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Contribution to geographic distribution of some Mexican Melanoplinae and description of a new species

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Abstract

On the basis of material collected over several years, 13 genera and 33 species of Melanoplinae of northeastern México are treated. Four species are considered as new records: *Melanoplus arizonae* Scudder, 1878, *M. bivittatus* (Say, 1825), *M. regalis* (Dodge, 1876) and *M. sanguinipes sanguinipes* (Fabricius, 1798). A new species is described: *Huastecacris fariensis* n. sp. Twenty species are endemic to México: new information on geographic distribution and relative abundance is provided for all species treated. *Melanoplus* Stål, 1873 and *Phaedrotettix* Scudder, 1897 were the most diverse genera, with 13 and five species, respectively. The most common species, in order of abundance, were *Phaulotettix compressus* Scudder, 1897 (231 specimens), *Phaedrotettix violai* Fontana & Buzzetti, 2007 (229), *Huastecacris zenoni* Fontana & Buzzetti, 2007 (188), *Phoetaliotes nebrascensis* (Thomas, 1872) (161), *Melanoplus flavidus* Scudder, 1878 (110) and *Huastecacris truncatipennis* Fontana & Buzzetti, 2007 (109). Simpson's index (D) was estimated at 0.07 and Simpson's biodiversity index (1-D) at 0.93.

AFLP molecular analysis supported morphological separation for some of the taxa studied and confirmed the presence of a new species of *Huastecacris*: *H. fariensis* n. sp.

Key words

Melanoplinae, northeastern México, geographic distribution, *Huastecacris fariensis*

Introduction

An extensive review of Mexican Orthoptera lists 920 specific or subspecific taxa representing 274 genera (Barrientos-Lozano 2004). Zárate-Torres & Barrientos-Lozano (2005) and Barrientos-Lozano *et al*. (2008) studied the Orthoptera, Acridoidea inhabiting "El Cielo Biosphere Reserve" in northern México, listing 41 species in a preliminary check list; Torres-Acosta & Barrientos-Lozano (2006) reported 61 species of Orthoptera occurring at the "Natural Protected Area Altas Cumbres", Victoria-Tamaulipas. In a recent Photographic Guide of Mexican Orthoptera, Fontana *et al.* (2008) listed 651 species representative of 250 genera.

Within the Orthoptera, the Subfamily Melanoplinae constitutes the third largest subfamily of Acrididae, with more than 900 species around the world. This subfamily has its largest number of species in North America and is dominated numerically in number of species by the genus *Melanoplus* Stål. This genus includes more than 230 species and represents more than 60% of all Melanoplinae in this continent (Litzenberger & Chapco 2003). Amédégnato *et al.* (2003) reported ~330 species of Melanoplinae for North America, ~235 for South America and about 80 species for Central America.

Regarding Mexican Melanoplinae, Barrientos-Lozano (2004) estimated that 27 genera representing 119 species occur in México; while Fontana *et al.* (2008) quoted 102 taxa and 25 genera. These figures do not incorporate two new genera and 21 new species described by Otte (2007).

Recent important contributions to the systematics of Mexican Melanoplinae have been made by Otte (2007), Otte & Cohn (2002), Fontana & Buzzetti (2007) and Ciglianao & Otte (2003a, b). However, information on distribution and ecology of Mexican endemic species is very limited, to the extent that some taxa, *e.g.*, *Phaedrotetix litus* and *P. valgus*, have been reported as critically endangered (www.zipcodezoo.com/Animals/critically_endangered) (08/24/2006); an additional constraint is that very often original descriptions are not useful in separating species.

This paper aims to provide new information on geographic distribution of the Orthoptera, Melanoplinae of northeastern México. For some taxa molecular analyses were performed to support morphological separation; description of a new species is also provided.

Materials and Methods

Orthoptera: Melanoplinae were collected in northeastern México (Fig. 1), in the States of Coahuila, Nuevo León, Tamaulipas and San Luis Potosi, from 2000 to 2008. Specimens were collected using an entomological net or by hand, then killed with either ethyl acetate or potassium cyanide; to preserve original colors adults were eviscerated following the technique of Rosas-Costa (1966). Specimens were pinned, labeled and identified. Morphological characters, original descriptions (Scudder 1897; Saussure 1893-1899; Hebard 1917, 1919; Cohn & Cantrall 1974; Descamps 1975; Capinera *et al*. 2000, 2004; Otte 2007; Fonta & Buzzetti 2007; Cigliano & Otte 2003a, b) Orthoptera Species File-2 (OSF2), and online resources, when available, were used to identify species. Field photographs were taken with a Sony DSC-F707 Digital Camera; measurements and laboratory images were taken with a Motic Stereomicroscope, Model 43-FBGG-C, 3.0 mp (2048 × 1536) and a Carl-Zeiss stereoscope Discovery V12. Dorsal view measurements: body length (head vertex to tip of hind femora), hind femora length and tegmina length; pronotum length, dorsal view. All measurements taken at 10×.

Depositories: IB-UNAM collection (Instituto de Biología-Universidad Nacional Autónoma de México) and L. Barrientos collection.

Molecular analyses were used to confirm that some taxa, particularly *Phaedrotettix, Mexitettix and Huastecacris*, belonged to the species and genera assigned using morphological characters.

Ethanol-preserved or dry specimens were used for genomic DNA extractions. With a Qiagen kit (QIAGEN Inc., Valencia, CA)

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Table 1. Melanoplinae of Northeastern México, species list, relative abundance and calculation of Simpson's biodiversity index.

Species name	Number of specimens	n (n - 1)
Agroecotettix modestus modestus Hebard, 1922	3	6
Aidemona azteca (Saussure, 1861)	49	2,352
Campylacantha olivacea similis Scudder, 1897	46	2,070
Huastecacris truncatipennis Fontana & Buzzetti, 2007	109	11,772
Huastecacris fariensis n. sp.	40	1,560
Huastecacris zenoni Fontana & Buzzetti, 2007	188	35,156
Dactylotum bicolor bicolor Charpentier, 1843	43	1,806
Hesperotettix viridis viridis (Thomas, 1872)	28	756
**Melanoplus arizonae* Scudder, 1878	8	56
**Melanoplus bivittatus* (Say, 1825)	5	20
Melanoplus differentialis nigricans Cockerell, 1917	12	132
Melanoplus femurrubrum (DeGeer, 1773)	36	1,260
Melanoplus flavidus Scudder, 1878	110	11,990
Melanoplus gladstoni Scudder, 1897	3	6
Melanoplus lakinus (Scudder, 1878)	49	2,352
Melanoplus mexicanus (Saussure, 1861)	64	4,032
Melanoplus reflexus (Scudder, 1897)	13	156
**Melanoplus regalis* Dodge, 1876	1	0
**Melanoplus sanguinipes sanguinipes* Fabricius, 1878	10	90
Melanoplus scitulus Scudder, 1897	99	9,702
Melanoplus sumichrasti (Saussure, 1861)	57	3,192
Mexitettix jocari Otte, 2007	5	20
Mexitettix ricuchuri Otte, 2007	3	6
Mexitettix simuchi Otte, 2007	4	12
Necaxacris moctezumae Roberts	53	2,756
Pedies cerropotosi Fontana & Buzzetti,2007	40	1,560
Phaedrotettix angustipennis Scudder, 1897	6	30
Phaedrotettix gracilis (Brunner, 1908)	56	3,080
Phaedrotettix litus Hebard, 1917	16	240
Phaedrotettix valgus Scudder, 1897	10	90
Phaedrotettix violai Fontana & Buzzetti, 2007	229	52,212
Phaulotettix compressus (Scudder, 1897)	231	53,130
Phoetaliotes nebrascensis (Thomas, 1872)	161	25,760
Total (N)	**1787**	**227,362/ N (N-1)**
		227362

Simpson's Index (D) = 0.07
Simpson's Biodiversity Index (1-D) = 0.93
*New records

we obtained genomic DNA from the right hind femur of grasshoppers. From these DNA samples we developed AFLP molecular markers (Vos *et al*. 1995). AFLP were obtained using components from various commercial kits. Digestion of genomic DNA by *Eco*RI and *Mse*I and ligation of oligonucleotide adaptors were performed in a single reaction. Each reaction contained approximately 127.73 ng/µL of DNA. Preselective PCR amplification was performed using the Applied Biosystems AFLP kit (Applied Biosystems, Foster City, California). All samples were stored at 4 ° C following amplification. The amplified product was diluted 20-fold using 15nM Tris-HCl buffer (pH 8.0) containing 0.1 mM EDTA. For selective PCR amplification of restriction fragments, we used already prepared custom primers for recognition of *Eco*RI and M*se*I adaptors. Fragments were visualized using fluorescent dyes attached to the 5′ end of each *Eco*RI selective amplification primer, with no modification made to the *Mse*I primer.

AFLP markers were analyzed using capillary electrophoresis in a 3100 Genetic Analyzer from Applied Biosystems (Foster City, California) and visualized using GeneMapper®. Markers were normalized using the sum of signal method. Markers with a dye signal larger than 100 luminescent units were considered as present. PAUP 4.0 (Swofford 2003) was used to generate a neighbor-joining tree (Saitou & Nei 1987). The adequateness of the number of AFLP markers and the number of individuals used to generate the neighbor-joining tree generated was assessed using SESim values (Medina *et al*. 2006).

Simpson's index (D) was used to assess Melanoplinae diversity. Simpson's index describes the probability that a second individual drawn from a collection area will belong to the same species as a first. Simpson's biodiversity index (1-D) describes the probability of collecting a second individual from a different species than the first at a given location; these values were obtained using Southwood's methodology (1984).

