

2003

A Monographic Revision of the Genus *Platycoelia* Dejean (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini)

Andrew B. T. Smith

University of Nebraska - Lincoln, asmith@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/museumbulletin>



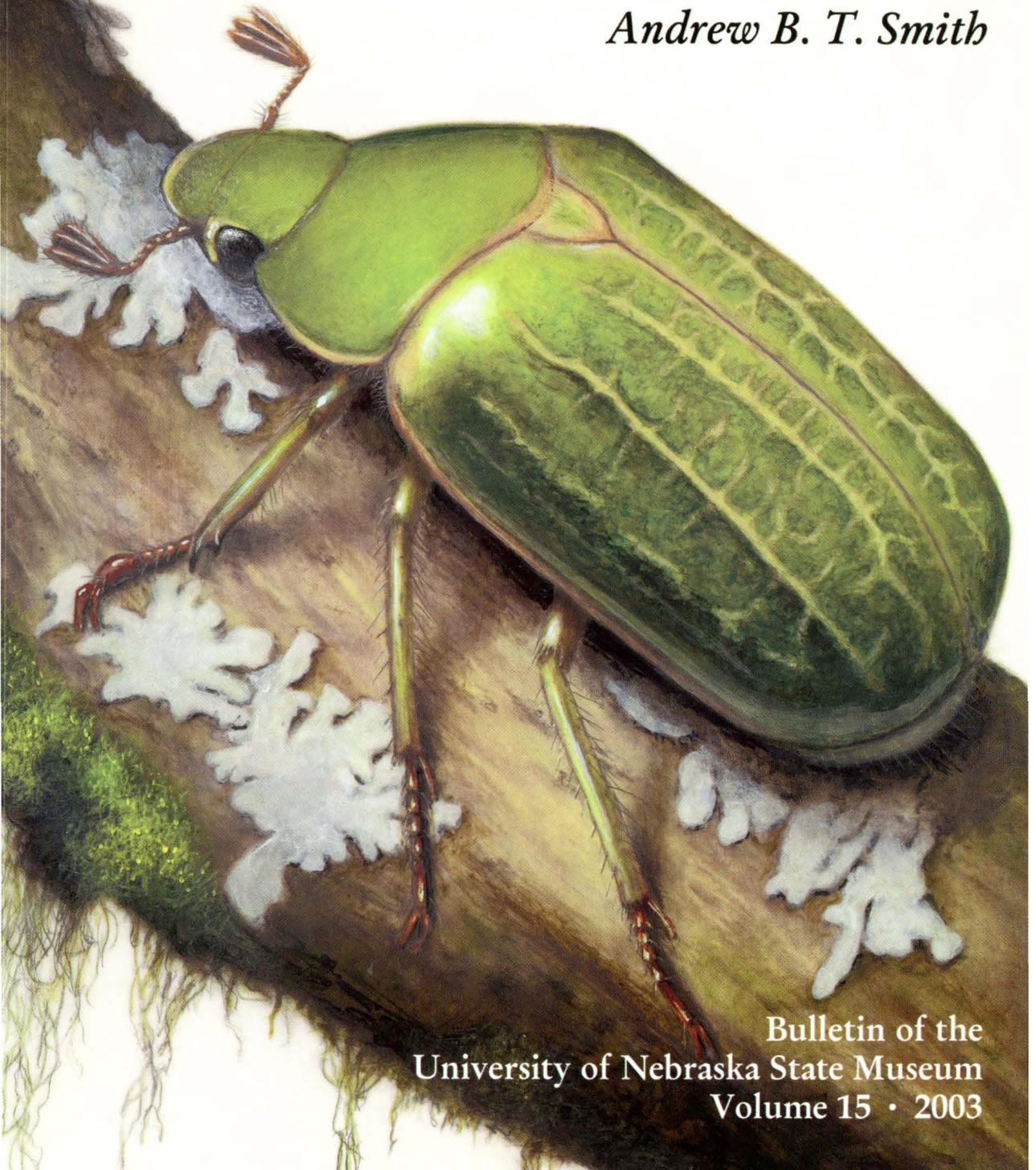
Part of the [Entomology Commons](#), and the [Other Ecology and Evolutionary Biology Commons](#)

Smith, Andrew B. T., "A Monographic Revision of the Genus *Platycoelia* Dejean (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini)" (2003). *Bulletin of the University of Nebraska State Museum*. 3.
<http://digitalcommons.unl.edu/museumbulletin/3>

This Article is brought to you for free and open access by the Museum, University of Nebraska State at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Bulletin of the University of Nebraska State Museum by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

**A Monographic Revision of
the Genus *Platycoelia* Dejean**
(Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini)

Andrew B. T. Smith



Bulletin of the
University of Nebraska State Museum
Volume 15 • 2003

Bulletin
of the
University of Nebraska State Museum

Volume 15

A Monographic Revision
of the Genus *Platycoelia* Dejean
(Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini)

by

Andrew B. T. Smith



Published by the University of Nebraska State Museum
Lincoln, Nebraska
2003

Bulletin
of the
University of Nebraska State Museum

Volume 15
Issue Date: 7 July 2003

Editor: Brett C. Ratcliffe
Cover Design: Angie Fox
Text design and layout: Linda J. Ratcliffe
Text fonts: New Century Schoolbook and Arial

Bulletins may be purchased from the Museum.
Address orders to: Publications Secretary
W436 Nebraska Hall
University of Nebraska State Museum
Lincoln, NE 68588-0514 U.S.A.

Price: \$20.00

Copyright © by the University of Nebraska State Museum, 2003.
All rights reserved. Apart from citations for the purposes of research or review,
no part of this Bulletin may be reproduced in any form, mechanical or
electronic, including photocopying and recording, without permission in
writing from the publisher.

ISSN 0093-6812
Library of Congress Catalog Card Number
Printed in the United States of America

The Bulletin is a peer-reviewed journal.

CONTENTS

Abstract.....	1
Introduction.....	3
Tribe Anoplognathini.....	4
Subtribe Platycoeliina.....	6
Taxonomic History of the genus <i>Platycoelia</i>	6
Notes on Authors, Types, and Collections.....	8
Phylogenetic Methods and Materials.....	12
Phylogenetic Analysis.....	12
Character Definition.....	12
Adult Morphological Character Analysis.....	13
Phylogenetic Protocol.....	22
Taxonomic Methods and Materials.....	22
Specimens.....	22
Catalog Format.....	24
Type Specimens.....	24
Designation of Lectotypes and Neotypes.....	25
Species Concept.....	26
Phylogenetic Patterns and Biogeographic Implications.....	27
Key to the Neotropical Genera of Anoplognathini.....	30
Subtribe Platycoeliina Burmeister, 1844.....	31
Genus <i>Platycoelia</i> Dejean, 1833.....	31
Key to the Species of <i>Platycoelia</i>	34
1. <i>Platycoelia alternans</i> Erichson, 1847.....	42
2. <i>Platycoelia inflata</i> Ohaus, 1904.....	44
3. <i>Platycoelia nervosa</i> Kirsch, 1871.....	48
4. <i>Platycoelia marginata</i> Burmeister, 1844.....	50
5. <i>Platycoelia meridensis</i> new species.....	55
6. <i>Platycoelia selanderi</i> Martínez and Martínez, 1994.....	57
7. <i>Platycoelia prasina</i> Erichson, 1847.....	61
8. <i>Platycoelia simplicior</i> Ohaus, 1909.....	62
9. <i>Platycoelia abdominalis</i> Ohaus, 1904.....	64
10. <i>Platycoelia pomacea</i> Erichson, 1847.....	66
11. <i>Platycoelia occidentalis</i> Ohaus, 1904.....	69
12. <i>Platycoelia valida</i> Burmeister, 1844.....	71
13. <i>Platycoelia mesosternalis</i> Ohaus, 1904.....	74
14. <i>Platycoelia peruviana</i> new species.....	76
15. <i>Platycoelia forcipalis</i> Ohaus, 1904.....	80
16. <i>Platycoelia sandia</i> new species.....	84
17. <i>Platycoelia penai</i> Frey, 1967.....	86
18. <i>Platycoelia galerana</i> new species.....	87
19. <i>Platycoelia flavostriata</i> (Latreille, 1813).....	91
20. <i>Platycoelia nigrosternalis</i> Ohaus, 1904.....	95
21. <i>Platycoelia humeralis</i> Bates, 1888.....	97
22. <i>Platycoelia intermedia</i> Ohaus, 1925.....	101

23. <i>Platycoelia convexa</i> new species.....	102
24. <i>Platycoelia interstincta</i> new species.....	104
25. <i>Platycoelia variolosa</i> Ohaus, 1904.....	105
26. <i>Platycoelia grandicula</i> new species.....	106
27. <i>Platycoelia hiporum</i> new species.....	111
28. <i>Platycoelia paucarae</i> new species.....	112
29. <i>Platycoelia flavoscutellata</i> Ohaus, 1904.....	115
30. <i>Platycoelia puncticollis</i> Ohaus, 1904.....	116
31. <i>Platycoelia unguicularis</i> Ohaus, 1904.....	120
32. <i>Platycoelia burmeisteriana</i> Ohaus, 1917.....	122
33. <i>Platycoelia burmeisteri</i> Arrow, 1899.....	124
34. <i>Platycoelia traceyae</i> new species.....	126
35. <i>Platycoelia wallisi</i> Ohaus, 1904.....	129
36. <i>Platycoelia flavohumeralis</i> new species.....	131
37. <i>Platycoelia steinheili</i> Ohaus, 1904.....	132
38. <i>Platycoelia chrysotina</i> Ohaus, 1904.....	133
39. <i>Platycoelia butleri</i> new species.....	136
40. <i>Platycoelia hirta</i> Ohaus, 1904.....	138
41. <i>Platycoelia alti plana</i> new species.....	140
42. <i>Platycoelia confluens</i> Ohaus, 1904.....	141
43. <i>Platycoelia lutescens</i> Blanchard, 1851.....	144
44. <i>Platycoelia gaujoni</i> Ohaus, 1904.....	149
45. <i>Platycoelia pusilla</i> new species.....	152
46. <i>Platycoelia bordoni</i> Martínez, 1976.....	153
47. <i>Platycoelia parva</i> Kirsch, 1885.....	154
48. <i>Platycoelia furva</i> new species.....	157
49. <i>Platycoelia quadrilineata</i> Burmeister, 1844.....	159
50. <i>Platycoelia rufosignata</i> Ohaus, 1904.....	160
51. <i>Platycoelia insolita</i> new species.....	163
52. <i>Platycoelia signaticollis</i> (Burmeister, 1844).....	166
53. <i>Platycoelia helleri</i> (Ohaus, 1904).....	169
54. <i>Platycoelia ignota</i> new species.....	171
55. <i>Platycoelia kirschi</i> (Ohaus, 1904).....	171
56. <i>Platycoelia baessleri</i> (Ohaus, 1904).....	173
57. <i>Platycoelia aenigma</i> new species.....	174
58. <i>Platycoelia bocki</i> (Ohaus, 1925).....	175
59. <i>Platycoelia alticola</i> (Gutiérrez, 1951).....	177
60. <i>Platycoelia inca</i> new species.....	179
61. <i>Platycoelia haenkei</i> (Gutiérrez, 1952).....	181
62. <i>Platycoelia laelaps</i> (Gutiérrez, 1951).....	184
Acknowledgments	186
Literature Cited	188
Appendix 1	193
Appendix 2.....	198
About the Author	202

LIST OF FIGURES

Fig. 1. <i>Platycoelia valida</i> mouthparts.....	14
Fig. 2. <i>Platycoelia grandicula</i> mouthparts.....	14
Fig. 3. <i>Platycoelia chrysotina</i> mouthparts.....	14
Fig. 4. <i>Platycoelia signaticollis</i> mouthparts.....	14
Fig. 5. <i>Platycoelia abdominalis</i> elytral apex.....	14
Fig. 6. <i>Platycoelia valida</i> elytral apex.....	14
Fig. 7. <i>Platycoelia mesosternalis</i> mesothoracic process.....	15
Fig. 8. <i>Platycoelia grandicula</i> mesothoracic process.....	15
Fig. 9. <i>Platycoelia chrysotina</i> mesothoracic process.....	15
Fig. 10. <i>Platycoelia signaticollis</i> mesothoracic process.....	15
Fig. 11. <i>Platycoelia alternans</i> male protarsal claw.....	17
Fig. 12. <i>Platycoelia valida</i> male protarsal claw.....	17
Fig. 13. <i>Platycoelia grandicula</i> male protarsal claw.....	17
Fig. 14. <i>Platycoelia chrysotina</i> male protarsal claw.....	17
Fig. 15. <i>Platycoelia alternans</i> parameres.....	18
Fig. 16. <i>Platycoelia inflata</i> parameres.....	18
Fig. 17. <i>Platycoelia prasina</i> parameres.....	18
Fig. 18. <i>Platycoelia abdominalis</i> parameres.....	18
Fig. 19. <i>Platycoelia occidentalis</i> parameres.....	18
Fig. 20. <i>Platycoelia forcipalis</i> parameres.....	18
Fig. 21. <i>Platycoelia flavostriata</i> parameres.....	19
Fig. 22. <i>Platycoelia puncticollis</i> parameres.....	19
Fig. 23. <i>Platycoelia parva</i> parameres.....	19
Fig. 24. <i>Platycoelia haenkei</i> parameres.....	19
Fig. 25. <i>Platycoelia alternans</i> phallobase and paramere.....	20
Fig. 26. <i>Platycoelia valida</i> phallobase and paramere.....	20
Fig. 27. <i>Platycoelia peruviana</i> phallobase and paramere.....	20
Fig. 28. <i>Platycoelia forcipalis</i> phallobase and paramere.....	20
Fig. 29. <i>Platycoelia flavostriata</i> phallobase and paramere.....	20
Fig. 30. <i>Platycoelia puncticollis</i> phallobase and paramere.....	20
Fig. 31. <i>Platycoelia butleri</i> phallobase and paramere.....	20
Fig. 32. <i>Platycoelia parva</i> phallobase and paramere.....	20
Fig. 33. <i>Platycoelia rufosignata</i> mentum.....	21
Fig. 34. <i>Platycoelia abdominalis</i> metasternum.....	21
Fig. 35. <i>Platycoelia parva</i> apical spiracle.....	21
Fig. 36. <i>Platycoelia inflata</i> male protibia.....	21
Fig. 37. Strict consensus tree of the species in the genus <i>Platycoelia</i>	28
Fig. 38. Phylogram of the species in the genus <i>Platycoelia</i>	29
Fig. 39. Typical form of male (right) and female (left) front claws.....	33
Fig. 40. Distribution of <i>Platycoelia alternans</i> and <i>P. inflata</i>	44
Fig. 41. <i>Platycoelia inflata</i> female.....	47
Fig. 42. Distribution of <i>Platycoelia nervosa</i> , <i>P. marginata</i> , and <i>P. meridensis</i>	49

