-elliptic, sparsely pubescent beneath, especially along the major veins, the margins finely and rather evenly spinulose-dentate. Heads arranged 5-15 in both terminal and axillary cymes, the ultimate peduncles mostly 1-5 mm long. Involucres subcylindric, mostly 9-11 mm high, the bracts 4-5 seriate, glabrous dorsally, the margins sparsely pubescent, the midbracts mostly abruptly obtuse or broadly acute at their apices. Florets (7-)8-9(-10) per head. Achenes (immature) 3-4 mm long, densely short-glandular throughout, the pappus of ca. 40 slender white bristles ca. 10 mm long in a single series.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Michoacán: steep mountain-sides NW of Aguililla, ca. 6-7 km S of Aserradero Dos Aguas, cut-over slopes in pine-forest zone, on sharply eroded and tumbled limestone rocks, 2000 m, 3 Mar 1965, *McVaugh 22711* (ENCB, MICH).

This species is clearly closely related to *Acourtia dugesii* and both of the above cited collections were included by McVaugh (1984) in his concept of that taxon. In label data of type material he notes the plant to be a "Harsh herb 1.5 m high; flowers purple, spicily fragrant." *Acourtia dugesii*, as I understand the species, is a sprawling shrub or shrublet 2-5 m high having sessile heads, each with only 5 or 6 florets. *Acourtia macvaughii* is apparently confined to the area cited and does not appear to intergrade with *A. dugesii* from closely adjacent Coalcoman, Michoacán, plants of the latter having sessile smaller heads with only 5-6 florets. The geographical distribution of *A. dugesii* and closely related taxa are shown in Fig. 1.

*Acourtia moschata* (La Llave & Lex.) DC., *Prodr.* 7:66. 1838. BASIONYM: *Perezia moschata* La Llave & Lex., *Nov. Veg. Descr.* 1:26. 1824. TYPE: MEXICO. Michoacán: "montibus Vallisoletanis" [near the present city of Morelia], w/o date, *La Llave s.n.* (not located). (NEOTYPE [selected here]: MEXICO. Michoacán: 24 mi W of Morelia, 29 Nov 1907, *H.D. Ripley & R.C. Barneby 14849*, NY!).





Fig. 1. Distribution of *A. dugesii* and closely related taxa.

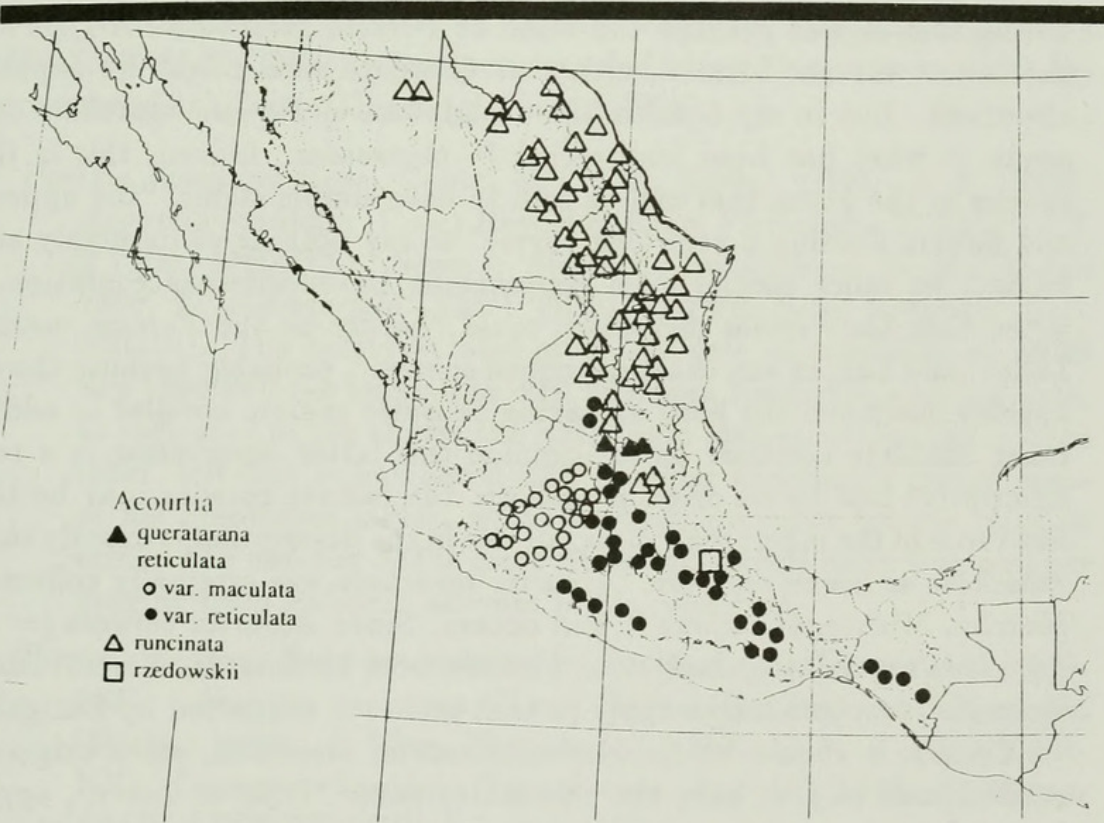


Fig. 2. Distribution of selected *Acourtia* species.



