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# *NEOTRICHONOTULUS*, A NEW GENUS FOR THREE MEXICAN APHODIINI (SCARABAEOIDEA, APHODIIDAE)

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**RESUMEN**

Se redescriben e ilustran *Aphodius inurbanus* Gordon & Howden, *A. perotensis* Deloya & Lobo, y *A. urangai* Islas. Para estas tres especies mexicanas se propone el nuevo género *Neotrichonotulus* con *Aphodius inurbanus* como especie tipo. El nuevo género se distingue fácilmente de *Trichonotulus* por tener la base del pronoto sin reborde y la cabeza glabra.
**Palabras Clave:** *Neotrichonotulus*, género nuevo, *Neotrichonotulus inurbanus, Neotrichonotulus perotensis, Neotrichonotulus urangai,* combinaciones nuevas, México

**ABSTRACT**

*Aphodius inurbanus* Gordon & Howden, *A. perotensis* Deloya & Lobo, and *A. urangai* Islas are redescribed and illustrated. The new genus *Neotrichonotulus* is proposed for the three Mexican taxa. The genus is easily distinguishable from *Trichonotulus* by having the pronotum not bordered at base and the head glabrous.
**Key words:** *Neotrichonotulus*, new genus, *Neotrichonotulus inurbanus, Neotrichonotulus perotensis, Neotrichonotulus urangai,* new combinations, Mexico.

## INTRODUCTION

As part of the ongoing revision of Mexican Aphodiini, *Neotrichonotulus* is proposed as a new genus for three species of that fauna based on characters described below. In addition to the generic description, redescriptions and illustrations are provided for all included species.

## ***Neotrichonotulus*** gen. nov.

**Type species:** *Aphodius inurbanus* Gordon & Howden, 1973

**Diagnosis:** *species parvae, elongatae, valde convexae, plus minusve opacae; caput glaber, pronotum elytraque pubescentia. Nigrescentes. Capite epistoma regulariter punctato, clypeo medio sinuato, lateribus rotundatis, margine glabro; genis fere haud prominulis; sutura frontali mutica. Pronoto transverso, valde convexo, basi immarginata. Scutello parvo, pentagonali. Elytris valde striatis,*

*subcrenulatis; interstitiis planis dense fortiterque punctatis. Metatibiis setis apicalibus longitudine gradatim inaequalibus.*

**Description:** small species (length 3.5-5.0 mm), elongate, subcylindrical; strongly convex, elytra somewhat flattened on disc; more or less dull or, at most, feebly shiny; head glabrous, pronotum and elytra with very short pubescence. Blackish, clypeal margin and sometimes pronotal sides and elytral apex more or less dark reddish-brown. Head with epistoma densely regularly punctured; clypeus sinuate at middle, obtusely rounded at sides, not bordered, margin glabrous and slightly upturned; genae rounded almost not protruding more than eyes; frontal suture finely impressed laterally, more or less widely interrupted at middle, not tuberculate at all; frons regularly punctured. Pronotum strongly convex, subquadrate or moderately transverse, with lateral margins straigth or regularly arcuate; hind angles obliquely truncate, with short bristles; base not bordered. Scutellum small, pentagonal with sides parallel toward base, sunk below elytra. Elytra elongate, strongly convex, with stout humeral denticle; deeply striate; striae more or less shiny, not or feebly crenulate; interstices flat, densely, coarsely punctured. Fore tibiae distally tridentate and proximally not serrulate at outer margin; upper side very sparsely and finely punctured. Meso- and metatibiae with two strong transverse carinae at outer face, apically fimbriate with stout and progressively unequal spinules. Pygidium distinctly miocroreticulate, rather sparsely irregularly subrugosely punctured; punctures rather elongately setigerous, setae recumbent; apical margin with several straight elongate setae. Sexual dimorphism shown in males by relative length of first tarsal segment, i. e. longer than following two combined, and by more deep median longitudinal groove of metasternal plate. Aedeagus with paramera apically curved and membranous. Epipharynx with anterior margin nearly straight, epitorma reaching front margin; corypha with six spiculae variously elongate and protruding anteriorly; chaetopariae dense, moderately elongate; pedia pubescent with more or less few irregularly stout mixed chaetae.