Fig. 43. <i>Platycoelia marginata</i> female.....	54
Fig. 44. <i>Platycoelia meridensis</i> female.....	56
Fig. 45. <i>Platycoelia selanderi</i> male.....	59
Fig. 46. Distribution of <i>Platycoelia selanderi</i> , <i>P. prasina</i> , and <i>P. simplicior</i>	60
Fig. 47. Distribution of <i>Platycoelia abdominalis</i> and <i>P. pomacea</i>	66
Fig. 48. Distribution of <i>Platycoelia occidentalis</i> and <i>P. valida</i>	71
Fig. 49. <i>Platycoelia valida</i> male.....	73
Fig. 50. Distribution of <i>Platycoelia mesosternalis</i>	76
Fig. 51. <i>Platycoelia peruviana</i> male.....	78
Fig. 52. Distribution of <i>Platycoelia peruviana</i> and <i>P. convexa</i>	79
Fig. 53. <i>Platycoelia forcipalis</i> male.....	82
Fig. 54. Distribution of <i>Platycoelia forcipalis</i> , <i>P. sandia</i> , and <i>P. penai</i>	83
Fig. 55. <i>Platycoelia sandia</i> male.....	85
Fig. 56. Distribution of <i>Platycoelia galerana</i> , <i>P. nigrosternalis</i> , and <i>P. intermedia</i>	90
Fig. 57. <i>Platycoelia flavostriata</i> male.....	93
Fig. 58. Distribution of <i>Platycoelia flavostriata</i> , <i>P. lutescens</i> , and <i>P. helleri</i>	94
Fig. 59. <i>Platycoelia humeralis</i> male.....	99
Fig. 60. Distribution of <i>Platycoelia humeralis</i>	100
Fig. 61. <i>Platycoelia grandicula</i> male.....	109
Fig. 62. Distribution of <i>Platycoelia grandicula</i>	110
Fig. 63. Distribution of <i>Platycoelia interstincta</i> , <i>P. variolosa</i> , <i>P. paucarae</i> , and <i>P. hiporum</i>	114
Fig. 64. <i>Platycoelia puncticollis</i> male.....	118
Fig. 65. Distribution of <i>Platycoelia puncticollis</i> , <i>P. unguicularis</i> , <i>P. traceyae</i> , <i>P. wallisi</i> , <i>P. flavohumeralis</i> , and <i>P. steinheili</i>	119
Fig. 66. Distribution of <i>Platycoelia flavoscutellata</i> , <i>P. burmeisteriana</i> , <i>P. burmeisteri</i> , and <i>P. chrysotina</i>	123
Fig. 67. <i>Platycoelia traceyae</i> male.....	128
Fig. 68. Distribution of <i>Platycoelia butleri</i> , <i>P. hirta</i> , <i>P. alti plana</i> , and <i>P. confluens</i>	137
Fig. 69. <i>Platycoelia confluens</i> male.....	143
Fig. 70. <i>Platycoelia lutescens</i> male.....	148
Fig. 71. Distribution of <i>Platycoelia gaujoni</i> , <i>P. pusilla</i> , <i>P. bordoni</i> , and <i>P. parva</i>	151
Fig. 72. Distribution of <i>Platycoelia furva</i> , <i>P. quadrilineata</i> , <i>P. signaticollis</i> , <i>P. ignota</i> , and <i>P. aenigma</i>	158
Fig. 73. Distribution of <i>Platycoelia rufosignata</i> , <i>P. insolita</i> , <i>P. kirschi</i> , <i>P. baessleri</i> , <i>P. bocki</i> , <i>P. alticola</i> , <i>P. inca</i> , <i>P. haenkei</i> , and <i>P. laelaps</i>	163
Fig. 74. <i>Platycoelia insolita</i> male.....	165
Fig. 75. <i>Platycoelia signaticollis</i> male.....	168
Fig. 76. <i>Platycoelia bocki</i> male.....	176
Fig. 77. <i>Platycoelia inca</i> male paratype.....	180
Fig. 78. <i>Platycoelia haenkei</i> male paratype.....	183

Bulletin
of the
University of Nebraska State Museum
Volume 15

A Monographic Revision
of the Genus *Platycoelia* Dejean

(Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini)

by

Andrew B. T. Smith

Division of Entomology
University of Nebraska State Museum
Lincoln, NE, USA
68588-0514
Email: asmith@unlserve.unl.edu

Abstract. This paper presents a taxonomic revision of the genus *Platycoelia* Dejean (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini: Platycoeliina). Phylogenetic analyses of all species in the genus were conducted and the biogeography of the genus is discussed. The phylogenetic analysis supports the monophyly of *Platycoelia* and divides the genus into four major clades. Based on the cladistic analysis, the generic names *Callichloris* Burmeister, *Leucopelaea* Bates, and *Epicallichloris* Gutiérrez are considered synonyms of *Platycoelia*. Character states supporting monophyletic clades are discussed. Descriptions and keys to all taxa are included.

The genus *Platycoelia* was revised and now includes 62 species, 19 of which are described as new. The new species are: *P. aenigma*, *P. altiplana*, *P. butleri*, *P. convexa*, *P. flavohumeralis*, *P. furva*, *P. galerana*, *P. grandicula*, *P. hiporum*, *P. ignota*, *P. inca*, *P. insolita*, *P. interstincta*, *P. meridensis*, *P. paucarae*, *P. peruviana*, *P. pusilla*, *P. sandia*, *P. traceyae*. The following species group names are placed in synonymy: *P. boliviensis* Blanchard (= *P. pomacea* Erichson), *P. brasiliensis* Ohaus (= *P. pomacea* Erichson), *P. limbata* Ohaus (= *P. prasina* Erichson), *P. nigricauda* Bates (= *P. parva* Kirsch), *P. proseni* Martínez (= *P. burmeisteri* Arrow), *P. pulchrior* Ohaus (= *P. chrysotina* Ohaus), *P. tucumana* Ohaus (= *P. inflata* Ohaus). Lectotypes were selected for the following names: *Callichloris baessleri* Ohaus, *C. bocki* Ohaus, *C. helleri* Ohaus, *C. signaticollis* Burmeister, *Leucopelaea baronis* Ohaus, *Melolontha flavostriata* Latreille, *P. abdominalis* Ohaus, *P. alternans* Erichson, *P. boliviensis* Blanchard, *P. burmeisteri* Arrow, *P. burmeisteri* Ohaus, *P. chrysotina* Ohaus, *P. confluens* Ohaus, *P. flavoscutellata* Ohaus, *P. forcipalis* Ohaus, *P. gaujoni* Ohaus, *P. hirta* Ohaus, *P. humeralis* Bates, *P. inflata* Ohaus, *P. inflata tucumana* Ohaus, *P. intermedia* Ohaus, *P. laevis* Burmeister, *P. limbata* Ohaus, *P. lutescens* Blanchard, *P. marginata* Burmeister, *P. mesosternalis* Ohaus, *P. nervosa* Kirsch, *P. nigrocauda* Bates, *P. nigrosternalis* Ohaus, *P. occidentalis* Ohaus, *P. olivacea* Blanchard, *P. parva* Kirsch, *P. pomacea* Erichson, *P. pomacea brasiliensis* Ohaus, *P. prasina* Erichson, *P. pulchrior* Ohaus, *P. puncticollis* Ohaus, *P. quadrilineata* Burmeister, *P. rufosignata* Ohaus, *P. scutellata* Guérin-Méneville, *P. simplicior* Ohaus, *P. steinheili* Ohaus, *P. tschudii* Ohaus, *P. unguicularis* Ohaus, *P. valida* Burmeister, *P. variolosa* Ohaus, *P. wallisi* Ohaus. Neotypes were designated for *Callichloris alticola* Gutiérrez and *Callichloris laelaps* Gutiérrez.

Resumen. Este trabajo presenta una revisión taxonómica del género *Platycoelia* Dejean (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini: Platycoeliina). Se realizaron análisis filogenéticos de todas las especies y la biogeografía del género es discutida. El análisis filogenético soporta la monofilia de *Platycoelia* y divide el género en dos clados. Basado en el análisis cladístico, los nombres genéricos *Callichloris* Burmeister, *Leucopelaea* Bates, y *Epicallichloris* Gutiérrez son considerados sinónimos de *Platycoelia*. Los caracteres que dan soporte a los clados son discutidos. Descripciones y claves para los taxa son incluidas.

El género *Platycoelia* es revisado y ahora incluye 62 especies, 19 de las cuales se describen como nuevas. Las especies nuevas son: *P. aenigma*, *P. alti plana*, *P. butleri*, *P. convexa*, *P. flavohumeralis*, *P. furva*, *P. galerana*, *P. grandicula*, *P. hiporum*, *P. ignota*, *P. inca*, *P. insolita*, *P. interstincta*, *P. meridensis*, *P. paucarae*, *P. peruviana*, *P. pusilla*, *P. sandia*, *P. traceyae*. Los siguientes nombres específicos son pasados a sinonimia: *P. boliviensis* Blanchard (= *P. pomacea* Erichson), *P. brasiliensis* Ohaus (= *P. pomacea* Erichson), *P. limbata* Ohaus (= *P. prasina* Erichson), *P. nigricauda* Bates (= *P. parva* Kirsch), *P. proseni* Martínez (= *P. burmeisteri* Arrow), *P. pulchrior* Ohaus (= *P. chrysotina* Ohaus), *P. tucumana* Ohaus (= *P. inflata* Ohaus). Lectotipos son designados para los siguientes nombres: *Callichloris baessleri* Ohaus, *C. bocki* Ohaus, *C. helleri* Ohaus, *C. signaticollis* Burmeister, *Leucopelaea baronis* Ohaus, *Melolontha flavostriata* Latreille, *P. abdominalis* Ohaus, *P. alternans* Erichson, *P. boliviensis* Blanchard, *P. burmeisteri* Arrow, *P. burmeisteri* Ohaus, *P. chrysotina* Ohaus, *P. confluens* Ohaus, *P. flavoscutellata* Ohaus, *P. forcipalis* Ohaus, *P. gaujoni* Ohaus, *P. hirta* Ohaus, *P. humeralis* Bates, *P. inflata* Ohaus, *P. inflata tucumana* Ohaus, *P. intermedia* Ohaus, *P. laevis* Burmeister, *P. limbata* Ohaus, *P. lutescens* Blanchard, *P. marginata* Burmeister, *P. mesosternalis* Ohaus, *P. nervosa* Kirsch, *P. nigrocauda* Bates, *P. nigrosternalis* Ohaus, *P. occidentalis* Ohaus, *P. olivacea* Blanchard, *P. parva* Kirsch, *P. pomacea* Erichson, *P. pomacea brasiliensis* Ohaus, *P. prasina* Erichson, *P. pulchrior* Ohaus, *P. puncticollis* Ohaus, *P. quadrilineata* Burmeister, *P. rufosignata* Ohaus, *P. scutellata* Guérin-Méneville, *P. simplicior* Ohaus, *P. steinheili* Ohaus, *P. tschudii* Ohaus, *P. unguicularis* Ohaus, *P. valida* Burmeister, *P. variolosa* Ohaus, *P. wallisi* Ohaus. Neotipos son designados para *Callichloris alticola* Gutiérrez y *Callichloris laelaps* Gutiérrez.

INTRODUCTION

The genera of the cockchafers offer few species as remarkable as this one.

—Pierre André Latreille 1813

(when describing the first species of *Platycoelia*)

Members of the genus *Platycoelia* Dejean are usually 1-3 cm in length with lime green to olive green coloration. A total of 62 species are known, and the larvae of two species have been described. Species of *Platycoelia* are most diverse through the Colombian to Bolivian Andes. They are common in mid-elevation to high elevation habitats in the Andes Mountains and other montane areas of the Neotropics. Unusually small, dark, and setose species are found at high elevation (3,000-4,000 m) in the Puna and Altiplano regions of Perú and Bolivia.

Very little is known of the biology of *Platycoelia* species. The larvae have been found feeding on organic material in the soil (Ohaus 1908, 1909a). Adults feed on the foliage of various types of plants and are sometimes attracted to lights at night. The adults of some species have a short life span and emerge in great numbers to rapidly breed and lay eggs. This is the reason why many abundant species are known from only a handful of museum specimens. Collectors usually have only a narrow window of opportunity in remote locations of poorly known regions. Whymper (1891) discussed an example of this when he observed “many hundreds” of *P. lutescens* Blanchard individuals spread over a large area on the plains near Volcán Cotopaxi in Ecuador. He remarked that the “region has been traversed by several, at least, of my predecessors” (who would have collected specimens if they saw them). Whymper noted that the beetles were large and very obvious because of their abundance and the scarcity of vegetation in the area. There are also examples of *Platycoelia* known from only a very large type series originating from a single collecting event (*P. inca* n. sp. and *P. haenkei* [Gutiérrez] are examples). There are undoubtedly more species of *Platycoelia* with short-lived adults that have not yet been discovered. Indiscriminant collecting probably accounts

for the skewed sex ratios seen in collections for several species of *Platycoelia*. As with many other insects, the adult males tend to emerge first, followed several days later by the females (which probably live longer). The sex ratio of specimens captured can vary widely from day to day, especially for the species with short adult life spans. Males and females may have different propensities to disperse and that probably also has an effect on the sex ratio of collected specimens.