Results and Discussion

A total of 1787 specimens of Melanoplinae were collected, representing 13 genera and 33 species (Table 1). Four species are considered as new records: *Melanoplus arizonae* Scudder, 1878; *M. bivittatus* (Say, 1825); *M. regalis* (Dodge, 1876); *M. sanguinipes sanguinipes* (Fabricius, 1878); twenty are endemic to Mexico (Table 2, see p. 45) and a new species is described: *Huastecacris fariensis* n. sp. (Figs 3A-D). Novel information on collection sites, geographic

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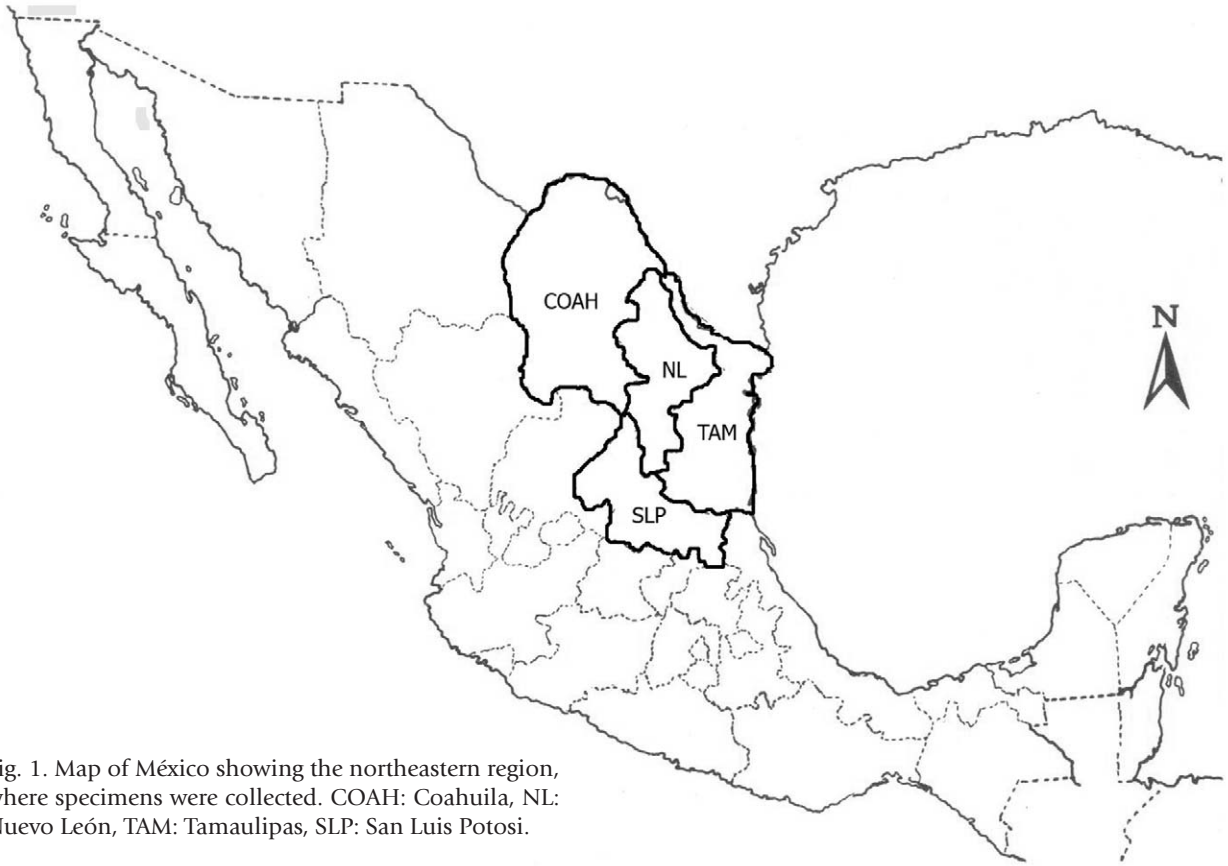


Fig. 1. Map of México showing the northeastern region, where specimens were collected. COAH: Coahuila, NL: Nuevo León, TAM: Tamaulipas, SLP: San Luis Potosi.

distribution and relative abundance of poorly known endemic species is provided (Table 2).

The material studied represents 45% of the genera and 24% of the Melanoplinae species reported for Mexico. However, the number of species occurring in the northeastern region may be considerably higher than this since additional species have been described (Otte 2007). Our results agree with those reported by Barrientos-Lozano (2004), Fontana & Buzzetti (2007) and Otte (2007), regarding abundance and diversity of this group in northeastern México. Some taxa (*e.g.*, *Agroecotettix modestus modestus* Hebard, 1922; *Huastecacris* Fontana & Buzzetti, 2007 and *Mexitettix* Otte, 2007) are known only from northeastern México; other taxa (such as *Melanoplus* Stål, 1872) are very diverse and abundant in northeastern and central Mexico and represented by only a few taxa in the south, as pointed out by Fontana and Buzzetti (2007).

Each of a good number of endemic species are known only from their type locality. We have done extensive collection in northeastern México and some of the species there are confined to certain areas of the eastern mountain range (Sierra Madre Oriental), *i.e.*, *A. m. modestus; Melanopls regalis; M. sanguinipes sanguinipes; M. scitulus* Scudder, 1897*; Mexitettix jocari* Otte, 2007*; Mexitetti ricuchuri* Otte, 2007*; Mexitetti simuchi* Otte, 2007 and *Pedies cerropotosi* Fontana & Buzzetti, 2007 (see Table 2*)*.

Hustecacrsi zenoni Fontana & Buzzetti, 2007 is the only species of this genus that occurs in the mountains surrounding Cd. Victoria; however, its distribution extends south of Tamaulipas towards Llera, Mante, Gómez Farías, Ocampo and Tula, where it occurs in sympatry with *H. fariensis* n. sp. This latter species extends its distribution from South Tamaulipas to East San Luis Potosi and Northern Hidalgo. *H. truncatipennis* is widely distributed in northeastern Mexico, even so, it does not occur sympatrically with *H. zenoni* or *H. fariensis*.

Melanoplus scitulus was known from Mount Alvarez, San Luis Potosi (type locality); this is one of the dominant species in the Natural Protected Area "Cerro El Potosí", Nuevo León, where it has been collected between 3600 to 3730m; Cerro Potosi is considered the highest peak of the eastern mountain range (Sierra Madre Oriental) in northeastern, México.

Necaxacris moctezumae Roberts (Figs 4A, B) is known from Tamazunchale, San Luis Potosi (type locality) and Veracruz (Descamps, 1975); this species extends its known distribution to northern Tamaulipas and Nuevo León (Table 2). The five species of *Phaedrotettix* reported are widely distributed in northeastern, Mexico. The occurrence in Mexico of *M. arizonae*, *M. bivittatus*, *M. regalis and M. sanguinipes sanguinipes* is confirmed.

Melanoplus Stål, 1873 and *Phaedrotettix* Scudder, 1897 were the most diverse genera encountered, with 13 and five species, respectively (Table 1).

The most commonly collected species were *Phaulotettix compressus* (Scudder, 1897) (231 specimens), *Phaedrotettix violai* Fontana & Buzzetti, 2007 (229), *H. zenoni* (188), *Phoetaliotes nebrascensis* (Thomas, 1872) (161), *Melanoplus flavidus* Scudder, 1878 (110) and *Huastecacris truncatipennis* Fontana & Buzzetti, 2007 (109).

Species poorly represented, with ten or less individuals, were as follows: *A. m modestus* (3 individuals only); *Melanoplus arizonae* (8); *Melanoplus bivittatus* (5); *Melanoplus gladstoni* Scudder, 1897 (3*)*; *Melanoplus regalis* (1); *Mexitettix jocari* Otte, 2007 (5), *Mexitettix ricuchuri* Otte, 2007; (3), *Mexitettix simuchi* Otte, 2007 (4); *Phaedrotettix angustipennis* Scudder, 1897 *(6)* and *Phaedrotettix valgus* Scudder, 1897 (10).

Phaedrotettix gracilis (Brunner, 1908) (Figs 6A-C) was previously known only from its type locality in south Tamaulipas; its distribution is now seen to extend northwards to Nuevo León and Coahuila;

