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# New data on bark beetles of the genus *Chramesus* LECONTE, 1868 with descriptions of two new species from Peru (Coleoptera: Curculionidae: Scolytinae)

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## Abstract

Two new species of *Chramesus* LECONTE (Coleoptera: Curculionidae: Scolytinae) are described from Peru, namely *C. flechtmanni* and *C. schoenmanni*. In addition, new distributional data on *Chramesus* species in Loreto, Huánuco, Junín and Cusco Provinces of Peru are listed.

**Key words:** Coleoptera, Curculionidae, Scolytinae, bark beetles, *Chramesus*, Phloeosinini, taxonomy, new species, Peru.

## Introduction

Recent taxonomic work has highlighted the actuality of bark beetle studies in South America. Fieldwork and collections in the Neotropical forests have allowed description of new scolytine genera and species and added to the natural history knowledge of scolytines (DOLE & COGNATO 2007, WOOD 2007, PETROV 2007, 2009, PETROV & MANDELSHTAM 2007, 2009, 2010, SMITH & COGNATO 2010). The genus *Chramesus* LECONTE, 1868 includes 89 New World species (WOOD & BRIGHT 1992). In South America, more than 40 species are known to occur. Most species of *Chramesus* are monogamous and phloeophagous, only one is polygamous, one is myelophagous while three are xylophagous (WOOD 2007). During fieldwork in Peru in 1997 and 2005–2010, new *Chramesus* species and additional data on the morphology, distribution and natural history of rare and poorly known species of this genus were gathered.

Here we provide descriptions of all *Chramesus* species known from Peru. The females of *Chramesus granulipennis* SCHEDL, 1959 and *C. peruanus* SCHEDL, 1961 previously were unknown. They are described here for the first time.

*Chramesus granulatus* (EGGERS, 1928) was described from Bolivia and never reported afterwards from Peru (WOOD 2007) and is therefore excluded from the Peruvian species list.

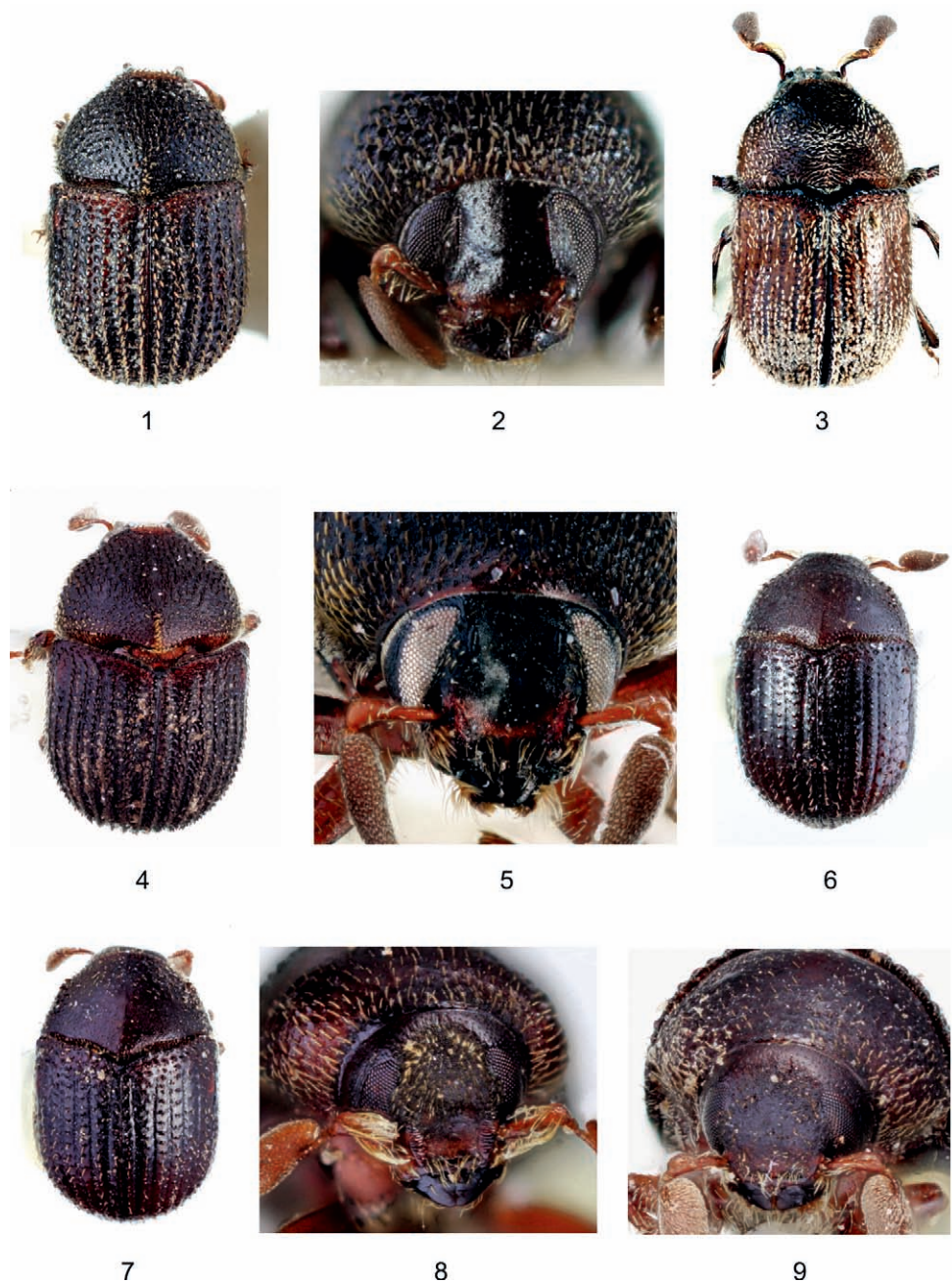
The following abbreviations for the type depositories are used in the text: NHML – The Natural History Museum, London (UK); NMW – Naturhistorisches Museum Wien (Austria); ZMM – Zoological Museum of Moscow University (Russia).

