A REVISION OF THE GENUS EUDIADORA OBENBERGER (COLEOPTERA: BUPRESTIDAE)

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Abstract. — The Neotropical coroebine genus Eudiadora is fully revised for the first time. Four species are recognized with four new synonymies proposed: E. pulchra (Obenberger) (= vianai Obenb. = corobensis Obenb. = pulcherrima Cobos); E. kerremansi Obenberger (= negrei Cobos); E. meliboeoides Obenberger and E. bronzeola Cobos. The genus and species are redescribed, separated in a key, illustrated and the distribution shown on a map. The genus is discussed with regard to possible relationships within the tribe. Lectotypes are designated for E. cordobensis, E. vianai and E. meliboeoides.

Key Words: Argentina, Coleoptera, Buprestidae, revision

In the short time that I have been associated with this department, I have enjoyed the varied personalities of the collective Coleoptera contingent and their wealth of knowledge. No one, however, was more willing to discuss varied topics, make suggestions or give advice than Don Whitehead. Along with many others in the department, I miss him as a colleague, friend and a constant source of both interesting and interested commentary. I wish, therefore, to dedicate this paper to Don in memory of the many things I learned from him and the many times I enjoyed his company.

INTRODUCTION

The Neotropical Coroeboeini Bedel have received little comprehensive attention; the three works of Cobos (1972a, b, 1974) being the only ones that I am aware of. The coroebine genera currently defined from this zoogeographical region are Amorphosoma Laporte, Amorphosternus Deyrolle, Amorphosternoides Cobos, Diadora Kerremans, Bergidora Kerremans, Diadorina, Helferina both Cobos, Eudiadora Obenberger, Cyphothorax, Trypantius, both Waterhouse, Dismorpha Gistel (= Stenogaster Solier), Deyrollius and Sambomorpha, both Obenberger. Several of these taxa would benefit from a thorough revision of reevaluation. The putative relationships between some of these taxa and those of both Subsaharan Africa and Australia will be better understood once these genera, and indeed uniform limits to just what constitutes a coroebine genus, are defined.

Eudiadora was described by Obenberger (1924) for his Diadora pulchra (1922), then he (1932) described E. kerremansi. In 1947 he described three more species (E. vianai, E. cordobensis, E. meliboeoides) and provided a key to all five. Cobos (1959) described E. bronzeola and provided a key to separate it from the first two species described by Obenberger, apparently being unaware of the last three described by Obenberger. Cobos (1961) described E. negrei and E. pulcherrima, mentioned the key of Obenberger (1947) and provided a checklist of all eight species. Cobos (1974), in a review of Diadora, suggested in a footnote...
that *Amorphosoma gibbicolle* Kerremans should be removed from the then current combination in *Diadora* to *Eudiadora*. Hespenheide (1979) transferred this species to *Cyphothorax*.

The last three Obenberger species were described from material sent by M. J. Viana, and a statement in the introduction of that paper (Obenberger 1947) infers that the "types" (syntypes) would be deposited in the Prague Museum (NMPC) and the Viana collection. Under each description size, ranges are given but there is no mention of the exact number of specimens. Senor Viana is currently associated with the Instituto Investigaciones Entomologicas Salta, Rosario de Lerma, Salta, Argentina, with his private collection being housed at that address. The director, Sr. Manfredo Fritz, has indicated (in litt.) that there is no determined material of these taxa present in the collection. Therefore I was surprised to receive a parcel from Museo de La Plata containing one syntype of each of these species. While I generally agree with the philosophy of conserving the greatest number of types under the same roof (in this case, NMPC), I also believe that, where and when possible, it is important to preserve natural history within the country or region of origin. Therefore, I will designate lectotypes herein for these three species and have chosen the specimens belonging to Museo de La Plata.

