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Scarabaeidae: Aphodiinae)

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Oxyomoides, a new genus for three species of *Scabrostomus* Gordon and Skelley, 2007 in the southeastern United States (Coleoptera: Scarabaeidae: Aphodiinae)

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Abstract. The **new genus** *Oxyomoides* (Coleoptera: Scarabaeidae: Aphodiinae) is established for three species, *O. baileyi* (Skelley and Gordon, 2002), *O. dyspistus* (Skelley and Woodruff, 1991), and *O. sepultus* (Cartwright, 1944) previously placed in the genus *Scabrostomus* Gordon and Skelley, 2007.

Key words. Systematics, new combinations, southern U.S.A.

Introduction

With the aim to have a systematic panorama of Mexican Aphodiinae as complete as possible, several taxa with distribution recorded from neighbouring countries, mostly those of southern United States, have been examined.

The thorough study of *Aphodius sepultus* Cartwright, 1944, a species known from Arkansas, Kansas, Louisiana and Texas, considered by Gordon and Skelley (2007) to belong to a peculiar group of species, the sepultus group, of the genus *Scabrostomus* Gordon and Skelley, convinced us of the need to establish for it and its sibling species, *A. dyspistus* Skelley and Woodruff, 1991 and *A. baileyi* Skelley and Gordon, 2002, a new genus *Oxyomoides*.

The peculiar characteristics of the new genus are:

- epistome coarsely granulate;
- upper side almost entirely pubescent;
- scutellum small, triangular;
- hind tibiae apically fimbriate with spinules rather short, stout and irregularly alternately unequal;
- aedeagus with parameres with more or less elongate fine membranous apical appendages;
- epipharynx with anterior margin straight, epitorma guttiform and corypha not protruding from the anterior margin.

The new genus belongs in a group of taxa characterized by the hind tibiae evenly or abruptly widened toward apex and apically fimbriate with spinules rather short, stout and irregularly alternately unequal. It is most similar to *Xeropsamobeus* Saylor and *Scabrostomus* and can be distinguished from them as follows:

1. Head with epistome coarsely granulate, each granule shortly haired; dorsally almost entirely pubescent. Species more or less dark brown. Length 3.0–4.0 mm. Nearctic region ***Oxyomoides* new genus**
- Head with epistome confusedly granulo-rugosely or creberly punctured; dorsally glabrous or almost glabrous, rarely epistome and elytral declivity vaguely pubescent **2**
2. Clypeus denticulate at sides of median sinuosity; hind tibiae rather abruptly, strongly widened toward apex. Species testaceous or reddish, elytra usually paler. Length 3.0–6.0 mm. Nearctic region ***Xeropsamobeus* Saylor**
- Clypeus rounded at sides of median sinuosity; hind tibiae evenly widened toward apex. Species reddish or testaceous; head and pronotum darker. Length 3.0–5.0 mm. Nearctic region ***Scabrostomus* Gordon and Skelley**

Material and Methods

The geographical distributions are reported from the reliable records cited by Gordon and Skelley (2007). Terminology used to describe morphological features follows that of Dellacasa et al. (2001). Materials studied are in the following collection, **DCGI** – Dellacasa Collection, Genoa, Italy.

Genus *Oxyomoides* new genus

Type species. *Aphodius sepultus* Cartwright, 1944.

