A new species of the weevil genus *Theodorinus* Korotyaev, 1982 (Coleoptera: Curculionidae: Ceutorhynchinae) from Spain

Новый вид жуков-долгоносиков рода *Theodorinus* Korotyaev, 1982 (Coleoptera: Curculionidae: Ceutorhynchinae) из Испании

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Theodorinus (*Atlantonyx*) *lopezcoloni* **sp. nov.** is described from Spain, closely related to *Th. latipennis* (Pic, 1905) from Algeria and Morocco, but differing in the noticeably narrower body, uniformly flat elytral intervals, narrower tarsi with 3rd tarsomere only slightly wider than 2nd, somewhat less convex scales, and absence of erect setae in the depression on anal ventrite in male. In the shape of body, evenly flat elytral intervals, position of the tubercle on 5th interval, and absence of erect setae on male anal ventrite the new species is more similar to the Moroccan *Th. peyerimhoffi* Korotyaev, 1994. It differs, in addition to the structure of aedeagus, in the broader, more widely overlapping scales on the body, much narrower odd-numbered elytral intervals than even-numbered ones, and, prima facies, in the still more advanced denticle on the 5th interval of elytra.

Описан новый вид жуков-долгоносиков *Theodorinus* (*Atlantonyx*) *lopezcoloni* **sp. nov.** из Испании, близкий к *Th. latipennis* (Pic, 1905) из Алжира и Марокко, но отличающийся значительно более узкой формой тела, плоскими промежутками надкрылий, более узкими лапками с 3-м члеником лишь едва превышающим по ширине 2-й, немного менее выпуклыми чешуйками и отсутствием торчащих щетинок во вдавлении на анальном стерните у самца. По форме тела, плоским промежуткам надкрылий, положению бугорка на 5-м промежутке надкрылий и отсутствию торчащих щетинок во вдавлении на анальном стерните у самца новый вид более сходен с *Th. peyerimhoffi* Korotyaev, 1994 из Марокко, но отличается от него, помимо строения эдеагуса, более широкими и сильнее перекрывающимися краями чешуйками на поверхности тела, заметно более широкими нечетными промежутками надкрылий и, в особенности, еще сильнее выдвинутым вперед бугорком на 5-м промежутке надкрылий.

Key words: Spain, Coleoptera, Curculionidae, Ceutorhynchinae, Oxyonychini, *Theodorinus*, *Atlantonyx*, *Ephedra*, new species

Ключевые слова: Испания, Coleoptera, Curculionidae, Ceutorhynchinae, Oxyonychini, *Theodorinus*, *Atlantonyx*, *Ephedra*, новый вид

INTRODUCTION

The two genus-group taxa *Theodorinus* Korotyaev, 1982 and *Atlantonyx* Korotyaev, 1999 are treated as separate genera by Colonnelli (2004) although the differences are limited to the degree of the development of xeromorphic features, i.e. thickness of the vestiture and width of the tarsi. *Theodorinus* has moderately dense vestiture formed by separate, neither imbricate nor tightly appressed to the integument, snow-white and dark brown scales forming a contrasting pattern on dorsal surface. The third tarsal

segment in *Theodorinus* is noticeably wider than the 2nd segment, and sole surface is covered with fine dense hairs.

Atlantonyx (Figs 1–6) differs in the imbricate, rounded scales somewhat convex in the center and tightly appressed to the elytra and pronotum, and a dorsal pattern often three-coloured with pale sand-coloured scales. The tarsi are narrower, with the 3rd segment inconspicuously wider than the 2nd; sole surface with coarser, in some species spiniform setae. The set of differences characterizes *Atlantonyx* as a more xeromorphic taxon. Noteworthy, all its species have the aedeagus with variably long apical projection (Figs 2–4) while the apex of aedeagus in the three *Theodorinus* s. str. species whose males are known is not produced. The aedeagus apex is similarly attenuate in two species of the subgenus *Aferonyx* Korotyaev, 1998 of the genus *Pseudoxyonyx* Hoffmann, 1956, *P. pici* (Schultze, 1900) and *P. cailloli* (Peyerimhoff, 1919) (Figs 7–9), which have the vestiture, tarsi, and elytral pattern very similar to those in *Atlantonyx* and also are distributed in the southern Mediterranean Region (mostly in the west). One may speculate that the more xerophilic species of Oxyonychini independently acquired this feature in the aedeagus shape probably to reduce transpiration through the apical part of the abdomen during copulation. The only other genus of this tribe that fits this assumption is *Oxyonyx* Faust, 1885, in which the most xerophilic *O. kaszabi* Voss, 1967 occurring in the extra-arid Gobian deserts has the aedeagus with the longest apical projection (Korotyaev, 1982) whereas the apex of the aedeagus is not produced in the species living among savannoid (*O. major* Korotyaev, 1982) or maquis to semidesert [*O. brisouti* (Faust, 1885)] vegetation.