The following abbreviations are used for the collections which loaned material for this study and are from, or in the style of, Arnett and Samuelson (1986). ACAS—A. Cobos collection, Almeria, Spain; BMNH—The Natural History Museum, London, England; MACN—Museo Argentina de Cien-
cias Naturales “Bernardino Rivadavia,” Buenos Aires, Argentina; CHAH—H. A. Hespenheide collection, Los Angeles, California; CLBC—my research collection; ILMA—Fundacion e Instituto Miguel Lillo, Universidad Nacional de Tucuman, Argentina; MCZC—Museum of Comparative Zo-
ology, Harvard University, Cambridge, Massachusetts; MLPA—Museo de Ciencias Naturales, La Plata, Argentina; NMNH—National Museum of Natural History, Washington, D.C.; NMPC—National Mu-
seum, Prague, Czechoslovakia; RLWE—R. L. Westcott collection, Salem, Oregon.

The genus and species are redescribed herein due to the diverse languages and journals of the original descriptions.

**Genus Eudiadora** Obenberger


Type-species.—*Diadora pulchra* Oben-
berger (by original designation).

Subcylindrical, elongate ovoid; rugose dorsally; setose.

**Head** (e.g. Figs. 2, 3): With narrow, elongate, longitudinal groove on frontovertex, feebly bifurcate at ventral apex. Eyes widely separated on frontovertex, inner margins diverging dorsally. Antennal insertions moderate, separated by distance nearly twice their own width. Frontoclypeus flattened, distal margin emarginate, with ventrally produced roundly acute lateral lobe on either side. Gena concave beneath eye be-

**Pronotum:** Wider than long, widest at or near midpoint; anterior margin slightly convex; posterior margin bisinuate with me-
dian portion truncate; lateral margins carinate, arcuate beyond acute basolateral angles; one prelateral carina on either side from base to near midpoint; disk convex. Scutellum more or less triangular.

**Elytra:** Slightly wider near base than pronotum; lateral margins subparallel and narrow-
ing to middle, then broadly arcuate in apical ½ before attenuately converging to separately rounded apices. Epipleura sepa-
rated from disk by carina past midpoint.
Figs. 1–7. *Eudiadora pulchra*. 1, Lateral aspect (A = basolateral projection of 1st abdominal sternite; E = epipleuron; m = metepimeron). 2, Head (frontal aspect). 3, Head (lateral aspect). 4, Thoracic sternites, (ventral aspect: Mc = mesocoxa; Ms = mesosternum; Mt = metasternum; Mtc = metacoxal plate; Pc = procoxa; Ps = prosternum). 5, Hind leg (ventral aspect). 6, Antenna (dorsal aspect). 7, Hind wing (ventral aspect: M = median vein; r = radial cell; r-m = radiomedial crossvein; rs = radial sector vein; 1A = first branch of 1st anal vein; 1A2 = second branch of 1st anal vein; 2A = first branch of 2nd anal vein; 2A2 = second branch of 2nd anal vein; 2A3 = third branch of 2nd anal vein; 3A = first branch of 3rd anal vein; 4A1 = 4th anal vein). Scale lines = 1 mm; equal for 2 and 3, 5 and 6.

Wing (Fig. 7): Radial cell (r) elongate, with radiomedial crossvein (r-m) connecting from r to median vein (M). Radial sector (rs) extending further basally than M. 1A1 free at base. 1A2 with slight branch past midpoint near base of 1A1. 2A1 free at base. 2A2 attached basally to 2A3. 2A3 with small connecting crossvein to 3A1. 4A1 free basally.

Legs: Femora sub fusiform. Tibiae slightly longer than femora, arcuate, armed with two spines distally; hind tibia with setal comb on outer margin (e.g. Fig. 5). Tarsi with tarsomere 1 elongate, subequal to 2+3+4; 2–4 with ventral pulvilli, pulvilli very small in 2 and 3, projecting beyond distal margin of 4; 5 elongate, narrow, subequal to 1+2+3+4, claws bifid, inner teeth converging.

Ventrites (e.g. Figs 1, 4): Prosternum without mentonniere, anterior margin concave; process with sides subparallel between procoxae, apex roundedly attenuate. Sternal cavity mostly formed by metasternum, mesosternum reduced to two small lateral lobes.
Metacoxal plate with both anterior and posterior margins strongly bisinuate. Basolateral projection of 1st abdominal sternite partially covering metepimeron. Suture between sternites 1 and 2 arcuate anteriorly, very feebly impressed medially; remaining sutures evenly transverse, completely separated.

