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Aksakidion odontokeras (Coleoptera: Chrysomelidae:
Eumolpinae: Eumolpini), a new genus and species
in an old collection from Paraguay

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Aksakidion odontokeras (Coleoptera: Chrysomelidae: Eumolpinae: Eumolpini), a new genus and species in an old collection from Paraguay

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Abstract. *Aksakidion odontokeras*, **new genus** and **new species** (Coleoptera: Chrysomelidae: Eumolpinae: Eumolpini), is described from four specimens in the Bowditch Collection at Harvard University. It is distinguished from all other genera in the Eumolpinae by an elongate, seta-bearing, tusk-like projection on the dorsal side of each mandible. Although locality data only mention Paraguay as the country of origin, information about the collector indicates it was collected in the late 19th century in the vicinity of Asunción.

Key words. *Spintherophyta*, mandible, tusk, South America, Jan Bohls, taxonomy, leaf beetle.

Resumen. Se describe *Aksakidion odontokeras*, **género nuevo** y **especie nueva** (Coleoptera: Chrysomelidae: Eumolpinae: Eumolpini) de cuatro especímenes en la Colección Bowditch de la Universidad de Harvard. Este género se distingue de cualquier otro en Eumolpinae por una proyección largada en forma de colmillo con setas en el lado dorsal de cada mandíbula. Aunque los datos de localidad solo mencionan Paraguay como país de origen, información sobre el coleccionista indica que los especímenes fueron recolectados a fines del Siglo XIX en las proximidades a Asunción.

Palabras clave. *Spintherophyta*, mandíbula, colmillo, América del Sur, Jan Bohls, taxonomía, escarabajos fitófagos.

ZooBank registration. urn:lsid:zoobank.org:pub:65DABC23-2BF6-42D3-B445-AC2B9EDA66E8

Introduction

During a recent visit to the Museum of Comparative Zoology at Harvard University (MCZ) to study type material of Neotropical Chrysomelidae, a short series of four highly unusual specimens was discovered among unidentified material in a tray of *Lamprosphaerus* Baly (subfamily Eumolpinae) in the Bowditch Collection of Chrysomelidae. The specimens appeared congeneric with species of *Spintherophyta* Lefèvre, except for a striking pair of anterior projections. On closer examination, these projections were found to be located on the dorsal surface of the mandibles, and to have numerous apparent sensory pits and setae. Along with the unique mandibles, a number of other characters were found that are not present in known *Spintherophyta*. Examination of the structure of the abdomen showed that all four specimens are males. These specimens are described below as a new genus and species.

Materials and Methods

Specimens examined are in the following institutions:

FSCA Florida State Collection of Arthropods, Gainesville, FL, USA

MCZ Bowditch Collection, Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA

Specimens were examined under a Nikon stereomicroscope. A genitalia dissection was placed in glycerin in a polyethylene micro vial and pinned below the respective specimen. Whole specimens were photographed with Spectroscopy™ software at the Florida State Collection of Arthropods. Genitalia photographs were taken with a Nikon Coolpix 995 through a stereomicroscope, and photos were converted to line drawings with Gimp®.

Terminology of the genitalia follows Flowers (1995, 1999), Askevold and Flowers (1994), and Riley and Barney (2015). Label data for holotypes and paratypes are reproduced verbatim.

