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A review of the Neotropical genus *Prionodera* Chevrolat (Coleoptera, Chrysomelidae, Eumolpinae) with description of a new genus

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Abstract

The genus *Prionodera* Chevrolat is redescribed and *Prionodera adiastola* new species (type locality: Limacocha, Ecuador), *P. arimanes* **new species** (type locality: Beni, Bolivia), *P. dichroma* **new species** (type locality: Panamá, Panamá), *P. esmeralda* **new species** (type locality: Alajuela, Costa Rica), *P. furcada* **new species** (type locality: Ipeti, Panamá), *P. gaiophanes* **new species** (type locality: Limacocha, Ecuador), and *P. nila* **new species** (type locality: Panamá, Panamá) are described and illustrated. The genera *Stenolampra* Baly and *Jodasia* Bechyné are placed in synonymy with *Prionodera*. Redescriptions are given for *Prionodera costata* (Baly) **new combination**, *P. cyanea* (Lefèvre), *P. geniculata* (Baly) **new combination**, *P. kirschi* (Lefèvre) **new combination**, *P. lutea* Erichson, *P. marshalli* Lefèvre, *P. merana* Bechyné, *P. bicolor* (Olivier) and *P. peruviana* (Bechyné) **new combination**. *Jodasia roseometallica* Bechyné is placed in synonymy with *P. merana*. The species *chloroptera* Lefèvre and *ocanana* Lefèvre are transferred from *Prionodera* to *Metaxyonycha* Chevrolat **new combinations** and the species *nixa* Bechyné is transferred from *Prionodera* to *Prionoderita* **new genus**. A key is given to the species in the revised genus *Prionodera*.

Resumen. Se describe de nuevo el género *Prionodera* Chevrolat, y las **especies nuevas** *Prionodera adiastola* (localidad del tipo: Limacocha, Ecuador), *P. arimanes* (localidad del tipo: Beni, Bolivia), *P. dichroma* (localidad del tipo: Panamá, Panamá), *P. esmeralda* (localidad del tipo: Alajuela, Costa Rica), *P. furcada* (localidad del tipo: Ipeti, Panamá), *P. gaiophanes* (localidad del tipo: Limacocha, Ecuador), y *P. nila* (localidad del tipo: Panamá, Panamá) son descritas y ilustradas. Los géneros *Stenolampra* Baly y *Jodasia* Bechyné son sinonomizados con *Prionodera*. Se presenta nuevas descripciones para *Prionodera costata* (Baly) **combinación nueva**, *P. cyanea* (Lefèvre), *P. geniculata* (Baly) **combinación nueva**, *P. lutea* Erichson, *P. marshalli* Lefèvre, *P. merana* Bechyné, *P. bicolor* (Olivier) and *P. peruviana* (Bechyné) **combinación nueva**. *Jodasia roseometallica* Bechyné es sinonomizado con *P. merana*. Las especies *chloroptera* Lefèvre y *ocanana* Lefèvre son transferidas de *Prionodera* a *Metaxyonycha* Chevrolat **combinación nueva** y la especie *nixa* Bechyné es transferida de *Prionodera* a *Prionoderia* género **nuevo**. Se presenta una clave a las especies en el género revisado *Prionodera*.

Key words: Prionodera adiastola, Prionodera arimanes, Prionodera costata, Prionodera cyanea, Prionodera dichroma, Prionodera esmeralda, Prionodera furcada, Prionodera gaiophanes, Prionodera geniculata, Prionodera kirschi, Prionodera lutea, Prionodera merana, Prionodera nila, Prionodera bicolor, Prionodera peruviana, Prionoderita nixa, Stenolampra, Jodasia, Metaxyonycha, Chrysomelidae, Eumolpinae, Costa Rica, Panamá, Brazil, Colombia, Ecuador

Introduction

This study began over a decade ago with what at the time looked like a simple case of describing a large and showy new species of *Stenolampra* Baly 1859 (Eumolpinae) from Costa Rica. Routine checking to confirm its generic placement uncovered yet another taxonomic tangle in the Neotropical Eumolpinae involving the genera *Prionodera* Chevrolat 1837, *Stenolampra* Baly, and *Jodasia* Bechyné 1951, not to mention a legal tangle between Germany and Switzerland which for some time kept important type material off

limits to researchers. As of 1990, *Prionodera* contained 14 Central and South American species as listed in Bechyné's catalog, while *Stenolampra* contained 3 species and *Jodasia* included two (Bechyné 1953). Some of the more attractive Neotropical Eumolpinae are found in these genera, recognizable by their relatively large size and slender proportions which give them the appearance of cerambycid beetles. However, their taxonomy has been based entirely on a superficial *gestalt* which quickly falls apart when morphological structures are examined. Recently, all but one of the Central American *Prionodera* species were transferred to *Metaxyonycha* Chevrolat 1847 (Flowers 1996) and that one remaining species has been removed to the genus *Thysanomeros* (Flowers 2003a).