**Male genitalia** (Figs. 14–17): Elongate, subparallel; parameres with apicolateral membranous lobe with sensory setae, similar to *Meliboeus* Deyrolle and *Meliboeithon* Obenberger.

**Female genitalia:** Of the ‘coroebine’ type, with pair of ventral setose brushes.

Remarks.—*Eudiadora* shares the important character state of the longitudinally grooved frontovertex with four other New World genera of Coroebini, *Cyphothorax*, *Trypantius*, *Dismorpha*, and *Lepismadora* Velten. These genera apparently are more similar in other respects than are the three Australian genera (*Synechocera* Deyrolle, *Ethon* Gory and Laporte, and *Meliboeithon*) which share the same character state, but are not otherwise closely related (Bellamy 1988).

As several of the Neotropical coroebine genera need revision and some species’ placements within certain genera are spurious, no well-based phylogenetic commentary is appropriate now. *Eudiadora* seems to be the sister taxon to *Cyphothorax*, a revision of which is underway (Bellamy, in prep.). My initial impression is that *Eudiadora* is composed of two species groups based on the presence or absence of the hypomeral carina and the structure of the male genitalia. One group is defined solely for the type-species *E. pulchra* which has similarities to both *Cyphothorax* and *Meliboeithon*, mainly in wing venation and structure of the male genitalia. The other species group includes the remaining species which are more similar to *Lepismadora* as was discussed earlier by Velten and Bellamy (1987); however, the male genitalia of these two taxa are widely divergent. With *Eudiadora* and *Lepismadora* existing in an apparently amphitropical distribution, and perhaps converging due to arid environmental requirements, it may be that *Cyphothorax*, with species known from Argentina to Mexico, is the link between them.

Any relationship between *Eudiadora* and *Meliboeithon* is obviously much older unless the similarities are completely convergent. However, the similarities between *E. pulchra* and *M. intermedium* (Kerremans) are striking enough to suggest otherwise.

**Key to the Species of Eudiadora**

1. Hypomeron with disk entire, no longitudinal carina; integument color cupreous to dark red cupreous; pronotum and elytra often with patches and fasciae of setae (Figs. 8–10); male genitalia more cylindrical and with sides subparallel (Fig. 14) .................................................. (Chaco, Cordoba, Santa Fe, Santiago del Estero) *E. pulchra* (Obenberger)

2. Integument color black; setae of pronotum and elytra feebly concentrated into vague longitudinal vittae (Fig. 11) ..................................................
   (Catamarca, Jujuy, Salta, Tucuman) .......................................................... *E. kerremansi* Obenberger

3. Aeneous with greenish reflection; setae regularly distributed on entire dorsal surface
   (Misiones) .......... *E. meliboeoides* Obenberger

   Dark aeneous, sometimes with cupreous reflection; setae concentrated into longitudinal vittae on pronotum and elytra (Fig. 13) ..........
   (Catamarca) .......... *E. bronzeola* Cobos

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**Eudiadora pulchra** (Obenberger)

Figs. 1–10, 14a, b

*Diadora pulchra* Obenberger, 1922: 130.  
*Eudiadora vianai* Obenberger, 1947: 13; Cobos 1961: 13. **NEW SYNONYMY**  
*Eudiadora cordobensis* Obenberger, 1947: 14; Cobos 1961: 13. **NEW SYNONYMY**  
*Eudiadora pulcherrima* Cobos, 1961: 11. **NEW SYNONYMY**

Length 6.2–8.7, width 1.8–2.4 mm. Dark to reddish cupreous above and below. Dorsal surface generally transversely rugose. Ventral surface sparsely to moderately punctate and otherwise finely shagreened. Some areas of both dorsal and ventral surfaces with concentrations of short, recurved, white setae forming fasciate or tessellate patterns, especially on elytra (Figs. 8–10); in fresh specimens pulverulence concentrates in the various setal patches.