The evidently parallel development of the set of xeromorphic features in the two pairs of the genus-group taxa, *Pseudoxyonyx* – *Aferonyx* and *Theodorinus* – *Atlantonyx*, would not seriously contradict treating the two pairs as genera including two subgenera each. Thus, we adopt here the previous concepts of the genera *Pseudoxyonyx* (including subgenus *Aferonyx*) and *Theodorinus* (with *Atlantonyx* as a subgenus).

MATERIAL AND METHODS

The length of body was measured from anterior margins of eyes to the apex of the elytra.

Holotype is in the Coll. Alonso-Zarazaga of the Museo Nacional de Ciencias Naturales (MNCN–CSIC), Madrid, Spain, together with 17 paratypes; 7 paratypes, in the Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN); two paratypes are to be transferred to the Enzo Colonnelli's collection, Rome.

TAXONOMIC PART

FAMILY **CURCULIONIDAE** Latreille, 1802

Genus ***Theodorinus*** Korotyaev, 1982

Subgenus ***Atlantonyx*** Korotyaev in Alonso-Zarazaga & Lyal, 1999

Theodorinus (*Atlantonyx*) *lopezcoloni* sp. nov.

(Figs 1, 2)

Holotype. Male, **Spain**: "España, Cerro del Telégrafo, Rivas-Vaciamadrid (MADRID), 16.V.1992 (J.I. López-Colón)", "Holotypus *Theodorinus lopezcoloni* Korotyaev et Alonso-Zarazaga" (MNCN). MNCN Type Catalogue no. 2003.

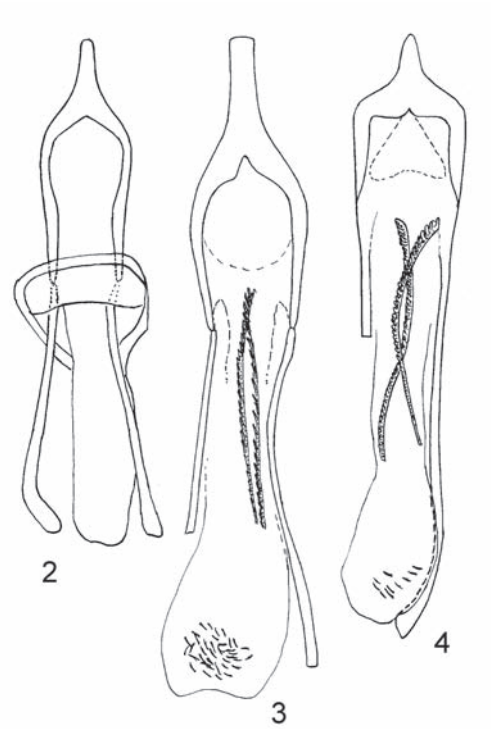
Paratypes. **Spain**: same locality and collector as holotype, but differing in typesetting or handwriting, and date: 1 female, as holotype; 2 males, 1 May 1992; 1 female, 7 May 1992 (ZIN); 1 male, 1 female, 9 May 1992; 3 males, 2 females, 30 May 1992 (ZIN) and 2 males, 1 female (MNCN); 3 males, 2 females, 16 May 1993 (MNCN); 1 male, 7 June 1992 (MNCN); 1 male, 1 female, 29 May 1993; 1 female, 8 May 1994 (MNCN); 1 female, 19 June 1992 but collector M.A. Alonso-Zarazaga; 1 male, "ESPAÑA Teruel Albarracin 1170 m, 22–26 Sept 1995 (A. Teunissen)" (ZIN); id., 1 male (MNCN).

Description. Body length 1.85–2.15 mm.

Fig. 1. *Theodorinus lopezcoloni* **sp. nov**.

Body dark brown, completely covered with large, wide, convex, overlapping, pearl-like shining scales arranged in 1 or 2 rows on elytral intervals; striae of elytra with narrow-lanceolate scales, also concealing integument (Fig. 1). Dorsal surface with contrasting pattern. Frons and pronotum dark brown with pale greyish anterolateral and basal spots. Elytra with wide transverse basal band projecting along odd-numbered intervals; another dark band occupying most of apical half of elytra and leaving pale areas along apex of suture and behind apical tubercles. Median part of pronotal disc and posterior half of dark apical band on elytra sometimes paler brown than rest of pattern. Underside and legs pale with infuscate areas of varying size on mesepimera, sides of abdomen, and on legs.