*Perezia thyrsoides* A. Gray in Torrey, *Bot. Mex. Bound.* 104. 1859.  
*Acourtia thyrsoides* (A. Gray) Reveal & King, *Phytologia* 27:231.  
1973. TYPE: MEXICO. Guanajuato: Guanajuato, 1827, *Berlandier* 1329 (HOLOTYPE: GH!).

Bacigalupi (1931) relegated *Perezia moschata* to his list of "Doubtful or Excluded" species. He did this in spite of the fact that the original authors provided an excellent Latin description of the taxon, which was translated into English by Bacigalupi. In this, the latter worker described *Perezia moschata* as having "a simple, erect stem 3-4 feet high, the upper leaves and flowers forming a very long thyrses" with an additional note that the whole plant exudes a strong odor of musk, whence the name". Nevertheless, Bacigalupi contended that the "description would seem to fit *P. hebeclada* [*Acourtia cordata* of the present treatment] more closely than any other Mexican *Perezia*."

De Candolle (1838; *Prodr.* 7:66) accepted *Acourtia moschata* with a query, noting that it was perhaps the same as *Perezia moschata*. A type sheet of the latter was not located, either at G where such might be expected, or elsewhere. But in my opinion the description of *Perezia moschata* can only apply to what has been long called *P. thyrsoides*. Indeed, this is the only species in the genus that can be said to have simple stems, "the upper leaves and flowers forming a very long thyrses" to say nothing of its highly aromatic foliage, no other species even approaching its odoriferous condition. Gray noted that his *Perezia thyrsoides* could "hardly be the *Perezia moschata* of Lallav. and Lex, or any other described species", probably because the original authors described the head as having 18 outer radiate corollas in addition to inner bilabiate corollas. In my opinion this latter observation is a technical descriptive flaw by its original authors: the radiate corollas may be bilabiate like those of the inner; regardless, all else in the description is exactly that of *A. moschata* as conceived here. *Acourtia moschata* was originally collected near Morelia, Michoacán, where it still occurs. Since *Acourtia cordata* (= *Perezia hebeclada* sensu Bacigalupi), is not known from Michoacán, it is not likely that *Acourtia moschata* might apply to that name, as suggested by Bacigalupi.

Finally, it should be noted that *Acourtia moschata*, when originally described, was said to have the vernacular name "Cola de Zorra", apparently because the dense elongated capitulescence superficially resembles the tail of a fox, which it does, this attributed to Lexarza who first collected the plant near Morelia, Michoacán. Subsequent collections of this plant from near Morelia were still given the common name "Cola de Zorra" (e.g., *Urbina* s.n., in the year 1877, MEXU); this name is also applied to the same plant in other areas as well (e.g., near Cd. Guanajuato, Guanajuato, Oct 1894, *Duges* s.n., GH). I emphasize here: so far as known no other *Acourtia* has received this vernacular name nor does any other species possess such a capitulescence.



*Acourtia patens* (A. Gray) Reveal & King, *Phytologia* 27:230. 1973. BASIONYM: *Perezia patens* A. Gray, *Pl. Wright.* 1:127. 1852. *Trixis patens* (A. Gray) Sch.-Bip. in Seemann, *Bot. Voy. Herald* 315, t. 56. 1856. TYPE: MEXICO. Durango (?): (probably at or near the Sinaloa-Durango border along the present day highway 40), 1839-40, *Seemann s.n.* (LECTOTYPE [selected here]: GH!; Isolectotype: K!, this sheet bears Seemann's collection no. 2032, as noted by McVaugh 1984). Seemann's number 2032 is also cited by Schultz-Bipontinus in his transfer of the species to *Trixis*. In the protologue Gray recognized two unnamed varieties, these based upon at least three separate collections belonging to yet other species. The typical element of Gray's *Perezia patens*, however, was based upon Seemann's collection, hence its designation as lectotype. The type locality is not known for certain but subsequent collections of the taxon have been made only near the site indicated in the above (e.g., along hwy 40, 1 mi E of Palmito, Sinaloa, *Breedlove 4250* [MICH]; ca. 9 mi W of Espinosa del Diablo, Durango, along hwy 40, *Scott 1018* [TEX]). Seemann traveled along this very route in his traverse of the Sierra Madre (cf. Turner 1992).

*Perezia montana* Rose, *Contr. U.S. Nat. Herb.* 1:105. t. 8. 1891. *Acourtia montana* (Rose) Reveal & King, *Phytologia* 27:230. 1973. TYPE: MEXICO. Sonora: Sierra de los Alamos, 25 Mar-8 Apr 1890, *E. Palmer 285 (385?)* (HOLOTYPE: US!; Isotypes: GH!, MICH!). The holotype label gives the date of collection as 16-30 Sep 1890 and the number as 385, although Rose gave a spring date, as indicated in the above; the latter date also occurs on the isotype label, but this is numbered 285. Palmer apparently mixed some of his preprinted labels, which perhaps accounts for the citation error. The number 385 is more likely the correct collection number judging from Palmer's account of his collection.