**Distribution:** Endemic to Mexico

**Remarks:** the primary distinguishing characters of the genus are the following: pronotum and elytra with short, sparse pubescence; head with the clypeus rounded at sides, with margin glabrous; frontal suture not tuberculate; scutellum small, pentagonal, with sides parallel toward base; pronotum with the base not bordered and with the hind angles obliquely truncate; elytra denticulate at shoulder; hind tibiae apically fimbriate with progressively unequal spinules.

The new genus is easily distinguishable from *Trichonotulus* by having the pronotum not bordered at base and the head glabrous.

The three species belonging at present to the genus seem to be all cleptocoprids of *Onthophagus*.

**Key to species**

**1** Sides of pronotum rounded, not at all sinuate before hind angles. Blackish; clypeal margin feebly reddish. Length 4.5-5.0 mm. Veracruz State . . . . . ***N. perotensis***

**1'** Sides of pronotum straight, feebly sinuate inwardly before hind angles . . . . . **2**

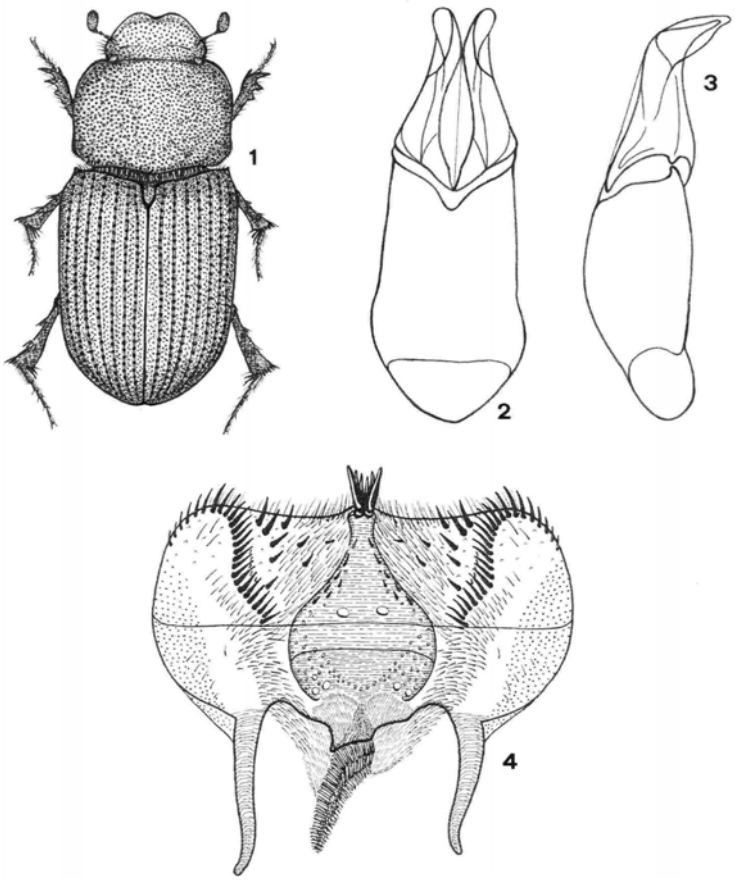
**2 (1)** Apical sutural angle of elytra drawn into strong blunt point. Blackish; clypeal margin, sides of pronotum and elytral apex feebly reddish. Length 4.0-4.5 mm. Mexico State . . . . . ***N. urangai***

**2'** Apical sutural angle of elytra rounded. Blackish; clypeal margin, anterior angles of pronotum and elytral apex reddish brown. Length 3.5-4.0 mm. Durango State . . . . . ***N. inurbanus***

***Neotrichonotulus inurbanus*** (Gordon & Howden, 1973) **comb. nov.**
(Figs 1-4)

*Aphodius inurbanus* Gordon & Howden, 1973: 442
*Aphodius (Trichonotulus) inurbanus;* Deloya & Lobo, 1995: 53

**Type locality:** 11 miles SW El Salto, Estado de Durango, México.
**Type depostory:** Canadian National Collection, Ottawa.




**Figures 1-4**
*Neotrichonotulus inurbanus* (Gordon & Howden, 1973): 1. Habitus (male, length 3.5 mm, 11 mi. SW El Salto, Estado de Durango, México); 2-3. Aedeagus (dorsal and lateral view); 4. Epipharynx.