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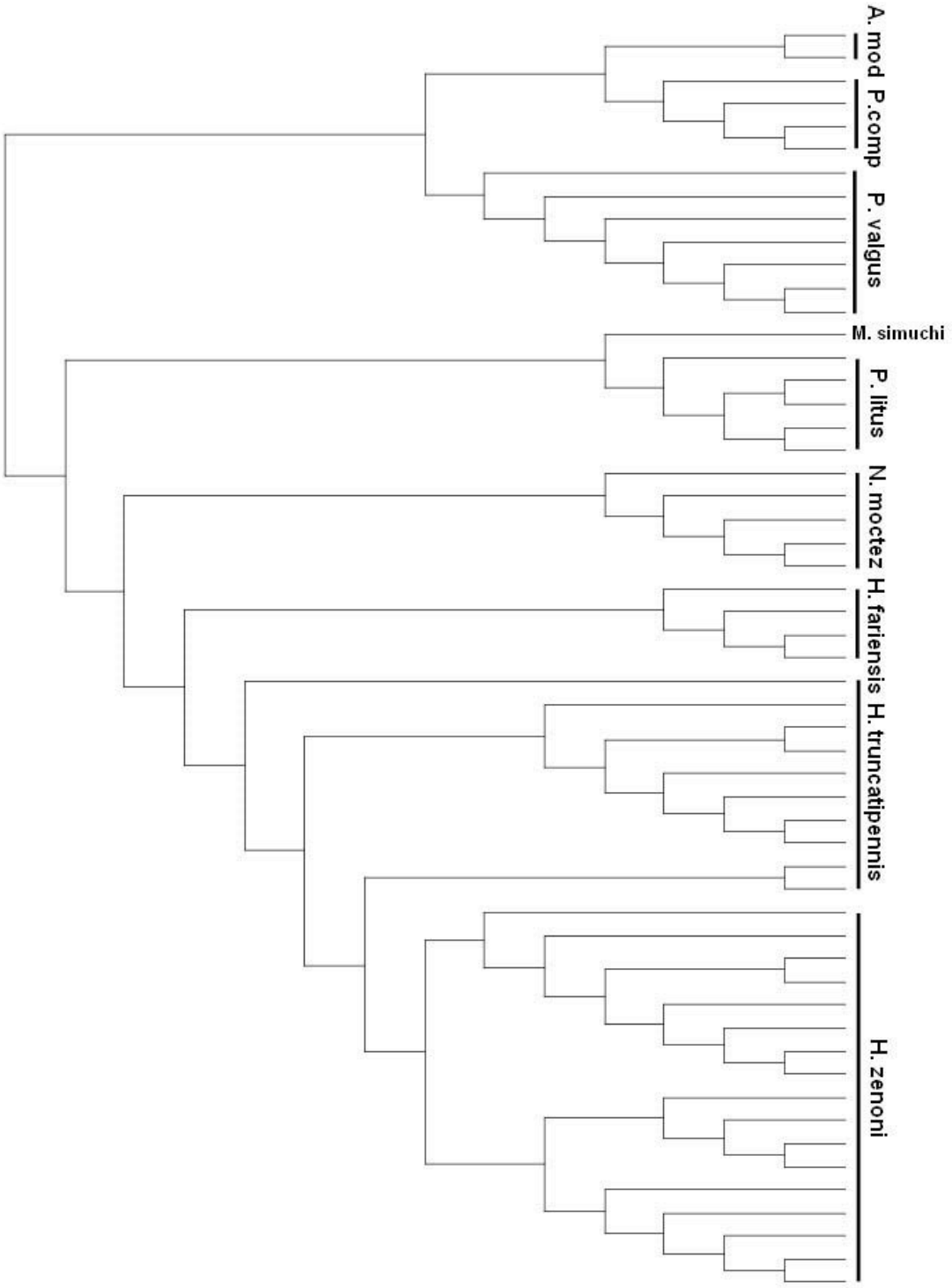


Fig. 2. AFLP tree for some species of northeastern Mèxico Melanoplinae.

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Fig. 3. *Huastecacris fariensis* n. sp. A. Female. B. Male supra-anal plate dorsal view. C, D. Male left cercus lateral view.

it was collected between 61 to 1700 m (Table 2).

Phaedrotettix litus Hebard, 1917 was listed as critically endangered in 2006 (www//zipcodezoo.com/Animals/critically_endangered.asp); this species was not abundant (see Table 1) and seems to be confined to certain mountainous localities of Nuevo León and Tamaulipas (Table 2). The "Natural Protected Area Altas Cumbres"— municipality (county) of Victoria, Tamaulipas and Horsetail Falls, Santiago, Nuevo León, where *P. litus* has been collected, are characterized by their biological diversity, geological formations and endemisms; both locations are subject to conservation by decree since 1997.

Simpson's Index (D) was estimated at 0.07, indicating the probability of picking up a second individual that belongs to the first species collected in a sample site, is 7%; Simpson's Biodiversity Index (1-D) = 0.93, *i.e.*, the probability of collecting any of the Melanoplinae species at a given collection site is 93%. Simpson's Index varies from 0 to 1, 1 being the highest biodiversity; therefore it may give an indication of the high biodiversity of this group in northeastern Mexico.

The neighbor-joining tree based on AFLP markers (Fig. 2) shows Melanoplinae grouped according to morphological separation. *Huastecaris fariensis* n. sp., *H. truncatipennis* and *H. Zenoni* cluster together; these three species belong to the tribe Conalcaeini, agreeing with the assignment that Cohn & Cantrall (1974) and Fontana & Buzzetti (2007) have given for these taxa. *M. simuchi* (Fig. 5A-C) aligned close to *P. litus*; these two genera may be hard to separate based on morphological characters, particularly if one is not very familiar with the numerous taxa from both genera.

Illustrations are provided for *N. moctezumae*, *P. gracilis* and *M. simuchi*; for the first two taxa no recent information was available.

A good number of endemic taxa reported here are poorly known because they are not economically important. Scudder (1897) when describing the genus *Phaulotettix* (*P. compressus*) reckoned this as a "good-for-nothing; terric, grasshopper". Most taxa of *Agroecotettix*, *Huastecacris*, *Mexitettix*, *Phaedrotettix* and *Phaulotettix*, live in low numbers in canyons or at the top of mountains. Some of these species have probably survived as relict populations. Most species treated here occur along the eastern Sierra Madre in northeastern Mexico: "Natural Protected Area Altas Cumbres", El Cielo Biosphere Reserve, Horsetail Falls, La Huasteca and other isolated mountains that are the habitat of these, and certainly, many other endemic and undescribed species.

Huastecacris fariensis n. sp. (Figs 3A-D)

Type locality.—Mexico, Tamaulipas, road (rd). Mante-Ocampo, 383m,

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lat 22°49′3.07″N, long 99° 15′4.13″W,x 20. 07.2007.

Type material (Examined material).— **Tamaulipas,** rd. Cd. Mante-Ocampo, 383m, 22°49′3.07″N, 99°15′4.13″W, 24.07.2002, 12.07.2007; rd. Ocampo-Tula, 1361m, 22°53′6.39″N, 99°26′4.99″W, 25.07.2002, 19.08.2003; Reserva de La Biosfera El Cielo, 980m, 23°03′1.12″N, 99°10′9.70″W, 19.08.2003; rd. Estación- Manuel- Río Verde, San Luis Potosí- Rancho El Gualul, 107m, 22°31′57.8″N, 98°24′39.7″W, 01.02.2002. **San Luis Potosí**, Tamasopo, 437m, 21°56′76.4″N, 99°24′03.4″W, 27.07.2002, 03.10.2001; Platanitos Cd. Del Maíz, 1200m, 22°29′28″N, 99°28′47″W, 25.07.2002. **Hidalgo**, Huazalingo, East Tlamamala, 945 m, 20°58′24″N, 98°32′22″W,13.01.2009. 18 males (1 holotype: 17 paratypes), 26 females (1 allotype: 25 paratypes), IB-UNAM and L. Barrientos-Lozano coll. Paratypes in P. Fontana coll., 4 males: 1 female (**Tamaulipas**, Carr. 85, Cañón El Abra, 260m, 22°36′25″N, 99°01′28″W, 25.11.2008. Paratypes in coll. F. M. Buzzetti, 1 female (**San Luis Potosí**, carr. 85 km 41, Buenavista, 273m, 22°20′26″N, 99°01′49″W, 25.11.2008).

Diagnosis.— Similar to *H. zenoni*, Fontana & Buzzetti, 2007. It differs as follows: larger size; male supra-anal plate triangular with acute rounded apex (Fig. 3B); male cerci lateral view subconical, basally expanded, acutely incurved about middle portion, distal half spatulate (Figs 3C, D); furcula with rounded lobes projecting finger-like downwards (Fig. 3B); hind femur with ventral area blue; hind tibiae blue. Tegmina white, costal, subcostal and radial-sector areas dark; lateral post-ocular band dark brown, extending to epimeron 2.



Description.— Body length (mm) to end of hind femur: male 27.2. Hind femur length (mm): male 15. Pronotum length (mm): male 6.2. Tegmina length (mm): male 3.5. Pronotum in dorsal view gradually widening with hind margin emarginated; lateral post-ocular band dark brown, extending to epimeron 2 (Fig. 3A). Tegmina white, costal, subcostal and radial sector areas dark, subovate in lateral view; supra-anal plate triangular with well-defined rounded apex (Fig. 3B); furcula represented by rounded lobes projecting finger-like downwards (Fig. 3B); male cerci subconical, basal half expanded (1mm), acutely incurved at middle, distal half spatulate (Figs 3C, D), narrow middle part (0.5 mm). Hind femur ventral area blue, outer and inner face dark (living specimens dark green), outer lower marginal area with a cream band with dark marks; hind tibia blue.

Etymology.— This species is named after the locality of Gómez Farías, South Tamaulipas where it was first collected in 2001.

Distribution.— México (Tamaulipas, San Luis Potosí, Hidalgo).

Conclusions

New information on collection sites, geographic distribution and abundance is provided for 13 genera and 33 species of Melanoplinae occurring in northeastern Mexico. This represents 45% of the genera and 24% of the Melanoplinae species known for Mexico. Four of the 33 species treated are new records for Mexico. *Huastecacris fariensis* n. sp. is described and illustrated in addition to two species of this genus described previously by Fontana and Buzzetti (2007).

Mexican endemic species of Melanoplinae are restricted to certain localities of the eastern mountain range (top of mountains, canyons, remote areas) all of them under some status of protection (Biosphere Reserves, Natural protected Areas, National Parks, Natural Monuments).

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Fig. 4. *Necaxacris moctezumae*. A. Adult male dorsal view. B. Left cercus lateral view.