Diagnosis. Small species (length 3.0–4.0 mm), weakly elongate, convex, dull or weakly shiny, pubescent. Dark brown. Head with epistome granulate throughout; clypeus weakly sinuate at middle, round at sides, glabrous; genae protruding from the eyes; frontal suture with three more or less distinct tubercles; front coarsely, not closely punctured, punctures shortly setigerous. Pronotum convex, transverse, coarsely, more or less densely, somewhat irregularly punctured, punctures mostly on sides shortly setigerous; lateral margins glabrous; hind angles obtuse; base bordered or not. Scutellum small, triangular, coarsely punctured basally. Elytra convex, weakly elongate, subparallel-sided, deeply striate; striae crenulate or not, with subcordiform, geminate or simple punctures; interstriae more or less strongly convex, sometimes subcarinate and sharply finely margined on each side, dually longitudinally serially punctured, punctures with more or less elongate recumbent hairs. Hind tibiae apically fimbriate with spinules rather short, stout and irregularly alternately unequal. Pygidium distinctly alutaceous, superficially irregularly punctured, punctures with elongate recumbent hairs. Sexual dimorphism shown in males mostly by inferior spur of middle tibiae shortened and apically truncate. Aedeagus with elongate parameres, apically with more or less elongate thin membranous appendages. Epipharynx with anterior margin straight; epitorma guttiform; corypha not protruding from the anterior margin and with a clump of apical celtes rather short; pedia pubescent, with lateral rather elongate spines subserially arranged; chaetoparia moderately elongate and moderately dense.

Distribution. Southern United States.

Etymology. The name results from the combination of the genus name *Oxyomus* and the suffix *-oides* [having the form of]. The gender is masculine.

Key to species of *Oxyomoides*

1. Elytral striae strongly crenulate, with subcordiform punctures (Fig. 10) and nearly as wide as interstriae; base of pronotum not bordered but marked by a belt of large, coarse, contiguous punctures simulating a sort of edge. Dark brown. Length 3.0–3.5 mm. U.S.A. (Alabama, Florida, Georgia) ***O. dyspistus* (Skelley and Woodruff)**

- Elytral striae feebly or not at all crenulate; base of pronotum not bordered 2
2. Dorsal surface dull; elytral striae feebly crenulate, rather closely punctured, geminate (Fig. 16); interstriae moderately convex, with a fine sharp border on each side near striae. Dark brown. Length 3.0–3.5 mm. U.S.A. (Arkansas, Kansas, Louisiana, Texas) ***O. sepultus* (Cartwright)**
- Dorsal surface moderately shiny; elytra striae not crenulate, simply not closely punctured (Fig. 4); interstriae simply convex. Dark brown, Length 3.0–4.0 mm, U.S.A. (Alabama, Florida, Georgia) ***O. baileyi* (Skelley and Gordon)**

***Oxyomoides baileyi* (Skelley and Gordon, 2002) new combination**

(Fig. 1–6)

Aphodius baileyi Skelley and Gordon, 2002: 85.

Scabrostomus baileyi; Gordon and Skelley 2007: 531.

Type locality. 2.7 mi S. Jct. Rt. 19 on New Hope Road, Sedgfield Plantation, Thomas Co., Georgia, U.S.A.

Type repository. Florida State Collection of Arthropods, Gainesville, Florida, U.S.A. (paratype examined).

Redescription. Length 3.0–4.0 mm; elongate, convex, shiny, shortly pubescent. Dark brown; clypeal margin. anterior angles of pronotum, legs and antennal club reddish brown. Head with epistome slightly convex medially, granulate throughout; clypeus faintly sinuate at middle, broadly round at sides, distinctly bordered, edge reflexed, glabrous; genae obtusely round, rather sparsely ciliate, moderately protruding from the eyes; frontal suture trigibbous; front coarsely not closely punctured, most punctures with short recumbent hairs. Pronotum transverse, convex, faintly alutaceous thus moderately shiny, irregularly not closely punctured, mostly the lateral punctures with short recumbent hairs; lateral margins weakly arcuate, distinctly bordered, edge glabrous; hind angles obtuse; base distinctly bordered. Scutellum irregularly coarsely punctured on basal half. Elytra oval elongate, convex, faintly alutaceous thus moderately shiny, deeply striate; striae narrow, superficially not closely punctured, not crenulate; interstriae convex, bearing laterally two longitudinal rows of distinct shortly pubescent punctures. Hind tibiae superior spur shorter than first tarsal segment; latter as long as following two segments combined. Male: inferior spur of middle tibiae less than half shorter than superior and obliquely truncate apically; aedeagus Fig. 2–3. Female: inferior spur of middle tibiae slender, straight, and acuminate.