**Redescription:** length 3.5-4.0 mm; elongate, subcylindrical, strongly convex but elytra somewhat flattened on disc, head feebly shiny, pronotum dull, elytra with shiny striae and interstices almost dull; head glabrous, pronotum and elytra with very short pale setae. Blackish; clypeal margin, anterior angles of pronotum and apex of elytra dark reddish-brown; legs brownish; antennal club piceous. Head with epistoma feebly convex, regularly rather densely punctured; clypeus narrowly sinuate at middle, obtusely rounded at sides; genae broadly rounded, sparsely, shortly

ciliate, faintly protruding more than eyes; frontal suture finely impressed at each side, widely interrupted at middle; frons regularly punctured, punctation somewhat coarser than that of epistoma. Pronotum subquadrate, strongly convex, doubly densely coarsely punctured; larger punctures, two times larger than smaller ones, denser on sides; anterior angle not projected anteriorly; lateral margins nearly straight, feebly inwardly sinuate before hind angles; latter widely obliquely truncate, with very short bristles; basal margin not bordered but crenulate by belt of coarse contiguous punctures, feebly bisinuate, sparsely and rather elongately ciliate. Scutellum microreticulate, superficially confusedly punctured. Elytra subparallel-sided, with stout denticle at shoulder; apical sutural angle simply rounded; striae wide, deep, distinctly punctured, feebly crenulate; interstices flat, distinctly microreticulate, with irregular longitudinal rows of rather coarse punctures. First tarsal segment of hind tibiae as long as following two combined. Male: hind tibiae superior apical spur shorter than first tarsal segment; metasternal plate relatively more sparsely punctured and with median longitudinal groove more deep. Female: hind tibiae superior apical spur as long as first tarsal segment; metasternal plate relatively more densely punctured and with median longitudinal groove less deep.

**Distribution:** known only from type locality.

**Bionomical remarks:** the species is probably a cleptocoprid since it was a common associate of the cells of *Onthophagus cuboidalis* Bates, 1887 (Gordon & Howden, 1973: 442).

**Material examined:** 2 males (paratypes): 11 mi. SW El Salto, Estado de Durango, Mexico, 14.06.1964, leg. H. F. Howden (Dellacasa Collection, Genova); 1 male (paratype): same data (Gordon Collection, Willow City); 1 female (paratype): 11 mi. SW El Salto, Estado de Durango, Mexico, 04.06.1964, leg. H. F. Howden (Dellacasa Collection, Genova); 1 female (paratype): 10 mi. W El Salto, Estado de Durango, Mexico, VI.1964, leg. H. F. Howden (National Museum of Natural History, Washington).

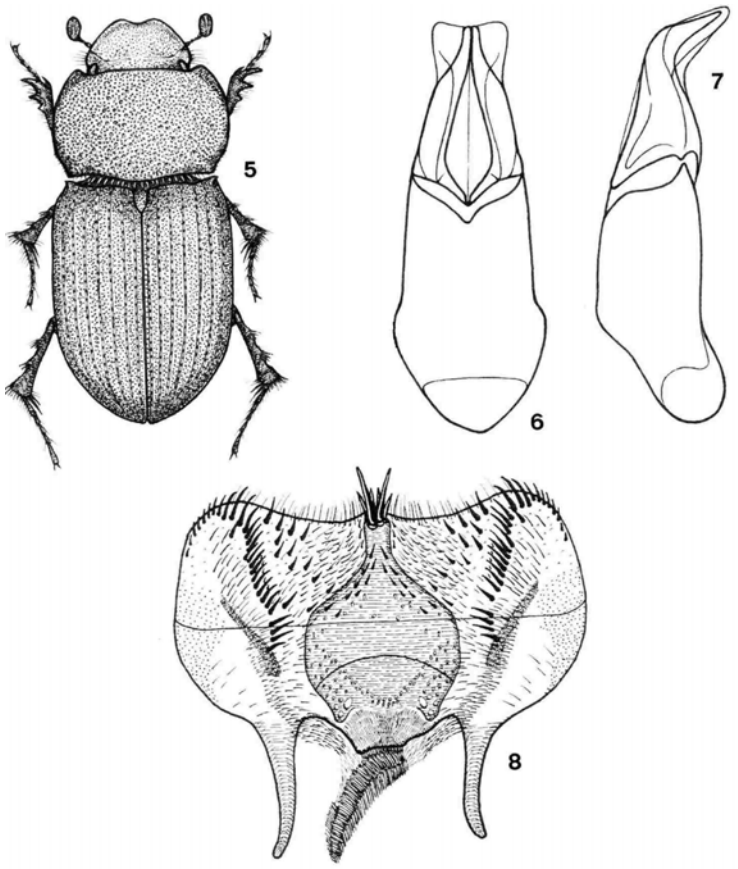
***Neotrichonotulus perotensis*** (Deloya & Lobo, 1995) **comb. nov.**
(Figs 5-8)