Head with longitudinal groove beginning opposite dorsal apex of eye; ventral bifurcation just ventral to midpoint of eye and dorsal to frontoclypeal plate. Frontovertex feebly depressed between eyes, slightly projecting laterally on either side along ocular inner margin. Eye with slight groove between frontovertex and inner margin extending from slightly posterior to dorsal apex to just anterior to ventral apex. One vague arcuate carina dorsal to each antennal cavity. Frontoclypeal plate carinate laterally, margins feebly diverging ventrally; distal margin broadly arcuate. Antenna with antennomere 1 elongate, angled basally; 2 shorter, broader than 1; 3, 4 each subequal in length and width to 2; 5–10 roundly serrate, length subequal to width; 11 subrectangular.

Pronotum slightly more than 1.3 × as wide as long, widest slightly posterior to midpoint. Anterior margin transverse laterally with slight convex median lobe. Posterior margin angularly bisinuate on either side of truncate median lobe. Posterolateral angles subacute. Lateral margins serrulate-crenulate, converging beyond angles then broadly arcuate to anterior margin. One feebly elevated bisinuate prelateral carina on either side from angle to beyond middle. Disk convex medially, slightly depressed laterally.
Scutellum triangular, longer than wide; lateral margins concave; disk depressed; surface strigose.

Elytra wider than pronotum, widest opposite humeri. Humeri moderately elevated, oblique. A slight depression between humeri and scutellum on either side. Lateral margins carinate, subparallel to beyond humeri before narrowing slightly to midpoint, then widening slightly before narrowing to separately rounded apices. Pygidium not visible from above.

Underside: Basolateral portions of sternites 1–5 with small glabrate areas (Fig. 1).

Material examined.—Holotype of pulchra, male (NMPC 23579): ARGENTINA, Santiago del Estero, La Banda, Argent Weiser; lectotype (here designated) of vianai, female (MLPA), 1 female paralectotype (NMPC 65191) and 1 female (MLPA): ARGENTINA, Cordoba, Dep. de Calamuchita, “El Sauce,” XII.1938, Manuel J. Viana; lectotype (here designated) of cordobensis, female (MLPA), 1 male paralectotype (NMPC 65192) and 1 female (MLPA): same data as lectotype of vianai; 1 female (NMPC), Chaco de Santiago; 2 females (MCZC, CLBC), Pr. Stgo. del Est., Las Termas, 28S 65W, 30.I.63, F. G. Werner; 1 male (MLPA), (Chaco) Resistencia, XII.37; 1 male (MACN), Sgo. del Estero, Rio Salado, Wagner col.

Remarks.—*Eudiadora pulchra* is the largest and most variable species in the genus. It differs from its congeners in size, coloration, punctuation, vestiture and male genitalia as illustrated, and lacks the hypomeral carina as indicated in the key. The type of pulcherrima was not made available for study; however, from the description and accompanying illustrations, the conspecificity is clear and supports the new synonymy proposed herein. The published type-locality is “Prov. Santa Fe, Villa Ana, 18.I.1946, Hayward coll.” This locality has been plotted on the distribution map (Fig. 18) and shows that all of the material known at present is from the floral province known as “Chaco.”

**Eudiadora kerremansi** Obenberger Figs. 11, 15


*Eudiadora negrei* Cobos, 1961: 9. New synonymy

Length 4.7–5.7, width 1.3–1.7 mm. Nitid black above and below. Dorsal surface rugose; ventral surface sparsely punctate and otherwise finely shagreened. Dorsal and ventral surfaces sparsely setose with concentrations of short, recurved, white setae forming vitae on pronotum and elytra (Fig. 11).

Head with longitudinal groove beginning on vertex and hidden under anterior margin of pronotum; ventral bifurcation just ventral to midpoints of eye and dorsal to frontoclypeal plate. Frontovertex feebly depressed between eyes, slightly projecting laterally on either side along ocular inner margin. Eye with slight groove between frontovertex and inner margin extending from slightly posterior to dorsal apex to just anterior to ventral apex. One vague arcuate carina dorsal to each antennal cavity. Frontoclypeal plate carinate laterally, margins feebly diverging ventrally; distal margin narrowly arcuate. Antenna with antennomere 1 elongate, angled basally; 2 shorter, broader than 1; 3, 4 each subequal in length and width to 2; 5–10 roundly serrate, length subequal to width; 11 subrectangular.