Material examined. U.S.A.: Georgia: 1.2 mi NE Gresston on Wilson Woodyard Rd., Dodge Co., 08-30. III.1997, leg. P. E. Skelley & P. W. Kovarik, *Geomys* burrow pitfall (6 exx., paratypes, DCGI).

Distribution. U.S.A. (Alabama, Florida, Georgia).

Bionomics. Most specimens examined were collected in winter from burrows of the southeastern pocket gopher, *Geomys pinetis* Rafinesque.

***Oxyomoides dyspistus* (Skelley and Woodruff, 1991) new combination**

(Fig. 7–12)

Aphodius dyspistus Skelley and Woodruff, 1991: 518; Skelley and Gordon 2002: 88.

Aphodius (*Amidorus*) *dyspistus*; Dellacasa 1988: 169.

Scabrostomus dyspistus; Gordon and Skelley 2007: 534.

Type locality. 2.5 mi. SW of Archer, Alachua Co., Florida, U.S.A.

Type repository. Florida State Collection of Arthropods, Gainesville, Florida, U.S.A. (type not examined).

Redescription. Length 3.0–3.5 mm; moderately elongate, convex, weakly shiny, pubescent. Dark brown; clypeal margin, legs and antennal club reddish brown. Head with epistome convex, coarsely granulate, superficially alutaceous between granules with semirecumbent hairs; clypeus slightly sinuate at middle, broadly round at sides, finely bordered, edge moderately reflexed, glabrous; genae obtusely round, rather shortly ciliate, protruding from the eyes; frontal suture weakly tuberculate mostly laterally; front rugosely, coarsely irregularly punctured. Pronotum transverse, convex, slightly dull, feebly depressed near anterior and posterior angles, densely, coarsely and somewhat irregularly punctured throughout; punctures with short recumbent hairs, the larger punctures faintly umbilicate; lateral margins arcuate, distinctly bordered, edge glabrous; hind angles obtuse; basal margin not bordered but marked by a series of deep, coarse and contiguous punctures. Scutellum coarsely irregularly punctured. Elytra convex, oval elongate, almost opaque, deeply striate; striae coarsely distinctly punctate, subcordately crenulate, nearly as wide as interstriae (Fig. 10); interstriae subcariniform, with a double row of punctures bearing short recumbent hairs. Hind tibiae superior spur shorter than first tarsal segment; latter nearly as long as following two segments combined. Male: inferior spur of middle tibiae half length of superior and apically truncate; aedeagus Fig. 8–9. Female: inferior spur of middle tibiae not so shortened and regularly acuminate.

Material examined. U.S.A.: Alabama: Ft. Rucker Military Res., Dale Co., 29.I.1993, leg. P. Skelley, R. Turnbow & M. C. Thomas, *Geomys* nest or dung chamber (4 exx., DCGI); **Florida:** 4.0 mi SW Archer, Levy Co., 25.I.1992, leg. Heyer, Skillman & Skelley, *Geomys* chamber (3 exx., DCGI); 2.5 mi E Melrose, Putnam Co., 22-24.XII.1992, leg. P. Skelley, *Geomys* burrow (1 ex., DCGI); Deerland, 2.8 mi W Co. Line on US-90, Okaloosa Co., 17-31.XII.1991, leg. P. Skelley, pocket gopher burrow (2 exx., DCGI); **Georgia:** 1.2 mi NE Gresston on Wilson Woodyard Rd., Dodge Co., 08-30.III.1997, leg. P. E. Skelley & P. W. Kovarik, *Geomys* burrow pitfall (4 exx., DCGI); 4.4 mi N Metcalf on St. 59, Thomas Co., 13-21.I.1996, leg. P. E. Skelley, P. W. Kovarik & R. Turnbow, *Geomys* burrow pitfall (4 exx., DCGI).

Distribution. U.S.A. (Alabama, Florida, Georgia).

Bionomics. Most specimens were taken from burrows of *Geomys pinetus* in winter and early spring.

