

A new species of the genus *Rhabdopteris* Lefèvre, 1885 (Coleoptera: Chrysomelidae) from the state of Tamaulipas, Mexico

Новый вид рода *Rhabdopteris* Lefèvre, 1885 (Coleoptera: Chrysomelidae) из штата Тамаулипас, Мексика

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KEY WORDS: Chrysomelidae, Eumolpinae, *Rhabdopteris*, Mexico, new species, identification key.

КЛЮЧЕВЫЕ СЛОВА: Chrysomelidae, Eumolpinae, *Rhabdopteris*, Мексика, новый вид, определительная таблица.

ABSTRACT: *Rhabdopteris elcieli* sp.n. from the Biosphere Reserve “El Cielo” in the State of Tamaulipas, Mexico, is described. Taxonomical status of the new species is discussed. A key to the species of the genus *Rhabdopteris* from Mexico is given. *Rh. perplexus* (Jacoby, 1882) is a new record for Mexico (Chiapas).

РЕЗЮМЕ: Описан новый вид — *Rhabdopteris elcieli* sp.n. из биосферного заповедника “Эль Сьело”, штат Тамаулипас, Мексика. Обсуждён таксономический статус нового вида. Приведена определительная таблица мексиканских видов рода *Rhabdopteris*. *Rh. perplexus* (Jacoby, 1882) впервые указан для Мексики (штат Чьяпас).

Introduction

The subfamily Eumolpinae is one of the largest in the family Chrysomelidae and includes about 7000 species worldwide, more than 400 of which are distributed in Mexico. There is a big confusion with American genera and species described because most of them were described in XIX to middle XX centuries without studying the genitalia and have never been revised later. In XX century, as well, a number of genera was described by J. Bechyné without careful morphological descriptions and comparisons with other genera. A key to Central American genera of Eumolpinae [Flowers, 1996] was given, but fauna of Eumolpinae of this region and its generic structure still needs careful revision.

The species described in this paper habitually resembles metallic-coloured species described by Jacoby

[1881, 1890] in the genera *Alethaxius* Lefèvre, 1885 (= *Aletes* Chapuis, 1874) and *Coytiera* Lefèvre, 1875. Later, the species described in the genus *Coytiera* was transferred to the genus *Euphrytus* Jacoby, 1881 and several additional species of this group were described in this genus [Bechyné, 1957]. However, all the genera discussed above have a thin intercoxal projection of prothorax, robust antennae and obtuse last segment of maxillar palpi, which doesn't let us place the new species in one of these genera.

Rhabdopteris Lefèvre, 1885 is a replacement name for the genus established under the name *Rhabdophorus* Lefèvre, 1878 for 4 South-American species. Later, a number of species from Neotropical and Nearctic regions were described, and now 11 species of the genus indicated for Central America [Bechyné, 1953; Flowers, 1996], 4 of which for Mexico, and 7 other species described from the USA. Barber [1943] revised the USA species and wrote that those species are not very similar to the type of the genus. In his opinion, the principal generic character of the genus which is wide intercoxal projection of prothorax is not applicable here. He wrote that the genera *Rhabdopteris* and *Colaspis* Fabricius, 1801 may be merged. But later, conversely, the genus *Colaspis* was separated into a number of genera by Bechyné and the genus *Allocolaspis* Bechyné, 1950 became a most close genus to *Rhabdopteris*. The only formal difference between these two genera is the width of fore intercoxal projection. So, these two genera are indeed of revision as almost all other genera of Neotropical Eumolpinae.

According to all formal characters (see diagnosis) we place the new species into the genus *Rhabdopteris*.

This is the first distinctly metallic coloured species in this genus. Additional evidences that the new species may be placed to this genus are the specific shape of hind tibia, as in some other *Rhabdopterus*, for example *Rh. deceptor* Barber, 1943 from the USA, aedeagus with pronounced tooth on the tip and sclerotized bases of coxites in ovipositor.

The types of the described species will be kept in depositaries as follows: USNM — United States National Museum, Smithsonian Institution, Washington, D.C., the USA; ZISP — Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia. UAT — Universidad Autonoma de Tamaulipas, Ciudad Victoria, Mexico.