Rostrum of male 1.24–1.29 times as long as pronotum, moderately and evenly curved, occasionally somewhat less strongly curved in apical half; weakly flattened (about 1.2 times as wide as deep), subparallel-sided, slightly narrowing at antennal insertion. Median carina narrow at base, vanishing



Figs 2–4. *Theodorinus* spp., aedeagus dorsally; Figs 3, 4 after Korotyaev, 1994. **2** – *Th. lopezcoloni* **sp. nov.**; **3** – *Th. latipennis*; **4** – *Th. peyerimhoffi*.

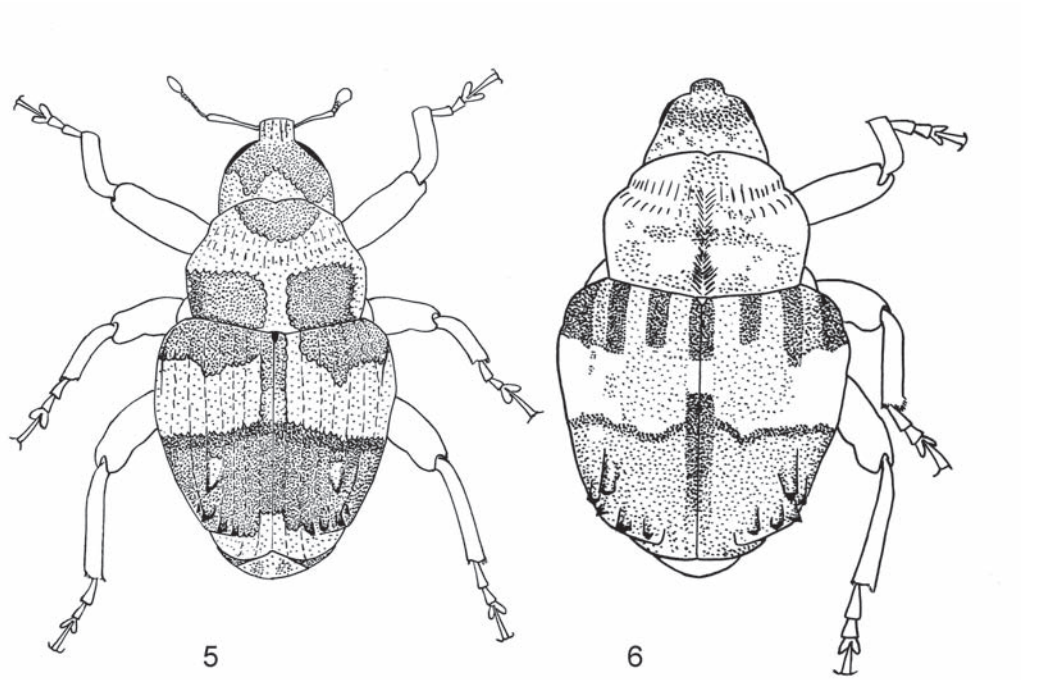
under scaling close to eyes, and widening apically, noticeably extending beyond antennal insertion. Finer admedian carinae separated from median one by narrow punctate striae running along its entire length. Apical third of rostrum shining, with rows of fine punctures along sides. Antennae inserted at 0.44–0.50 length of rostrum from base, slender, funicle 7-segmented, filiform. 1st segment of funicle longest, about as long as 2nd and 3rd segments combined; 4th segment about as long as 3rd and about 1.5 times as long as 5th, 6th as long as, and slightly wider than 5th, 7th slightly shorter and noticeably wider than 6th. Club moderately long, with conical apex and somewhat attenuate base, clearly separated from funicle. 4–7th funicular segments with long fine erect hairs. Eyes medium-sized, rounded triangular, flat; their inner margins slightly raised above flat frons surface.

Pronotum of male moderately transverse, 1.29–1.30 times as wide as long, with straight base and moderately raised, roundly produced over head and shallowly excised in middle anterior margin. Sides strongly convex and sharply constricted in apical part, rather long apical area moderately narrowing anteriorly. Disc rather strongly convex; median sulcus entire, deepened in round fovea at base and less strongly so, in apical constriction. No lateral tubercles present. Scutellum minute.