*Perezia montana* Rose var. *intermedia* Bacig., *Contr. Gray Herb.* 97:19. 1931. *Acourtia montana* (Rose) Reveal & King var. *intermedia* (Bacig.) Reveal & King, *Phytologia* 27:230. 1973. TYPE: MEXICO. Durango: Santiago Papasquiario, Apr-Aug 1896, *E. Palmer 59* (HOLOTYPE: GH!; Isotype: US!).

I am unable to distinguish *Acourtia patens* from *A. montana*; the types of both were collected along the Pacific slopes of Sonora and Durango, and both possess very similar habits, glabrous foliage, similar eglandular involucre, and sparsely to moderately hispidulous achenes. Bacigalupi (1931) retained both taxa, distinguishing between these by the purportedly obtuse involucre bracts in *A. patens* vs. acute bracts in *A. montana*. His concept of *A. patens* also included material of what I refer to *A. meziae* R.L. Cabrera (1992); McVaugh



(1984) also shared or followed the concept of Bacigalupi. He, however, noted that material referable to *A. meziae*, while similar to *A. patens*, differs in having fewer obtuse involucre bracts, and fewer florets (9-11 vs. 17+). He commented, wisely I think, that "when more specimens become available the extent of the variation [in the taxa concerned] may be better understood." I think this is now the case.

***Acourtia pilulosa* (Bacig.) B.L. Turner, *comb. et stat. nov.* BASIONYM:**  
*Perezia dugesii* A. Gray var. *pilulosa* Bacig., Contr. Gray Herb. 97:19.  
1931. TYPE: MEXICO. Oaxaca: below Jayacatlin, 1067 m, 9 Feb 1895,  
*L.C. Smith 373* (GH!).

*Acourtia pilulosa* appears to be largely confined to southern Puebla and closely adjacent Oaxaca. It is readily distinguished from *A. dugesii* by its erect, nonclambering habit, often lobulate leaves, and densely appressed-hirsute achenes. *Acourtia pilulosa* may possess either lobed or unlobed leaves and is consistently described as a herb 60-100 cm high.

In his description of this taxon, Bacigalupi cited only two collections, the type and a specimen from Veracruz (*Muller s.n.*, NY; Orizaba, collected in 1855). My examination of the latter shows it to be *Acourtia carpholepis*, the plant concerned having 10 or more florets with glandular-pubescent achenes. Nevertheless, numerous collections of *A. pilulosa* have come to the fore since its original description. Those examined in the present study follow:

Oaxaca: Jayacatlin along road to Nacaltepec, 1600 m, 4 Nov 1973, *Breedlove 35949* (MICH); Tomallin Cañon, 30 Nov 1895, *Pringle s.n.* (US); 6 km NE of Chilapa de Diaz, 1800 m, 2 Nov 1976, *Rzedowski 34495* (ARIZ,IPN,MEXU).  
Puebla: km 259 between Puebla and Tehuacan, 18 Oct 1963, *Niles 250* (ARIZ); 10 km NW of Caltepec, 2120 m, 16 Oct 1984, *Tenorio L. 7714* (MEXU,TEX); W of Caltepec, 2120 m, 6 Nov 1984, *Tenorio L. 7986* (MEXU,TEX); SE of Caltepec, 2000-2200 m, 16 Nov 1984, *Tenorio L. 8022* (MEXU,TEX); 3.5 km E of Zonatitlanapa, ca. 2320 m, 19 Oct 1988, *Tenorio L. 15291* (MEXU,TEX). A Pringle collection (w/o number) dated 29 Oct 1902 said to be from Yautepec, Morelos is probably in error as to locality.

***Acourtia queretaranana* B.L. Turner, *sp. nov.* TYPE: MEXICO. Querétaro:**  
Mpio. Pinal de Amoles, 13 km al NE de Pinal de Amoles, sobre la carretera a Jalpan, 1700 m, 15 Jan 1989, *J. Rzedowski 48108* (HOLOTYPE: TEX!).

*Acourtiae veracruzanae* B.L. Turner similis sed capitulis valde campanulatis flosculis 18-20 (vs. cylindricis flosculis 5-6) differt.



Suffruticose sprawling or clambering herbs to 2 m high. Stems green, somewhat fractiflex, moderately puberulent to glabrate. Midstem leaves ovate to ovate-elliptic, sessile, clasping, mostly 10-15 cm long, 4-8 cm wide, the undersurfaces nearly glabrous to minutely glandular-pubescent but always sparsely puberulent along the major veins, the margins irregularly serrulate, the apices gradually attenuate. Heads 4-5, broadly campanulate, loosely arranged in terminal cymes, the ultimate peduncles moderately to densely puberulent, mostly 5-20 mm long. Involucres broadly campanulate, 3-4 seriate, unevenly graduate, 6-8(-9) mm high, 9-12 mm wide (pressed), the middle bracts mostly scarious and ciliate along the margins, the dorsal surfaces glabrous, the apices rounded to acute, sometimes shortly reflexed. Florets ca. 20 per head, the corollas bilabiate, whitish. Achenes (immature) 3-4 mm long, fusiform, densely and minutely glandular-pubescent throughout, the pappus of numerous tawny barbellate bristles 7-8 mm long.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Guanajuato: El Alamo, 12 km SE of Xichu, 1500 m, 10 Dec 1989, *Ventura & Lopez 7729* (TEX). Querétaro: Mpio. Pinal de Amoles, 4 km al SE de Santa Agueda, 1100 m, 20 Dec 1989, *E. Carranza 2268* (TEX); 13 km al NE de Pinal de Amoles, 1300 m, 12 Mar 1989, *Rzedowski 48416* (TEX).