A KEY TO IDENTIFICATION OF THE SPECIES OF *RHABDOPTERUS* FROM MEXICO

1. Colour of upper side is yellow or reddish-brown, sometimes with metallic lustre 2
— Colour of upper side is metallic-green, blue or bronze. Underside and legs are blackish. Length 4.3–5.0 mm *Rh. elcieli* sp.n.
2. Punctures of pronotum are very large, sparsely and irregularly placed, with secondary smaller punctuations between them. Length 5.0–5.5 mm *Rh. fulvipes* (Jacoby, 1882)
— Punctures on pronotum are of equal size, more evenly placed 3
3. First 4 rows of punctures on elytra in hind quarter are very regular and makes the furrows. There are distinct ridges on the sides of elytra in hind third. 6.0–7.0 mm in length. Here are two very close species which are, probably, conspecific 4



Fig. 1. *Rhabdopterus elcieli* sp.n., paratype, male (ZISP); above.

Рис. 1. *Rhabdopterus elcieli* sp.n., паратип, самец (ЗИН РАН); сверху.

- At least the 4th row of the punctures on elytra in hind third is irregular and doesn't make the furrow. There are no ridges on the sides of elytra 5
4. Ridges and furrows in the hind part of elytra more raised. First complete row of punctures is regular from top angle to fore third of its length *Rh. mexicanus* (Jacoby, 1882)
— Ridges and furrows in hind part of elytra less raised. First complete row of punctures is regular from top angle to middle of its length *Rh. jansonii* (Jacoby, 1882)
5. Colour of upper side is fulvous with metallic lustre. Last segment of maxillar palpi is sometimes dark, the same in color like darker segments of antennae. Length 4.5–5.0 mm. Described from Guatemala. Firstly indicated for Mexico (Chiapas) *Rh. perplexus* (Jacoby, 1882)
— Colour of upper side is dark reddish-brown with very feeble metallic lustre. Last segment of maxillar palpi is same in colour like the others 6
6. Described from Southern Mexico and Central America. Length 5 mm *Rh. guatemalensis* (Jacoby, 1882)
— Described from Texas and "on lettuce from Mexico", probably, from North Mexico. Length 5.0–6.0 mm *Rh. bottimeri* Barber, 1946.

Rhabdopterus elcieli Moseyko, Niño Maldonado, Ruíz Cancino et Coronado Blanco, sp.n.

Figs 1–9

MATERIAL EXAMINED: Holotype, ♂: Mexico. Tamaulipas. Reserva "El Cielo". Charco del Lindero. 28-agosto-1998. S. Niño — J. Parra Niño (USNM).

Paratypes, 3 ♂♂ and 3 ♀♀: same label as the holotype; 1 ♂, 1 ♀ (UAT); 1 ♂, 1 ♀ (ZISP; Mexico). Tamaulipas. Reserva "El Cielo". El Capulin. 30.sep.1998. S. Niño — T. Ornelas, 1 ♂ (UAT); Mexico. Tamaulipas. Reserva "El Cielo". El Capulin. 29-julio-1998. S. Niño — J. Hernandez, 1 ♀ (UAT).

DESCRIPTION. Length of males 4.3–5.0 mm, width — 2.25–2.6 mm. Length of females — 4.3–4.45 mm, width — 2.3–2.4 mm.