The name *Prionodera* first appeared in Chevrolat's (1837) catalog, where it included the valid species *Colaspis bicolor* Olivier 1808. Erichson (1847) first used the name in an independent publication for the species *Prionodera lutea*, and Monrós and Bechyné (1956) designated *C. bicolor* as the type species. Bechyné (1953) also synonymized *Aporistus* Lefèvre with *Prionodera*, and described two species in a new genus *Jodasia* (Bechyné 1951, 1953), which he described as closely related to *Prionodera*. Recent collecting and inventory studies have brought to light some surprisingly large and colorful undescribed species which, among other things, have re-established the presence of *Prionodera* in Central America. This paper describes seven new species from Central and South America, synonymizes the genera *Stenolampra* and *Jodasia* with *Prionodera*, transfers two additional South American species to the genus *Metaxyonycha*, and describes a new genus to receive a third South American species.

In the descriptions given below, terminology of the genitalia follows Flowers (1995, 1999) and Askevold and Flowers (1994). Specimens are deposited in the following institutions:

AG	Arthur Gilbert collection, San Francisco, California, USA
BPBM	Bernice P. Bishop Museum, Honolulu, Hawai'i, USA
NHM	The Natural History Museum, London, England
CU	Cornell University Collection, Ithaca, New York, USA
EGR	Edward G. Riley collection, Texas A&M University, College Station, Texas,
	USA
EPN	Escuela Politécnica Nacional, Quito, Ecuador
FAMU	Florida A&M University, Tallahassee, Florida, USA
FSCA	Florida State Collection of Arthropods, Gainesville, Florida, USA
HPS	Henry P. Stockwell collection, Ciudad Panamà, Panamà
INBio	Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica
ISA	Ingolf S. Askevold collection, Tallahassee, Florida, USA
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachu-
	setts, USA
MNHNP	Musum National d'Histoire Naturelle, Paris, France

zоотаха 631 MPEG Museo Paraense Emelio Goelgi, Belem, Brazil
 MMNH National Museum of Natural History, Washington, DC, USA
 NHMB Naturhistorisches Museum, Basil, Switzerland
 STRI Smithsonian Tropical Research Institute, Ciudad Panamá, Panamá
 ZMHU Zoologisches Museum, Museum für Naturkunde der Humboldt-Universität, Berlin, Germany

Prionodera Chevrolat

(Figs 1-56, 60-100)

Prionodera Chevrolat 1837:407 Stenolampra Baly 1859:12, **new synonymy** Jodasia Bechyné 1951:350, **new synonymy**

Type species. *Colaspis bicolor* Olivier 1808:879, designated by Monrós and Bechyné (1956)

Body elongate-oval, dorsally convex. Head with clypeus coarsely to rugosely punctate, apex of clypeus emarginate. Frons finely to coarsely punctate; surface between punctures smooth to alutaceous; antennal calli smooth and slightly swollen. Eye oval, broadly emarginate at antennal insertion; ocular sulci present or absent. Antenna with scape elongate oval, pedicel subglobose, shorter than scape, distinctly shorter than flagellomere 1; flagellum filiform, each flagellomere slightly wider at apex, elongate; antennomeres 3-6 with scattered appressed setae, antennomeres 7–11 densely pubescent, with whorl of long erect setae at apex of antennomeres 3-10; antennomere 11 spindle-shaped. Mouthparts with apex of labrum emarginate, with 2-4 dorsal setae, and short row of lateral setae along outer margin. Mandible with outer margin with sharp bend, lateral surface rugose and setose, a prominent seta on dorsal surface at angle, apical teeth broad, pointed. Maxillary palp with apical segment tapered. Prothorax distinctly wider than long, pronotum moderately convex, with posterior margin subequal in length to anterior margin, diagonal submedian depressions weak to well developed; anterior angles acute, directed anteriorly, posterior angles acute; all angles with a seta-bearing puncture; basal marginal bead present; lateral margin narrow undulate, forming three weak teeth, greatest width of pronotum anterior to middle; disc distinctly, regularly punctate, with punctures separated by a distance equal to or slightly greater than their own diameters; surface between punctures smooth, shining. Prosternum with long setae, coarsely punctate, transversely flat between coxae; with anterior margin excavated for reception of gular area of head; posterior margin of intercoxal process truncate to markedly concave, lateral angles of intercoxal process swollen. Lateral arms of prosternum excavated for reception of gular area of head, with anterior margin straight, junction with prosternum discontinuous, surface glabrous. Proepimeron weakly concave, sparsely punctate, with punctures separated by distance