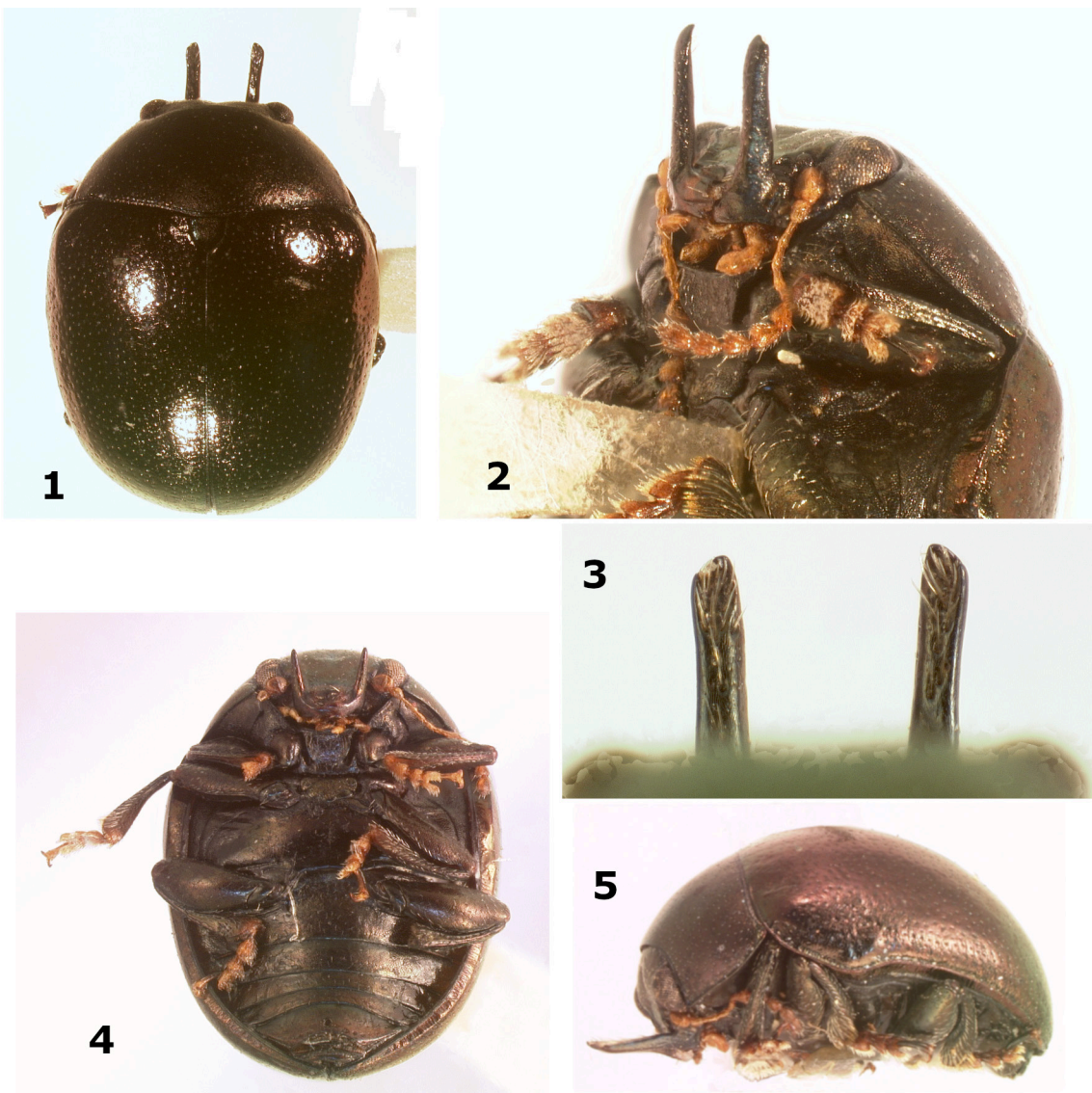
Systematics

Aksakidion Flowers, new genus

Figures 1–9

Type species. *Aksakidion odontokeras* Flowers, new species, here designated.

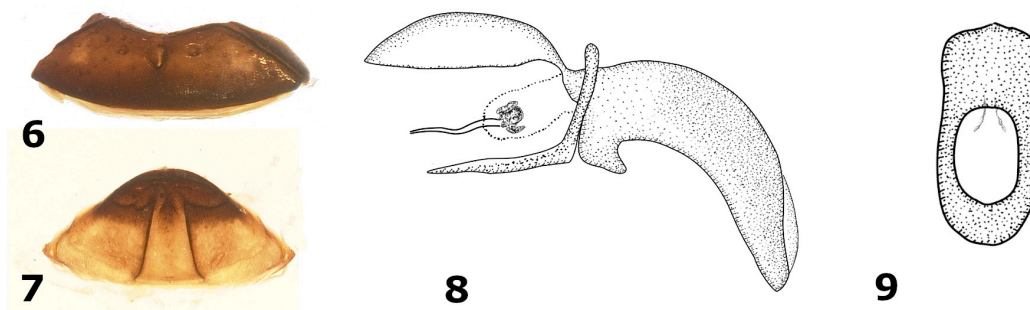
Description. Male: Body oval, dorsally convex (Fig. 1). *Head* distinctly broader than long, width across eyes $2\times$ length, slightly concave between eyes and mouthparts (Fig. 2), vertex with short longitudinal depression between eyes. Head with surface between punctures strongly microreticulate, frons with a narrow longitudinal depression