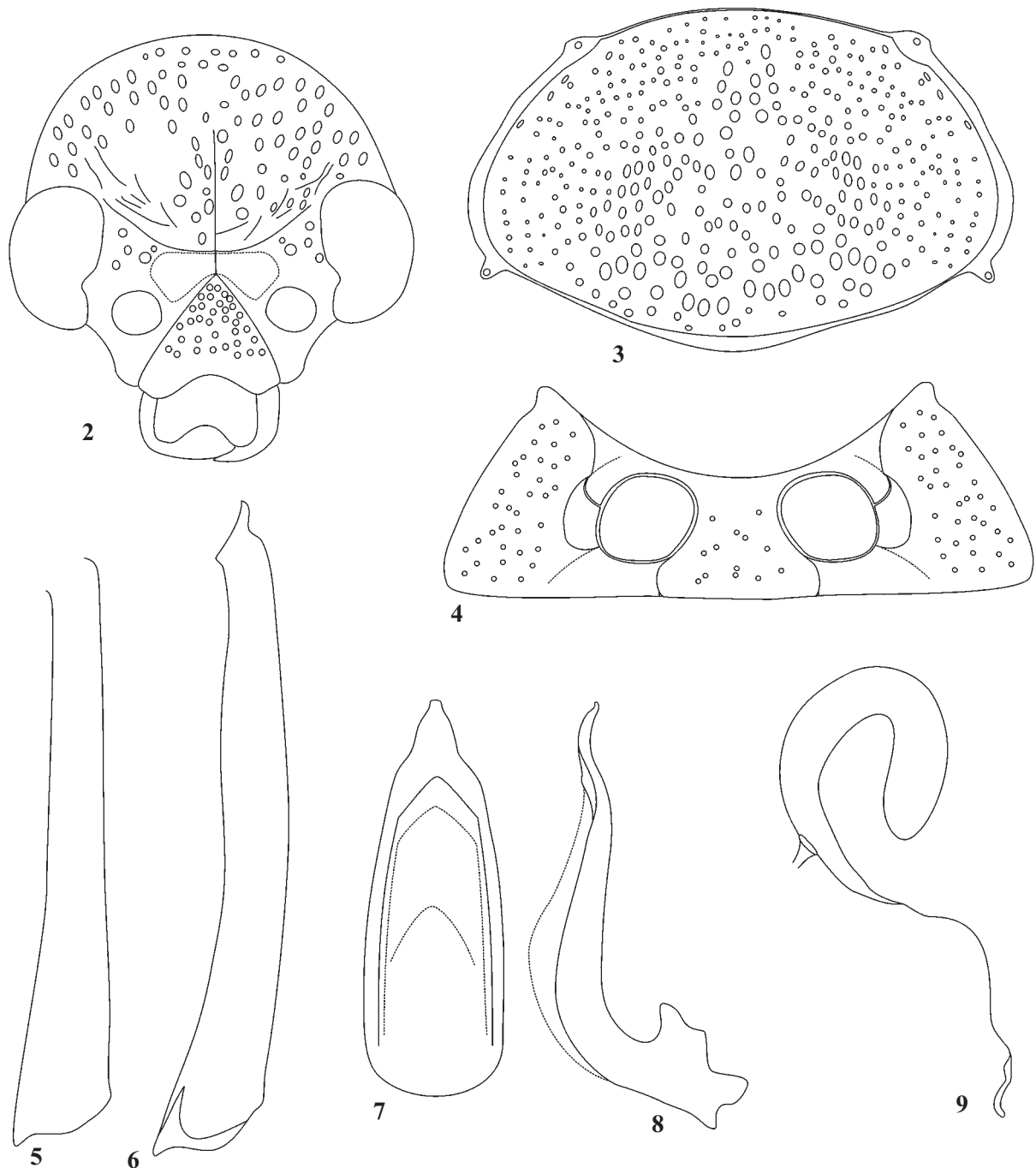
Body glabrous, elongate-ovate (Fig. 1), 1.85–1.92 times as long as wide, metallic to dull metallic coloured, from completely green above to bronze or violaceous. Sometimes elytra greenish with blue lustre and pronotum bronze. Underside and legs black with distinct metallic lustre. Antennae with at least 2 to 6, sometimes also 1 and 8 segments yellow. The rest segments are blackish. Mouthparts also partly yellow.

Head (Fig. 2) of the same colour as pronotum, hypognathous, with well bordered frontoclypeus and distinguishable middle frontal groove and lines from eye to frontal groove in form of bend with punctures between frontal tubercles and front. These lines not connected with borders of frontoclypeus. Frontal tubercles well developed, prominent, contiguous, not punctured medially and only with several punctures near the eyes. Frons wide, 2.5 times wider than eye, punctured, interspaces between the punctures quite wider than diameter of puncture. Near the eyes punctures are elongate and interspaces between them slightly wrinkled along the eye margin. Frontoclypeus triangle, 1.25 times wider than height, densely punctured. Eyes not large, prominent, excavated in lower third. Antennae thin, quite longer than 2/3 of body length, ratio of segments length is 2 : 0.9 : 1.9 : 1.8 : 2.3 : 2.3 : 2.7 : 2.3 : 2.4 : 2.3 : 2.7. Ratio of length to width for the segments are 2 : 1.3 : 3.2 : 3 : 3.3 : 3.8 : 3.2 : 2.9 : 3 : 3.1 : 3.4. 7th segment is quite larger and marked by colour, usually this segment and last four segments are blackish. Mouth parts

generally yellow, but last segments of maxillar and labial palpi are blackish. Last segment of maxillar palpi is distinctly pointed on apex.