At certain times of the year, *Platycoelia* adults are used as food by the indigenous people of the Ecuadorian highlands (and undoubtedly other places). Onore (1997) reported that five species of *Platycoelia* were regularly consumed in Ecuador, while Smith and Paucar-Cabrera (2000) detailed the use of *P. lutescens* as food. Ecuadorians call green-colored *Platycoelia* “catso verde” and white-colored *Platycoelia* (mainly *P. lutescens*) “catso blanco.” David Hawks (UCRC) and Ron Cave (EAPZ) informed me that they call *Platycoelia* “watermelons” or “poor man’s *Chrysinina*” when collecting in the mountains of Central America for jewel scarabs. I, of course, take exception with the latter name!

The large size and appealing coloration of the genus *Platycoelia* made it a popular group with 19th century collectors and explorers. As a result, many species were described over a century ago. Friedrich Ohaus (1904b) published the most important *Platycoelia* paper to date when he revised the group in 1904. His work, however, did contain several mistakes and has proven to be an ineffective identification guide (based on the high percentage of unidentified and misidentified specimens in collections around the world). It did not even contain a key to the species level. Ohaus’ taxonomic work on *Platycoelia* is now badly outdated. Over the past 98 years, South America has become tremendously more accessible, and people have collected insects in many new

habitats and areas. The modern practice of including detailed data labels on specimens has led to a much better understanding of the geographic distribution, biogeography, habitat preferences, and phenology of *Platycoelia* species. Some new species of *Platycoelia* have been described over the past few decades, but many more new species have awaited description. It has never been explicitly stated where all the type material for previously described species was deposited. All of this new information needs to be analyzed, synthesized, and disseminated in a form that is usable to other taxonomists, biologists, and conservationists.

This revision provides a means of identification, describes new species, synonymizes some old names, makes lectotype and neotype designations, and presents relationship and biogeography hypotheses for the genus *Platycoelia*. Ultimately, the taxonomic research on Anoplognathini will lead to a better understanding of southern hemispheric distributional patterns that are commonly observed in many groups of organisms. A phylogenetic and biogeographic analysis of *Platycoelia* will also provide valuable clues to the processes that lead to the unusually rich amount of biodiversity found in mid-elevation habitats along the eastern slope of the Andes Mountains. It is my great hope that this monograph will inspire and facilitate future research on the systematics, biogeography, and ecology of this fascinating group of beetles.

Tribe Anoplognathini

Anoplognathini is one of six tribes (Rutelini, Anomalini, Spodochlamyini, Geniatiini, Adoretini, and Anoplognathini) currently recognized in the subfamily Rutelinae (Coleoptera: Scarabaeidae). The tribe Anoplognathini is endemic to the Australian and Neotropical realms. Anoplognathines have long been recognized as a distinct group within the Scarabaeoidea. MacLeay (1819) was the first to erect the family group names Rutelinae (as Rutelidae) and Anoplognathini (as Anoplognathidae), but each had a very different composition from their current

concepts. MacLeay's Rutelidae consisted of the modern tribe Rutelini while his Anoplognathidae consisted of the modern Anoplognathini, Geniatiini, and *Apogonia* Kirby (a Melolonthinae genus). MacLeay's (1819) promulgation of the quinary system of classification perhaps necessitated his erection of the family group name Anoplognathini (in order to get the required five groups). The quinary system (which asserted the divine division of living things into groups of five) was used in the early 19th century by some authors. The concept of the quinary system is bizarre (to say the least) by today's standards in the context of evolutionary and phylogenetic theories. It was, nonetheless, used by some of the religious scholars who were the predominant authors of works on natural history prior to the middle of the 19th century. MacLeay's time was the dawn of insect classification, and the methods and standards were in a wild state of flux as authors grappled with different ideas of the origin of species and the overwhelming diversity of life being discovered around the world. Mayr (1982) has pointed out that the use of the quinary system of classification actually originated from MacLeay's 1819 publication on the scarab beetle families.

Laporte (1840) made modifications to the "Anoplognathites" by removing and adding some taxa to the group. Although Laporte's concept of the group was more similar to the modern concept, it was still considered to be separate from the rest of the rutelines. Burmeister (1844) was the first to classify Anoplognathini in the modern sense. His "Anoplognathidae" contained all of the taxa currently considered to be in the group and that were known at the time. Burmeister also classified the anoplognathines in the "Phyllophaga Metallica" with the rest of the taxa now considered to be in the subfamily Rutelinae. This was the first time these groups were considered to be more related to each other than to other groups of scarabs. Blanchard (1851) and Lacordaire (1856) also made noteworthy treatments of the group but mainly followed Burmeister's classification scheme. Bates (1888) doubted the validity of using the structure of the labrum

alone to divide up the rutelines (as was later done by Ohaus). He felt that anoplognathines, geniatiines, and anomalines were more closely related than previously thought.

Ohaus (1918) was the first to divide the subfamily Rutelinae into two groups based on the form of the labrum: the Rutelinae homalochilidae (Anomalini and Rutelini) with a labrum parallel to the clypeus, and the Rutelinae orthochilidae (Adoretini, Anoplognathini, Geniatiini, and Spodochlamyini) with the labrum perpendicular to the clypeus. Ohaus (1904a, 1904b, 1905, 1918) also did a major taxonomic overhaul on the Anoplognathini, dividing the tribe into the five currently recognized subtribes: Anoplognathina (Australia and New Guinea), Schizognathina (Australia), Brachysternina (Chile, Argentina), Phalangogoniina (México and Central America), and Platycoliina (Neotropics). Early authors (Burmeister 1844; Lacordaire 1856; Sharp 1878; Ohaus 1904a) commented on the similarities between some of the Australian and Neotropical genera. However, when Ohaus (1918) classified the Australian genera into two subtribes and Neotropical genera into three separate subtribes, the similarities between the Australian and Neotropical groups were obscured and have not been studied since. Machatschke (1965) briefly discussed the evolution and biogeography of the Anoplognathini. He thought that the Neotropical Anoplognathini and Australian Anoplognathini were both monophyletic groups, but stopped short of suggesting that the two groups were sister taxa.

The Australian subtribes of Anoplognathini were reviewed by Carne (1954, 1955, 1956, 1957, 1958). Carne (1958) mentioned some problems with Ohaus' classification scheme in the context of Australian Rutelinae. Some Australian genera share several key character states with Geniatiini, but he hypothesized that this is due to convergent evolution. Carne (1958) did not make any changes to Rutelinae classification above the generic level when reviewing the Australian fauna. I think it is most unfortunate that Carne did not critically examine at least the subtribes of Anoplognathini, especially since there are relatively few genera in the rest of

the world. Machatschke (1965, 1972) mimicked Ohaus' classification scheme in the most recent world catalogs of the subfamily Rutelinae, but Machatschke (1965) was critical of Ohaus' division of Rutelinae tribes into multiple subtribes because many of these groups were based on a single character. For the same reason, Machatschke was critical of the division of Rutelinae into two groups (Ohaus' Rutelinae homalochilidae and Rutelinae orthochilidae). He argued that this classification system (and the classification of Scarabaeidae in general) "is based on completely outdated opinions" (developed by Burmeister [1844] before evolutionary theory was elucidated), and that classification systems such as this will not endure when they "are still based on single characters." Many recent authors have echoed Machatschke's frustration with the antiquated scarab classification system. It seems inevitable that modern phylogenetic analysis will topple many of the ancient and untested ideas about relationships within the family Scarabaeidae!

Jameson (1998) demonstrated problems with Ohaus' tribal-level classification scheme of the Rutelinae, but she did not include any Anoplognathini in her analysis. Up to then, there had been no published attempt to verify the monophyly of Ohaus' subtribes within the Anoplognathini or of the Anoplognathini with respect to the rest of the Rutelinae using modern phylogenetic methods. All three of the Neotropical subtribes have recently been revised (Brachysternina by Jameson and Smith [2002], Ratcliffe and Ocampo [2002], and Smith [2002a]; Phalangogoniina by Smith and Morón [2003]; and Platycoliina by Smith [this paper]). My phylogenetic analysis (Smith 2002a) supported the monophyly of the subtribe Brachysternina, and I hypothesized that the split between the Australian and Neotropical taxa occurred during the breakup of the Gondwana supercontinent during the late Cretaceous or early Tertiary. The tribe Anoplognathini is, therefore, quite old, having arisen soon after the adaptive radiation of the phytophagous scarabs (Melolonthinae, Rutelinae, Dynastinae, Cetoniinae and other minor subfamilies) during the Cretaceous, along with the adaptive

radiation and diversification of the angiosperm plants on which they feed.

Phylogenetic analyses have cast doubt on the validity of some of Ohaus' ruteline subtribes. Jameson (1998) demonstrated the paraphyly of most of the subtribes within the tribe Rutelini and, as a result, synonymized most of the names. My preliminary phylogenetic research on the tribe Anoplognathini has supported the monophyly of the Neotropical subtribes of Anoplognathini (Brachysternina, Phalangogoniina, Platycœliina), but not the Australian subtribes (Anoplognathina, Schizognathina). Preliminary molecular and biogeographic analyses also shed some doubt on the monophyly of the tribe Anoplognathini as well. Rutelini and Anoplognathini are paraphyletic based on these preliminary data. The analysis suggests that the Anoplognathini are basal lineages of Rutelinae and the Rutelini are the more apical lineages (having multiple origins within the Anoplognathini). This question, along with phylogenetic analyses of the Rutelinae + Dynastinae clades (preliminarily examined by Jameson [1998]), must be thoroughly addressed before a stable and enduring new Rutelinae classification system can be proposed to replace Ohaus' classification system. It is obvious that modifications are needed.

Subtribe *Platycœliina*

The subtribe *Platycœliina* contains one genus, *Platycœlia*, and is endemic to the Neotropics. The subtribe *Platycœliina* was first erected by Burmeister (1844) (as *Platycœliidae*) to accommodate the genera *Platycœlia* and *Phalangogonia* Burmeister. Ohaus (1904b, 1905) later removed *Phalangogonia* and added *Callichloris* Burmeister and *Leucopelaea* Bates (now junior synonyms of *Platycœlia*) to the taxon. Ohaus (1918) was also the first to use *Platycœliina* in its current sense and usage as a subtribe of the tribe Anoplognathini. The subtribe became monogeneric when Machatschke (1965) synonymized all of the generic names in the subtribe under *Platycœlia*. As discussed in the phylogeny section, the subtribe *Platycœliina* (genus *Platycœlia*) is a monophyletic group. How-

ever, the preservation of this subtribe may render other subtribes paraphyletic. The monophyly and validity of the subtribes within the Anoplognathini are topics of ongoing research on which I will report in the future.

TAXONOMIC HISTORY OF THE GENUS *PLATYCOELIA*

During their historic journey to the Spanish colonies in South America from 1799-1803, Alexander Humboldt and Aimé Bonpland collected many plants and animals for scientific description. In South America, they collected material in Venezuela, Colombia, Ecuador, and Perú. Upon returning to Europe, Humboldt contracted Pierre André Latreille to describe some of the insects collected during the voyage. These descriptions were in the insect section of *Voyage de Humboldt et Bonpland: Observations de Zoologie et d'Anatomie Comparée*, which was published from 1805-1832. A specimen (or specimens) of *Platycœlia* was collected by Humboldt and Bonpland, and Latreille (1813) described it as *Melolontha flavostriata* Latreille. Blanchard [1851], Ohaus [1918], Machatschke [1965, 1972] and others have erroneously listed the date of this work as 1833, but it was published in 1813 (Sherborn 1899). At the time, there were very few generic names used for scarab beetles and most non-metallic rutelines were placed in *Melolontha* Fabricius. Soon afterward, authors such as Dejean, MacLeay, LePeletier and Serville, Kirby, and Hope began splitting up the old genera and creating many new generic names to accommodate the tremendous diversity of the group. Dejean published a series of catalogs listing the species in his personal collection (see Madge [1988] for more details). According to Arrow (1899), Latreille gave Dejean a specimen of *P. flavostriata* (which eventually ended up at BMNH). This specimen is now the lectotype of *P. flavostriata*. Dejean (1833, 1836) then listed the species under the new generic name *Platycœlia* in his catalogs. The dates of the Dejean catalogs have been the source of much discussion in the literature with Madge (1988)

being the most recent authority on the subject. The publication dates for the fascicles in which *Platycoelia* was cataloged were listed in Madge (1988) and confirmed by the journal *Bibliographie de la France* which announces the release of new publications in that country. *Platycoelia* Dejean, 1833 was published no later than 27 July 1833 according to the *Bibliographie de la France* (36[30]: 459). Although Dejean (1833) provided no description for the new generic name, *Platycoelia* was made available in that publication under the ICZN rules (Article 12.2.5). The placement of an available specific name in combination with a new generic name makes the generic name available by indication (International Commission on Zoological Nomenclature 1999). Ohaus (1918) and Machatschke (1965) incorrectly (according to the current rules of nomenclature) cited the author and date of *Platycoelia* as Burmeister, 1844.