Elytra of male short, 1.07–1.09 times as long as wide, with moderately convex humeral prominences, roundly widening along short distance behind them, afterwards first weakly, then strongly narrowing to apices. Disc moderately and evenly convex. 3rd, 4th, 6th and 7th intervals with large truncate dent at apex, 5th interval with a much larger dent far anteriad apical row. Dents in apical row arranged in oblique curve in dorsal view; 3 inner dents situated at one level and lying on one straight line in posterior view, dent on 7th interval the smallest and situated somewhat below that on 6th interval. Elytral striae linear; intervals weakly convex or almost flat, odd-numbered intervals wider and more strongly convex than even-numbered ones.

Legs of male short; middle and hind femora with weak angular prominence somewhat after middle. All tibiae mucronate. Foretibia weakly narrowed near apex, with dense short spines on apical margin not extending on outer surface of tibia. Middle and hind tibiae straight, with longer and finer mucrones; apical combs slightly beveled on their outer surface. Tarsi narrow; 3rd tarsomere of fore tarsus shortly bilobate, half as long as, and only slightly wider than 2nd tarsomere. 5th tarsomere moderately widening apically, by 0.8 of its length extending beyond lobes of 3rd tarsomere. 1st and 2nd tarsomeres with moderately coarse dark setae ventrally, 3rd tarsomere with usual brushes of fine pale hairs.

Anal ventrite of male shallowly and broadly depressed, without erect setae in



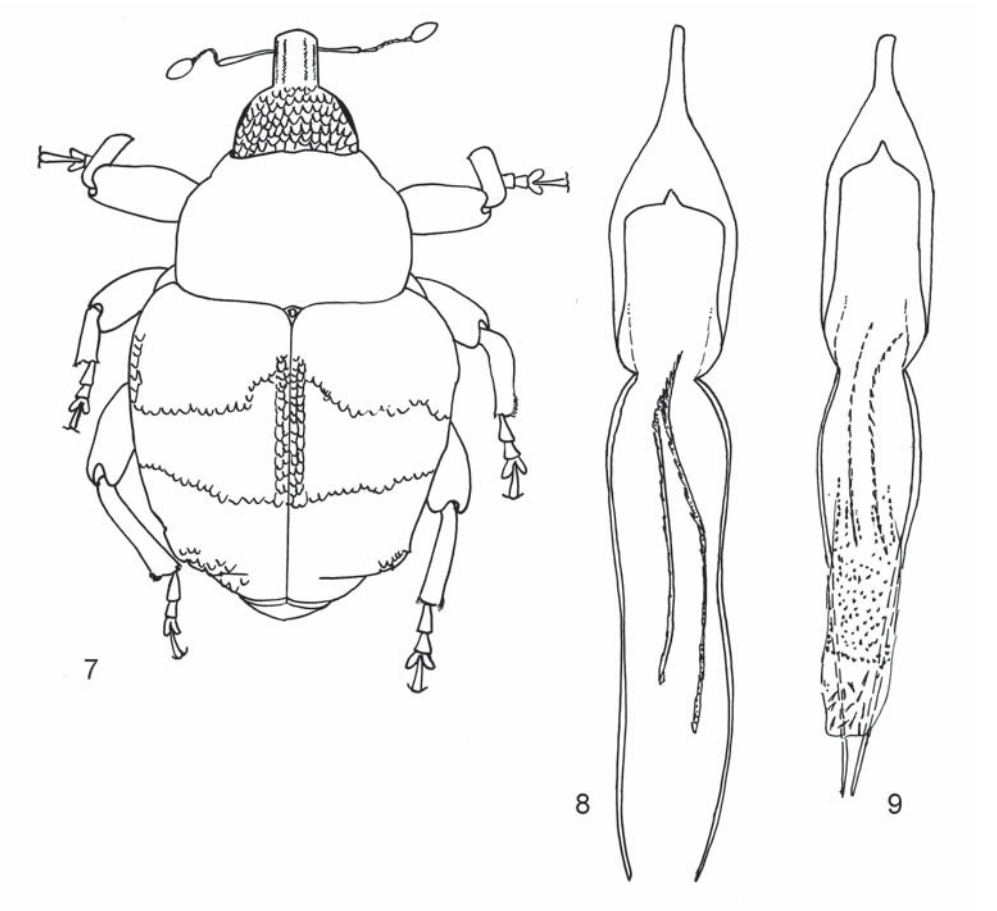
Figs 5, 6. *Theodorinus*, after Korotyaev, 1994. **5** – *Th. peyerimhoffi*; **6** – *Th. latipennis*.

depression. Pygidium transverse, weakly convex.

Aedeagus with long apical prominence (Fig. 2).