*Acourtia queretarana* superficially resembles *A. carpholepis* and was so identified by its original collector. It differs from the latter in having fewer and campanulate to hemispheric heads (vs. turbocampanulate) with more numerous florets (8-10 vs. ca. 20) on longer ultimate peduncles (1-3 cm long vs. 0.5-1.0 cm).

*Acourtia reticulata* (Lag. ex D. Don) Reveal & King, *Phytologia* 27:231. 1973.

BASIONYM: *Proustia reticulata* Lag. ex D. Don, *Trans. Linn. Soc. London* 16:200. 1830. *Perezia reticulata* (Lag. ex D. Don) A. Gray, *Pl. Wright*. 1:128. 1852. TYPE: MEXICO: w/o specific locality, 1787-1804, *Sessé & Moçino 3082* (LECTOTYPE [selected here]: M; Fragment lectotype: F!). McVaugh (1984) thought the type to be from Guerrero, but with equal reason it could have been from México City or its environs, where typical forms of the species abound.

*Perdicium mexicanum* Sessé & Moç., *Pl. Nov. Hisp.* 139. 1890. TYPE: MEXICO. w/o specific locality, 1787-1804, *Sessé & Moçino 3082* (LECTOTYPE [selected here]: M, fragment of lectotype: F!). Heads in packet material on the F specimen almost exactly match those of *Acourtia reticulata*. McVaugh (1984) also lists *Perdicium mexicanum* as a synonym of the present species, although Bacigalupi (1931), without having access to type material, placed this name among his doubtful or uncertain species.



I recognize two morphogeographic varieties within this widespread species, as follows (Fig. 2):

1. Middle and inner involucral bracts with punctate, reddish spots on their dorsal surfaces (readily visible at 10×); achenes minutely glandular-pubescent throughout, hispidulous, eglandular hairs lacking; Michoacán, Guanajuato. .... var. *maculata*
1. Middle and inner involucral bracts without punctate spots; achenes to some extent with both glandular and hispid hairs, rarely glandular throughout or nearly so; eastern Michoacán and elsewhere but not within the above range. .... var. *reticulata*

*Acourtia reticulata* (Lag. ex D. Don) Reveal & King var. *maculata* B.L. Turner, var. nov. TYPE: MEXICO. Michoacán: Swales in pastured thorn-savanna in subtropical deciduous forest zone, 27 mi E of Jiquilpan and 10 mi W of Zamora, 5600 ft, 8 Oct 1965, A. Cronquist 10295 (HOLOTYPE: NY!; Isotypes: GH!, IPN [2 sheets]!, MEXU [2 sheets]!, NY!).

Varietati typicae similis sed involucri bracteis interioribus maculas punctatos rubentes efferentibus (vs. maculae absentes) et acheniis omnino glandiferis (vs. glandiferis ac aliquantum hispidulis) differt.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Guanajuato: 1 km S of Uriangato, 1650 m, Diaz L. 8983 (IPN, MICH); 9 km S of Acambaro, 1500-2000 m, 3 Dec 1971, Iltis & Cochrane 264 (IPN, WIS); ca. 8 km NNE Uriangato, 1900-2100 m, 17 Sep 1977, Iltis & Doebley nos. (US, WIS); hills near Acambaro, 18 Oct 1892, Pringle no. (BM, F, GH, MICH, MU, NY, US); 1.5 km NW of Comonfort, 2000 m, 21 Sep 1987, Zamudio 5676 (TEX). Michoacán: vicinity of Morelia, 1950 m, 18 Oct 1909, Arsene 3155 (F, GH, NY, US); 44.6 km along road from Patzcuaro to Uruapan, 1750 m, 5 Nov 1973, Banda s.n. (MEXU); 5 km W of Huandacareo, 2000 m, 15 Oct 1986, Barrie 1546 (TEX); 5 km NE of Quitupan; ca. 2000 m, 5-7 Aug 1959, Feddema 107 (IPN, MICH, TEX); Aguatiaba, Puruandiro, ca. 1850 m, 12 Oct 1970, Hernández M. 751 (MEXU); summit of slopes W of Jiquilpan, ca. 1800 m, 23 Sep 1952, McVaugh 13211 (BM, MEXU, MICH, NY); between Zinapécuaro and Acambaro, 27 Sep 1975, Mendoza s.n. (IPN); El Sabino, Sep 1975, Mendoza s.n. (IPN); Crucero a Curimeo, 1750 m, Perez & Garcia 1830 (TEX); vicinity of Cotija, 13 Oct 1976, Stuessy & Gardner 4170 (IPN, US, WIS). San Luis Potosí: near Peñasco, Sep 1876, Schaffner 374 (GH).



As indicated in Fig. 2, var. *maculata* is confined to the states of Michoacán and Guanajuato. Only a single collection of var. *reticulata* was seen from Michoacán, this collected by King & Soderstrom (5126 MICH) ca. 18 mi E of Morelia. The plant concerned is typical var. *reticulata*, without maculations on the bracts and achenes hispidulous throughout.