greater than diameter of a puncture, with surface smooth, shiny. Mesosternum subequal in width to prosternum, flat between coxae. Metasternum convex, swollen anterior to hind coxae, smooth, with sparse short yellow setae: metepisternum gradually narrowed posteriorly, with surface aluteceous. Legs sparsely covered with short prostrate setae; all surfaces alutaceous. Trochanters with strong seta on apical angle. Femora strongly swollen in middle, profemur armed below with a small obtuse tooth (Fig. 6). Tibiae bicarinate, slightly to moderately sulcate between carinae, with setae increasing in length toward apex of tibiae; protibiae abruptly widened in apical third; middle and hind tibiae widened apically and lacking emargination. Tarsi densely and uniformly pilose beneath; basal tarsomere of foreand middle legs weakly expanded in male (Fig. 9), distinctly longer than wide; 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 punctate, punctures scattered or in regular longitudinal striae, if striate, intervals between striae flat or raised; surface between punctures smooth with scattered small punctulae; humeri prominent, rounded, basal calli obsolete; postbasal depression weak or lacking; sides subparallel or broadly rounded, convergent, apices conjointly rounded. Basal margin costate at humeri. Epipleuron narrow, slanted downward, visible in lateral view, tapering evenly from base to apex. Scutellum Ushaped, with base subequal to length; surface smooth, with few punctulae. Abdomen with all segments subequal in length, with sparse prostrate setae, also with pairs of long submedian setae on sternites III or IV-VI. Surface of segments smooth. Male sternite VII with lateral margins smooth, a weak depression in center. Pygidium lacking longitudinal groove, with apical setae; pygidial surface smooth, lateral margins smooth (Fig. 7). Male Genitalia: Median lobe of male with basal hood lightly sclerotized, with apodemes indistinct at lateral margins of hood; subbasal fenestra present; basal spurs prominent; tegmen triangular. Female Genitalia: Sternite VII with apical margin weakly emarginate, and with numerous long lateral and apical setae. Segments VIII-XI in female forming ovipositor of variable length. Gonocoxae usually short, robust, curved inwardly toward midline (as in Fig. 70). Spermatheca with receptacle long, not strongly differentiated from pump, spermathecal gland located near mid-length.

Remarks. This genus can be distinguished from all other Neotropical Eumolpinae by the following combination of characters: 1) pygidium lacking groove; 2) prosternum broadly excavated at anterior margin; 3) lateral arms of prosternum not distinctly convex; 4) anterior femur with ventral tooth or angulation. *Prionodera* most closely resembles *Thysanomeros* Flowers (Flowers 2003a) and *Prionoderita* Flowers (see below) but can be distinguished by its larger size, ventral tooth on the fore femur, and more elongate and tapering body shape.

Prionodera belongs to the informal group Endocephalites, as defined by Flowers (2003a). It can be distinguished from other genera of the Endocephalites by the ventral tooth on the fore femur and, except for *P. cyanea*, by the more elongate body shape.

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FIGURES 1–5. *Prionodera*, dorsal view. 1. *P. arimanes* Flowers, female; 2. *P. esmeralda* Flowers male; 3. *P. bicolor* (Olivier), male; 4. *P. nila* Flowers, male; *P. lutea* Erichson, female.