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Fig. 5. *Mexitettix simuchi*. A. Adult male, lateral view. B. Supra-anal plate and cerci, dorsal view. C. Left cercus, lateral view.





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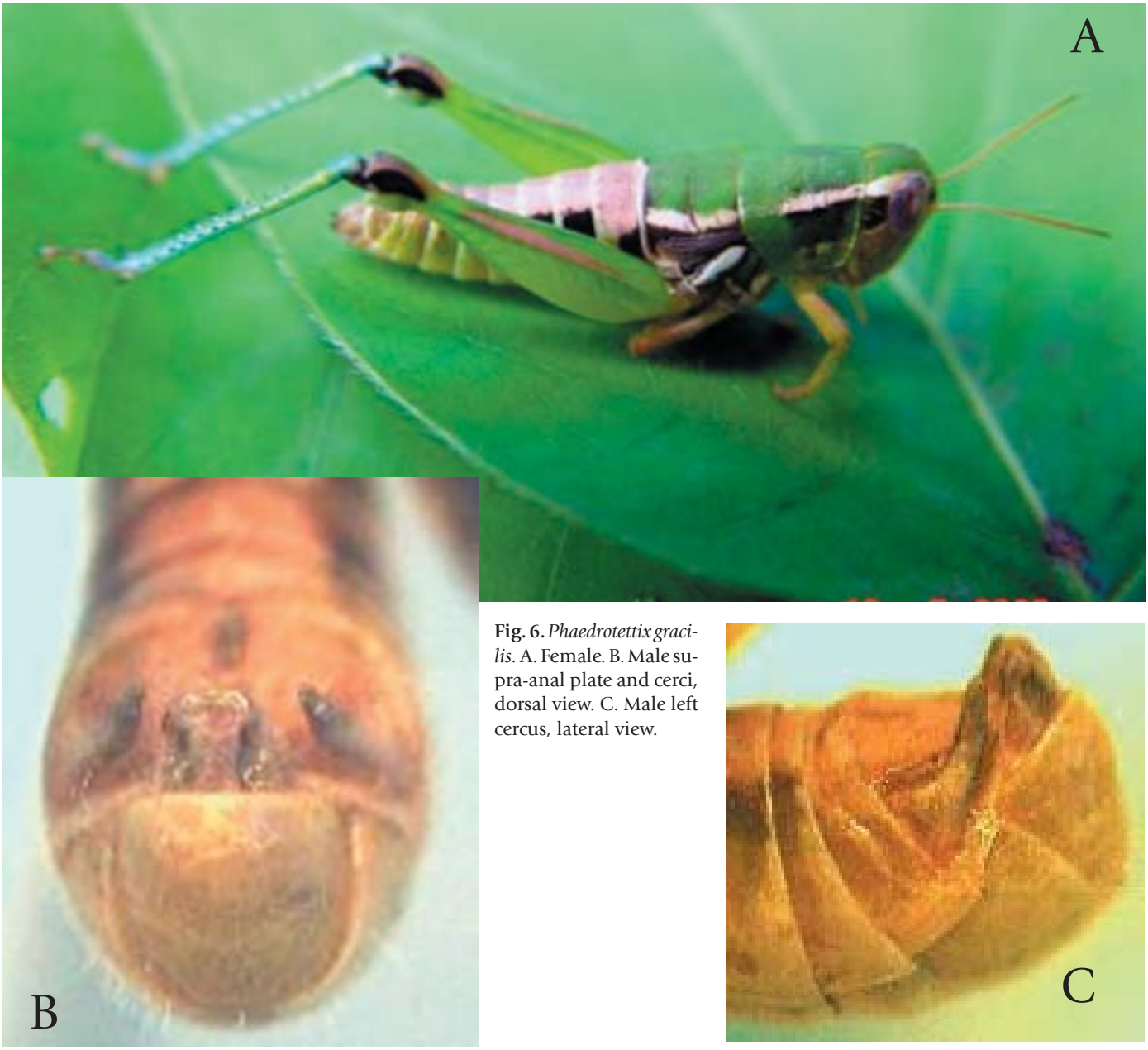


Fig. 6. *Phaedrotettix gracilis*. A. Female. B. Male supra-anal plate and cerci, dorsal view. C. Male left cercus, lateral view.

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Table 2. Melanoplinae of northeastern Mexico, type localities and collection sites. Type locality from OSF2 online: http://osf2x.orthoptera.org/Common/basic/Taxa.aspx. *Endemic species.

Taxa	Type locality/Range	Collection Sites
*Agroecotettix modestus modestus** Hebard, 1922	North America, México México: northeast, Durango, Villa Lerdo [near Torreon]	**Nuevo León:** Arramberri, 1280 m, N 24°06'6.96'', W 99°52'8.88'', 21.10.01; Rancho El Rodeo, 1890 m, N 24°44'8.82'' W 99°59'26.8", 23.07.2002; Vitro Parque El Manzano, 1500 m, N 25°22'017'' W 100°11'8.79'', 23.10.2001; Santa Rosa, 1780 m, N 24°41'8.26'' W 99°52'17.5'', 25.07.2001.
Aidemona azteca (Saussure, 1861)	México: Orizaba, Veracruz	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17'03'' W 101°20'44.2'', 30.08.2007. **Nuevo León:** Vitro Parque El Manzano, 1500 m, N 25°22'017'' W 100°11'8.79'', 23.10.2001; Santa Rosa, 1780 m, N 24°41'8.26'' W 99°52'17.5'', 25.07.2001. **Tamaulipas**: Gómez Farías, 540 m, N 23°02'8.08'' W 99°09'30.8'', 25.11.2001, 25.11.2005, 12.07.2007; rd. Ocampo-Tula, 480 m, N 22°53'6.39'' W 99°26'49.9'', 25.07.2002; Reserva de la Biósfera El Cielo, 980 m, N 23°03'11.2" W 99°10'9.7'', 19.08.2003, 10.10.2003; Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23°53'24.3'' W 99°5'6.93'', 19.11.2004; Cd. Victoria; Cañón de la Libertad, 250-300 m, N 23°44'5.63'' W 99°09'4.43", 02.08.2004. **San Luis Potosí**: Tamasopo, 437 m, N 21°56'7.64'' W 99°24' 03.4'', 27.07.2002, 03.10.2001.
*Campylacantha olivacea similis** Scudder, 1897	México: northeast, Durango, Lerdo	**Cohauila:** Bellavista, Saltillo, 1600 m, N 25°17'03'' W 101°20'44.2'', 09.09.2007; Potrero El Abrego, 1749 m, N 25°17'03'' W 100°20'4.42'', 05.10.2001. **Nuevo León:** Santa Rosa, 1800 m, N 24°42'8.28'' W 99° 53'38.2'', 20.10.2001; Vitro Parque el Manzano, 1513 m, N 25°22'017'' W 100°11'8.79'', 10.03.2001, 07/09/2002; Rancho Aceros-Santo Domingo, 1505 m, N 24° 47'10.4'' W 99°39'6.54'', 01/11/2003; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m N 24° 53' 2.76'' W 100° 11'1.87'', 02.11.2008. **Tamaulipas**: Hwy. Cd. Victoria-Monterrey km 19.5, 196 m, N 23°53'24.3'' W 99°5'6.93'', 19.11.2004; Ejido la Chaca-Mante, 84 m, N 22°49'3.54''W 99°03'4.17'', 20.08.2002; Poblado 601-.Mante, 51 m, N 22°58'4.8'' W 99°04'2.66'', 09.11.2007; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59'28.9'', W 99°49'57.8'', 21.10.2006.
*Dactylotum bicolor bicolor** Charpentier, 1843	North America, México	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17.03'' W 101° 20'4.42'', 09.09.2007; Jamé-3 km East Los Lirios, Arteaga, 1749 m, N 25°17'03'' W 100°20'44.2'', 5.10.2001; Jamé, Km 23 towards Nuncio, Rayones, 1740 m, N 25° 17'03'' W 100° 20' 4.42''; 5.10.2001; **Nuevo León:** Santa Rosa, 1780 m, N 24°41'8.26'' W 99°52'17.5'', 25.07.2001; La Ciénega, 1520 m, N 25°22'01''W 100°11'8.7'', 07.09.2002; Rancho El Rodeo, 1890 m, N 24°44'8.82'' W 99° 59'26.8", 23.07.02; Potrero Prieto, 1920 m, N 24°44'9.75" W 99°56'7.88", 23.07.2002; Potrero Viejo, 780 m, N 24°42'1.69'' W 99°44'6.76'', 11.11.2002; Cabañas antes de subir a Cerro Potosi, Galeana, 2103 m, N 24° 53'2.67'' W 100° 11'1.66'', 06.09.2008; Carretera Linares a Iturbide, Km 30-31, 878 m, N 24° 44' 5.7'' W 99° 92' 2.32'', 05.09.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24°52'1.39'' W 100°13' 8.20'', 06.09.2008. **Tamaulipas:** Cd. Victoria: Natural Protected Area Altas Cumbres (Nuevo Centro de Población Altas Cumbres –NCP- 589 m, N 23°40'001'' W 99°11'6.94'', Cañón de Calamaco, 180 m, N 23°43'00'' W 99°17'00'', 09.06.2003; Cañón de la Peregrina, 200 m, N 23°45'00'' W 99°15'00'', 9.11.2004, 14.08.2004, 23.09.2005. **San Luis Potosí:** Cd. del Maíz, 1250 m, N 22°45' 30'' W 99°45' 58''. 19.07.2003.