It should also be noted that occasional specimens of *Acourtia fruticosa* from San Luis Potosí with glandular involucres superficially resemble *A. reticulata* var. *maculata*, especially in foliage, but such plants can be recognized by their more numerous florets (8-11 vs. 5-7) per head. It is possible, however, that the variation concerned is occasioned by hybridization between *A. reticulata* and *A. fruticosa* in this region, at least Schaffner combined various collections from various sites at different dates under his number 374, the plants being quite variable.

***Acourtia rzedowskii*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Puebla: 8 km al NNE de Azumbilla, sobre la carretera a Esperanza, 2350 m, 5 Jan 1981, J. Rzedowski 37173 (HOLOTYPE: MEXU!; Isotypes: ARIZ!, GH!, ENCB!, NY!, US!, WIS!).

*Acourtiae lobulatae* (Bacig.) Reveal & King similis sed foliis dense glanduliferis in superficiebus ambabus, capitulis majoribus flosculis numerosioribus, et bracteis exterioribus involucri parus glanduliferis differt.

Much-branched scrambling shrublets or clambering vines 0.8-2.5 m high. Stems mostly somewhat fractiflex, both puberulous and stipitate glandular, purple and glabrescent with age. Midstem leaves sessile, clasping, at least some of the blades lobulate, mostly 3-14 cm long, 1.5-7.0 cm wide, glandular-pubescent on both surfaces, the margins spinulose, the apices acute. Heads arranged 1-3 on both terminal and axillary shoots, usually subtended by (1-) 2-3 reduced leaves, the ultimate peduncles mostly 0.5-3.0 cm long. Involucres markedly campanulate, 14-16 mm high, 10-18 mm wide (pressed), the bracts 3-4 seriate, the outermost ovate-lanceolate, to some degree glandular-pubescent, the innermost linear-lanceolate with mostly acuminate apices. Florets 18-22 per head, the corollas bilabiate, lilac or rose-colored. Achenes fusiform, ca. 6 mm long, densely pubescent with very short glandular hairs.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Puebla: Mpio. Caltepec, Cerro El Gavilan, al SE de Caltepec, 1800-2320 m, 20 Oct 1983, Tenorio L. 4773 (MEXU, TEX); Mpio. Morelos Cañada, 10 km S of Esperanza, 2280 m, 5 Jan 1970, Anderson 5321 (ENCB, MICH); Mpio. Tehuacan, 4 km al E de Azumbilla, 19 Sep 1990, Sanchez-Ken 240 (TEX).

All of the above-cited sheets were identified as *Acourtia lobulata*, a markedly different species from Veracruz and Oaxaca having narrowly campanulate,



ebracteate involucre with eglandular outer bracts, fewer florets, and nearly glabrous leaves, only the major ribs bearing a crisp puberulence.

It is a pleasure to name this taxon for the doyen of Mexican synantherologists and collector of the type material, Dr. J. Rzedowski.

***Acourtia sinaloana*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Sinaloa: summit of Sierra Tacuichamona, rocky slope in oak forest, 4500 ft, 19 Feb 1940, *Howard S. Gentry 5679* (HOLOTYPE: MICH!; Isotypes: ARIZ!, F!, GH!, MEXU, NY!, US!).

*Acourtiae dugesii* A. Gray similis sed involucris minoribus (6-8 mm altis vs. 9-12 mm) turbinatis (vs. cylindricis) flosculos pauciores (8 vs. 5-6) efferentibusque et phyllariis externis viscidis vel glandulosis absque trichomatibus eglandulosis (vs. puberulis sed absque glandibus) differt.

Suffruticose reclining or clambering shrublets 1-2 m high. Stems glandular-pubescent, purplish, the upper portions somewhat fractiflex. Midstem leaves relatively thick, spreading, sessile, clasping, those at or near mid-stem mostly 10-20 cm long, 4-8 cm wide, ovate-elliptic to elliptic, the undersurfaces minutely glandular-pubescent to glabrate, the margins serrulate, the apices mostly broadly acute to narrowly obtuse. Heads both terminal and lateral, mostly arranged 5-10 in congested corymbs, the ultimate peduncles 1-8 mm long. Involucre campanulate, 6-8 mm high, the bracts 2-3 seriate, appressed, graduate, the outer bracts viscid or with a few glandular hairs, the apices acute, often abruptly so. Florets ca. 8 per head, the corollas zygomorphic, pink. Achenes fusiform, minutely glandular-pubescent, the pappus of numerous tawny bristles 7-8 mm long.

*Acourtia sinaloana* is known only by type material and appears closely related to the more southern *A. dugesii* (occurring in Jalisco and Guanajuato southwards). It is readily distinguished from the latter by its smaller involucre (6-8 mm high vs. 9-12 mm), the outer bracts being viscid or glandular, and heads with more numerous florets (ca. 8 vs. 5-6).

***Acourtia souleana*** B.L. Turner, *sp. nov.* TYPE: MEXICO. Oaxaca: 7.5 mi NW of Huahuapan de León, 4.5 mi SE of Puebla border along route 190, "seasonally dry chaparral with *Dasyllirion*, *Yuccas*, etc.," 1875 m, 9 Jan 1992, *J.A. Soule 3187* (with L.A. Prather) (HOLOTYPE: TEX!; Isotype: MEXU).