Pronotum (Fig. 3) 1.56–1.69 times as wide as long, widely bordered on the sides, narrower behind and very narrow in front. Lateral bordering are flattened and shiny, separated from the disk by a line of punctures. Maximum width of the disk is in its hind third. Fore angles are widened,

with antero-lateral setae of pronotum on its upper side. Punctuation of pronotum is dense, interspaces between punctures on the sides smaller than diameter of punctures. Punctures are longitudinally elongate, especially on the sides. Punctuation in the center of the disk is more sparse and irregular. Sides of pronotum without distinguishable dents, but quite irregular. Prothorax below (Fig. 4) with distinctly concave fore margin. Fore intercoxal projection has same



Figs 2–9. *Rhabdopterus elcieli* sp.n.: 2–4, 6–8 — holotype, male; 5, 9 — paratype, female; 2 — head; 3 — pronotum; 4 — prothorax, ventral view; 5–6 — hind tibia; 7 — aedeagus, dorsal view; 8 — aedeagus, lateral view; 9 — spermatheca.

Рис. 2–9. *Rhabdopterus elcieli* sp.n.: 2–4, 6–8 — голотип, самец; 5, 9 — паратип, самка; 2 — голова; 3 — переднеспинка; 4 — переднегрудь, вид снизу; 5–6 — задняя голень; 7 — эдеагус, сверху; 8 — эдеагус, сбоку; 9 — сперматека.

width as the coxae. Intercostal projection and hypomera are shiny, not dense and irregularly punctured. There is no distinct bend between intercostal projection and hypomera behind. Notosternal suture in its lateral third turn to fore, invisible from below side of prothorax and seems like not reaching the lateral margin of prothorax. Sternite of mesothorax is not punctured, shiny metallic, approximately equal in the width to middle coxae. Episternae and epimerae of mesothorax are not punctured, microsculptured. Only mesothoracic episternae are metallic coloured; mesothoracic epimerae, metathoracic episternae and epimerae are black. Metaventricle metallic coloured, shiny, not punctured. Metathoracic episternae with well separated fore and medial bordering, disc with irregular line of punctures, turning into a groove in the hind part. Metathoracic epimerae small, not bordered.

Elytra 1.35–1.42 times as long as wide and 1.18–1.28 times as wide as prothorax. Humeral calli are well developed but the widest part of elytra is in the middle. Basal concavity is almost undeveloped and not bordered from other part of elytra. Punctuation of elytra is irregular. Only shortened 1st and complete 2nd rows are more or less regular, in hind quarter of elytra the 3rd row is also quite visible, also last and partly joined with it next to last rows are recognizable, next to last row in hind 1/7 of elytra is very regular and makes a groove.

Legs black, about twice shorter than body length each, hind more longer. Ratio of length of fore, middle and hind femours are 8.5 : 8.8 : 11; ratio of width is 3.1 : 2.8 : 3.2. There are no dents in the middle of femours. Middle tibiae slightly curved and widened on the top. Hind tibiae of females simple (Fig. 5). Hind tibiae of males (Fig. 6) with slightly widened basal third and elongate projection on the top. First tarsomer of fore and middle tarsi in males are widened and of the same width as 3rd. First tarsomers of all legs in both sexes are the same length as two next tarsomers together. Claws appendiculate.

Abdomen is black, fourth ventrite is longer than others. There are no secondary sexual structures on ventrites. Pygidium in males with well marked median groove throughout their length, punctured, covered with hairs, with very short microsculptured areas on the base on each side. Pygidium in females with median groove shortened behind and with more developed intergral area of microsculpture. Sides of 5th ventrite in female feebly dentate, distinctly partly-closed notched on the middle of apex.

Aedeagus (Figs 7–8) with well developed tooth on the top, curved when viewed from the side.