Burmeister (1844) was the first author to attempt to classify *Platycoelia* in the context of other groups of scarab beetles. He was the first to provide a description of the genus and he placed the group in the "Anoplognathidae," which is the modern tribe Anoplognathini consisting of Australian and Neotropical genera. Burmeister also erected the family group name *Platycoeliina* Burmeister (originally as *Platycoeliidae*) containing *Platycoelia* and *Phalangogonia*, and he discussed similarities with *Anoplognathus* Leach and *Repsimus* MacLeay (two Australian genera). Three new species of *Platycoelia* were also described in this paper: *P. valida* Burmeister, *P. quadri-lineata* Burmeister, and *P. marginata* Burmeister. Burmeister also redescribed *P. flavostriata*, but used specimens of another species for the description. The species Burmeister described as *P. flavostriata* was later recognized as different by Arrow (1899) and Ohaus (1904b) and given the names *P. burmeisteri* Arrow and *P. tschudii* Ohaus respectively (with the Arrow name being the valid one). Burmeister (1844) also described *P. signaticollis* (Burmeister) in the new genus *Callichloris*, which he placed under the family group name *Brachysternidae* (with taxa currently in the subtribes *Brachysternina* and *Schizognathina*). *Callichloris* was also

listed by Dejean (1833, 1836), but was not made available in those publications because no available species-group names were listed under that generic name.

Erichson (1847) described three new species of *Platycoelia* from Perú: *P. pomacea* Erichson, *P. alternans* Erichson, and *P. prasina* Erichson. Accession records at ZMHB indicate that the type series of *P. alternans* was collected by Rudolph A. Philippi and the type series of *P. pomacea* and *P. prasina* were collected by José Pavón (Pavón specimens arrived at ZMHB via the Hoffmannsegg collection). Blanchard (1851) later described three more species: *P. boliviensis* Blanchard (herein a junior synonym of *P. pomacea*); *P. olivacea* Blanchard (later placed in synonymy with *P. marginata*); and *P. lutescens* Blanchard. Burmeister (1855) later added one additional species, *P. laevis* Burmeister (later placed in synonymy with *P. marginata*). In the same year, Guérin-Ménéville (1855) described another species, *P. scutellata* Guérin-Ménéville (herein a junior synonym of *P. marginata*). Kirsch (1871, 1885) then added two species: *P. nervosa* Kirsch and *P. parva* Kirsch. Bates (1888, 1891b) described two new species: *P. humeralis* Bates and *P. nigricauda* Bates (herein a junior synonym of *P. parva*). Bates (1891b) also described the new genus *Leucopelaea* Bates (later placed in synonymy with *Platycoelia*) to accommodate the new species *L. albescens* Bates (later placed in synonymy with *P. lutescens*).

Before the 20th century, there was no comprehensive work done on the genus *Platycoelia*. Friedrich Ohaus, who has been called the "Father of Rutelinae" (Jameson 1998), changed all that with the first review of the genus in 1904. Ohaus (1904b) redescribed all the existing species and described the following 23 new species group names of *Platycoelia*: *P. inflata* Ohaus, *P. inflata tucumana* Ohaus (herein a junior synonym of *P. inflata*), *P. limbata* Ohaus (herein a junior synonym of *P. prasina*), *P. steinheili* Ohaus, *P. forcipalis* Ohaus, *P. occidentalis* Ohaus, *P. pomacea brasiliensis* Ohaus (herein a junior synonym of *P. pomacea*), *P. abdominalis* Ohaus, *P. mesosternalis* Ohaus, *P. variolosa* Ohaus, *P. nigrosternalis* Ohaus,

P. puncticollis Ohaus, *P. tschudii* Ohaus (later placed in synonymy with *P. burmeisteri* Arrow), *P. wallisi* Ohaus, *P. burmeisteri* Ohaus (junior primary homonym *P. burmeisteri* Arrow, replacement name now used: *P. burmeisteriana* Ohaus), *P. unguicularis* Ohaus, *P. flavoscutellata* Ohaus, *P. hirta* Ohaus, *P. confluens* Ohaus, *P. chrysotina* Ohaus, *P. pulchrior* Ohaus (herein a junior synonym of *P. chrysotina*), *P. gaujoni* Ohaus, and *P. rufosignata* Ohaus. Ohaus (1904b) also described three new species in the genus *Callichloris* (later transferred to *Platycoelia*): *P. helleri* (Ohaus), *P. kirschi* (Ohaus), and *P. baessleri* (Ohaus). Ohaus (1905) next added the name *Leucopelaea baronis* Ohaus (later placed in synonymy with *P. lutescens*). In subsequent years, Ohaus (1909b, 1925) added two more species: *P. simplicior* Ohaus and *P. intermedia* Ohaus. Ohaus (1925) lastly described the species *Callichloris bocki* Ohaus (later transferred to *Platycoelia*).

Although Ohaus' work was the last comprehensive treatment of *Platycoelia*, a few authors have added new species to the genus over the past 50 years. Gutiérrez (1951) described the genus-group name *Epicallichloris* Gutiérrez (later placed in synonymy with *Platycoelia*) as a subgenus of *Callichloris*. He also described two new species in the genus *Callichloris* (later placed in synonymy with *Platycoelia*): *P. alticola* (Gutiérrez) and *P. laelaps* (Gutiérrez). One year later, Gutiérrez (1952) added another species originally in the genus *Callichloris* (which are now considered *Platycoelia*): *P. haenkei* Gutiérrez. Gutiérrez (1952) also described the monotypic genus *Heterocallichloris* Gutiérrez, and its species, *H. bicolor* Gutiérrez, in the subtribe *Platycoeliina*. This species (and genus) does not belong in the tribe *Anoplognathini* and was justifiably transferred to the genus *Eremophygus* Ohaus (*Rutelini*) by Smith and Jameson (2001). Machatschke (1965) then synonymized the genus group names *Callichloris*, *Epicallichloris*, and *Leucopelaea* under the name *Platycoelia*. Frey (1967) later added one more species, *P. penai* Frey. Martínez (1976) then added *P. bordoni* Martínez and *P. proseni* Martínez (now a junior synonym of *P. burmeisteri*) and Martínez

and Martínez (1994) added *P. selanderi* Martínez and Martínez. Finally, Smith and Paucar-Cabrera (2000) reviewed the taxonomy of *P. lutescens*, and Paucar-Cabrera and Smith (2002) described the larvae of *P. gaujoni* and *P. lutescens*.

The following taxa were once classified as *Platycoelia* (and junior synonyms) but have since been transferred to other groups. The name *Callichloris perelegans* Curtis was originally described in *Callichloris* due to confusion over the identity of the generic name. The species name has since been correctly placed as a junior synonym of *Hylamorpha elegans* (Burmeister) (see Ratcliffe and Ocampo 2002). The genus *Heterocallichloris* Gutiérrez and species *Heterocallichloris bicolor* Gutiérrez (now *Eremophygus bicolor*) were originally placed in the subtribe *Platycoeliina*, but later transferred to the tribe *Rutelini* by Smith and Jameson (2001).

NOTES ON AUTHORS, TYPES, AND COLLECTIONS

In order to facilitate future research on scarab beetle taxonomy I have included the following information on authors, types, and collections. Other indispensable resources for tracking types and collections include Horn and Kahle (1935, 1936, 1937) and Evenhuis (1997).

Henry Walter Bates 1825-1892

Henry Walter Bates is a well-known English 19th century naturalist and entomologist. He spent 11 years (from 1848-1859) collecting in Amazonia. After he returned to Europe, he published many taxonomy papers, but he also became well-known for his papers on evolution and biogeography. O'Hara (1995) provided an excellent review of Bates' career and provided a bibliography of his scientific publications. Bates described many new species of scarab beetles and his most important contribution to scarabaeology was the monumental *Biologia Centrali-Americana* volume on scarabs. Bates described *Platycoelia* species both in the *Biologia Centrali-Americana* (Bates 1888) and in a less-known work, Whymper's *Supplementary Appendix to Trav-*

els Amongst the Great Andes of the Equator (Bates 1891). Bates' type material from these works is now at the BMNH and MNHN. The material at the BMNH was deposited there at the time of publication, while the specimens at the MNHN were from Bates' personal collection. After his death, his collection was purchased by Oberthür and eventually deposited at the MNHN with the rest of the Oberthür collection. I have followed the standard established by previous authors (and recommended by the ICZN) by selecting the specimen illustrated as the lectotype for species described in the *Biologia Centrali-Americana*. The specimens illustrated are always labeled as such and housed at the BMNH.

Charles Émile Blanchard (1819-1900)

Émile Blanchard was a French entomologist who worked at the MNHN. He used specimens in the MNHN collection, and the type series of the species he described are housed there. His type specimens have large green labels and smaller round labels with a unique number corresponding to an entry in the accession records (which are still available at the MNHN). They are rarely labeled as types. Blanchard (1850, 1851) described many new species of scarab beetles in the Coleoptera section of the series *Muséum d'Histoire Naturelle de Paris. Catalogue de la Collection Entomologique*. A fact that has often been overlooked is that this publication came out in two parts. The first part (pages 1-128) was published in 1850, and the second part (pages 129-240) was published in 1851. Most volumes I have seen have had the cover pages removed and have been bound together. In the library of the CNCI there is a version where the title page of the first part was stuck at the end of the bound version. The cover page says "Première Livraison" and "Pages 1-128" (handwritten). It seems clear that the first part came out in 1850 because of the date on the cover page and at the end of the introduction (25 avril 1850). The earliest publication date I could find for the first part was 19 October 1850. That is when it was recorded in the journal *Bibliographie de la France* (1850[42]: 534), which reports when publications are released. The second part (pages

129-240, which contains the entire Rutelinae section) came out no later than 2 August 1851 according to the *Bibliographie de la France* (1851[31]: 418). As I was working on the Brachysternina (Jameson and Smith 2002; Smith 2002a), I noticed that the second section came out after Solier (1851). Blanchard (1851) even refers to Solier (1851) on several pages (including 219, 225, 226). This is internal evidence of the publication date of 1851. However, many subsequent authors have incorrectly used the date 1850 for the entire volume.

Karl Hermann Burmeister 1807-1892

Hermann Burmeister was a German entomologist who published many important works on scarab taxonomy. He was the first to comprehensively treat many groups and place them in a classification scheme based on comparisons with the world fauna. Burmeister split the most productive years of his career between the Universität Halle (MLUH) in Germany and the Museo Argentino de Ciencias Naturales (MACN) in Buenos Aires, Argentina. Most of his scarab work was done before his 1862 move to Argentina, and so the type series of most species he described are still at MLUH. In his *Handbuch der Entomologie* series, Burmeister used the symbol "*" to indicate new species descriptions and "+" to indicate if specimens were retained at MLUH. He also indicated the collections from which material was examined when describing species (unfortunately, most were personal collections that have long been dispersed or lost). Generally speaking, the MLUH collection is still intact with Burmeister's large, green, handwritten labels. Only the first specimen in a series is labeled, so the others need to be scrutinized to make sure they are part of the type series. This is difficult, because the other specimens lack labels. Fortunately, not much Neotropical material has been added to MLUH since Burmeister's time, and the collection has been well-tended over the years so it is fairly easy to find Burmeister's specimens (see Calvert 1898 for a discussion of Burmeister's specimens at MLUH). Burmeister's specimens in a series usually have similar, char-

acteristic pins that can also be used as evidence of their common origin. Burmeister's material acquired after 1862 is at MACN (see Cardoso [1944] for details of the Argentinean years).

Wilhelm Ferdinand Erichson (1808-1849)

Erichson had a short but very productive career in entomology. He was a curator at the ZMHB for a number of years (1834-1848) before his death (Uhlig and Jaeger 1995). His collection, including the type series of species he described, are housed at ZMHB. Erichson's types have orange type labels and a unique number that corresponds to an entry in the ZMHB accession books (*Catalog General Musei Zoologici Berlinen*). I have discovered a couple of noteworthy points about Erichson's (1847) article titled "Conspectus Insectorum Coleopterorum quae in Republica Peruana observata sunt" in the journal *Archiv für Naturgeschichte*. The publication date of Erichson (1847) is no later than April 1847 according to the library records published in the journal *Linnaea entomologica: Zeitschrift herausgegeben von dem entomologischen Vereine in Stettin*. This article (Erichson 1847) was intended to describe new species from Perú, but somehow included species that were obviously collected in Chile. Examples include *Brachysternus spectabilis* Erichson (Scarabaeidae: Rutelinae: Anoplognathini) and *Dasychaeta lateralis* Erichson (Glaphyridae). Solier (1851) and Blanchard (1851) commented that "Entomologists frequently confuse insect collections originating from the two regions (Peru and Chile) even though they are so different." This was apparently a common mistake at the time, perhaps due to the then recent changes in the political borders and regional name changes of the area.

Georg Frey 1902-1976

Georg Frey amassed a large personal collection of scarab beetles during his life time. He also established the journal *Entomologischen Arbeiten aus dem Museum G. Frey, Tutzing*, where scarab taxonomy papers were published. After Frey's death, his personal collection was temporarily moved to Munich.

The NHMB also had an interest in obtaining the collection. Disagreements over ownership and the interpretation of Frey's will caused the matter to be settled in court. Finally, the collection was awarded to NHMB and moved to Basel, Switzerland. The Frey collection (MGFT) is still maintained as a separate collection within the NHMB. Most of the types of species described by Frey are housed at MGFT, but he also exchanged some with other collectors (such as Martínez).