Key to the species of Prionodera

1 Body ovate, relatively short; sides of elytra curved at middle (Fig. 8), color dark blue

1'	Body elongate-ovate; sides of elytra subparallel at middle, color variable
2(1)	Intercoxal process of prosternum depressed posterior to forecoxae, and with apical margin distinctly concave (Fig. 10)
2'	Intercoxal process of prosternum not depressed, apical margin truncate or very shallowly concave
3.(2)	Body with at least faint metallic sheen, usually metallic green or copper
5.(2)	merana Bechyné
3'	Body entirely tan or brown
4 (3')	Body and elytra entirely light tan (Fig. 5)lutea Erichson
4'	Body dark brown, elytra dark brown or brown and tan
5 (4')	Body and elytra entirely dark chocolate brown; intervals on elytral disc sharply costate
5'	Elytra light brown with dark brown sutural and lateral margins, intervals of elytral disc flat
6 (2')	Head, pronotum and body reddish or yellowish brown, elytra blue (Fig. 3)7
6'	Elytra same color as head and pronotum (Figs 1, 2, 4, 5)
7 (6)	Elytra shining blue, punctures in striae bicolor (Olivier)
7'	Elytra matte blue, punctation confused marshalli Lefèvre
8 (6')	Body and elytra metallic green, blue, or coppery9
8'	Body and elytra brown or tan, sometimes with faint metallic sheen14
9 (8)	Legs reddish brown to dark brown, contrasting with metallic blue or green body
	and elytra <i>dichroma</i> n. sp.
9'	Legs same metallic color as body and elytra10
10 (9')	Apical declivity of elytra with two or three elytral intervals weakly to strongly inflated (Figs 11, 12)
10'	Elytral intervals not differentially inflated or swollen above apical declivity <i>kirschi</i> (Lefèvre)
11 (10)	Elytral intervals costate and elytral interval III strongly produced posteriorly at
11 (10)	apical declivity (Fig. 11)
11'	Elytral intervals fused and only weakly swollen at apical declivity (Fig. 12)13
	Pronotum more evenly and densely punctate (Fig. 14) <i>costata</i> (Baly)
12'	Pronotum more sparsely and irregularly punctate (Fig. 13) adiastola n. sp.
	Color bright metallic green, known from central to northern Costa Rica (Fig. 3)
13'	Color dark blue-green, known from Panamá <i>esmeralda</i> n. sp.
13 14 (8')	Legs concolorous yellowish brown
14 (8)	Legs yellowish brown with tarsi and femoral-tibial joints darker brown
	Apex of median lobe with projections digitate and angled downward (Fig. 32),
15 (14)	known from Panamá and Colombia
	known nom i anania and colomola

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FIGURES 6–14. 6. *P. merana* Bechyné, fore femur; 7. *P. esmeralda* Flowers, pygidium; 8. *P. cyanea* (Lefèvre), dorsal outline; 9. *P. furcada* Flowers, basitarsi: left, foretarsus; right, mesotarsus; 10. *P. merana* Bechyné, prosternum, three-quarter view; Figs. 11–12, elytral apices, 11. *P. costata* (Baly); 12. *P. esmeralda* Flowers; Figs. 13–14, pronota, 13. *P. adiastola* Flowers; 14. *P. costata* (Baly).

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Prionodera adiastola Flowers, new species

(Figs 13, 15–18, 60–62, 97, 100)



Holotype Male. Body elongate-oval, dorsally convex; length 8.9 mm. Head, pronotum and elytra metallic bluish green; antenna with segments 1–6 piceous, 7–11 brown. Underside and legs shining piceous with dark blue reflex. Head with clypeus coarsely punctate, punctures separated by distance greater than their diameters, surface between punctures smooth, apex of clypeus emarginate. Frons finely punctate, punctures separated by distance greater than their diameters; surface between punctures smooth, shining; vertex with a fait median impressed line; antennal calli smooth, shining, and slightly swollen. Eyes oval, shallowly and broadly emarginate at antennal insertion; ocular sulci present. Mouthparts piceous. Prothorax distinctly wider than long, L/W = 0.81; pronotum with diagonal submedian depressions weak; lateral margin narrow, undulate, forming two weak teeth at the mid-point, with widest part of pronotum anterior to middle; disc almost impunctate in anterior third, distinctly, regularly punctate behind middle (Fig. 13), with punctures separated by a distance greater than their diameters; surface between punctures smooth, shining. Undersurface of thorax smooth. Prosternum with long setae, rugosely punctate, longitudinally strongly inclined behind coxae, transversely flat; posterior margin of intercoxal process very shallowly concave, lateral angles of intercoxal process swollen, width of intercoxal process 0.60 x diameter of procoxa. Lateral arms of prosternum with surface glabrous, wrinkled. Proepimeron with a few punctures scattered in posterior half, with surface smooth, shiny. Mesosternum flat between coxae, surface finely punctate, with sparse short yellow setae. Metasternum finely wrinkled, with two pairs of long yellow setae. Trochanters with strong seta on apical angles. Protibiae abruptly widened in apical third. Basal tarsomere of fore- and middle legs weakly expanded, distinctly longer than wide. Elytra punctate-striate, fourth stria irregularly geminate in basal third; with punctures in striae separated by distance greater than their diameters; intervals flat on disc, becoming convex apically and laterally, intervals forming low costae laterally; interval III swollen and protruding above apical declivity, intervals IV and VIII swollen and united at top of apical declivity; intervals V and VIII broadly united in angle of intervals IV and VIII (as in Prionodera costata, Fig. 11). Surface between punctures smooth with scattered small punctulae; humeri prominent, rounded, width across humeri 1.4 x width across pronotum; basal calli obsolete; postbasal depression lacking, sides subparallel, convergent; apices strongly declivous, conjointly rounded, basal margin costate to scutellum. Male sternite VII with lateral margins smooth, a weak depression in center. Median lobe in lateral view smoothly curved (Fig. 15); apex bifid (Fig. 18). Partly everted endophallus membranous, with small lateral lobes (Fig. 17). Apical sclerite, straight, slightly twisted (Fig. 16).