***Oxyomoides sepultus* (Cartwright, 1944) new combination**
(Fig. 13–18)

Aphodius sepultus Cartwright, 1944: 146.

Aphodius (Amidorus) sepultus; Dellacasa 1988: 197.

Scabrostomus sepultus; Gordon and Skelley 2007: 534.

Type locality. 8 miles South of Somerset, Texas [U.S.A.].

Type repository. California Academy of Sciences. San Francisco (paratype examined).

Redescription. Length 3.0–3.5 mm; moderately elongate, convex, subshiny, pubescent. Brown; clypeal margin and pronotal sides paler; legs reddish brown; antennal club brownish. Head with epistome feebly convex, closely moderately granulate throughout, alutaceous between granules, distally with nearly imperceptible hairs; granulation somewhat confused proximally; clypeus subsinuate at middle, broadly round at sides, thinly bordered, edge glabrous and slightly reflexed; genae broadly round, sparsely shortly ciliate, moderately protruding from the eyes; frontal suture medially obsolete, feebly raised laterally; front coarsely, rather confusedly rugose. Pronotum transverse, convex, feebly depressed near anterior and posterior angles, simply, coarsely punctured throughout; large, umbilicate punctures

contiguous and, mainly laterally, with short recumbent hairs; lateral margins feebly arcuate, thickly bordered, edge glabrous; hind angles obtusely round; base feebly bisinuate, finely somewhat irregularly bordered. Scutellum strongly alutaceous, irregularly punctured. Elytra convex, moderately elongate, slightly wider posteriorly; striae geminate, few deep, finely, not closely punctured, faintly crenulate; interstriae slightly convex, strongly alutaceous, with extremely fine sharp border on each side and with double longitudinal row of close, coarse punctures bearing recumbent hairs moderately long. Hind tibiae superior spur somewhat shorter than first tarsal segment; latter as long as following two segments combined. Male: inferior spur of middle tibiae shortened, slightly bent inwardly, truncate apically; aedeagus Fig. 14–15. Female: inferior spur of middle tibiae rather elongate, and regularly acuminate.

Material examined. U.S.A.: Texas: 8-mi South of Somerset, 10.I.1940, leg. A. J. Kirn & E. S. Ross, from *Geomys* burrow (2 exx., paratypes, DCGI); *idem*, 27-29.XI.1942, leg. A. J. Kirn, from *Geomys* burrow (1 ex., paratype, DCGI); *idem*, 28.XI.1942, leg. A. J. Kirn, from *Geomys* burrow (1 ex., paratype, DCGI); *idem*, 27.XII.1942, leg. E. S. Ross, from *Geomys* burrow (2 exx., paratypes, DCGI).

Distribution. U.S.A. (Arkansas, Kansas, Louisiana, Texas).

Bionomics. Late autumn and winter species often collected from burrows of pocket gophers, *Geomys* spp.. Kovarik et al. (2008), Tishechkin and Cline (2008), Connior (2011), and Connior et al. (2014) report on more recent collections in pocket gopher burrows in Arkansas and Louisiana.