Ovipositor is long, more than 10 times longer than width, with well developed styli. Basal parts of coxites with narrow elongate sclerotization, triangularly widened on the base. Spermatheca (Fig. 9) is C-shaped, widened to the top, with ductus shorter than its diameter. There is little elongate sclerotization on the base of ductus. Gland is attached in some distance from the ductus, without specific formations.

DIAGNOSIS. Characters of generic level. Pygidium with wide complete median groove. "Propleurae" concave. Last segment of maxillar palpi is pointed on apex, its colour is black. Intercostal projection of prothorax is of the same width as fore coxae. Fore angles of prothorax are not tapered forward. Middle tibia without tooth near apical third. **Characters of**

specific level. Metallic-green, blue or bronze. Underside and legs are blackish. Head with connected frontal tubercles, frontoclypeus well separated from the frons. Hind tibia of males with widened basal third and with wide elongate projection on the top. Aedeagus with curved tooth on the top.

DISCUSSION. New species belongs to the group with comparatively narrow body, head with connected frontal tubercles, not curved fore tibiae and curved narrow hind tibiae of male with widened basal third. It is close to *Rh. perplexus* from Guatemala and Southern Mexico (Chiapas), differs in colour and genitalia. In addition, *Rh. perplexus* has punctuation of pronotum and head more sparse and punctures not elongate. Both species have the last segment of maxillar palpi blackish.

The fauna of *Rhabdopterus* of Mexico may contain several more species of the genus in question. But, their description is in need of studying the genitalia of all previously described species.

References

- Barber H.S. 1943. Notes on *Rhabdopterus* in the United States (Coleoptera, Chrysomelidae) // Bulletin of the Brooklyn Entomological Society. Vol.38. No.4. P.111–120.
- Barber H.S. 1946. A new *Rhabdopterus* from Texas (Coleoptera, Chrysomelidae) // Bulletin of the Brooklyn Entomological Society. Vol.41. No.4. P.140–142.
- Bechyné J. 1950. Notes sur les Eumolpides de l'Amérique du Sud, (Col. Phytophaga) // The Annals and Magazine of Natural History, including Zoology, Botany and Geology. Twelfth series. Vol.3. No.25. P.70–85.
- Bechyné J. 1953. Katalog der neotropischen Eumolpiden (Col. Phytoph. Chrysomeloidea) // Entomologische Arbeiten aus dem Museum G. Frey, München. Bd.4. S.26–303.
- Bechyné J. 1957. Eumolpides neotropicaux de la Collection du Museo Civico di Storia Naturale "Giacomo Doria" di Genova (Col. Phytophaga) // Annali del Museo Civico di Storia Naturale di Genova. T.69. P.226–247.
- Chapuis F. 1874. Famille des Phytophages. Lacordaire T. & Chapuis F.: Histoire naturelle des insectes. Genera des coléoptères ou exposé méthodique et critique de tous les genres proposés jusqu'ici dans cet ordre d'insectes. Tome dixième. Paris: Roret, Roret, iv + 455 pp.
- Flowers R.W. 1996. La subfamilia Eumolpinae (Coleoptera: Chrysomelidae) en América Central // INBio Special Publications. Vol.2. P.1–59.
- Jacoby M. 1881, 1882. Phytophaga (part). Biologia Centrali-Americana. Insecta. Coleoptera. Vol. 6. Part. 1 (1880–1892: 1881 — P.73–144; 1882 — P.145–224), P.1–625.
- Jacoby M. 1890. Phytophaga (part). Biologia Centrali-Americana. Insecta. Coleoptera. Vol. 6. Part. 1. Suppl. (1888–1892 : 1890 — P.169–232), P.1–374.
- Lefèvre E. 1875. Descriptions d'Eumolpides nouveaux ou peu connus // Revue et Magasin de Zoologie. 38e Année. 3e Série. T.3. P.102–139.
- Lefèvre E. 1878. Voyage de M. E. Steinheil à la Nouvelle Grenade. Eumolpides // Mitteilungen des Münchener Entomologischen Vereins. Jahr.2. S.112–133.
- Lefèvre E. 1885. Eumolpidarum hucusque cognitarum catalogus, sectionum conspectu systematico, generum sicut et specierum nonnullarum novarum descriptionibus adjunctis // Mémoires de la Société royale des sciences de Liège. 2ème série. T.11. Mém.16. P.1–172.