## *Chramesus granulipennis* SCHEDL, 1959 (Figs. 1–2)

TYPE MATERIAL: **Holotype** ♂ (NHML): “B R A Z I L: PARANA, Rondon”.

### ADDITIONAL MATERIAL EXAMINED:

P E R U: HUÁNUCO PROVINCE: 26 km SW Tingo Maria, Cayumba vill., 820 m a.s.l., 9°29.567'S / 75°57.276'W; 14.II.2005, leg. A. Petrov, 1 ♂, 1 ♀ (Petrov collection).



Figs. 1–9: 1–2: *Chramesus granulipennis*, 1) holotype, habitus, male, 2) frons, male; 3) *C. peruanus*, habitus male; 4–5: *C. flechtmanni*, 4) holotype, habitus, male, 5) frons, male; 6–9: *C. schoenmanni*, 6) holotype, habitus, male, 7) paratype, habitus, female, 8) frons, male, 9) frons, female.

**REDESCRIPTION:** Male: 2.2 mm long, 1.6 times as long as wide (Fig. 1), covered with pale scale-like setae, antennae and legs reddish-brown.

Frons strongly concave from epistoma to vertex, sides elevated and serrate in area against eyes, from eye middle to its upper margin; serrate frons sides bear 16 elevated transverse wrinkles, marginal elevation of frontal cavity absent near the border with vertex, but especially high near epistoma, forming there short high costae, sloped (45°) towards bases of mandibles (Fig. 2). Frontal cavity with weakly shiny, regularly reticulate surface, with deep median fossa, pale setae there very thin, sparse and short; sides of cavity slightly elevated at the level of antennal insertion. Lateral surface of frons from elevated ridge to eye weakly shining, reticulate, with short yellow setae; these setae thicker and longer, but sparser at upper edge close to vertex.

Narrow band of epistoma over mandibles reddish-brown; mandibles black, antennae reddish-brown. Scape two times as long as funicle and 1.3 times as long as wide, covered with erect pale setae of moderate length. Antennal club 2.3 times as long as wide, densely covered with appressed pale setae.

Pronotum wide, 1.62 times as wide as long, its maximum width around base; sides evenly rounded anteriorly, anterior margin slightly pointed towards head. Pronotal disc with large shallow, irregularly shaped punctures, intervals with reticulate microsculpture. Separate large, transverse wrinkle with rounded top born next to every puncture; thick, short, appressed scale-like setae originating at base of every such wrinkle. Wrinkles indistinct in mediobasal part of disc and more prominent laterally.

Scutellum small, elliptical, two times as wide as long.