Pronotum slightly more than 1.4× as wide as long, widest slightly posterior of midpoint. Anterior margin transverse laterally with slight convex median lobe. Posterior margin angularly bisinuate on either side of truncate median lobe. Posterolateral angles acute. Lateral margins serrulate-crenulate, converging beyond angles then broadly arcuate to anterior margin. One feebly elevated bisinuate prelateral carina on either
side from angle to beyond middle. Disk strongly convex medially, slightly depressed on either side. Scutellum triangular, sides subequal, margins arcuate; disk depressed; surface strigose.

Elytra wider than pronotum, widest opposite humeri. Humeri moderately elevated, oblique. One slight depression between humeri and scutellum on either side. Lateral margins carinate, subparallel to beyond humeri before narrowing slightly to midpoint, then widening slightly before narrowing to separately rounded apices. Pygidium not visible from above.

Underside: Lateral abdominal ventrites partially visible past lateral elytral margins. Male genitalia as in Fig. 15.

Material examined.—Holotype of kerremansi, female (NMPC 23548): R= ARGENTINA, Prov. Tucuman, V.1921, C. Bruch; holotype of negrei, female (ACAS): (Salta) (Doctor Facundo) Zuviria (S25.05 W65.29), Reimoser coll.; 1 male (NMPC), Salta; 1 female (USNM), Catamarca Province; Andalgala, 4–6 February 1972, W. D. Duckworth; 1 female (RLWE), Salta, Rosario de Lerma, XII-26/27-1983, M. Wasbauer coll./malaise trap; 1 female (CLBC), same data except XII-21/23-1983; 1 male (CHAH), Pr. Tucuman, San Pedro de Colaloa, 2-II.(1974, coll. J. L. Neff; 3 ex., Tucuman, La Soledad, 8–30.XII.1967, L. Stange; 1 ex.,

Remarks.—As mentioned above, this species is grouped with *E. bronzeola* and *E. meliboeoides* due to the similarity of general facies, vestiture and male genitalia. *Eudiaadora kerremansi* is immediately separable from these other two species with its distinctive black color and reduced setal covering. The distribution of this species in the provinces of Jujuy, Salta and Tucuman corresponds with the floral biome known as “Yungas.”

*Eudiadora meliboeoides* Obenberger

Figs. 12, 16a, b

*Eudiadora meliboeoides* Obenberger, 1947: 15; Cobos 1961: 11.

Length 4.5–5.5, width 1.2–1.4 mm. Aeneous with slight greenish reflection above and below. Dorsal surface generally transversely rugose. Ventral surface sparsely to moderately punctate and otherwise finely shagreened. Dorsal surface moderately densely setose with vague vitae apparent on pronotum and elytra; ventral surface densely covered with short, adpressed, white setae; in fresh specimens pulverulence concentrates in the various setal patches.

Head with longitudinal groove beginning opposite dorsal apex of eye; ventral bifurcation just ventral to midpoint of eye and dorsal to frontoclypeal plate. Frontovertex feebly depressed between eyes, slightly projecting laterally on either side along ocular inner margin. Eye with slight groove between frontovertex and inner margin extending from slightly posterior to dorsal apex to just anterior to ventral apex. One vague arcuate carina dorsal to each antennal cavity. Frontoclypeal plate carinate laterally, margins feebly diverging ventrally; distal margin broadly arcuate. Antenna with antennomere 1 elongate, angled basally; 2 shorter, broader than 1; 3, 4 each subequal in length and width to 2; 5–10 roundly serrate, length subequal to width; 11 subrectangular.

Pronotum slightly more than 1.3 × as wide as long, widest slightly posterior of midpoint. Anterior margin transverse laterally with slight convex median lobe. Posterior margin angularly bisinuate on either side of truncate median lobe. Posterolateral angles subacute. Lateral margins serrulate-crenulate, converging beyond angles then broadly arcuate to anterior margin. One feebly elevated bisinuate prelateral carina on either side from angle to beyond middle. Disk convex mediately, slightly depressed laterally. Scutellum triangular, longer than wide; lateral margins concave; disk depressed; surface strigose.

Elytra wider than pronotum; widest opposite humeri. Humeri moderately elevated, oblique. A slight basal depression between humeri and scutellum on either side. Lateral margins carinate, subparallel to beyond humeri before narrowing slightly to midpoint, then widening slightly before narrowing to separately rounded apices. Pygidium not visible from above.