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*Huastecacris fariensis** n. sp.	México: Tamaulipas, rd. Cd. Mante-Ocampo, 383 m, N 22°49′3.07″ W 99°15′4.13″	**Tamaulipas**: rd. Cd. Mante-Ocampo, 383 m, N 22°49′3.07″ W 99°15′4.13″, 24.07.2002, 12.07.2007; rd. Ocampo-Tula, 1361 m, N 22°53′6.39″ W 99°26′4.99″ 25.07.2002, 19.08.2003; Reserva de la Biósfera El Cielo, 980 m, N 23°3′1.12″ W 99°10′9.70″, 19.08.2003; rd. Estación- Manuel- Río Verde, San Luis Potosí- Rancho El Gualul-107 m, N 22°31′57.8″ W 98°24′39,7″, 01.02.2002. **San Luis Potosí:** Tamasopo, 437 m, N 21°56′76.4″ W 99°24′ 03.4″, 27.07.2002, 03.10.2001.Platanitos, Cd. del Maíz, 1200 m, N22°29′28″ W99° 28′47″, 25.07.2002. **Hidalgo**: Huazalingo, East Tlamamala, 945 m, N 20°58′24″ W98°32′22″,13.01.2009.
*Huastecacris truncatipennis** Fontana & Buzzetti 2007	North America, México México: northeast, Nuevo León, Saltillo	**Coahuila:** Los Lirios, Artega, 1749 m, N 25°17′03″ W 100°20′4.42″, 09.08.2003; Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 09.09.2007; Arteaga, 1800m, N 25° 57′3.45″ W 100° 42′ 8.4″, 30.08.2007. **Nuevo León:** Cerro el Potosí, 3256 & 3730 m, N 24°52′6.14″ W 99°13′15.9″, 01.12.01; Rancho Encino Grande, 2060 m, N 24°06′6.96″ W 99°52′8.88″, 08.09.2001; Las Adjuntas, 753 m, N 25°18′028″ W 100°08′45.3″, 30.11.2001;, Vitro Parque El Manzano, 1513 m, N 25°22′017″ W 100°11′8.79″, 10.03.2001; Cola de Caballo, 1095 m, N 25°20′06″ W 100°10′06″, 01.03.2001. Santa Rosa, 1780 m, N 24°41′8.26″ W 99° 52′17.5″, 20.10 & 20.12 2001; Vitro Parque El Manzano, 1513 m, N 25°22′17″ W 100°11′8.79″, 19.07.2001; Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 25.07 & 28.10. 2001, 22.07.2002; Cola de Caballo, 1513 m, N 25°22′01″ W 100°11′8.7″, 03.01.2001; Las Ajuntas, 735 m, N 25°18′02″ W 100°08′45″, 30.12.2001; Jamé, Km 23 towards Nuncio, Rayones, 1749 m, N 25°17′03″ W 100°20′ 4.42″, 05.10.2001. **Tamaulipas:** Cerro del Diente, municipio de San Carlos. 1130-1400 m, N 24°31′ W 98°57′, 10.08 & 17.09.2004.
*Huastecacris zenoni** Fontana & Buzzetti, 2007	México: Tamaulipas, Balcón de Moctezuma, Hwy. 101 Cd. Vctoria-San Atonio, SW de Cd. Victoria, ejido Alta Cumbre	**Tamaulipas:** Cd. Victoria-Natural Protected Area Altas Cumbres (Cañón del Novillo, 470 m N 23°41′9.79″ W 99°12′58.6″, 19.08.2003, 3.07, 20.08 & 4.09.2004; Cañón de la Libertad, N 23°44′5.63″ W 99°09′4.43″, 20.08.2004, 30.09 & 16.10.2005; Cañón de la Peregrina, 200 m, N 23°45′00″ W 99°15′00″, 03.09.2005; Cañón de Calamaco, 180 m, N 23°43′00″ W 99°17′00″, 14.09.2004); Reserva de la Biósfera El Cielo, 980-1450 m, N 23° 03.11.2″ W 99°10′9.70″, 22.11.2001, 22.11.2002, 5.07.2003, 19.08.2003, 10.10.2003; hwy. 101-Cd. Victoria-Jaumave, Nuevo Centro de Población Altas Cumbres, 589 m, N 23°40′001″ W 99°11′6.94″, 10.12.2005, 07.08.2007; rd. Jaumave-San Lorenzo, 1000 m, N 23° 23′07″ W 99° 23′01″, 4.09.2004; Ej. El Ébano-Llera, 348 m, N 23° 45′ 16.6″ W 99°00′6.6″, 08.09.2005.
Hesperotettix viridis viridis (Thomas, 1872)	USA: northwestern (Colorado, Wyoming, Kansas) and southeastern; Mexico: (northeastern and central)	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 09.09.2007; Arteaga, 1800m, N 25°57′3.45″ W 100°42′ 8.4″, 30.08.2007. **Nuevo León:** Santa Rosa, 1780 m, N 24° 41′8.26″ W 99° 52′17.5″, 25.07.2001; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m, N 24° 53′ 2.76″ W 100°11′ 1.87″, 02.11.2008; Antes de llegar a entrada a Buena Vista, Galeana, 1805 m, N 24° 50′ 2.32″ W 100° 08′9.59″, 02.11.2008. **Tamaulipas:** rd. Ocampo-Tula, 1365 m, N 22° 53′6.39″ W 99°26′4.99″ 20.08.2003; rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 12.10.2004; Gómez Farías-Ej. Altacima, 1050 m, N 23°03′7.01″ W 99°12′3.47″, 8.06.2002.
Melanoplus arizonae Scudder, 1878	USA: southwestern, Arizona; south central and Texas	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 09.09.2007; Arteaga, 1800m, N 25°57′3.45″ W 100°42′ 8.4″, 30.08.2007.
Melanoplus bivittatus (Say, 1825)	USA: northeastern, southeastern and central	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 09.09.2007. **Nuevo León:** Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W 99°51′ 07″, 22.07.2002; Antes de la cima de Cerro Potosi, Galeana , 3624m, N 24°52′1.39″ W 100°13′ 8.20″, 06.09.2008.
Melanoplus differentialis nigricans Cockerell, 1917	North America, northwestern USA, Colorado, Boulder; Mexico: Hidalgo Ixmiquilpan	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 09.09.2007.Potrero El Abrego, 1749 m, N 25°17′03″ W 100°20′4.42″, 05.10.2001. **Nuevo León:** Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m, N 24°53′2.76″ W 100°11′1.87″, 02.11.2008; Vitro Parque El Manzano, 1500 m, N 25°22′017″ W 100°11′8.79″, 3.10.2001;rd. Linares-Iturbide Km 30-31, N 24°44′57″ W 99°92′2.32″, 878m, 05.09.2008; Antes de la cima de Cerro Potosi, Galeana , 3624m, N 24°52′1.39″ W 100°13′8.20″, 06.09.2008; Parte mas alta de Cerro Potosi, Galeana, 3730 m, N 24° 52′3.17″ W 100°13′ 7.53″, 06.09.2008. **Tamaulipas:** NCP Altas Cumbres, 826 m, N 23°38′16.5″ W 99°11′7.3″, 10.12.2005; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59′28.9″, W 99°49′57.8″, 10.06.2006; rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 10.12.2001