Félix Édouard Guérin-Méneville (1799-1874)

Guérin-Méneville was a French entomologist and prolific author and illustrator who described many new species of scarab beetles during the middle of the 19th century. Most of his type specimens are now in the MNHN, but some are missing. Guérin-Méneville's type specimens usually bear a type label and the species name in his handwriting. Horn and Kahle (1935) reported that his collection was broken up and distributed to several places. The scarab beetles seem to have arrived at the MNHN through the collections of Félix Monchicourt and Émile Deyrolle (Horn and Kahle 1935, 1936)

Ramón Gutiérrez 1917-1953

Ramón Gutiérrez was a Chilean entomologist who wrote several scarab taxonomy papers in the late 1940s and early 1950s and he died at the young age of 35 of heart failure. He described new species collected by fellow Chilean collectors Kuschel and Peña. Gutiérrez deposited type material in his own collection (which is now at UCCC) and in the collections of Antonio Martínez, MNNC, and "Sociedad Científica Chilena Claudio Gay." The Sociedad Científica Chilena Claudio Gay collection was a short-lived collection that was soon amalgamated with Luis Peña's personal collection. The Peña collection was purchased by the FMNH in the 1980s, and this is where some of the Gutiérrez types are now housed. Some of Gutiérrez's material that was reportedly deposited in the Sociedad Científica Chilena Claudio Gay collection has since disappeared. Gutiérrez also deposited some paratypes in the Rodolfo Zischka collec-

tion. Zischka was a German who lived in Cochabamba, Bolivia. The current location of the Zischke collection is unknown, but presumably it is somewhere in Cochabamba. Gutiérrez's necrology and bibliography was written by Fauré (1953).

Pierre André Latreille 1762-1833

Much has been written of the prominent French entomologist, Pierre André Latreille. He was arguably the most important of the early entomologists who turned insect taxonomy from a pastime for amateurs into a scientific discipline. He developed the basic classification systems still used in many groups of insects and described numerous species and genera. He was the earliest author to classify Coleoptera into what are now considered modern family group names. Latreille's collection was sold after his death in 1833 (Dejean acquired some of the material). Much of the material eventually went to the BMNH and the MNHN through various means. Many other specimens have been lost over time.

Antonio Martínez 1922-1993

Martínez was an avid collector of Neotropical scarabs and prolific author on scarab taxonomy. He lived in northern Argentina, but collected all over South America and acquired specimens from other collectors in Latin America. He and his wife died in a tragic automobile accident while on a collecting trip to Bolivia in 1993. After Martínez's death, Henry and Anne Howden of Ottawa, Canada (HAHC) purchased his collection (with the exception of the primary types, which were deposited at MACN). As of 2002, the Howden collection is in the process of being donated to the CMNC. This process should be completed soon, and the CMNC will be the permanent repository for the Martínez Collection. The Martínez Collection contains most of the paratypes of species he described, as well as some paratypes from species described by Gutiérrez and Frey. Martínez also deposited some types of species he described in the MGFT. Fritz (1994) provided a necrology and list of publications for Antonio Martínez.

Friedrich Ohaus 1864-1946

Friedrich Ohaus was an eminent German entomologist who published over 170 papers on scarabaeoids. The vast majority of these concerned the taxonomy of Rutelinae. Because of his voluminous and ground-breaking research on ruteline taxonomy, he has been referred to as the "Father of Rutelinae" (Jameson 1998). He wrote the *Coleopterorum Catalogus* volume on Rutelinae and developed the modern classification of the subfamily Rutelinae that (with some modifications) is still used today.

Ohaus was a student of Edgar von Harold and later a practicing medical doctor. His medical training allowed him to travel to South America three times in the capacity of ship's doctor. While in South America, he collected extensively and made detailed observations on the biology and development of scarabs. His expeditions were August 1898 - March 1899 (Brazil, especially Petropolis); August 1904 - April 1906 (Ecuador, travelling over the Cordilleras from Rio Villano to Cururay and Napo to Iquitos and then down the Amazon to Para, Brazil); and 1926 (Brazil: São Paulo, Porto Epitacio, Itatiya). His journeys to South America were some of the last done in the 18th and 19th century naturalist tradition. After WWI and until his death he was a scientific assistant at the Natural History Museum in Mainz. Nissen (1952) provided a brief biography and bibliography of Friedrich Ohaus.

Ohaus traveled to many collections in Europe. He deposited his types in various collections (including BMNH, NMPC, SMTD, USNM), but the vast majority of *Platycoelia* types are housed in the MNHN and ZMHB. Ohaus also visited the Oberthür Collection (now in MNHN) in 1903 while preparing the manuscript for the review of *Platycoelia*. Oberthür had purchased many personal collections from European collectors and had an impressive number and diversity of *Platycoelia* specimens. This material, along with specimens Ohaus had acquired personally, formed the basis of his review of the genus (Ohaus 1904b). All of Ohaus' personal collection is now housed at the ZMHB. Ohaus also deposited types in ZMUH, but these

specimens, along with the entire Coleoptera and Lepidoptera collections, were destroyed in July 1943 by an air raid (Klapperich 1948).

Ohaus' type concept was similar to others of his time; never designating a single specimen to be the primary type of his new species. He always considered the entire type series to be "cotypes" (properly called syntypes). He would often label the type series with a male and female "type" and with the remainder of the type series "cotypes," but this was not done consistently. Sometimes he would label a male and female in one collection as "type" and another male and female in another collection as "type." Even though Ohaus labeled some specimens as "type," these cannot be considered to be holotypes because they were not fixed in the original publication. According to the ICZN, holotypes must be fixed in the original publication (ICZN Article 73). Ohaus never did this so the type series of all the species he described must be considered to consist of syntypes until a lectotype is designated. The only exception is when the taxon was described using a single specimen (there must be clear evidence of this from the original publication or a secondary source), and then the holotype is fixed by monotypy (ICZN Article 73.1.2). To further complicate matters, Ohaus would often label specimens as types even though he examined them after the original description was published. This habit was observed with many *Platycoelia* specimens and has been commented on in the past by other authors (Kuijten 1992; Jameson 1998). As a result, it is necessary to be conservative and critical when deciding if specimens with Ohaus' type labels are truly types. This can usually be done using the original descriptions, because Ohaus often indicated the collecting locality, collector, and/or type depository for specimens in the original descriptions of new species. The retroactively and erroneously labeled types are often evident because they have slightly different type labels (the paper and ink are often different), and the data label are not congruent with the information given in the original description.

PHYLOGENETIC METHODS AND MATERIALS

Phylogenetic Analysis

The phylogeny of *Platycoelia* was reconstructed using 91 adult morphological characters. The character matrix was constructed using MacClade 4.03 (Maddison and Maddison 2002) and analyzed using PAUP* 4.0b10 (Swofford 2002). *Phalangogonia sperata* Sharp was used as an outgroup for the analysis. The outgroup was selected based on the preliminary generic-level phylogenetic analysis of the tribe Anoplognathini, the phylogenetic analysis of the subtribe Brachysternina (Smith 2002a), and the historic idea that this is the most closely related taxon to *Platycoelia* (Burmeister 1844; Ohaus 1904b). Homology was assessed using position and quality of resemblance as basic criteria (derived from Remane [1956]). If these basic criteria were met, then the character states were assumed to be homologous. Ultimately, the results of the phylogenetic analysis provide further evidence for or against the homology assumptions.

Character Definition

All descriptions are based on adults unless otherwise specified. The following definitions and standards were used in the scoring of character states for the phylogenetic analyses and for the generic and species descriptions. For definitions of entomological terms used in this work, see Torre-Bueno (1989).

Color: based on dried, pinned specimens. The color of some specimens darkens considerably after death.

Body length: measured from the apex of the clypeus to the apex of the elytron.

Body width: measured at the widest point of the elytra.

Puncture density: dense = punctures separated by less than two puncture diameters to punctures confluent; moderate = punctures separated by 2-6 puncture diameters; sparse = punctures separated by more than 6 puncture diameters.

Puncture size: large = 0.17 mm or larger; moderately large = 0.08-0.17 mm; moderate = 0.03-0.08 mm; small = 0.03 mm or smaller.

Setae density: dense = setae completely cover and obscure body surface; moderate = setae completely cover body surface but surface clearly visible; sparse = setae do not cover body surface and surface clearly visible.

Protibial teeth: protibial first tooth = the apical tooth on the protibia; protibial second tooth = the second tooth from the apex of the protibia; protibial third tooth = the third tooth from the apex of the protibia.

Adult Morphological Character Analysis

Puncture size and density, and several other character states are defined in "Character Definition" section. The complete character matrix is in Appendix 1.

1. Clypeal disc glabrous (or with a few sparse lateral setae) (0); sparsely setose over whole surface (1); sparsely setose laterally (2); sparsely setose apically (3).
2. Clypeal apex not reflexed (0); reflexed (1).
3. Clypeal apex rounded (0); broadly rounded (1); weakly trapezoidal (2); distinctly trapezoidal (3); rectangular (4).
4. Frontoclypeal suture complete (0); incomplete (1).
5. Frons base sparsely punctate (0); moderately to densely punctate (1).
6. Frons medioapically not depressed (0); depressed (1).
7. Frons glabrous (0); scattered lateral setae (1); sparsely setose laterally (2); moderately setose (3).
8. Eyes well-separated from pronotum (0); touching pronotum (1).
9. Eyes well-separated (more than 4.7 transverse eye widths) (0); closer together (less than 4.5 transverse eye widths) (1).
10. Antenna 10-segmented (0); 9-segmented (1).
11. Antennal club (males) longer than or approximately equal to other segments (0); slightly shorter than other segments (1); approximately equal to segments 2-6 (in 9-segmented individuals) or 2-7 (in 10-segmented individuals) (2).
12. Antennal club (males) not longer than clypeal length (0); longer than clypeal length (1).
13. Antennal club (females) longer than other segments (0); approximately equal to other segments (1); slightly shorter than other segments (2); approximately equal to segments 2-6 (in 9-segmented individuals) or 2-7 (in 10-segmented individuals) (3); shorter than segments 2-6 (in 9-segmented individuals) or 2-7 (in 10-segmented individuals) (4).
14. Labrum surface medially sparsely to moderately setose (0); densely punctate to rugopunctate (1); convex with punctures obsolete (2).
15. Labrum with apical tooth reduced (small), triangular (Fig. 4) (0); broad (well-developed), triangular (Figs. 1, 3) (1); well-developed, truncate (Fig. 2) (2).
16. Labrum with apical tooth well-separated from mentum (Fig. 4) (0); weakly overlapping apex of mentum (Fig. 3) (1); strongly overlapping apex of mentum (Figs. 1-2) (2).
17. Mandibular molar region without lamellae (0); with 1-12 weakly developed lamellae (1); with over 14 strongly developed lamellae (2); with 8-12 strongly developed lamellae (3); with over 14 weakly developed lamellae (4).
18. Right mandibular molar region without diagonal lamellae at base of other lamellae (0); with diagonal lamellae at base of other lamellae (1).
19. Mandibular apex forming thick cup (0); forming thin blade (1).
20. Mandibular scissorial region without medial tooth (0); with medial tooth (1).
21. Maxilla outer tooth absent (0); simple (1); bifurcate (2); cup-shaped (3).
22. Maxilla second tooth absent (0); simple (1); bifurcate (2); cup-shaped (3).
23. Maxilla third tooth absent (0); simple (1); bifurcate (2); cup-shaped (3).
24. Apex of mentum with notch (Figs. 3-4) (0); with distinct tooth (1); with distinct tooth curved into oral cavity (Figs. 1-2) (2).
25. Mentum base medially flat (0); depressed (1); with deep pits on either side of middle (Fig. 33) (2).



Fig. 1. *Platycoelia valida* mouthparts.



Fig. 2. *Platycoelia grandicula* mouthparts.

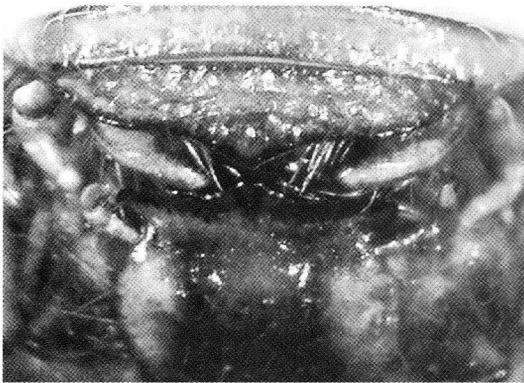


Fig. 3. *Platycoelia chrysotina* mouthparts.

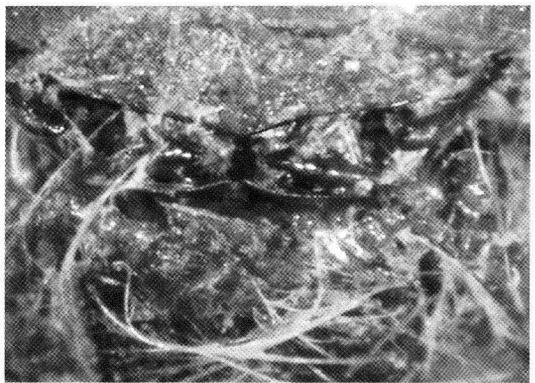


Fig. 4. *Platycoelia signaticollis* mouthparts.

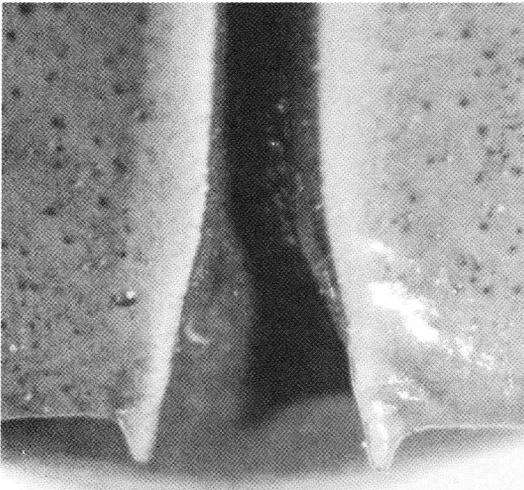


Fig. 5. *Platycoelia abdominalis* elytral apex.