Elytra as long as wide, 1.75 times as long as pronotum; elytral base elevated, coarsely wrinkled; sides gradually widened posteriorly, maximum width around posterior third; apices evenly rounded. Elytral surface dull, finely reticulate, with regular striae formed by deep, large, circular punctures; intervals between punctures smaller than their diameters; puncture bottoms smooth, shiny; striae punctures lack setae; elytral interstriae wide and elevated, two times as wide as striae, 1<sup>st</sup> and 3<sup>rd</sup>–5<sup>th</sup> intervals each with distinct regular row of strongly elevated, rounded tubercles, which are medially higher than in anterior and posterior parts of disc, in posterior part tubercles smaller (except interstriae 7–9); 2<sup>nd</sup> interstriae from base with large crenulations and double row of large tubercles; bristles arranged into regular rows on interstriae from bases to apices of elytra.

Abdomen reddish-brown, surface of sternites regularly reticulate; 2<sup>nd</sup> sternite with sparse, large punctures, 3<sup>rd</sup> and 4<sup>th</sup> sternites with single rows of punctures along posterior margins; posterior margins with regular rows of golden bristles.

Legs dark brown, protibia with a brush of short setae on inner edges, middle and hind legs covered with golden setae of medium length.

Female: Body length 2.1 mm, similar to male, but frontal cavity weak, indistinct, lateral margins of frons not elevated, but evenly rounded, frontal surface finely shagreened, with small, shallow punctures sparsely scattered, with very fine granular tubercles (most distinct laterally, at the level of upper edges of eyes) and short, and appressed setae; scape with short, sparse, erect setae.

**DIAGNOSIS:** According to WOOD (2007), this species differs from all other members of the genus by the sculpture of frons in males and large rounded teeth in elytral interstriae. The structure of the frons in males distinguishes this species from *Chramesus flechtmanni*. Females differ in the presence of a weak, indistinct median frontal depression and more pronounced granular tubercles on lateral margins of frons, next to upper margins of eyes.

**DISTRIBUTION:** Peru and Brazil.

***Chramesus peruanus* SCHEDL, 1961**

(Fig. 3)

TYPE MATERIAL: **Holotype** ♂ (NHML): "P E R U: CUSCO PROVINCE, Urubamba, Olantaibambo, Dep. Cruza."

**ADDITIONAL MATERIAL EXAMINED:**

P E R U: CUSCO PROVINCE: 52 km from Cusco to Machu Picchu, Watá, 3200 m, 9.–12.II.2007, leg. A. Petrov, 22 ♂♂, 20 ♀♀ (Petrov collection); 27 ♂♂, 23 ♀♀, same locality and collector, but 20.IV.2009 (Petrov collection).

**REDESCRIPTION:** Male: body length 1.9–2.6 mm, 1.75–1.90 times as long as wide (Fig. 3), body reddish-brown, covered with pale scales, antennae and legs brown.

Frons concave from epistoma to vertex, sides of frons from epistoma with elongate crest, above level of antennal insertions more strongly, almost serrately elevated to its abrupt, dentate termination above at point half distance from antennal insertions to upper level of eye; crest surfaces smooth, shiny; edges of frontal concavity rounded from upper part of eyes to vertex; median part of frontal disc shiny, with small, shallow punctures; lateral areas of concavity, from upper part of eyes to vertex, with pale, curved, erect setae, rest of frontal surface covered with shorter, appressed setae. Antennae with long scape covered with long golden setae (setae shorter than scape length); scape two times as long as funicle. Antennal club strongly elongate, 2.8 times as long as wide, densely covered with short, appressed setae.

Pronotum wide, 1.66 as wide as long, onion-shaped, maximum width at middle, minimum width at anterior margin. Pronotal surface weakly shiny, with small shallow punctures, with distinct small sparse tubercles anteriorly and laterally, completely covered with scale-like setae; in addition to these setae, sides with thickened pale-gray setae, pronotal posterior margin with pale thin setae, anterior margin with erect thin brown setae.

Scutellum small, circular.

Elytra brown, weakly shiny, 1.2 times as long as wide, 2.0 times as long as pronotum; elytral base elevated, coarsely wrinkled; subparallel-sided, very weakly widening posteriorly, maximum width around posterior third; apices evenly rounded.

Elytral surface with regular striae formed by shallow small punctures; striae punctures lack setae; elytral interstriae wide and flat, four times as wide as striae, surface of interstriae smooth, without tubercles and wrinkles, only with single rows of tiny punctures, densely covered with pale-grey and brown scales; most scales appressed, short erect setae associated with every small puncture on interstriae.