In female, rostrum 1.34 times as long as pronotum, obsoletely widening apically, shining except for a short basal area covered with scales. Rostral sculpture somewhat finer than in male. Antennae inserted at 0.47 length of rostrum from base. Pronotum 1.30 times as wide as long. Elytra 1.13 times as long as wide. All tibiae mucronate. Anal ventrite not depressed. Pygidium transverse, slightly shorter than in male, rounded apically, weakly convex.

Comparison. This is the third known species of the subgenus *Atlantonyx* Korotyaev (Korotyaev in Alonso-Zarazaga & Lyal 1999: 106 – replacement name for *Berberonyx* Korotyaev, 1994, non Jeannel, 1956) formerly including *Th. latipennis* (Pic, 1905) from Algeria and Morocco, and *Th. peyerimhoffi* Korotyaev, 1994, from Morocco. In the structure of the aedeagus with a very long apical process and odd-numbered elytral intervals being much narrower than even-numbered intervals, the new species is very similar to *Th. latipennis* (Figs 3, 6), differing in the noticeably narrower body, uniformly flat elytral intervals, narrower tarsi with 3rd segment only slightly wider than 2nd, somewhat less convex scales, and absence of erect setae in the depression on male anal ventrite. In the shape of body, evenly flat elytral intervals, position of the tubercle on 5th interval, and absence of erect setae on male anal ventrite the new species is more similar to the Moroccan *Th. peyerimhoffi*. It differs, in addition to the structure of aedeagus, in the broader, more widely overlapping scales on the body, much narrower odd-numbered elytral intervals as compared to even-numbered ones, and, prima facies, in the still more advanced denticle on 5th interval of elytra. The distance from the denticle on 5th interval to that on 3rd interval is equal to distance between apices of denticles on 3rd intervals on the two elytra, whereas the respective distance in *Th. peyerimhoffi* comprises about 0.7 of



Figs 7–9. *Pseudoxyonyx*, habitus **(7)** and aedeagus **(8, 9)**, after Korotyaev, 1998. **7, 8** – *P. pici* (Schultze, 1900); **9** – *P. cailloli* (Peyerimhoff, 1919).

that between denticles on 3rd intervals, and in *Th. latipennis*, 0.6 of that. The denticles on 3rd, 4th, and 6th intervals are separated by about 1.5 their widths in the new species; by own width, in *Th. peyerimhoffi*, and by less than width, in *Th. latipennis*. Tarsi in the new species are narrower than in the both African species, with slightly coarser setae of ventral surface. The set of characters distinguishing the new species presumes its derived nature and more xerophilic habits as compared to the two African species.

Theodorinus hispanicus Colonnelli, 1995 was correctly described in the nominotypical subgenus but is placed in *Atlantonyx* in the World catalogue of Ceutorhynchinae (Colonnelli, 2004). The holotype of this species has been examined by us.

*Etymology***.** The species is named for the Spanish coleopterologist J.I. López-Colón.

Bionomics. The type locality is a gypsaceous hill, now almost completely covered with houses, 680 m high [UTM 30TVK5568]. In the topmost area, one large female plant of *Ephedra fragilis* Desf. was surrounded by almost 20 dwarf male bushes. All the specimens of *Th. lopezcoloni* were taken from the female plant between the beginning of May and mid-June, when they became exceptional. Some labels have a different name for the *Ephedra* species, but this is an error.

Key to species of the subgenus *Atlantonyx*

1(2). Body larger (2.4–2.6 mm) and more robust, elytra 1.04 times as long as wide. Odd-numbered elytral intervals noticeably more strongly convex than even-numbered intervals. Distance from denticle on 5th interval to that on 3rd interval 0.6 times distance between apices of denticles on apices of 5th intervals on two elytra. Denticles on apical prominences separated by less than own width. Aedeagus (Fig. 3) produced in long process apically. Algeria . . . . . ***Th.* (*Atlantonyx*) *latipennis***

2(1). Body smaller (1.85–2.4 mm) and narrower, elytra 1.07–1.13 times as long as wide. All elytral intervals flat or slightly convex. Distance from denticle on 5th interval to that on 3rd interval 0.7–1.0 times distance between apices of denticles on apices of 5th intervals on two elytra. Denticles on apical prominences separated by not less than own width. Morocco, Spain.

3(4). Aedeagus with long apical process (Fig. 2); body length 1.85–2.15 mm. Spain . . . . . ***Th.* (*Atlantonyx*) *lopezcoloni* sp. nov.**

4(3). Aedeagus with short apical process (Fig. 4); body length 1.95–2.4 mm. Morocco . . . . . ***Th.* (*Atlantonyx*) *peyerimhoffi***

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