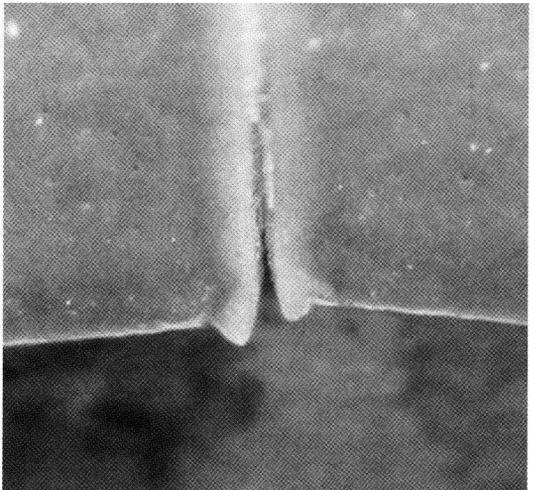


Fig. 6. *Platycoelia valida* elytral apex.

26. Pronotal surface sparsely punctate (0); moderately punctate (1); densely punctate (2).
27. Pronotal surface glabrous (0); sparsely setose around margins (1); sparsely setose (2); moderately setose (3).
28. Pronotal punctures small (0); moderate to moderately large (1); mixture of small and moderate to moderately large (2).
29. Elytral striae not impressed (0); weakly impressed (1); strongly impressed (2).
30. Elytral sutural apex rounded or angled (0); with nub or weak spine (Fig. 6) (1); acute spine (Fig. 5) (2).
31. Elytral interval punctures small (0); moderate (1).
32. Elytral intervals impunctate (0); sparsely punctate (1); densely punctate (2).
33. Elytron glabrous (0); sparsely setose at base (1).
34. Pygidium surface setose near apex (0); setose in apical half (1); entirely setose (2).
35. Pygidial disc impunctate to sparsely punctate (0); moderately punctate to rugose (1).
36. Pygidium convex (0); flat to weakly convex (1).
37. Pygidium exposed (0); covered by elytra (1).
38. Mesothoracic process nub to weakly projecting anteriorly (Fig. 10) (0); projecting anteriorly apically to mesocoxa (1); projecting anteriorly to procoxa (Figs. 8-9) (2).



Fig. 7. *Platycoelia mesosternalis* mesothoracic process.

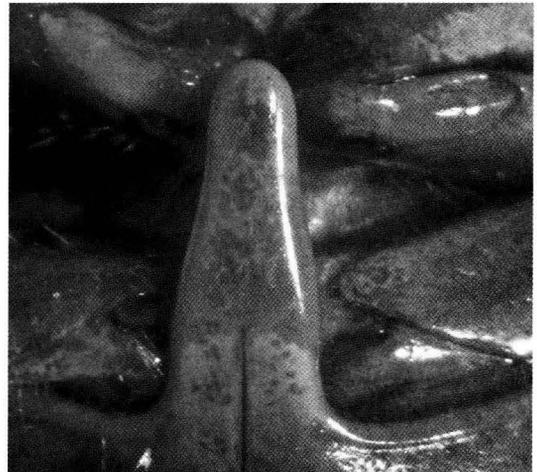


Fig. 8. *Platycoelia grandicula* mesothoracic process.



Fig. 9. *Platycoelia chrysotina* mesothoracic process.

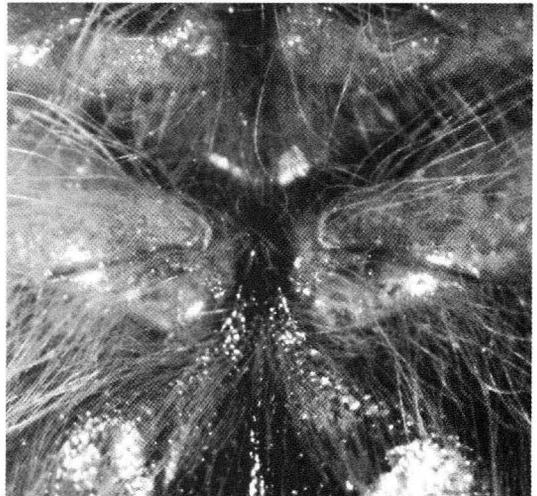


Fig. 10. *Platycoelia signaticollis* mesothoracic process.

39. Mesothoracic process shape conical-elongate (Figs. 8-9) (0); conical (length approximately equal to base width) (1); diamond-shaped (Fig. 7) (2); cylindrical (Fig. 10) (3).
40. Metasternum densely setose (0); densely setose (except medially) (1); moderately setose (except medially) (2); sparsely setose (3); glabrous (4); sparsely setose laterally (5).
41. Abdominal sternites glabrous (0); sparsely setose (1); sparsely setose laterally (2); moderately setose laterally (3).
42. Apical abdominal spiracle flat (0); weakly everted (1); protuberant, cylindrical (Fig. 35) (2).
43. Protibial apical tooth (males) strongly tapered to a sharp point (Fig. 36) (0); triangular (1).
44. Protibial second tooth (males) absent (Fig. 36) (0); short, obsolete (1); subequal in size to apical tooth (2).
45. Protibial third tooth (males) absent (Fig. 36) (0); small, obsolete (1).
46. Protibial second tooth (males) evenly separated from apical tooth (0); adjacent to apical tooth (1).
47. Protibial spur absent (0); present (1).
48. Protibial spur apex extending past adjacent tibial apex (0); apex approximately even with adjacent tibial apex (1); apex shorter than adjacent tibial apex (2).
49. Protibial third tooth (females) small, obsolete (0); subequal in size to second tooth (1).
50. Protibial teeth (females) all subequally separated (0); with apical 2 teeth adjacent, third well separated (1).
51. Protarsomere 3 (males) with distinct, apical stridulatory patch (0); without distinct, apical stridulatory patch (1).
52. Protarsomere 5 (males) with stridulatory surface present (0); with stridulatory surface absent (1).
53. Protarsomere 5 (males) without medioventral tooth (0); with medial medioventral tooth (1); with apical medioventral tooth (2).
54. Protarsomere 5 (males) with lateroventral tooth absent (0); with lateroventral tooth present (1).
55. Modified protarsal claw (males) dorsoventrally flattened (Figs. 12, 14) (0); diagonally flattened (Fig. 11) (1); laterally flattened (Fig. 13) (2).
56. Modified protarsal claw (males) more or less evenly bifurcate (Fig. 14) (0); unevenly bifurcate (Fig. 12) (1).
57. Pronguigractor plate with 2 apical setae (0); with 1 apical, 1 subapical seta (1); with 2 subapical setae (2).
58. Unguigractor plate flattened (0); cylindrical (1).
59. Mesotibial widest medially (0); apically (1).
60. Mesotibia gracile, much narrower than mesofemur (0); robust, similar in width to mesofemur (1).
61. Mesotarsomere 4 (males) without apical stridulatory ridge (0); with apical stridulatory ridge (1).
62. Mesotarsomere 5 without tooth or swelling (0); with internomedial tooth (1); with internobasal tooth (2).
63. Modified mesotarsal claw (males) with apex bifurcate, dorsoventrally flattened (0); with ventral tooth (1).
64. Mesounguigractor plate with 2 apical setae (0); with 1 apical, 1 subapical seta (1); with 2 subapical setae (2).
65. Metatibial widest medially (0); apically (1).
66. Metatibia gracile, much narrower than metafemur (0); robust, similar in width to metafemur (1).
67. Metatarsomere 4 (males) without apical stridulatory ridge (0); with apical stridulatory ridge (1).
68. Metatarsomere 5 without tooth or swelling (0); with internomedial tooth (1); with internobasal tooth (2).
69. Modified metatarsal claw (males) with apex bifurcate, dorsoventrally flattened (0); with ventral tooth (1).
70. Metaanguigractor plate with 2 apical setae (0); with 1 apical, 1 subapical seta (1); with 2 subapical setae (2).
71. Phallobase length shorter than parameres (0); longer than parameres (1).
72. Parameres fused to phallobase (0); separated from phallobase by suture (1).
73. Parameres fused together at base and medially (0); completely separated by suture (1).

Fig. 11. *Platycoelia alternans* male protarsal claw.Fig. 12. *Platycoelia valida* male protarsal claw.Fig. 13. *Platycoelia grandicula* male protarsal claw.Fig. 14. *Platycoelia chrysotina* male protarsal claw.

74. Paramere with apex dorsoventrally flattened (Figs. 28-29) (0); rounded (Figs. 25-27, 30-32) (1).
75. Paramere with apex not expanded (Figs. 21, 23-24) (0); expanded (Figs. 15-16, 20) (1); greatly expanded (Figs. 17, 22) (2).
76. Paramere with apex laterally without striae (0); with diagonal striae (Fig. 26) (1).
77. Parameres apicolaterally without triangular hook (0); with triangular hook (Figs. 18-19) (1).
78. Parameres apically without setose patch (0); with ventral setose patch (1); with dorsal to ventral setose patch (2); with internal setose patch (3).
79. Parameres medially with sclerotized parts in contact (0); with unsclerotized area (1).
80. Frons color similar to clypeal color (0); darker than clypeal color (1).
81. Pronotal dark maculations absent (0); detectable but obsolete (1); well-defined (2).
82. Frons color similar to pronotal and elytral color (0); lighter than pronotal and elytral color (1); darker than pronotal and elytral color (2).



Fig. 15. *Platycoelia alternans* parameres.

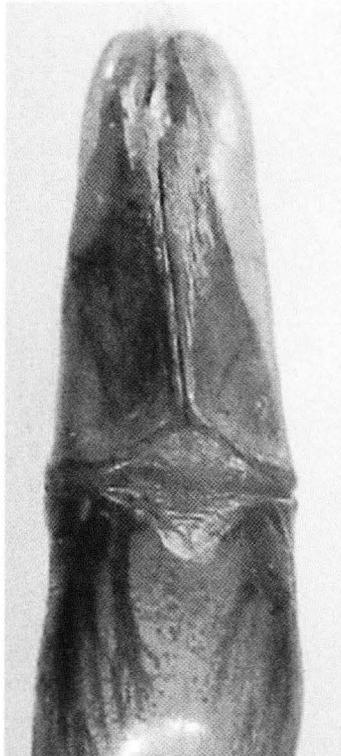


Fig. 16. *Platycoelia inflata* parameres.

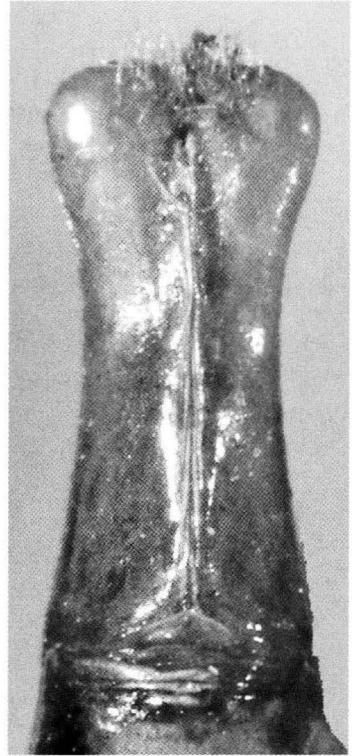


Fig. 17. *Platycoelia prasina* parameres.



Fig. 18. *Platycoelia abdominalis* parameres.



Fig. 19. *Platycoelia occidentalis* parameres.



Fig. 20. *Platycoelia forcipalis* parameres.

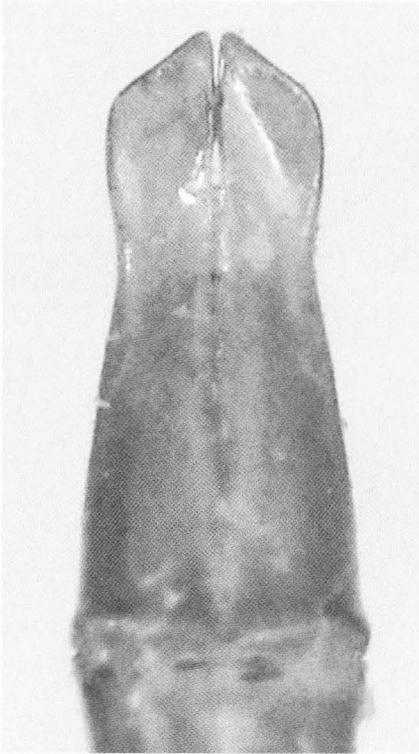


Fig. 21. *Platycoelia flavostriata* parameres.



Fig. 22. *Platycoelia puncticollis* parameres.



Fig. 23. *Platycoelia parva* parameres.



Fig. 24. *Platycoelia haenkei* parameres.

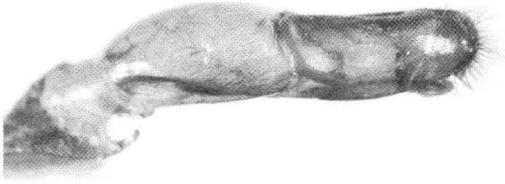


Fig. 25. *Platycoelia alternans* phallobase and paramere.

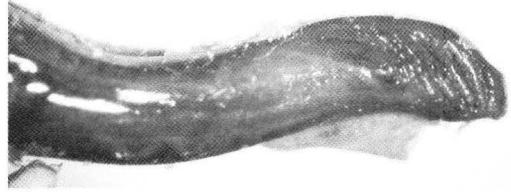


Fig. 26. *Platycoelia valida* phallobase and paramere.

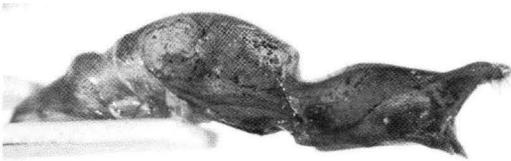


Fig. 27. *Platycoelia peruviana* phallobase and paramere.