Abdomen reddish-brown, surface of sternites with regular, circular punctures and pale setae, 3<sup>rd</sup> and 4<sup>th</sup> sternites with single rows of pale setae.

Legs brown, protibia with dense brush of short setae on inner edges, middle and hind legs covered with golden setae of medium length.

Female: Body length 2.0–2.6 mm, similar to male, but frons without strong concavity, only with weak depression occupying area from gular region to median part of frons; sides of frons from epistoma with short crest; surface of frons punctured with small points, hair-like vestiture on frons uniform; pronotal asperities slightly larger, sides of pronotum with few separate large tubercles.

**DIAGNOSIS:** This species may be distinguished from *Chramesus phloeotriboides* SCHEDL, 1958 by the scale-like setae on the interstriae and by the abruptly projecting upper margin of the lateral crest of the frons in males.

**DISTRIBUTION:** Peru: Urubamba and Apurimac River valleys.

HOST: *Senna birostris*.

***Chramesus flechtmanni* sp.n.**  
(Figs. 4–5)

TYPE LOCALITY: Satipo, Junín Province, Peru.

TYPE MATERIAL: **Holotype** ♂ (ZMM): “P E R U: JUNIN PROVINCE: 15 km SW from Satipo, Rio Venado, 1050 m a.s.l., S 11° 11.982' W 74° 46.277', 21.01.2007 A.V. Petrov”. **Paratypes**: same date, locality and collector as in holotype, 1 ♂, 1 ♀ (Petrov collection).

DESCRIPTION: Male: Length 2.2 mm, 1.57 times as long as wide (Fig. 4), body dark brown, covered with pale scale-like setae, antennae and legs reddish-brown.

Frons broadly deeply concave from epistoma to vertex, sides elevated from epistoma to antennal insertions (at level of middle of eye), short crest at upper level of eye (Fig. 5); surface of frontal concavity weakly shiny, evenly reticulate, with deep median fossa and very thin, minute and sparse setae; lateral areas of concavity, next to antennal insertions, weakly elevated. Antenna reddish-brown, scape long, two times as long as funicle and 1.7 times as long as wide. Antennal club 2.4 times as long as wide, densely covered with short, appressed setae.

Pronotum wide, 1.62 times as wide as long, its maximum width around base; sides evenly rounded anteriorly, anterior margin slightly pointed towards head; pronotal disc with large, shallow, irregularly shaped punctures, intervals with reticulate microsculpture; separate large transverse wrinkle with rounded top next to every puncture; thick, short, appressed scale-like seta at base of every such wrinkle, wrinkles cover most of disc, but indistinct in mediobasal part and more prominent laterally.

Scutellum small, elliptic, two times as wide as long.

Elytra 1.1 times as long as wide, 1.75 times as long as pronotum; elytral base elevated, coarsely wrinkled; sides gradually widened posteriorly, maximum width around posterior third; apices evenly rounded; elytral surface dull, finely reticulate, with regular striae of deep, large, circular punctures; intervals between punctures smaller than their diameters; puncture bottoms smooth, shiny; striae punctures lack setae; elytral interstriae wide and elevated, two times as wide as striae, 1<sup>st</sup> and 3<sup>rd</sup>–5<sup>th</sup> intervals with distinct regular row of strongly elevated, rounded tubercles, which are higher medially, than in lateral, anterior and posterior parts of disc (except interstriae 7–8); 2<sup>nd</sup> and 3<sup>rd</sup> interstriae from base to midpoint with double row of large tubercles; bristles arranged into regular rows on interstriae from base to apex of elytron.

Abdomen reddish-brown, surface of sternites regularly reticulate; 2<sup>nd</sup> sternite with sparse large punctures, 3<sup>rd</sup> and 4<sup>th</sup> sternites with single rows of punctures along posterior margins; posterior margins with regular rows of golden bristles.

Legs dark reddish-brown, protibia with a brush of short setae on inner edges, middle and hind legs covered with golden setae of medium length.

Female: body length 2.1 mm, similar to male, but frons strongly convex, lacking median concavity, even weak indistinct lateral margins of frons unelevated, but evenly rounded, frontal surface finely shagreened, with small shallow punctures sparsely scattered, very fine granular tubercles (most distinct laterally, at level of upper edges of eyes) and short appressed setae.