Allotype Female. Body oval; length 11.6 mm; head, and pronotum dark metallic green, elytra metallic green with a strong red-purple reflex on disc, and underside piceous with metallic green reflex; antennae with segments 1–7 piceous, 8–11 reddish brown; legs

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piceous with bluish reflex. Prothorax distinctly wider than long, L/W = 0.79; pronotum with two weak teeth on lateral margin; sparsely and irregularly punctate on disc, impunctate in apical fourth at middle; with punctures separated by distance equal to or slightly greater than their diameters, punctures more dense near anterior angles. Lateral arms of prosternum and proepimeron as in male; prosternum similar to male, but with width of intercoxal process 0.9 x diameter of procoxa, broadened behind coxae, posterior angles slightly swollen, posterior margin straight and weakly crenulate. Legs similar in form to male, basal tarsomere of fore- and middle legs not expanded. Elytra loosely geminiatepunctate-striate, lateral intervals more convex than in male, apical intervals as in male, but with interval III more strongly inflated above apical declivity. Abdominal sternites sparsely covered with short setae, setae longer laterally; sternites III to VI with three or four long setae on each side of midline. Sternite VII with apical margin weakly emarginate, and with numerous long lateral and apical setae. Segments VIII-XI forming short, robust ovipositor (Fig. 60); sternite VIII with short strap-like basal apodeme; apicolateral arms present only as several setae; tergite of segment VIII weakly sclerotized laterally (Fig. 61). Segment IX with hemisternites with short broad basal rods; paraprocts separated into pair of slender, curved dorsal rods, apically forming hood-like projection above gential orifice; baculum indistinct, apical, shorter than gonocoxae. Gonocoxae short, robust, with long setae in apical half; coxostyli very small, with several long apical setae. Spermatheca as in Fig. 62; spermathecal duct thin, sclerotized, not coiled.

Etymology. Adiastolos, from Greek, meaning confused.

Specimens examined. Male HOLOTYPE labeled "ECUADOR: Limacocha 0°23'S 76°38'W, 31 Mar. '74, EL 300m, H.P. Stockwell" (HPS). Female ALLOTYPE labeled "ECUADOR: Limacocha 0°23'S 76°38'W, 31 Mar. '74, EL 300m, H.P. Stockwell" (HPS). PARATYPES (7♂♂, 6♀♀): ECUADOR: 1♀ "Chiquindo" 80–14 (NHM); 1♀ 42149/Buck-ley/Ecuador, Macas/Frey Coll., 1905.100 (NHM); 6♂♂, 1♀ Napo Prov. Estación Cientifica Yasuní, 8–10-IX-1999. 215m. Coll. E.G. Riley (EGR); 1♂ Limacocha 0°23'S 76°38'W, 31-III-1974, EL 300m, H.P. Stockwell (HPS); 1♀ Macas; F. Monrós Collection 1959 (det. "Prionodera metallica Jac., J. Bechyné) (NMNH); 1♀ El Presidio, Ecuador (NMNH). BRASIL (?): 1♀ Amazonas, Fonteboa, Dr. Hahnel; F. Monrós Collection 1959 (NMNH). Paratypes in NHM, NMNH, HPS.

Remarks. This species closely resembles *Prionodera costata* (Baly), but can be distinguished externally by the more sparsely punctate pronotum (Fig. 13). One of the NMNH specimens is labeled "*Prionodera metallica* det. Bechyné", and I have seen similar determinations on specimens in other collections (Flowers 2003b).