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Melanoplus femurrubrum (De Geer, 1773)	USA: Pennsylvania, Colorado; Texas: Dallas County, Dallas; Utah: Salt lake City; Nebraska: Glencoe; Canada, Québec: Cape Rouge. Widely distributed USA, México and Canada.	**Coahuila:** Potrero El Abrego, 1749 m, N 25°17′03″ W 100°20′4.42″, 03.10.2001; Arteaga, 1800 m, N 25°57′3.45″ W 100° 42′ 8.4″, 30.08.2007; Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′44.2″, 30.08.2007. **Nuevo León:** Vitro Parque El Manzano, 1500 m, N 25°22′017′ W 100°11′8.79″, 3.10.2001. **Tamaulipas:** rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 21.10.2001; Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23°53′24.3″ W 99°5′6.93″, 19.11.2004; Ej. Emiliano Zapata-Xicoténcatl, 113 m, N 22°39′48″ W 100°10′10″, 23.06.2002; Ej. Alta Cima-Gómez Farías, 1050 m, N 23°03′7.01″ W 99°12′3.47″, 08.06.2002; rd. Ocampo-Tula, 1400m, N 22° 53′ 6.39″ W 99° 26′4.99″, 20.08.2003; Ej. Crucita Mpio. Gómez Farias ,540 m, N 23°02′8.08″ W 99°09′30.8″, 08.05.2002. **San Luis Potosí:** rd. Estación Manuel-Río Verde, San Luis Potosí- km 11, Rancho El Gualul- 107 m, N 22°31′57.8″ W 98°24′39.7″, 10.11.2001, 01.02.2002; Hacienda Los Tulillos-Ébano, 1840 m, N 22°24′, W 101°10′, 21.08.2002.
Melanoplus flavidus Scudder, 1878	northwestern U.S.A., Colorado, Morrison. Widely distributed USA, México and Canada.	**Coahuila:** Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′4.42″, 30.08.2007. **Nuevo León:** Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 25.07-28.10.2001, 22.07.2002, 11.11.2003; Vitro Parque El Manzano, 1513 m, N 25°22′17″ W 100°11′ 8.79″, 23.10.2001; Cola de Caballo, 1513 m, N 25°22′01″ W 100°11′8.7″, 20.07.200; Arteaga, 1800m, N 25°57′34.5″ W 100°42′ 8.4″, 30.08.2007; La Gloria, Apodaca, 495.6m, N 25°56′14.15″ W 100°22′47″, 20.07.2001; San Roberto, 1935 m, N 24°40′56.7″ W 100°40′56.2″, 01.12.2001. **Tamaulipas**: rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 15.08.2001, 14.06.2002; Ej. Alta Cima-Gómez Farías, 1050 m, N 23° 03′7.01″ W 99°12′3.47″, 08.06.2002; Cañón del Novillo, 470 m N 23°41′9.79″ W 99°12′5.86″, 4.06.2002; Hwy 101 Cd. Victoria-Jaumave, 1000 m N 23°23′07″ W 99°23′01″, 12.10.2001; Xicoténcatl, 96.9264 m, N 22°59′ 59.10″ W 98°56′ 35.58″, 20.09.2002; Carretera Interejidal, 14.09.2004; Ej. Crucita Mpio. Gómez Farias ,540 m, N 23°02′8.08″ W 99°09′30.8″, 08.05.2002; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59′28.9″, W 99°49′57.8″, 04.11.2006; Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23°53′24.3″ W 99°05′93″, 19.11.2004; Cañón de la Peregrina, 200 m, N 23°45′00″ W 99°15′00″, 30.09.2005. **San Luis Potosí.** Taninul, 440 m, N 21° 56′7.64″ W 99°24′30.7″, 27.07.2002.
Melanoplus gladstoni Scudder, 1897	North America, western Canada, Alberta, [Assiniboin, Medicine Hat]. Widely distributed USA, México and Canada.	**Nuevo León**: San Roberto, 1935 m, N 24°40′56.7″ W 100° 40′56′02″, 01.12.2001. **Tamaulipas:** Güemez, 201 m, N 23°55′40″ W 99°13′35″, 10.06.2001; Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23°53′24.3″ W 99°05′9.3″, 19.11.2004.
Melanoplus lakinus (Scudder, 1878)	northwestern USA, Colorado; north to central Mexico.	**Coahuila:** Potrero El Abrego, 1749 m, N 25°17′.03″ W 100°20′4.42″, 05.10.2001. **Nuevo León:** Vitro Parque El Manzano, 1500 m, N 25° 22′017′ W 100° 11′8.79″, 3.10.2001; Galeana, 1780 m, N 24°48′16.5″ W 100° 31′7.86″, 12.11.2003; Rancho El Viejo, 780 m, N 24°42′16.9″ W 99°44′6.76″, 11.11.2003; Antes de llegar a entrada a Buena Vista, Galeana, 1805 m, N 24° 50′2.32″ W 100° 08′9.59″, 02.11.2008; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m, N 24° 53′2.76″ W 100°11′1.87″, 02.11.2008; Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 28.10.2001; Camino de terracería a orillas de Galeana, km 23, 595.274m, N 24°44′09″ W 99°44′6.66″, 11.11.2003; Jamé, Km 23 towards Nuncio, Rayones, 1749 m, N 25°17′03″ W 100°20′4.42″, 05.10.2001; **Tamaulipas:** Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40′01″W 99°11′6.94′, 19.11.2004; Hwy 101 Cd. Victoria-Jaumave-Balcón del Chihue, 1590 m, N 23°36′7.50″W 99°15′32.0″, 12.10.2001; Cd Mante, 80 m, N 22°44′ W 98°58′, 27.06.2001; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59′28.9″, W 99°49′57.8″, 21.10.2006; Corredero Industrial, Mante, 61.26m, N 22°31′19.88″ W 98°47′32.98″, 27.06.2001. **San Luis Potosí:** Hacienda Los Tulillos-Ébano, 1840 m, N 22°24′, W 101°10″, 21.08.2002.
Melanoplus mexicanus (Saussure, 1861)	Mexico, Córdova t.c. Veracruz?	**Coahuila:** Potrero El Abrego, 1749 m, N 25°17′03″ W 100°20′4.42″, 11.11.2003 **Nuevo León:** Vitro Parque El Manzano, 1500 m, N 25° 22′17″ W 100°11′8.79″, 23.10.2001; Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 22.07.2002, 11.11.2003; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m, N 24° 53′ 27.6″ W 100°11′1.87″, 02.11.2008; Antes de llegar a entrada a Buena Vista, Galeana, 1805 m, N 24°50″2.32″ W 100° 08′9.59″, 02.11.2008. **Tamaulipas:** Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23°53′24.3″ W 99°05′6.93″, 19.11.2004; rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 21.10.2001, 19.11.2004; rd. Ocampo-Tula, 1400m, N 22° 53′ 6.39″ W 99° 26′4.99″, 20.08.2003; Alta cima- Gómez Farías, 540 m, N 23°02′8.08″ W 99°09′30.8″, 08.06.2002; Ej. La Chaca-Mante, 84 m, N 22°49′3.54″W 99°03′4.17″, 24.07.2004.

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*Melanoplus reflexus** Scudder, 1897	North America, Mexico, Mexico northeast, San Luis Potosí, Ciudad del Maiz	**Nuevo León:** Parte mas alta de Cerro Potosi, Galeana, 3730 m, N 24° 52′ 3.17″ W 100°13′ 7.53″, 06.09.2008; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m, N 24° 53′ 2.76″ W 100°11′ 1.87″, 02.11.2008; Cabañas antes de subir a Cerro Potosi, Galeana, 2103 m, N 24° 53′ 2.67″ W 100° 11′ 16.6″, 06.09.2008; Rancho El Encino, 2060 m, N 24°09′49.5″W 99°55′12.8″ 23.07.2002; Santa Rosa, 1780 m, N 24°41′8.26″ W 99°52′17.5″, 25.07.2001.
Melanoplus regalis (Dodge, 1876)	North America, north-central USA, Nebraska, Glencoe	**Nuevo león:** Camino Terracería a orillas de Galeana, km 23, 595m, N 24°44′ 09″ W 99°44′ 6.66″, 11.11.2003.
Melanoplus sanguinipes sanguinipes (Fabricius, 1798)	North America, [America boreali]	**Nuevo León:** Antes de llegar a entrada a Buena Vista, Galeana, 1805 m, N 24°50′ 2.32″ W 100°08′ 9.5″, 02.11.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24°52′ 1.39″ W 100°13′8.20″, 06.09.2008; Cabañas antes de subir a Cerro Potosi, Galeana, 2103 m, N 24°53′2.67″ W 100°11′1.66″, 06.09.2008.
*Melanoplus scitulus** Scudder, 1897	North America, Mexico, Mexico northeast, San Luis Potosí, Mount Alvarez	**Nuevo León:** Parte mas alta de Cerro Potosi, Galeana, 3730 m, N 24° 52′ 3.17″ W 100° 13′ ′7.53″, 06.09.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24° 52′1.39″ W 100° 13′ 8.20″, 06.09.2008.
*Melanoplus sumichrasti** (Saussure, 1861)	Mexico: widely distributed	**Nuevo León:** Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 25.07 & 28.10. 2001, 22.07.2002. **Tamaulipas:** Gómez Farías, 540 m, N 23° 02′8.08″ W 99°09′30.8″, 31.08.2001, 12.07.2007; Reserva de la Biósfera El Cielo, 980-1459 m, N 23°03′1.12″ W 99°10′9.7″, 20.10.2002, 17.02-19.08-10.10.2003; Cd. Victoria- Área Natural Protegida Altas Cumbres (Cañón de la Libertad, 250-300 m , N 23°44′5.63″ W 99°09′4.43″, 20.08.2004; Cañón de Calamaco, 180 m, N 23°43′00″ W 99°17′00″, 16.10.2005; Cañón de la Peregrina, 200 m, N 23°45′00″ W 99°15′00″, 30.09.2005; Cañón del Novillo, 470 m, N 23°41′9.79″ W 99°12′5.86″, 7.03-16.07.2004; NCP Altas Cumbres, 826 m, N 23°38′16.5″ W 99°11′7.3″, 10.12.2005; Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40′001″W 99°11′69.4″, 28.08.2004.
*Mexitettix jocari** Otte, 2007	North America, Mexico, Mexico northeast, Tamaulipas, 11 road miles SW of Ciudad Victoria on Hwy 101	**Tamaulipas:** Cd. Victoria-Natural Protected Area Altas Cumbres (Cañón de la Libertad, 300 m, N 23°44′5.63″ W 99°09′4.43″, 10.08.2004;Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40′001″W 99°11′6.94″, 22.07 & 09.11.2004; Nuevo Centro de Población Altas Cumbres, 826 m, N 23°38′16.5″ W 99°11′7.35″, 22.07.2004, 10.08.2004).
*Mexitettix ricuchuri** Otte, 2007	North America, Mexico, Mexico northeast, Nuevo León, 5.4 rd mi NW of Iturbide	**Nuevo León:** rd. Linares-Iturbide Km 30-31, N 24°44′ 57″ W 99° 92′ 2.32″, 878m, 05.09.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24° 52′1.39″ W 100° 13′8.20″, 06.09.2008.
*Mexitettix simuchi** Otte, 2007	North America, Mexico, Mexico northeast, Nuevo León, Cerro Potosi, 12.6 miles NW of Galeana	**Nuevo León:** Cerro el Potosí, 3258 m, N 22°52′ 6.14″ W 100°13′1.5″, 19.08.2003; Arramberri, 1280 m, N 24°06′6.96″ W 99°52′8.88″, 21.102.2001.
*Necaxacris moctezumae** Roberts	México: northeast, Tamasunchale, San Luis Potosí	**Nuevo León:** Linares-Iturbide, Km 30-31, 878 m, N 24° 44′ 57″ W 99° 92′ 2.32′, 05.09.2008; Vitro Parque El Manzano, 1513 m, N 25°22′1.7″ W 100°11′8.79″, 03.10.2001. **Tamaulipas:** Cd. Victoria-Natural Protected Area Altas Cumbres (Cañón de la Libertad, 300 m, N 23°44′5.63″ W 99°09′4.43″, 20.08.2004;Cañón de la Peregrina, 200 m, N 23°45′00″ W99°15′00″, 30.09.2005; Cañón de Calamaco, 180 m, N 23°43′00″ W 99°17′00″, 16.10.2005; Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40′001″W 99°11′69.4″, 22.07.2004; Nuevo Centro de Población Altas Cumbres, 826 m, N 23°38′16.5″ W 99°11′7.35″, 22.07 & 22.10.2004, 23.09.2005, 08.07.2007); Llera 15 km S of Ejido el Ébano, 348 m, N 23°45′16.6″W 99°00′6.6″; Reserva de la Biósfera El Cielo, 980m, N 23°03′01.12″ W 99°10′9.7″, 20.10.2002; Gómez Farías, 540 m, N 23°02′8.08″ W 99°09′30.8″, 12.10.2007; Carretera Interejidal, 2.10.2003; rd. Ocampo-Tula, 1461 m, N 22° 53′ 6.39″ W 99° 26′4.99′, 25.07.2002; La Bandera, Cd. Victoria, 820 m, N 23°45′ 38.06″ W 99°11′ 39.06″, 14.08.2004; Hwy 101 Cd. Victoria-Jaumave-Balcón del Chihue, 1590 m, N 23°36′7.50″W 99°15′3.20″, 12.10.2001.
*Pedies cerropotosi** Fontana & Buzzetti, 2007	North America, Mexico, Mexico northeast, San Luis Potosí, Cerro Potosí	**Nuevo León:** Parte mas alta de Cerro Potosi, Galeana, 3730 m, N 24°52′3.17″ W 100° 13″7.53″, 06.09.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24° 52′1.39″ W 100° 13′8.20″, 06.09.2008; Linares-Iturbide, Km 30-31, 878 m, N 24° 44′ 57″ W 99° 92′ 2.32″, 05.09.2008.
*Phaedrotettix angustipennis** Scudder, 1897	North America, Mexico, Mexico northeast, San Luis Potosí, Mount Alvarez	**Nuevo León:** rd. Galeana-Iturbide, km 62, 1589m, N24°46′4.87′ W100° 04′ 3.57″, 02.11.2008; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m N 24° 53′2.76″ W 100° 11′1.87″, 02.11.2008 **Tamaulipas:** Nuevo Centro de Población Altas Cumbres, 826 m, N 23°38′16.5″ W 99°11′7.35″, 08.07.2004;