*Acourtiae ovatifoliae* R.L. Cabrera similis sed foliis ellipticis valde denticulatisque (vs. ovatis integrisque) et capitulis parum majoribus flosculis paucioribus (6-7 vs. ca. 9) differt.



Stiffly erect leafy suffruticose herbs or shrublets to 1 m high. Stems purple, densely glandular-pilose, the hairs 0.10-0.25 mm long. Midstem leaves mostly 3-4 cm long, 1.5-2.5 cm wide; petioles 1.0-1.5 mm long; blades elliptic to elliptic-ovate, widest at or near the middle, the undersurfaces rather evenly pilose-puberulous with scattered glandular hairs, the margins decidedly denticulous. Heads ca. 2.5 cm long, arranged 10-12 in terminal congested cymes, the ultimate peduncles 1-4 mm long, bracteate, pilose. Involucres ca. 1.8 cm long, cylindric, 4-5 seriate, the bracts linear-lanceolate, minutely glandular-pubescent throughout, the apices gradually acuminate. Florets 6-7 per head, the corollas reportedly white, zygomorphic. Styler shaft and branches beige. Achenes ca. 6 mm long, 8-nervate, pubescent with both scabrid and short-glandular hairs, the pappus of numerous tawny white bristles 11-12 mm long in ca. 3 series, the apices scarcely enlarged.

ADDITIONAL SPECIMEN EXAMINED: MEXICO. Puebla: 3 mi N of Oaxaca border along route 125, ca. 2000 m, 11 Mar 1985, *Whittemore 85-019* (TEX).

Cabrera (1990) apparently included immature elements of this taxon in her concept of *Acourtia ovatifolia* R.L. Cabrera (Oaxaca: road to Nacaltepec-Jayacatitlan, 7.8 km SW of route 135, 1600 m, 20 Oct 1989, *Cabrera 779, 780*, which were not available to me in the present study, although these are cited as being at TEX).

The species is clearly related to *Acourtia ovatifolia* but is readily distinguished by its elliptical leaves with prickly margins (vs. ovate and entire) and somewhat larger heads with fewer florets per head.

It is a pleasure to name this taxon for Ms. Jacqueline A. Soule, doctoral student at the University of Texas who participated in the plant's discovery.

*Acourtia turbinata* (La Llave & Lex.) Reveal & King, *Phytologia* 27:232. 1973. BASIONYM: *Perezia turbinata* La Llave & Lex., *Nov. Veg. Descr.* 1:25. 1824. TYPE: MEXICO. Michoacán: vicinity of Morelia, Oct-Nov, w/o year *Lexarza s.n.* (HOLOTYPE: G, not located). NEOTYPE [selected here]: MEXICO. Michoacán: Mpio. Senguio, 5 km al S de Chincua, 7800 m, 15 Feb 1989, *J. Rzedowski 48261* (NEOTYPE: TEX!; Isonotype: IGN). Reasons for neotypification for *Acourtia turbinata* are given under my discussion of *Acourtia fruticosa*.

*Perezia arachnolepis* B.L. Rob., *Proc. Amer. Acad. Arts* 43:47. 1907. *Acourtia arachnolepis* (B.L. Rob.) Reveal & King, *Phytologia* 27:229. 1973. TYPE: MEXICO. Jalisco: Mountains N of Lake Chapala, S of La Capilla Station (according to McVaugh 1984), but given in the protologue as "Canons, Chapala Mountains near Guadalajara", 13 Dec 1889, *C.G. Pringle 2935* (HOLOTYPE: GH!).



Bacigalupi (1931) recognized both *Acourtia turbinata* (with misgivings) and *A. arachnolepis*, but his concept of the former is essentially the same as my concept of *A. cordata*. I can not distinguish between "true" *A. turbinata*, the type from near Morelia, Michoacán, and *A. arachnolepis*, the latter typified by material from near Guadalajara, Jalisco, as noted in the above. *Acourtia turbinata*, in my treatment of *Acourtia* for México (Turner, in prep.) is distributed from Durango, México to Morelos, México, mostly along the western sierras.

*Acourtia veracruzana* B.L. Turner, *sp. nov.* TYPE: MEXICO. Veracruz: Maltrata, 6 May 1937, *E. Matuda 1236* (HOLOTYPE: MEXU!; Iso-types: LL!, MICH!).

*Acourtia dugesii* (A. Gray) Reveal & King similis sed capitulis in cymis flexuosis laxisque (vs. congestis) dispositis in pedunculis ultimis 1-15 mm long (vs. sessilibus vel fere sessilibus) et bracteis interioribus involucri anguste acuminatis (vs. abrupte acutis) differt.

Scrambling suffruticose herbs or clambering vines to 4 m high. Stems much-branched and somewhat fractiflex, moderately puberulent to glabrate. Leaves ovate to ovate-lanceolate, sessile, clasping, mostly 8-20 cm long, 3-7 cm wide, the lower surfaces puberulous, especially along the veins, the apices gradually acute. Heads 3-10, arranged in open fractiflex cymes, the ultimate peduncles puberulent, mostly 2-10 mm long. Involucre cylindric, 12-14 mm long, the bracts mostly linear-lanceolate with abruptly acuminate apices, glabrous dorsally, the margins sparsely pilose. Florets 5-6 per head, the corollas zygomorphic, white to lilac. Achenes ca. 6 mm long, 5-ribbed, minutely glandular-pubescent, the pappus bristles tawny, 10-11 mm long.