DIAGNOSIS: The new species differs from *Chramesus granulipennis* in the shape of the elevated lateral margins of the frons in males and in lacking a frontal concavity in females.

DISTRIBUTION: Known only from the type locality.

ETYMOLOGY: The new species is named in honor of Dr. Carlos Flechtmann.

*Chramesus schoenmanni* sp.n.

(Figs. 6–9)

TYPE LOCALITY: Itaya River, left bank of Amazon River, Loreto Province, Peru.

TYPE MATERIAL: **Holotype** ♂ (ZMM): “P E R U: LORETO PROVINCE: Itaya River, left bank of Amazon River, 62 km SSW from Iquitos to Nauta, 120 m a.s.l., S 4°15.568' W 73°28.032', 16.02.2008, in window trap, leg. A. Petrov”. **Paratypes**: same locality and collector as in holotype, but 16.–22.II.2008, 7 ♂♂, 3 ♀♀; same locality and collector, but 8.V.2009, 11 ♀♀ (5 ♂♂, 3 ♀♀ in Petrov collection, 1 ♂, 1 ♀ in Knížek collection, 1 ♂ in NMW).

DESCRIPTION: Male: Length 2.0 mm (1.8–2.3 mm in paratypes), 1.8 times as long as wide (Fig. 6). Body dark brown, sparsely covered with pale scale-like setae, antennae and legs reddish-brown.

Frons strongly concave from epistoma to level of upper edge of eyes, sides weakly elevated from epistoma to the middle of eyes and serrate at level of antennal insertion; serrate edges bear 12 wide transverse wrinkles. Edges of concavity rounded at margins with vertex and weakly elevated as indistinct tubercles near epistoma (Fig. 8). Surface of frontal concavity weakly shiny, evenly reticulate; setae in concavity pale, very thin, of moderate length; upper part of frons and vertex with longer and denser setae with thickened apices. Narrow band of epistoma over mandibles reddish-brown; vertex evenly shagreened and covered with sparse, shallow punctures; antennae brown. Scape 1.5 times as long as funicle, covered with yellow setae, lengths of which substantially shorter than scape length. Antennal club 2.1 times as long as wide, densely covered with appressed, short, golden setae.

Pronotum wide, 1.66 as wide as long; pronotal surface with large, shallow, circular punctures, being large laterally; intervals reticulate. On lateral parts of disc, separate, small transverse wrinkle overhangs every puncture, thickened short appressed scale-like seta born at base of every wrinkle; wrinkles present mostly on anterior and lateral parts of pronotal disc, larger in medio-lateral areas.

Scutellum shiny, medium-sized, elliptic, two times as wide as long.

Elytra 1.1 times as long as wide, 2.1 times as long as pronotum; elytral base weakly elevated, prescutellar area with separate large transverse wrinkles; subparallel-sided, almost indistinctly rounded towards posterior third, maximum width around midpoint; apices evenly rounded; elytral surface weakly shiny, with regular striae formed by shallow large circular punctures; interstriae between punctures smaller than their diameters, each puncture bears microscopic, very short, thickened setae, which easily wear off, giving impression of asetose rows of punctures; elytral interstriae wide and elevated, 4.5 times as wide as striae. First to fifth interstriae with distinct, regular rows of tubercles, represented as transverse wrinkles anteriorly and as granulate tubercles medially; interval tubercles in median part of the disc higher than in anterior and lateral parts, completely absent on elytral declivity. Short, thickened, brown setae with blunt apex born at base of every interval tubercle; erect setae forming regular rows on intervals throughout entire length of elytra.

Abdomen reddish-brown, surface of sternites with regular reticulation, sparse circular punctures and golden setae denser in median part of sternites, shorter and sparser laterally.

Legs reddish-brown, protibia with dense brush of short setae on inner edges, middle and hind legs covered with golden setae of medium length.

Female: Length 2.0–2.3 mm, similar to male (Fig. 7), but frons strongly convex, without strong concavity, only with weak depression occupying area from gular region to level of antenna (Fig. 9); sides not elevated, evenly rounded, frontal surface finely shagreened, with small shallow punctures and appressed, short setae.

DIAGNOSIS: The male of the new species differs from *Chramesus impolitus* WOOD, 1971 and *C. imporcatus* WOOD, 1971 in the form of the crest on the lateral margin of the frons.

DISTRIBUTION: Known only from the type locality.

ETYMOLOGY: The new species is named in honor of Dr. Heinrich Schönmann (NMW).

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