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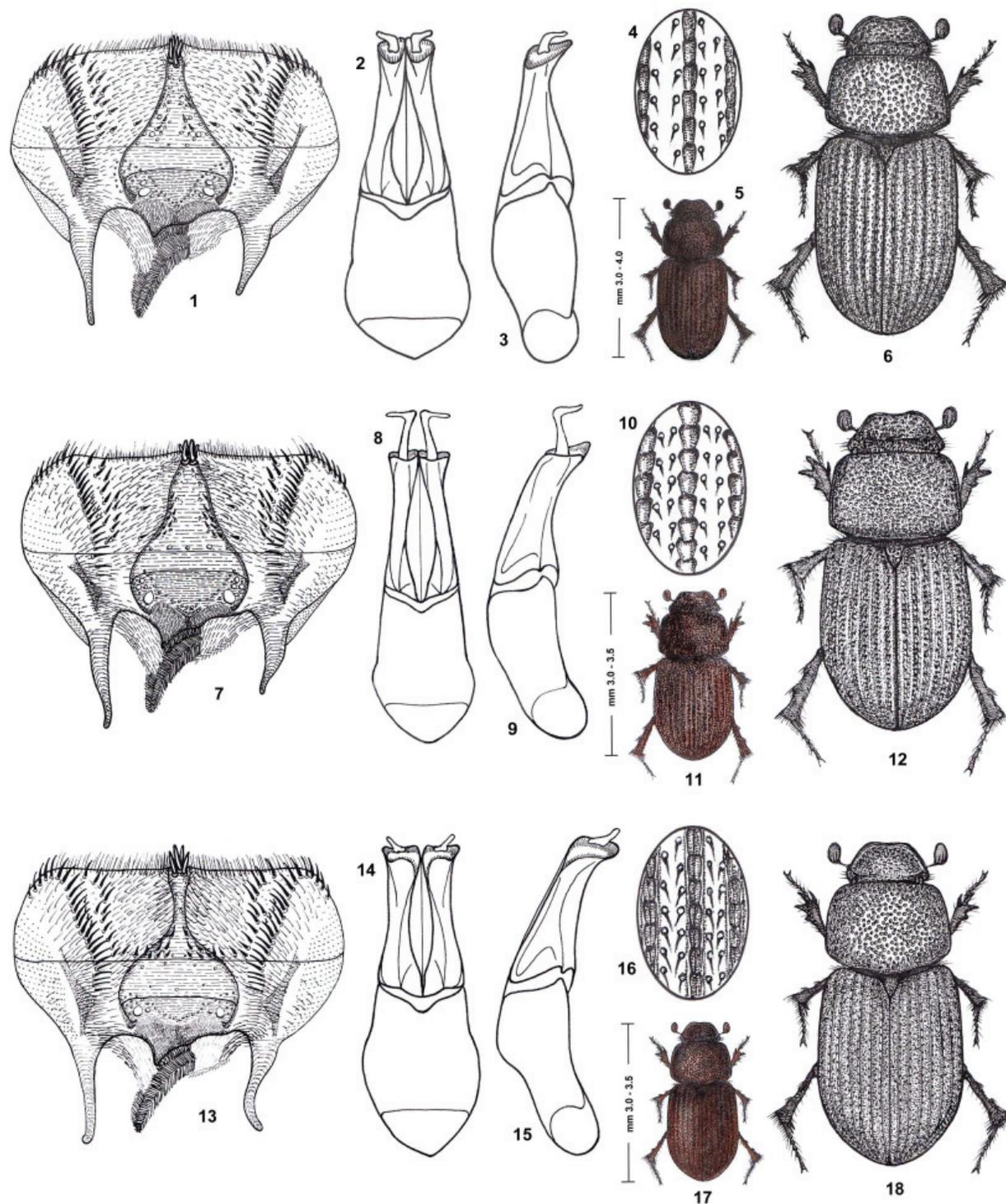
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Figures 1-18. *Oxyomoides baileyi* (Skelley and Gordon, 2002) (1.2 mi NE Gresston on Wilson Woodyard Rd., Dodge Co., Georgia, U.S.A.). **1)** Epipharynx. **2-3)** Aedeagus (dorsal and lateral views). **4)** Elytral striae and interstriae details. **5-6)** Habitus (length ideogram and morphological details). *Oxyomoides dyspistus* (Skelley and Woodruff, 1991) (Ft. Rucker Military Res., Dale Co., Alabama, U.S.A.). **7)** Epipharynx. **8-9)** Aedeagus (dorsal and lateral views). **10)** Elytral striae and interstriae details. **11-12)** Habitus (length ideogram and morphological details). *Oxyomoides sepultus* (Cartwright, 1944) (8 mi. South of Somerset, Texas, U.S.A.). **13)** Epipharynx. **14-15)** Aedeagus (dorsal and lateral views). **16)** Elytral striae and interstriae details. **17-18)** Habitus (length ideogram and morphological details).