ADDITIONAL SPECIMENS EXAMINED: Hidalgo: Mpio. Tianguistengo, 11 km NE of Tianguistengo, ca. 1100 m, 15 Jan 1980, *Hernández M. 4046* (GH, MEXU, WIS). México (Federal Dist.): wet meadows, Valley of México, 4 Oct 1899, *Pringle 8253* (NY) (the label bears the name *Aster pauciflorus*, perhaps a mixed label). Puebla: near Huachinango, 1300 m, 9 Dec 1932, *Asplund 742* (F, MICH, NY); Esperanza, Sep 1911, *Purpus 2977a* (MEXU). Querétaro: km 19 between Amealco and México, 2100 m, 10 Nov 1976, *Arguelles 640* (MEXU). Veracruz: Mpio. Huiloapan, Cerro de San Cristóbal, ca. 1300 m, 22 Apr 1982, *Calzada 8586* (IPN, TEX); Mpio. Tepetzintla, Sierra de San Juan Otantepec, 900 m, 13 Dec 1981, *Castillo 2426* (F, IPN); Mpio. Chiconquiaco, Rincón Grande, 5 km SE of Chiconquiaco towards Buenavista, 1950 m, 29 Dec 1989, *M. Chazaro 6151* (TEX); Huayacocotla, 2000 m, 21 Dec 1970, *Hernández 987* (GH, MEXU), ca. 5 km S of San Andreas Tejhapán, 1600 m, 11 Mar 1982, *Lorence 3902* (MEXU); Maltrata, 6 May 1977,



*Matuda* 1209 (MEXU,MICH,US); Mpio. Chocamán, 1350 m, 7 Dec 1981, *Nee* 2387 (BM,F,IPN,TEX); hills near Japala, 4000 ft, Mar-Apr 1899, *Pringle* 8131 (BM,GH,MEXU,MICH,US); Boca del Monte (30 km W of Orizaba) Mar 1908, *Purpus* 2977 (BM,F,GH,NY,US); Jalapa, Feb 1894, *Smith* 1671 (F,MICH,NY); Mpio. San Juan Coscomatepec, El Duranzo, 1420 m, 29 Jan 1972, *Ventura* 4861 (IPN,MEXU); Mpio. Naolinco, El Naranjo, 1350 m, 3 Feb 1976, *Ventura* 12396 (IPN,MEXU); La Cueva, 1500 m, 6 Mar 1978, *Ventura* 15062 (IPN,MEXU).

According to label data, this taxon occurs in montane rain forests and is a clambering shrublet or shrub 2-4 m high. Most of the specimens cited in the above were identified as *Acourtia dugesii*. The type of the latter was collected in western Guanajuato and the species is readily distinguished from *A. veracruzana* by its tightly congested, sessile heads in corymbose clusters. Nevertheless the two taxa are closely related, both having sprawling or clambering habits, membranous clasping leaves, and cylindric heads with only 5 or 6 florets.

The specimen from the Federal District (cited above) is not mapped (Fig. 1) since it is believed to be a label mixup.

***Acourtia wislizeni* (A. Gray) Reveal & King var. *subscaposa* B.L. Turner, var. nov.** TYPE: MEXICO. Durango: Mpio. Mesquital, 1.5 km S of Charcos, 2650 m, 21 Sep 1982, *R. Fernández N. 1161* (HOLOTYPE: TEX!; Isotypes: ARIZ!, CIIDIR,F!).

Varietati typicae similis sed habitu subscaposo et involucri bracteis interioribus plerumque coriaceis apicibus rotundatis (vs. membranaceis apicibus plerumque obtusis vel acutis) differt.

Erect herbs 15-40 cm high; well developed leaves mostly 5-12, these usually crowded near the lower 1/2 of the stem; heads broadly turbocampanulate, the involucre bracts mostly indurate and purple, the middle and inner series mostly broadly rounded to obtuse; achenes sparsely pubescent with hispidulous and often small glandular hairs.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Durango: Mpio. Durango, 65-75 km SW of Cd. Durango, on road to La Flor, 2620 m, 17 Sep 1979, *Breedlove* 44190 (NY,TEX); Mpio. Suchil, El Temascal, 4 km SW of Piedra, 2400 m, 11 Sep 1981, *S. Gonzáles* 1972 (ARIZ,F,MEXU,TEX); 5 mi E of El Salto, 7400 ft, 5 Oct 1985, *Ripley & Barneby* 13999 (NY); Mpio. San Juan de Michis, Reserva de La Michilia, potrero San Juan de Michis, 2 Oct 1985, *Alvarado* 144 (CIIDIR); Reserva La Michilia, El Olvido, 5 Oct 1980, *Carrillo S. 1* (MEXU).