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*Phaedrotettix gracilis** (Bruner, 1908)	Mexico: northeast, Tampico, Tamaulipas	**Cohauila:** Bellavista, Saltillo, 1600 m, N 25°17'.03'' W 101°20'44.2'', 09.09.2007. **Nuevo León:** El Salto-General, Zaragoza, 1700 m, N 23°56' 48" W 99°45'12", 22.07.2002; Rancho Aceros-Santo Domingo, 1505 m, N 24°47'10.4'' W 99°39'6.54'', 111/11/2003; Paradero Los Altares-Iturbide, 1290 m, N 24°44'16" W 99°51'07", 11.11.2003; Las Adjuntas, 735 m, N 25°18'02" W 100°08'45", 30.11.2001; San Roberto, 1935 m, N 24°40'56.7" W 100°40'56.2", 01.12.2001. **Tamaulipas:** rd. Ocampo-Tula, 1461 m, N 22° 53' 6.39'' W 99° 26'4.99', 25.07.2002; Gómez Farías, 540 m, N 23°02'8.08'' W 99°09'30.8'', 07.12.2007; rd. Estación Manuel-Río Verde, San Luis Potosí- km 11, Rancho El Gualul- 107 m, N 22°31'57.8'' W 98°24'39.7'', 10.11.2001, 27.11.2001; rd. Cd. Mante-Ocampo, Km 14, 170 m, N 22°49'3.07'' W 99°15'4.13'', 07.12.2007; La Florida-Gómez Farías, 190 m, N 22°59' 5.42'' W 99°52'8.88'', 31.06.01; Poblado 601-.Mante, 51 m, N 22°58'4.8'' W 99° 04' 2.66'', 03.01.2001, 09.11.2007; rd. Jaumave-San Lorenzo, 1000 m, N 23°23'07" W 99°23'01'', 10.12.2001; La Morita-Xicoténcatl, 135 m, N 23° 05' 4.43'' W 99°06' 6.91'', 25.07.2002; Rancho San Roberto-El Abra, Mante, 61 m, N 22°58'2.6'', W 99° 04'2.94'', 24.09.2007; La Virgen, Ocampo, 419 m, N 22° 43' 04'' W 99° 15' 4.05'', 07.12.2007; Ej. El Triunfo, Mante, 314 m, N 22° 29' 3.02'' W 99° 51' 3.83'', 08.02.2000; Ejido la Chaca-Mante, 84 m, N 22°49'3.54''W 99°03'4.17'', 24.06.2007; La Bandera, Cd. Victoria, 819.607 m, N 23°45' 38.06" W 99°11' 39.06", 14.08.2004; Cañón de la Peregrina, 200 m, N 23°45'00'' W 99°15'00'', 08.10.2004, 30.09.2005.
*Phaedrotettix litus** Hebard, 1917	México: northeast, Tamaulipas, Victoria	**Nuevo León:** Cola de Caballo, 1513 m, N 25°22'01'' W 100°11'8.7'', 03.10.2001 **Tamaulipas:** Cd. Victoria-Natural Protected Area Altas Cumbres (Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40'001''W 99°11' 6.94'', 22.07.2004, 07.08.2007, 23.09.2005; Cañón de la Libertad, 300 m, N 23°44'5.63'' W 99° 09'4.43", 20.08.2004; Nuevo Centro de Población Altas Cumbres, 826 m, N 23°38'16.5'' W 99°11'7.35'', 22.07 & 22.10.2004, 23.09.2005, 08.0.2007; La Bandera, Cd. Victoria, 819.607 m, N 23°45' 38.06" W 99°11' 39.06", 14.08.2004.
*Phaedrotettix valgus** Scudder, 1897	Mexico: northeast, Tamaulipas, Sierra Nola	**Nuevo León**: Santa Rosa, 1780 m, N 24° 41'8.26'' W 99° 52'17.5'', 25.07.2001; Rancho El Viejo, 780 m, N 24° 42'1.69'' W 99°44.676'', 21.10.2001, 11.11.2002. **Tamaulipas:** Cd. Victoria-Natural Protected Area Altas Cumbres (Nuevo Centro de Población Altas Cumbres, 589 m, N 23°40'9 001'' W 99°11' 6.94'', 07.08.2004, 23.09 & 12.10.2005, 08.07.2007; Cañón de la Peregrina, 200 m, N 23°45'00'' W99°15'00'', 08.10.2004, 22.10.2004, 30.09.2005; Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40'001'' W 99°11'69.4'', 10.12.2001, 22.07.2004; rd. Cd. Mante –Ocampo, km 30, 650 m, N 22°49'3.07'' W 99° 15'4.13'', 25.07.2002, 12.07.2007; Jaumave, 735m, N 23°24' W 99°24', 21.10.2001.
*Phaedrotettix violai** Fontana & Buzzetti, 2008	North America, Mexico, Mexico northeast, Nuevo León, S. Juan Bautista #46	**Cohauila:** Arteaga, 1800 m, N 25°57'3.45'' W 100°42' 8.4'', 30.08.2007; Bellavista, Saltillo, 1600 m, N 25°17' 03'' W 101°20'44.2'', 09.09.2007 & 30.08.2007. **Nuevo León:** Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m N 24° 53' 2.76'' W 100° 11' 17'', 02.11.2008; Carretera Galeana a Iturbide, Km 62, 1589 m, N 24°46' 4.87'' W 100° 04' 3.57'', 02.11.2008; Carretera Linares a Iturbide, Km 30-31, 878 m, N 24° 44' 57'' W 99° 92' 2.32'', 05.09.2008. Paradero Los Altares-Iturbide, 1290 m, N 24°44'16'' W° 99°51'07'', 25.07-28.10.2001, 11.11.2003; Potrero Prieto, 1920 m, N 24°44'9.75" W 99° 56'7.88", 21.10.2001, 11.11.2002; Galeana, 1780 m, N 24°48'16.5" W 100°31'7.86", 11.11.2002; Arramberri, 1280 m, N 24°06'6.96'' W 99°52'8.88'', 21.10.2001; Santa Rosa, 1780 m, N 24° 41'8.26'' W 99° 52'17.5'', 25.07.2001; Rancho El Viejo, 780 m, N 24° 42'1.69'' W 99°44' 6.76'', 21.10.2001; Cola de Caballo, 1513 m, N 25°22'01'' W 100°11'8.7'', 09.07.2002. Camino a orillas de Galeana, km 23, 595.274m, N 24° 44' 09'' W 99° 44' 6.66'', 11.11.2003; Rancho El Rodeo, 1890 m, N 24°44'8.82'' W 99°59'26.8", 23.07.2002. **Tamaulipas:** Cañón de Calamaco, 180 m, N 23°43'00'' W 99°17'00'', 14.08.2004, 16.10.2005; Cañón del Novillo, 470 m, N 23°41'9.79'' W 99°12' 5.86'', 16.07.2004; Cañón de la Libertad, N 23°44'5.63'' W° 99 09'4.43", 10.08.2001, 21.10.2001); Carretera Interejidal, 2.10.2003; Hwy. Victoria-Monterrey Km. 19. 5, 196 m, N 23°53'24.3'' W 99°5'6.93'', 19.11.2004; Gómez Farías, 540 m, N 23°02'8.08'' W 99°09'30.8'',08.05.2002; Cd. Victoria-Natural Protected Area Altas Cumbres (Nuevo Centro de Población Altas Cumbres, 589 m, N 23°40'9.1'' W 99°11' 6.94'', 12.10.2005; Cañón de la Peregrina, 200 m, N 23°45'00'' W 99°15'00'', 30.09.2005; La Bandera, Cd. Victoria, 819.607 m, N 23° 45' 38.06" W 99°11' 39.06", 14.08.2004; rd. Cd. Mante-Ocampo, 383 m, N 22°49'3.07'' W 99°15'4.13'', 25.07.2002; Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589 m, N 23°40'001'' W 99°11'6.94'', 10.12.2001; Llera, lote 2, 210.6m, N 23°16'24.18'' W 98°52'50.08'', 28.01.2006.