*Aphodius (Trichonotulus) perotensis* Deloya & Lobo, 1995: 50

**Type locality:** Los Pescados, Cofre de Perote, Estado de Veracruz, México.
**Type depostory:** Instituto de Ecología, Xalapa, México.

**Redescription:** length 4.5-5.0 mm; elongate, subcylindrical, strongly convex somewhat flattened on elytral disc; head shiny, pronotum moderately shiny, elytra subopaque; head glabrous, pronotum and elytra with very short pubescence. Blackish, clypeal margin shadowy reddish; legs piceous with tarsi paler; antennal club blackish. Head with epistoma feebly convex, simply, regularly, rather densely punctured; clypeus deeply sinuate at middle, obtusely rounded at sides; genae rounded, sparsely ciliate, slightly protruding more than eyes; frontal suture very thinly impressed, almost obsolete at middle; frons simply regularly rather densely punctured. Pronotum moderately transverse, globulous, with vestiges of longitudinal impunctate groove at basal half, finely microreticulate, doubly coarsely densely punctured; larger punctures, two times larger than smaller ones, somewhat coarser; sides regularly arcuate, not inwardly sinuate before hind angles; latter widely obliquely truncate and with short bristles; basal margin feebly bisinuate, not bordered, marked by belt of coarse punctures. Scutellum feebly convex, distinctly

microreticulate, superficially confusedly punctured. Elytra subparallel-sided, with stout humeral denticle; apical sutural angle somewhat plump and slightly protruding; striae deep, rather shiny, almost impunctate, not crenulate at all; interstices flat on disc, feebly convex on preapical declivity, distinctly microreticulate, coarsely rather regularly punctured; juxtasutural interstice toward apex, impunctate, shiny, more distinctly convex. Hind tibiae superior apical spur slightly longer than first tarsal segment. Male: hind tibiae superior apical spur shorter than first tarsal segment; metasternal plate relatively more sparsely punctured and with median longitudinal groove more deep. Female: hind tibiae superior apical spur as long as first tarsal segment; metasternal plate relatively more densely punctured and with median longitudinal groove less deep.




**Figures 5-8**
*Neotrichonotulus perotensis* (Deloya & Lobo, 1995): 5. Habitus (male, length 4.5 mm, Los Pescados, Cofre de Perote, Estado de Veracruz, México); 6-7. Aedeagus (dorsal and lateral view); 8. Epipharynx.

**Distribution:** Cofre de Perote mountain (Veracruz State, Mexico).

**Bionomical remarks:** the species was taken in the burrow systems of *Pappogeomys merriami* and it is probably a cleptocoprid of the brood masses of *Onthophagus hippopotamus* Harold, 1869 (Deloya & Lobo, 1996: 52).

**Material examined:** 2 males and 2 females (paratypes): Los Pescados, Cofre de Perote, m 3100, 11-12.08.1993, leg. Lobo J. M. (Museo Nacional de Ciencias Naturales, Madrid); 1 female: Los Pescados, Cofre de Perote, m 3200, 11.08.1993, leg. Lobo J. M. (Dellacasa Collection, Genova).

**Neotrichonotulus urangai** (Islas, 1955) **comb. nov.**
(Figs 9-12)

*Aphodius (Trichonotulus) urangai* Islas, 1955: 225; Deloya & Lobo, 1995: 48

**Type locality:** Tlamacas, Estado de México
**Type depostory:** Instituto de Biología de la Universidad Nacional Autónoma de México. Mexico City.