This taxon appears to intergrade with var. *wislizeni* to the SE of Cd. Durango and with var. *megacephala* (A. Gray) Reveal & King in the areas to





Fig. 3. Distribution of selected taxa of *Acourtia* in Mexico.



the east and southeast of Charco, Mpio. Mezquital (Fig. 3). Specimens from this area which I would assign to var. *megacephala* include *Alvarado 206, 348* (CIIDIR), both of which have very leafy stems but approach var. *subscaposa* in characters of the involucre. Occasional and seemingly intermediates between var. *subscaposa* and var. *megacephala* also occur (e.g., *González 1696*, CIIDIR). It may be that var. *subscaposa* is a populational system of transgressive variants of recent or ancient hybridization between varieties *wislizeni* and *megacephala*; at least the involucre features of var. *subscaposa* suggest that this might be the case, but the nearly scapose condition is seemingly unknown among populations of the other varieties. Field observations among populations in this region should help resolve the problem.

***Acourtia zacatecana* B.L. Turner, sp. nov.** TYPE: MEXICO. Zacatecas: 6 km antes de Monte Escobedo, a 36 km de Huejucar, sobre la brecha que va hacia Monte Escobedo, bosque de *Quercus*, ladera bastante pedregosa, 2100 m, 4 Nov 1978, *José García P. & A. Delgado S. 856* (HOLOTYPE: TEX!; Isotypes: CHAPA!, F!, GH!, MEXU!, NY!, TEX!).

*Acourtiae rigidae* DC. similis sed foliis midcaulinis late ellipticis plerumque 1.5-2.0 plo longioribus quam latioribus (vs. linearibolanceolatis) in paginis inferioribus sparsim vel moderate glanduliferis (vs. glabris) differt.

Stiffly erect suffruticose herbs 0.8-1.0 high. Stems sparsely puberulent to glabrescent. Midstem leaves sessile, clasping, relatively thick, elliptic to oblong-elliptic, mostly 8-14 cm long, 4-7 cm wide, sparsely to densely glandular-atomiferous beneath, the margins serrate-spinulose. Heads 10-numerous, arranged in terminal, rather rigid open cymes, the ultimate peduncles mostly 5-10 mm long. Involucres turbocampanulate, mostly 6-8 mm high, the bracts 3-4 seriate, the middle and inner bracts minutely glandular-pubescent, especially along the margins, their apices obtuse-apiculate. Florets 8-11(-12) per head. Achenes 4-5 mm long, densely atomiferous-glandular throughout, the pappus of numerous white bristles 8-10 mm long, their apices somewhat expanded.

ADDITIONAL SPECIMENS EXAMINED: MEXICO. Jalisco: Mpio. Huejuquilla, Rancho Viejo, ladera rialítica con vegetación de encinar, 1900 m, 31 Oct 1963, *Rzedowski 17555* (ENCB, MEXU). Zacatecas ("Durango-Zacatecas border"): Pass through Sierra Papantón near highway, oak-juniper grassland, 2400-2500 m, igneous derived soils, 25-30 Oct 1948, *Gentry 8449* (ARIZ, MICH, US); Mpio. Río Grande, Rancho El Carrizal, portrero Las Remudas, 2080 m, 9 Oct 1979, *García P. et al. 1191* (TEX).

*Acourtia zacatecana* is apparently confined to southcentral Durango and closely adjacent Zacatecas and Jalisco. It appears most closely related to *A.*



*wrightii* and *A. fruticosa*, standing somewhere between these taxa, perhaps of ancestral hybrid origin from them.

### ACKNOWLEDGMENTS

This work is based upon the study of approximately 2,900 specimens from 18 institutions, as follows (numbers in parenthesis refer to the sheets concerned): ARIZ (95), BM (86), CIIDIR (47), ENCB (187), F (202), G (230), GH (328), K (78), LL (111), MEXU (264), MICH (220), MU (23), NY (244), TEX (250), US (394), WIS (82), and XAL (38). We are grateful for the loan of these materials. Dr. Guy Nesom provided the Latin diagnoses, and both he and Dr. T.P. Ramamoorthy reviewed the manuscript. I am especially grateful to Dr. M. Dittrich of G for his search among their collections for possible types of *La Llave* & *Lexarza*.

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**NOMENCLATURAL NOTE: *JUNIPERUS COAHUILENSIS* (MARTINEZ)  
GAUSSEN EX R.P. ADAMS**

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**ABSTRACT**

***Juniperus coahuilensis* is validated for use in future publications.**

**KEY WORDS:** *Juniperus*, Cupressaceae, nomenclature

Gausсен (1968) elevated *Juniperus erythrocarpa* Cory var. *coahuilensis* Martinez to specific rank: *J. coahuilensis* (Martinez) Gausсен. Unfortunately, Gausсен (1968) failed to properly cite the basionym as required by the current *International Code of Botanical Nomenclature*, thus rendering the publication invalid. To validate the name, the following is proposed.

***Juniperus coahuilensis* (M. Martinez) Gausсен ex R.P. Adams, comb. nov.**

**BASIONYM:** *Juniperus erythrocarpa* Cory var. *coahuilensis* M. Martinez, Anal. Inst. Biol. Mexico 17:115-116. 1946. **TYPE:** MEXICO. Coahuila: Sierra de los Hechiceros, Johnston & Muller 1290 (**HOLOTYPE:** MEXU; **Isotypes:** GH,NA,TENN,TEX).

**Distribution:** Chihuahuan desert from n. México into w. Texas, s. New Mexico, and s. Arizona.

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