Figures 1–5. *Aksakidion odontokeras*. 1) Dorsal view of holotype. 2) Fronto-lateral view of holotype, prosternal furrow visible below left antenna. 3) Dorsal view of mandibular tusks. 4) Ventral view of paratype. 5) Lateral view of holotype.

in the middle. Clypeus shallowly concave with a narrow bead laterally, with lateral margins sulcate anteriorly; apex emarginate; antennal calli concave at antennal insertion. Eyes oval, shallowly and broadly emarginate at antennal insertion. Antenna with scape elongate oval, pedicel subglobose, shorter than scape, flagellum clavate, antennomeres 3–6 filiform with scattered appressed setae; antennomeres 7–11 robust, their segments widened apically, densely pubescent, with whorl of long erect setae at apex. Outer margin of each mandible with a long, tusk-like, erect projection, flattened on dorsal side with seta-bearing punctures (Fig. 3), apex blunt, angulate. Maxillary palpi with apical segment tapered. *Prothorax* distinctly wider than long, $L/W = 0.44$; pronotum convex, with posterior margin wider than anterior margin; anterior angles acute, directed anteriorly, posterior angles obtuse; all angles with a seta-bearing puncture; basal marginal bead present; lateral margins narrow, evenly rounded, pronotal width greatest at posterior angles; disc regularly, finely punctate, with punctures separated by a distance greater than their diameters; surface between punctures shining, weakly microreticulate medially, more densely microreticulate near antero-lateral angles. Prosternum with anterior margin concave, anterior edge of lateral arms weakly convex; finely punctate, expanded laterally behind coxae; intercoxal process with deep sulci laterally for reception of antennae (Fig. 4), posterior margin truncate. Hypomeron strongly excavated behind procoxae for reception of forelegs, sparsely punctate, with punctures separated by distance greater than diameter of a puncture, with surface alutaceous. *Mesosternum* between mesocoxae narrower than prosternum, flat, surface alutaceous. *Metasternum* smooth with numerous short yellow setae; metepisternum broad, slightly narrowed posteriorly with surface alutaceous. *Legs* robust, sparsely covered with short prostrate setae; all surfaces alutaceous. Femora strongly swollen in middle. All tibiae curved, expanded apically (Fig. 4), multicarinate, slightly to moderately sulcate between carinae, with setae increasing in length toward apex of tibiae. Tarsi densely and uniformly pilose beneath; basal tarsomere of fore- and middle legs triangular, not expanded, with length greater than width; second tarsomere broadly triangular, with acute apicolateral angles; third tarsomere longer than second, deeply bilobed; terminal tarsomere distinctly surpassing apex of third tarsomere; claws divergent, appendiculate. *Elytra* evenly punctate with punctures separated by distance slightly greater than the diameter of a puncture; surface between punctures weakly alutaceous, shining; humeri not prominent, broadly rounded, basal calli obsolete; postbasal depression lacking. Sides broadly rounded, convergent, a low lateral costa present in apical fourth; apices conjointly rounded. In lateral view (Fig. 5) elytral margin strongly sinuate with lobe in basal third. Epipleuron narrow, horizontal, tapering evenly from base to apex. Scutellum V-shaped, with base subequal to length; surface smooth, with few punctulae. *Abdomen* with segments decreasing in length, with appressed whitish setae laterally, surface of segments granulate. Sternum VII with lateral margins smooth, a pore-like depression in center (Fig. 6). *Pygidium* (Fig. 7) with longitudinal median groove narrow, extending to apical margin, median carina present on floor of median groove; pygidial surface microreticulate, lateral margins smooth. *Genitalia*. Basal hood lightly sclerotized; subbasal fenestra present; basal spurs small; tegmen triangular (Fig. 8–9). Female: unknown.

Etymology. *Aksak*, the beetle creator-god of the Paraguayan Enxet (Lengua) people, who lived in the vicinity of Asunción (Hawtrey 1901; Ratcliffe 2006; Smid 2016; Byrne and Lunn 2019); *idion*, Greek, a diminutive suffix. The gender is neuter.



Figures 6–9. *Aksakidion odontokeras*, abdomen. 6) Sternum VII. 7) Pygidium. 8) Lateral view of aedeagus, with endophallus and apical sclerite retracted. 9) En-face view of median lobe.