Fig. 28. *Platycoelia forcipalis* phallobase and paramere.



Fig. 29. *Platycoelia flavostriata* phallobase and paramere.

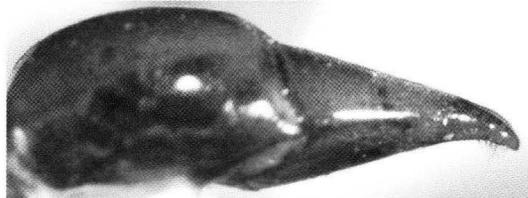


Fig. 30. *Platycoelia puncticollis* phallobase and paramere.

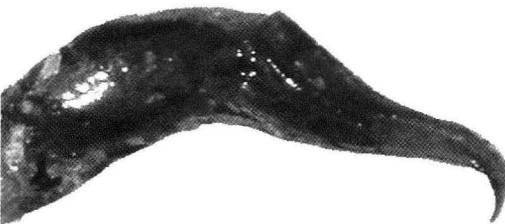


Fig. 31. *Platycoelia butleri* phallobase and paramere.



Fig. 32. *Platycoelia parva* phallobase and paramere.

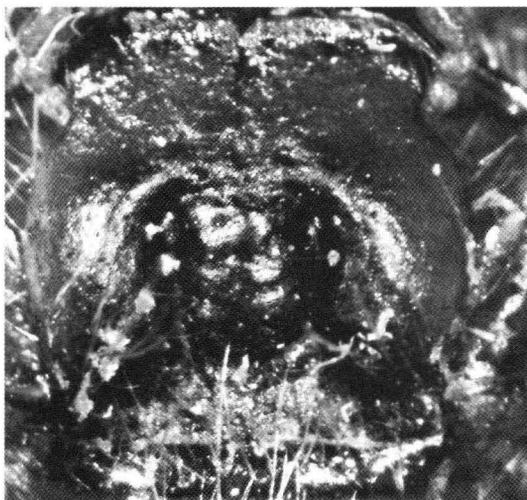


Fig. 33. *Platycoelia rufosignata* mentum.

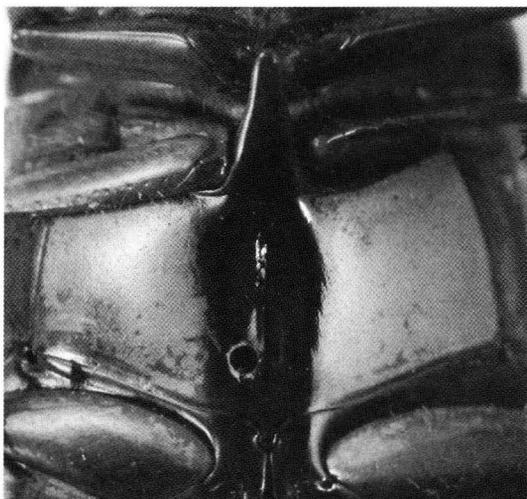


Fig. 34. *Platycoelia abdominalis* metasternum.

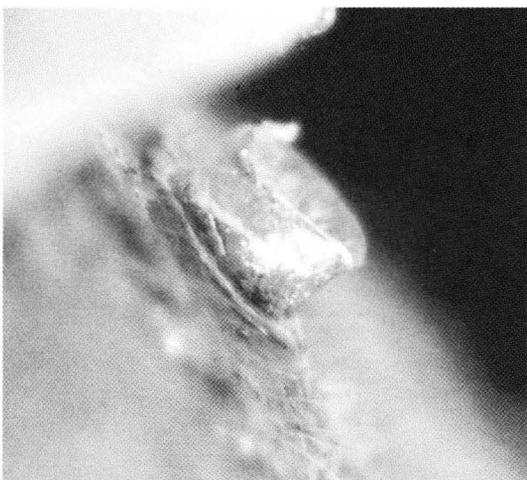


Fig. 35. *Platycoelia parva* apical spiracle.

83. Dorsal color dark brown to black (0); tan (1); yellow/green (2); brown (3).
84. Elytron with longitudinal lines at interval 2, base of stria 1 absent (0); present (1).
85. Elytron with longitudinal lines on striae 3 and 5 absent (0); weakly defined (1); well-defined on stria 5 (2); well-defined on striae 3 and 5 (3).
86. Elytron with distinct, yellow suture absent (0); thin (1); thick (extending to stria 1) (2).
87. Elytron with thick black suture line absent (0); present (1).
88. Metasternum color green, yellow, or tan (0), dark brown to black (at least medially) (1); with dark medial spot (2); with reddish-brown medial stripe (Fig. 34) (3).
89. Abdominal sternite color green, yellow, tan (0); dark brown to black (at least medially) (1); with dark apical and basal margins (2); reddish-brown (3).
90. Pygidium color similar to dorsal surface (0); darker than dorsal surface (1); lighter than dorsal surface (2).
91. Mesothoracic process color similar to metasternum color (0); lighter than metasternum color (1).

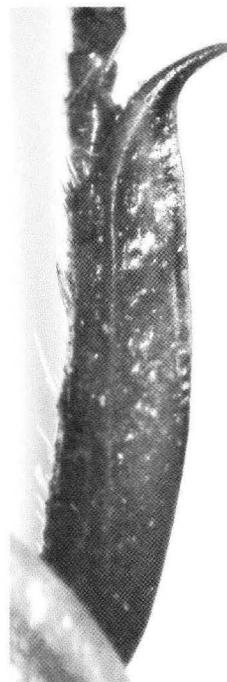


Fig. 36. *Platycoelia inflata* male protibia.

Phylogenetic Protocol

Initially, all characters were weighted equally and unordered. The character matrix was analyzed in PAUP* using a heuristic search. The following settings were used for the heuristic search: 1) keep: best trees only; 2) starting trees for branch-swapping: get by stepwise addition; 3) when multiple starting trees exist: swap on best only; 4) addition sequence: simple; 5) hold 1 tree at each step; 6) swapping algorithm: TBR; 7) save multiple trees (MulTrees); 8) when saving N best trees: swap on best trees only. Under parsimony options: multistate taxa the polymorphism setting was selected. The heuristic search yielded 851 most parsimonious trees of the length 174 with consistency index 0.400, retention index 0.715, and rescaled consistency index 0.286. The consistency index is a measure of homoplasy (rate of character convergence) on a scale of 0 to 1; the retention index is a measure of synapomorphic characters supporting monophyletic groups which is on a scale of 0 to 1; and the rescaled consistency index is a product of the other two indices (Maddison and Maddison 2002).

After an initial heuristic search, the characters were reweighted in PAUP* using the following settings: 1) reweight characters according to: consistency index; 2) if more than one tree, use: maximum value (best fit); and 3) base weight = 1. This technique is called successive weighting (Farris 1969) and uses the results of the first analysis to reweight each character based on homoplasy. After the characters were reweighted; a new heuristic search was performed. Stability was reached after one iteration (further character reweighting yielded the same trees). The successive weighting yielded 9 equally parsimonious trees with a length of 157.5, consistency index of 0.401, retention index of 0.724, and rescaled consistency index of 0.290 (see Fig. 37 for a strict consensus tree of the 9 equally parsimonious trees and Fig. 38 for a phylogram of one tree). The consistency index of 0.401 for this tree is reasonable for a matrix of this size (Meier *et al.* 1991). This indicates that homoplasy is not a major concern with the matrix and character weights used in the final analysis. The re-

tention index of 0.724 for this tree is consistent with a matrix of this size and suggests that the characters in general support monophyletic clades. The trees were evaluated using a bootstrap method with full heuristic search with 100 replicates (Fig. 37).

TAXONOMIC METHODS AND MATERIALS

Specimens

Specimens were borrowed from and deposited in the following 68 institutions and private collections (collections managers / curators listed in parenthesis). A total of 4,785 specimens formed the basis of this revision. All specimens examined were labeled with a distinctive double-bordered determination label or one of my red or yellow type labels.

- ABTS Andrew B. T. Smith Collection, Lincoln, NE
- AMNH American Museum of Natural History, New York, NY (Lee Herman)
- ANCB Museo de Historia Natural, La Paz, Bolivia (Jaime Sarmiento)
- ANSP Academy of Natural Sciences, Philadelphia, PA (Donald Azuma)
- AJRC Alex Reifschneider Collection, Sierra Madre, CA
- ARLG Andreas Reichenbach Collection, Leipzig, Germany
- BCRC Brett C. Ratcliffe Collection, Lincoln, NE
- BDGC Bruce D. Gill Collection, Ottawa, ON, Canada
- BMNH The Natural History Museum, London, England (Malcolm Kerley)
- CASC California Academy of Sciences, San Francisco, CA (Roberta Brett)
- CBAC Carlos Bordón Collection, Maracay, Venezuela
- CMNC Canadian Museum of Nature, Ottawa, ON, Canada (François Génier)
- CMNH Carnegie Museum of Natural History, Pittsburgh, PA (Robert Davidson)

- CNCI Canadian National Collection of Insects, Ottawa, ON, Canada (Yves Bousquet)
- DEIC Deutsches Entomologisches Institut, Eberswalde, Germany (Lothar Zerche)
- DCCC David C. Carlson Collection, Fair Oaks, CA
- DCHC David C. Hawks Collection, Riverside, CA
- DJCC Daniel J. Curoe Collection, Palo Alto, CA
- EAPZ Escuela Agrícola Panamericana, Zamorano, Honduras (Ron Cave)
- EGRC Ed G. Riley Collection, College Station, TX
- EMEC Essig Museum of Entomology, University of California, Berkeley, CA (Cheryl Barr)
- FCOC Federico C. Ocampo Collection, Lincoln, NE
- FMNH Field Museum of Natural History, Chicago, IL (Al Newton, Margaret Thayer, Philip Parrillo)
- FGIC François Génier Collection, Aylmer, PQ, Canada
- FSCA Florida State Collection of Arthropods, Gainesville, FL (Mike Thomas, Brenda Beck)
- HAHC Henry and Anne Howden Collection, Ottawa, ON, Canada
- HNHM Magyar Természettudományi Múzeum, Budapest, Hungary (Otto Merkl)
- HSIC Hacienda San Isidro Collection, Cosanga, Ecuador (Carmen Bustamante)
- INBC Instituto Nacional de Biodiversidad (INBio), Santo Domingo de Heredia, Costa Rica (Angel Solís)
- ISNB Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium (Pol Limbourg, Alain Drumont)
- JMMC Jean-Michel Maes Collection, Leon, Nicaragua
- LACM Los Angeles County Museum of Natural History, Los Angeles, CA (Brian Brown)
- LEMQ Lyman Entomological Museum, McGill University, Ste. Anne de Bellevue, PQ, Canada (Terry Wheeler, Stéphanie Boucher)
- MACN Museo Argentino de Ciencias Naturales Buenos Aires, Argentina (Axel O. Bachmann)
- MCZC Museum of Comparative Zoology, Harvard University, Cambridge, MA (Philip Perkins)
- MGFT Georg Frey Collection (formerly in Tutzing and Munich, Germany), Naturhistorisches Museum Basel, Switzerland (Daniel Burckhardt)
- MIZA Museo del Instituto de Zoología Agrícola "Francisco Fernández Yépez," Universidad Central de Venezuela, Maracay, Venezuela (Luis Joly)
- MLJC Mary Liz Jameson Collection, Lincoln, NE
- MLPA Departamento de Entomología, Universidad Nacional de La Plata, La Plata, Argentina (Juan Alberto Schnack)
- MLUH Martin-Luther-Universität, Wissenschaftsbereich Zoologie, Halle, Germany (Karla Schneider)
- MNHN Muséum National d'Histoire Naturelle, Paris, France (Jean Menier)
- MNNC Museo Nacional de Historia Natural, Santiago, Chile (Mario Elgueta)
- MXAL Miguel Angel Morón Collection, Xalapa, Veracruz, México
- NHMB Entomologische Abteilung, Naturhistorisches Museum Basel, Switzerland (Daniel Burckhardt)
- NMPC National Museum of Natural History, Prague, Czech Republic (Josef Jelínek)
- OSAC Oregon State University, Corvallis, OR (Darlene Judd)
- PKLC Paul K. Lago Collection, University, MS
- QCAZ Museo de Zoología, Pontificia Universidad Católica del Ecuador, Quito, Ecuador (Giovanni Onore)
- RACC Rich A. Cunningham Collection, Chino, CA
- RFMC Roy F. Morris Collection, Lakeland, FL

- ROME Royal Ontario Museum, Toronto, ON, Canada (Doug Currie, Brad Hubley)
- SEMC Snow Entomological Museum, University of Kansas, Lawrence, KS (Steve Ashe)
- SLTC Stéphane Le Tirant Collection, Lachenaie, PQ, Canada
- SMFD Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt-am-Main, Germany (Damir Kovac)
- SMTD Staatliches Museum für Tierkunde, Dresden, Germany (Dirk Ahrens)
- TAMU Texas A&M University, College Station, TX (Ed Riley)
- UAIC University of Arizona, Tucson, AZ (Carl Olson)
- UCCC Museo de Zoología, Universidad de Concepción, Concepción, Chile (Viviane Jerez)
- UCDC R. M. Bohart Museum of Entomology, University of California, Davis, CA (Steve Heydon, Lynn Kimsey)
- UCRC Entomology Museum, University of California, Riverside, CA (Doug Yanega, Dave Hawks)
- UMRM W. R. Enns Entomology Museum, University of Missouri, Columbia, MO (Robert Sites)
- UNSM University of Nebraska State Museum, Lincoln, NE (Brett Ratcliffe, Mary Liz Jameson)
- USNM United States National Museum, Washington, D.C. (Dave Furth, Gloria House)
- UVGC Universidad del Valle de Guatemala, Guatemala City, Guatemala (Jack Schuster)
- VMCP Vladislav Maly Collection, Prague, Czech Republic
- ZMHB Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Hella Wendt)
- ZMUH Zoologisches Institut und Zoologisches Museum der Universität Hamburg, Germany (Rudolf Abraham)
- ZSMC Zoologische Staatssammlung München, Germany (Max Kübandner, Alexander Riedel)

Catalog Format

The catalog section lists all names herein considered valid within the subtribe *Platycoeliina* (subtribal, generic, species). Under each species of *Platycoelia* are names used in the literature for the valid species. All names are included as they appeared in the original literature, including valid names, available names (synonyms), misspelled names (*lapsus calami*), unavailable names (*nomina nuda*, varieties, etc.) that have no nomenclatural status, and misapplied names (when the author misidentified a taxon or misused a name). Each name is followed by a list of references (separated by semicolons) in which that name appeared. Each reference includes the author, date, and beginning page(s) of the passage(s) mentioning the taxon as well as the nature of the content in square brackets.