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*Phaulotettix compressus** (Scudder, 1897)	México: northeast, Monclova, Coahuila	**Cohauila**: Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′44.2″, 09.09.2007; Potrero El Abrego, 1749 m, N 25°17′03″ W 100°20′4.42″, 05.10.2001; Arteaga, 1800 m, N 25°57′3.45″ W 100°42′ 8.4″, 30.08.2007; Los Lirios, Artega, 1749 m, N 25°17′03″ W 100°20′4.42″, 09.08.2002. **Nuevo León:** Santa Rosa, 1780 m, N 24° 41′8.26″ W 99°52′17.5″, 22.10.2003; Paradero Los Altares-Iturbide, 1290 m, N 24°44′16″ W° 99°51′07″, 20.10.2001, 11.11.2003; Vitro Parque El Manzano, 1513 m, N 25°22′17″ W 100°11′8.9″, 23.10.2001; Rancho El Viejo, 780 m, N 24°42′1.69″ W 99° 44′6.76″, 21.10.2001, 11.11.2002; Arramberri, 1280 m, N 24°06′6.96″ W 99°52′8.88″, 21.10.2001; El Salto-General, Zaragoza, 1700 m, N 23°56′ 48″ W 99°45′12″, 08.09.2001; Rancho Aceros-Santo Domingo, 1505 m, N 24° 47′10.4″ W 99° 39′6.54″, 11.11.2003; Las Adjuntas, 735 m, N 25°18′02″ W 100° 08′45″, 30.11.2001; Cola de Caballo, 1513 m, N 25°22′01″ W 100°11′8.7″, 01.03.2001, 09.07.2002; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m N 24° 53′2.76″ W 100° 11′1.87″, 02.11.2008; Carretera Galeana a Iturbide, Km 62, 1589 m, N 24° 46′.4.87″ W 100° 04′3.57″, 02.11.2008; rd. Estación Manuel-Río Verde, San Luis Potosí- km 11, Rancho El Gualul- 107 m, N 22°31′57.8″ W 98°24′39.7″, 10 & 27.11.2001; Rancho El Rodeo, 1890 m, N 24°44′8.82″ W 99°59′26.8″, 23.07.2002. **Tamaulipas:** Reserva de la Biósfera El Cielo, 980 m, N 23°03′1.12″ W 99°10′9.7″, 22.11.2002, 19.08.2003; Cd. Victoria-Natural Protected Area Altas Cumbres (NCP Altas Cumbres, 589 m, N 23°40′ 001″ W 99°11′ 6.94″, 22.07.2004, 23.09 & 12.10.2005, 08.07.2007; Cañón de la Peregrina, 200 m, N 23°45′00″ W 99°15′00″ Peregrina, 30.09.2005; Cañón de Calamaco, 180 m, N 23°43′00″ W 99°17′00″, 16.10.2005; Cañón del Novillo, 470 m, N 23°41′9.79″ W 99°12′5.86″, 16.07.2004; Cañón de la Libertad, 08.10.2004); Carretera Interejidal, km 14, 14.09.2004, 22.10..2003; Hwy. Victoria-Monterrey Km. 19.5, 196 m, N 23° 53′24.3″ W 99°5′6.93″, 19.11.2004; Hwy. 101 Cd. Victoria-Jaumave 10 km SW from Cd. Victoria, 589m, N 23°40′001″W 99°11′6.94″, 09.04.2004; Gómez Farías, 540 m, N 23°02′8.08″ W 99°09′30.8″, 07.12.2007; rd. Cd. Mante-Ocampo, Sierra Cucharas, Km 14, 170 m, N 22°52′16.2″ W 99°07′7.64″, 12.07.2007; Jaumave, 735m, N 23°24′ W 99°24′, 14.08.2002; rd. Estación- Manuel-Río Verde, San Luis Potosí, Km 11- Rancho El Gualul, 107 m, 11.07.2001; Ejido La Florida-Gómez Farías, 190 m, N 22°5′9.542″ W 99°52′8.88″, 19.10.2002; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59′28.9″, W 99°49′57.8″, 04.11.2006; Cd. Mante, 80 m, N 22°44′ W 98°58′, 03.01.2001. La Bandera, Cd. Victoria, 819.607 m, N 23° 45′ 38.06″ W 99°11′ 39.06″, 22.10.2003; Colonia Mirador, Cd. Victoria, 351.13m, N 23°45′15.59″ W 99°10′17.46″ 26.08.2004; La Bocatoma II, Ej. La Florida, Gómez Farías, 108.813 m, N 22°59′12.51″ W 99°08′41.92″, 19.10.2002. **San Luis Potosí:** Hacienda Los Tulillos-Ébano, 1840 m, N 22°24′, W 101°10′, 21.08.2002.
*Phoetaliotes nebrascensis** (Thomas, 1872)	USA: southwest, central-north, northeast. México: Querétaro. Parque Nac. El Cimatario	**Cohauila:** Cuatro Ciénegas, 740 m, N 26°56′10″ W 102°03′59″, 28.11.2004; Potrero El Abrego, 1749 m, N 25°17′03″ W 100°20′4.42″, 05.10.2001; Bellavista, Saltillo, 1600 m, N 25°17′03″ W 101°20′44.2″, 09.09.2007; Arteaga, 1800m, N 25°57′3.45″ W 100°42′8.4″, 30.08.2007. **Nuevo León:** Vitro Parque El Manzano, 1513 m, N 25° 22′ 17″ W 100° 11′ 8.79″, 23.10.2001; Rancho El Viejo, 780 m, N 24°42′1.69″ W 99°44′6.76″, 21.10.2001; Arramberri, 1280 m, N 24°06′6.96″ W 99°52′8.88″, 21.102.2001; El Salto-General, Zaragoza, 1700 m, N 23°56′ 48″ W 99°45′12″, 21.10.2001; La Ciénega, 1520 m, N 25° 22′01″W 100°11′8.7″, 7.09.2002; San Roberto, 1935 m, N 24°40′56.7″ W 100° 40′56.2″, 01.12.2001; Cabaña del Aserradero, Cerro Potosi, Galeana, 2103 m N 24° 53′ 2.76″ W 100° 11′ 1.87″, 02.11.2008; Antes de la cima de Cerro Potosi, Galeana, 3624m, N 24° 52′1.39″ W 100° 13′8.20″, 06.09.2008; Abajo de Cerro Potosi, Galeana , 1941.576 m, N 24° 52′ 07.3″ W 100° 90′ 8.26″, 05.09.2008. **Tamaulipas:** rd. Cd. Mante-Ocampo, Sierra Cucharas, Km 14, 170 m, N 22°52′16.2″ W 99° 07′7.64″, 25.07.2002; rd. Estación Manuel-Río Verde, San Luis Potosí- km 11, Rancho El Gualul- 107 m, N 22°31′57.8″ W 98°24′39.7″, 10 & 27.11.2001; Hwy 101 Cd. Victoria-Jaumave-Balcón del Chihue, 1590 m, N 23°36′7.50″W 99°15′3.20″, 12.10.2001; Poblado 601-Cd.Mante, 51 m, N 22° 58′4.8″ W 99°04′ 2.66″, 03.01.2001, 09.11.2007; rd. Jaumave-San Lorenzo, 1000 m, N 23°23′07″ W 99°23′01″, 10.12.2001; Rancho San Roberto-El Abra, Mante, 61 m, N 22°58′2.6″, W 99°04′ 2.94″, 11.09.2007; La Morita-Xicoténcatl, 135 m, N 23° 05′ 4.43″ W 99°06′ 6.91″, 25.07.2002; Ej. Bella vista, Mante, 82m, N 22°43′ 6.21″ W 99°03′9.34″, 08.11.2007; Poblado 601-.Mante, 51 m, N 22°58′4.8″ W 99°04′2.66″, 09.11.2007; Ejido Terrones & Benítez-Tula, 1179 m, N 22°59′28.9″, W 99°49′57.8″, 21.10.2006; Cañón de la Peregrina, 200 m, N 23°45′00″ W 99°15′00″, 11.12.2005; Ejido la Chaca-Mante, 84 m, N 22°49′3.54″W 99°03′4.17″, 24.07.2007; Cañón de Calamaco, 180 m, N 23° 43′00″ W 99°17′00″, 16.10.2005. **San Luis Potosí:** Hacienda Los Tulillos-Ébano, 1840 m, N 22°24′, W 101°10′, 21.08.2002; Taninul, 440 m, N 21° 56′7.64″ W 99° 24′30.7″, 27.07.2002.

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