Underside: Lateral abdominal ventrites partially visible past lateral elytral margins.

Male genitalia as in Figs. 16a, b.

Material examined.—Lectotype (here designated), female (MLPA), 1 male paralectotype (NMPC 65190) and 1 female (MPLA): ARGENTINA, Misiones, Dept. Concepcion, Sta Maria, M. J. Viana; 1 male (MACN), same data except XI.1956; 1 male, 1 female (MACN, CLBC), Misiones, Puerto Aguirre, Hayward, 1984; 2 females (MACN), P. Aguirre.

Remarks.—*Eudiaadora meliboeoides* comes nearest to *E. bronzeola* but differs in coloration, vestiture, shape of male genitalia and distribution and may be separated as indicated in the key.
Eudiadora bronzeola Cobos
Figs. 13, 17


Length 5.0–5.9, width 1.5–2.0 mm. Cephalic to aeneous above and black with aeneous to bluish reflections below. Dorsal surface generally transversely rugose. Ventral surface sparsely to moderately punctate and otherwise finely shagreened. Dorsal surface moderately setose with concentrations of short, apressed, white setae forming vittae on pronotum and elytra (Fig. 13); ventral surface densely covered with short, adpressed, white setae; in fresh specimens pulverulence concentrates in the various setal patches.

Head with longitudinal groove beginning opposite dorsal apex of eye; ventral bifurcation just ventral to midpoint of eye and dorsal to frontoclypeal plate. Frontovertex feebly depressed between eyes, slightly projecting laterally on either side along ocular inner margin. Eye with slight groove between frontovertex and inner margin extending from slightly posterior to dorsal apex to just anterior to ventral apex. One vague arcuate carina dorsal to each antennal cavity. Frontoclypeal plate carinate laterally, margins feebly diverging ventrally; distal margin broadly arcuate. Antenna with antennomere 1 elongate, angled basally; 2 shorter, broader than 1; 3, 4 each subequal in length and width to 2; 5–10 roundly serrate, length subequal to width; 11 subrectangular.

Pronotum 1.3 × as wide as long, widest slightly posterior of midpoint. Anterior margin transverse laterally with slight convex median lobe. Posterior margin angularly bisinuate on either side of truncate median lobe. Posterolateral angles acute. Lateral margins serrulate-crenulate, converging beyond angles then broadly arcuate to anterior margin. One feebly elevated bisinuate prelateral carina on either side from angle to beyond middle. Disk convex mediately, slightly depressed laterally. Scutellum triangular, longer than wide; lateral margins concave; disk depressed; surface strigose.

Elytra wider than pronotum, widest opposite humeri. Humeri moderately elevated, oblique. One slight basal depression between humeri and scutellum on either side. Lateral margins carinate, subparallel to beyond humeri before narrowing slightly to midpoint, then widening slightly before narrowing to separately rounded apices. Pygidium not visible from above.

Underside: Lateral abdominal ventrites partially visible past lateral elytral margins. Male genitalia as in Fig. 17.

Material examined.—Holotype, female (ACAS): ARGENTINA, Catamarca, Belen, Bosq leg.; 1 male (NMNH), Catamarca, Villavil, 8 km E of Andalgala, 30 December 1974, Frank A. Enders; 2 females (CLBC), Catamarca, Febr. 1983, Luis Peña; 3 males, 5 females (CHAH, CLBC), Catamarca, Andalgala IBP Program, Desert Scrub Site, collector J. L. Neff; 5 specimens (ILMA), Catamarca, El Rodeo, 1959, R. Golbach.

Remarks.—Eudiadora bronzeola is nearest to E. meliboeoides and differs as discussed under that species previously. It was this species that was figured by Velten and Bellamy (1987), but erroneously listed as E. pulchra.

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the institutions within Argentina, help in determining localities, and for the discussions about the biotic provinces and distribution patterns in her country and elsewhere in South America.

LITERATURE CITED


Obenberger, J. 1922. Beiträge zur Kenntnis der Buprestiden (Col.). Archiv für Naturgeschichte (A) 88(12): 64-170.