Differential diagnosis. *Aksakidion* will key to *Spintherophyta* in Bechyně (1997), and closely resembles that genus in size, body shape, and sculpture of the head and prothorax. In addition to the obvious mandibular projections (Fig. 3), *Aksakidion* differs from *Spintherophyta* by having a pair of deep grooves on the prosternum for reception of the antennae (Fig. 2, 4), a transversely elongate head (in contrast to the head only slightly broader than long in *Spintherophyta*), all legs with tibiae broad and distinctly curved (Fig. 4) (tibiae narrower and weakly curved in *Spintherophyta*), and a small circular depression at the center of sternum VII (Fig. 6).

Remarks. Female specimens of the new genus are unknown. In the similar genera *Metaparia* Crotch, *Dispardentium* Sublett and Cook (Sublett and Cook 2021), and in *Aristonoda* Bechyně (Bechyně 1953), males display some degree of mandibular enlargement that is not found in the females; thus, it is probable that female mandibles of the new genus will differ from those of the male. In *Metaparia* and *Dispardentium* the mandibles in the male are asymmetrically enlarged, whereas in *Aksakidion* the mandibles and their projections are symmetrical.

Reid and Beatson (2013) described two species in two other non-eumolpine genera in which the males have dorsal projections on the mandible: one species in *Chaloenus* Westwood (Galerucinae: Alticini), and two in *Scaphodius* Chapuis (Cryptocephalinae: Cryptocephalini). These authors also reviewed the occurrence of enlarged male mandibles in Chrysomelidae and listed 191 species, of which 165 are in the subfamily Cryptocephalinae.

Mandibular projections aside, *Aksakidion* specimens somewhat resemble species of *Oomorplus* Curtis (Lamprosomatinae), in having antennal grooves in the prosternum and depressions on the venter for folding the legs. However, in *Aksakidion* the depressions are less well defined than those in Lamprosomatinae, and a pygidial groove is present in *Aksakidion* but lacking in all lamprosomatines.

***Aksakidion odontokeras* Flowers, new species**

Figures 1–9

Male. Length 2.6–3.2 mm; length of mandibular projection 0.4–0.7 mm. Head and pronotum bronze-black, strongly microreticulate, elytra and underside black; antenna reddish brown. Legs black, tarsi reddish brown. Vertex, frons, and clypeus shallowly punctate, punctures separated by distance greater than the diameter of a puncture. Mouthparts reddish brown, mandibles black; with apex of labrum emarginate, with three dorsal long lateral setae at outer angles. Antenna with scape and pedicel oval, pedicel shorter than scape, subequal to antennomere 3, antennomere 3 = 1.1× antennomere 5, 1.4× antennomere 6, 0.8× antennomere 7. Prothorax distinctly wider than long, L/W = 0.44. Prosternum with width of intercoxal process 1.4× diameter of procoxa. Elytron width across humeri 1.1× width of pronotum. Median lobe of aedeagus (Fig. 8) in lateral view smoothly curved; apex rounded in en-face view (Fig. 9); apical sclerite a small node with a slender tapering process (Fig. 8).

Female. Unknown.

Specimens examined. (4 ♂♂) Male HOLOTYPE labeled: PARAGUAY, J. Bohls / (slip of white paper marked in pencil: “prosternum [remainder illegible]”) / MCZENT 0795571. Holotype deposited in MCZ. PARATYPES: (2 ♂♂, MCZ) same data as holotype / MCZENT 0795572–3; (1 ♂, FSCA) same data as holotype / MCZENT 0795574.

Etymology. *Odontokeras*, Greek, meaning tusk. Noun in apposition.

Remarks. Jan Friedrich Wilhelm Bohls, the collector of *Aksakidion*, was a German zoologist and linguist who spent time in Paraguay as a private tutor in the late 1800s (Wendt 2018). He also collected and sent specimens of reptiles (Peracca 1895), amphibians (Ehlers 1894), beetles (Olivier 1896; Lewis 1900), and ants (Wheeler 1942) to various specialists. Unfortunately, other than the occasional reference to “vicinity of Asunción,” his locality data were apparently no more precise with these other groups than it was for the specimens of *Aksakidion*. An exception was the locality San Salvador where he collected ants from acacia plants (Wheeler 1942). He returned from Paraguay to Hamburg in the late 1890s; we can assume all his Paraguayan specimens were collected before that time.

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