**Redescription:** length 4.0-4.5 mm; elongate, subcylindrical, strongly convex somewhat flattened on elytral disc; feebly shiny; head glabrous, pronotum and elytra with short pale setae. Blackish, clypeal margin, sides of pronotum and apex of elytra dark reddish-brown; legs brownish with tarsi paler; antennal club piceous. Head with epistoma feebly convex, finely and regularly punctured; clypeus feebly sinuate at middle, obtusely rounded at sides; genae broadly rounded, rather densely ciliate, not protruding more than eyes; frontal suture rather deeply impressed at sides, widely interrupted at middle; frons somewhat more coarsely punctured than epistoma. Pronotum subquadrate, strongly convex, distinctly microreticulate, densely coarsely, somewhat irregularly doubly punctured; larger punctures, two times larger than smaller ones, lacking on anterior third; antero-lateral angles moderately projected forwardly; lateral margin very thinly bordered, nearly straight, feebly inwardly sinuate before hind angles; latter obliquely truncate and with short bristles; basal margin feebly bisinuate, crenulate by belt of coarse contiguous punctures, not bordered, rather elongately ciliate. Scutellum superficially microreticulate, superficially confusedly punctured. Elytra subparallel-sided, with stout humeral denticle and sutural apical angle drawn out into strong blunt point; striae wide, deep, rather distinctly punctured, not crenulate; interstices superficially microreticulate, coarsely punctured, punctation somewhat confluent. Hind tibiae superior apical spur as long as first tarsal segment. Male: first segment of hind tarsi as long as following two combined. Female: first segment of hind tarsi shorter than following two combined.

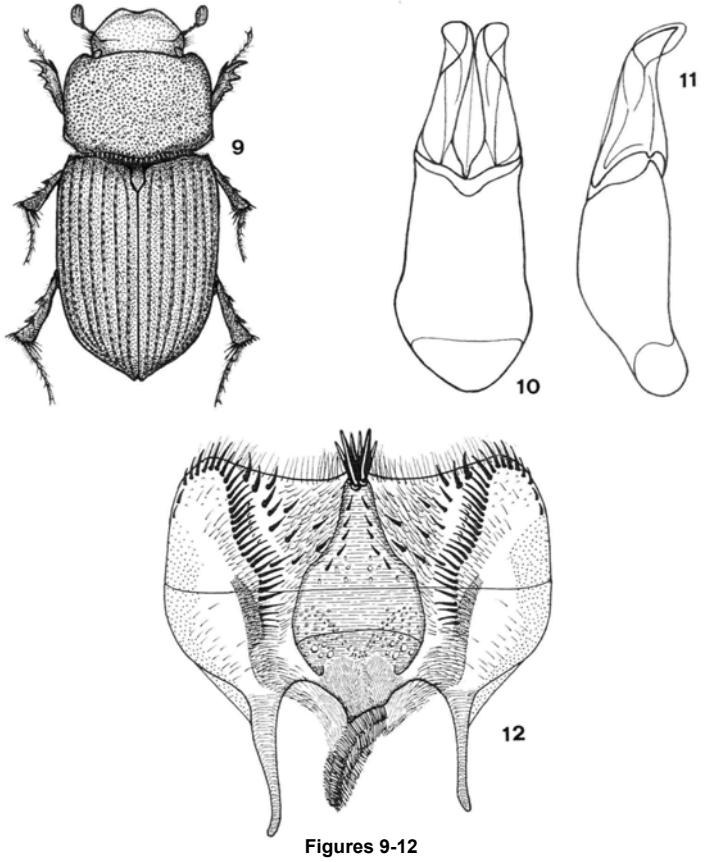
**Distribution:** Tlamacas and Amecameca (Mexico State, Mexico)

**Bionomical remarks:** the type specimens were taken in the burrows of *Pappogeomys* (Islas, 1955: 225).

**Material examined:** 3 males and 1 female: Amecameca, Estado de México, 13.10.1955 leg. Halffter G. & MacGregor R. (Anne & Henry Howden Collection, Ottawa)

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**Figures 9-12**
*Neotrichonotulus urangai* (Islas, 1955): 9. Habitus (male, length 4.0 mm, Amecameca, Estado de México, Mexico); 10-11. Aedeagus (dorsal and lateral view); 12. Epipharynx.

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