Type Specimens

I attempted to examine all traceable type material for *Platycoelia* species-group names. For all type specimens, the depository is listed and all of the labels are transcribed for ease of future location and recognition. I placed a red label on all of the holotypes, allotypes, lectotypes, and neotypes and a yellow label on all of the paratypes and paralectotypes examined during the course of my research on the genus. A number of specimens examined had type labels of some form but proved not to be part of the original type series. I labeled these specimens "erroneous type label" or "not a type of . . ." in order to facilitate their recognition.

Ohaus (1904b) described a few "varieties" of *Platycoelia* species. I have determined that these names are infrasubspecific and therefore not regulated by the International Code of Zoological Nomenclature (hereafter referred to as ICZN). Article 45.6.4 states that names described as "varieties" published before 1961 are subspecific "unless its author expressly gave it infrasubspecific rank, or the content of the work unambiguously reveals that the name was proposed for an infrasubspecific entity, in which case it is infrasubspecific." Ohaus (1904b) described both

subspecies AND varieties in the same paper (implication of different “ranks”), and the varieties were based on slightly different traits of coloration. These facts unambiguously reveal that Ohaus’ varieties were proposed for infrasubspecific entities. Infrasubspecific entities are not regulated by the ICZN. Ohaus (1904b) described the new species *P. nigrosternalis* and *P. puncticollis* with varieties in the same publication. The specimens used in the descriptions of the varieties are excluded from the type series of the nominal species-groups taxon in these cases. Article 72.4.1 of the ICZN states that specimens referred to by name as “distinct variants” are excluded from the type series.

Designation of Lectotypes and Neotypes

Article 74.7.3 of the ICZN requires that designations of lectotypes after 1999 must “contain an express statement of the taxonomic purpose of the designation” (International Commission on Zoological Nomenclature 1999). Lectotypes are designated in the genus *Platycoelia* in order to preserve the stability of nomenclature by selecting one specimen as the sole, name-bearing type of the taxon. The lectotype specimen serves to tie the published name to an actual specimen and as a reference standard for the taxon. Lectotypes were selected for the following names: *Callichloris baessleri* Ohaus, *C. bocki* Ohaus, *C. helleri* Ohaus, *C. signaticollis* Burmeister, *Leucopelaea baronis* Ohaus, *Melolontha flavostriata* Latreille, *P. abdominalis* Ohaus, *P. alternans* Erichson, *P. boliviensis* Blanchard, *P. burmeisteri* Arrow, *P. burmeisteri* Ohaus, *P. chrysotina* Ohaus, *P. confluens* Ohaus, *P. flavoscutellata* Ohaus, *P. forcipalis* Ohaus, *P. gaujoni* Ohaus, *P. hirta* Ohaus, *P. humeralis* Bates, *P. inflata* Ohaus, *P. inflata tucumana* Ohaus, *P. intermedia* Ohaus, *P. laevis* Burmeister, *P. limbata* Ohaus, *P. lutescens* Blanchard, *P. marginata* Burmeister, *P. mesosternalis* Ohaus, *P. nervosa* Kirsch, *P. nigrocauda* Bates, *P. nigrosternalis* Ohaus, *P. occidentalis* Ohaus, *P. olivacea* Blanchard, *P. parva* Kirsch, *P.*

pomacea Erichson, *P. pomacea brasiliensis* Ohaus, *P. prasina* Erichson, *P. pulchrior* Ohaus, *P. puncticollis* Ohaus, *P. quadrilineata* Burmeister, *P. rufosignata* Ohaus, *P. scutellata* Guérin-Méneville, *P. simplicior* Ohaus, *P. steinheili* Ohaus, *P. tschudii* Ohaus, *P. unguicularis* Ohaus, *P. valida* Burmeister, *P. variolosa* Ohaus, *P. wallisi* Ohaus. I consider that lectotypes are necessary for these names due to the long history of taxonomic confusion of some species and names in this genus. It is particularly critical because early authors did not explicitly state how many specimens were in the original type series. Information about collecting locality and date, collector, and type depository were also often omitted. This makes it impossible to determine with a high degree of accuracy what and where the ENTIRE type series is. If lectotypes are not designated, then the possibility will remain that “rogue” syntypes will surface and destabilize the application of the name to that taxon. *Platycoelia*, and many other groups of scarabs, have had many species described based on mixed series of specimens later considered to represent multiple species.

The ICZN requires that a designation of a neotype “is validly designated when there is an exceptional need and only when that need is stated expressly” (Article 75.3). As with the lectotype designations, two neotypes are designated in the genus *Platycoelia* in order to preserve the stability of nomenclature by selecting one specimen as the sole, name-bearing type of the taxon when the original name-bearing type specimen(s) were lost or destroyed. The neotype specimen serves to tie the published name to an actual specimen and as a reference standard for the taxon. Other qualifying conditions for designating valid neotypes in section 75.3 of the code are satisfied in the discussions and descriptions of the individual species. A neotype was selected for *Callichloris alticola* Gutiérrez and *Callichloris laelaps* Gutiérrez. I consider that neotypes are necessary for these names due to the history of taxonomic confusion of species and names in this genus. Until revisionary work is done on long-neglected groups such as *Platycoelia*, the taxonomy and classification

are "complex zoological problems" and there is doubt surrounding the identities of all species and names.

Species Concept

I utilize the Phylogenetic Species Concept outlined by Wheeler and Platnick (2000): species are the smallest aggregation of populations diagnosable by a unique combination of character states. Each species description is a scientific hypothesis. The number of specimens examined (given at the beginning of each description) is the number of replicates studied. Character states are used to support the hypothesis that all the individuals examined are of the same species. The different species can be recognized by a unique combination of character states because they are isolated genetically from other species (in sexual organisms such as *Platycoelia*). Population genetics has demonstrated the inevitability of character state fixation due to various forces, including genetic drift and natural selection. Different character states will become fixed in different species due to genetic isolation. As is generally true, the strength of the hypothesis (species description) increases with the number of replicates (specimens) examined. Not all species are equally diagnosable. Some are easily recognized by examining one individual with a unique set of characters (for example a male with radically different parameres), and some must be proposed only after many individuals from different populations are examined (when species have recently diverged or have not changed drastically since their divergence so fixed character states are difficult to recognize). These analyses must be done in the context of other closely related species. Examining intraspecific variation within closely related species is an important tool in distinguishing fixed character states from phenotypic traits that vary within a population or species. When traits are mistaken for fixed character states, the number of species can be overestimated.

No species description (hypothesis) is accurate for all of the individuals in a species.

There are sometimes anomalous individuals that have unusual traits or have been malformed during development. Size and coloration of some species many vary widely from year to year, depending on the amount of rain, food availability, temperature, etc. Some populations also may exhibit phenotypic variation of certain traits at different levels from other populations. There is also the possibility of some low level of interspecific breeding and gene flow between closely related species. Ideally, a taxonomist would examine large series of specimens from single collecting events and from different geographic areas within the distribution of a given species to get a full appreciation of the intraspecific variation. Unfortunately, this is often a luxury we do not have. The opposing forces of overwhelming species richness of insects and disappearing habitats, research dollars, and expertise make career-long taxonomic studies of limited groups impractical.

Because all proposed species are scientific hypotheses, examining more specimens and specimens from different localities and populations can test their validity. I expect that some of my *Platycoelia* species designations will have to be slightly modified as more specimens become available.

I have not seen a compelling argument for maintaining subspecific names in the context of the phylogenetic species concept. In fact, subspecies concepts all seem subjective and reliant on the whims of the experts on the given group to determine what populations are deserving of the status. To me, this harks back to the days before cladistic analysis when taxonomic authorities would present intuitive phylogenies as fact. I am not opposed, on principle, to naming subspecies, but I have yet to find an objective set of criteria for determining whether different populations warrant subspecific status. Therefore, I do not recognize subspecies as valid taxa in this work. Ohaus (1904b) proposed two subspecific names within *Platycoelia*. Types of each were examined and determined to be synonymous with the nominal species.

PHYLOGENETIC PATTERNS AND BIOGEOGRAPHIC IMPLICATIONS

The genus *Platycoelia* occurs in montane areas of Central and South America. Smith (2002a) hypothesized that *Platycoelia* or similar progenitors have been present in South America since the late Cretaceous to early Tertiary. As the Gondwana supercontinent broke up by the early Tertiary, the Australian and Neotropical Anoplognathini became isolated. Howden (1981), Newton (1985), and Thayer (1985) discuss similar southern hemispheric distributional patterns in other beetle groups. Andean uplift and climate-driven ecozone changes have undoubtedly lead to numerous speciation events within *Platycoelia*. Similar patterns have been discussed with regards to the other Neotropical Anoplognathini by Smith (2002a) for Brachysternina and Smith and Morón (2003) for *Phalangogonia*.

Platycoelia has several synapomorphic character states not found in *Phalangogonia*. They include protibial spur present (character 47); unguitactor plate cylindrical (character 58); mesotibia and metatibia gracile (characters 60, 66); males with modified metatarsal claw with a ventral tooth (character 69); parameres not fused to phallobase, not fused together (characters 72, 73). The species of the genus *Platycoelia* fall into four major clades (see Figs. 37-38). Each clade is discussed in detail below.

The basal clade (Fig. 37, clade 1) of *Platycoelia* consists of eight species. Species of this clade have a broad, triangular labral tooth that strongly overlaps with the mentum (characters 15, 16); a cup-shaped outer maxillary tooth (character 21); the apex of mentum with a distinct tooth curved into the oral cavity (character 24); 9-segmented antennae (character 10); reduced dentition on the male protibia (characters 44, 45); protarsomere 5 of males with an apical medioventral tooth (character 53); and the apex of each paramere expanded with a setose patch extending from the dorsal to ventral surface (characters 75, 78). This clade is similar to the "marginata group" of Ohaus (1918) and "marginata group" plus "alternans group" of Machatschke

(1965). This group is widespread in South America, occurring mainly in the Montane Wet Forest regions on the eastern slope of the Andes Mountains from Venezuela to Argentina.

A second clade (Fig. 37, clade 2) within *Platycoelia* consists of four species. Species of this clade have no yellow longitudinal lines on elytral striae 3 and 5 (character 85); a broad, triangular labral tooth that strongly overlaps with the mentum (characters 15, 16); cup-shaped inner and outer maxillary teeth (characters 21, 23); the apex of the mentum with a distinct tooth curved into the oral cavity (character 24); protarsal claws of males modified greatly and unevenly bifurcate (character 56); and an expanded apex of each paramere (character 75). This clade is similar to the "valida group" of Machatschke (1965). Although there are few species in this clade, it is a widespread group in South America occurring from the Andes Mountains of Colombia to Bolivia and the highlands of central Brazil. This clade contains the only species (*P. pomacea*) that occurs in the Brazilian central highlands. With only one species of *Platycoelia* occurring in the Brazilian highlands, it may represent a more recent range expansion or that species of *Platycoelia* were present in the region prior to the orogeny of the Andes Mountains. Based on my previous research (Smith 2002a), either scenario is possible because *Platycoelia* has occurred in South America since the late Cretaceous.

Another large clade (Fig. 37, clade 3) consists of 14 species. Species of this clade have a well-developed, truncate apical tooth on the labrum that overlaps with the mentum (characters 15, 16); apex of the mentum with a distinct tooth curved into oral cavity (character 24); densely punctate surface of the pronotum (character 26); elongated, strongly convex elytra capable of covering the pygidium (character 37); apex of the protibia spur usually much shorter than adjacent tibial apex (character 48); mesotarsomere 5 and metatarsomere 5 usually with an internobasal tooth (character 62, 68); and the apex of each paramere strongly, dorsoventrally flattened with a setose patch on the ventral surface (characters 74, 78). This clade

is similar to the "flavostriata group" plus "humeralis group" of Machatschke (1965). The clade occurs throughout the Andes Mountains from Venezuela to Bolivia, as well as Central America. It appears that members of this clade dispersed to Central America on at least two separate occasions, as *P. grandicula* and *P. humeralis* are both members of this clade, but are not sister taxa. This clade is most diverse in the northern Andes Mountains with many (apparently) parapatric species in adjacent regions of Colombia and northern Ecuador. The isolation of populations between the three cordilleras of the

Andes Mountains in Colombia has probably facilitated speciation within the clade.

The largest and most morphologically diverse clade (Fig. 37, clade 4) consists of 34 species. Species of this clade have the elytral striae weakly impressed (character 29); elytral apices are not elongated or strongly convex, incapable of completely covering the pygidium (character 37); mesotarsomere 4 and metatarsomere 4 in males without an apical, stridulatory ridge (characters 61, 67); mesotarsomere 5 and metatarsomere 5 usually without an internal tooth or swelling (characters 62, 68); meso-unguitractor plate and

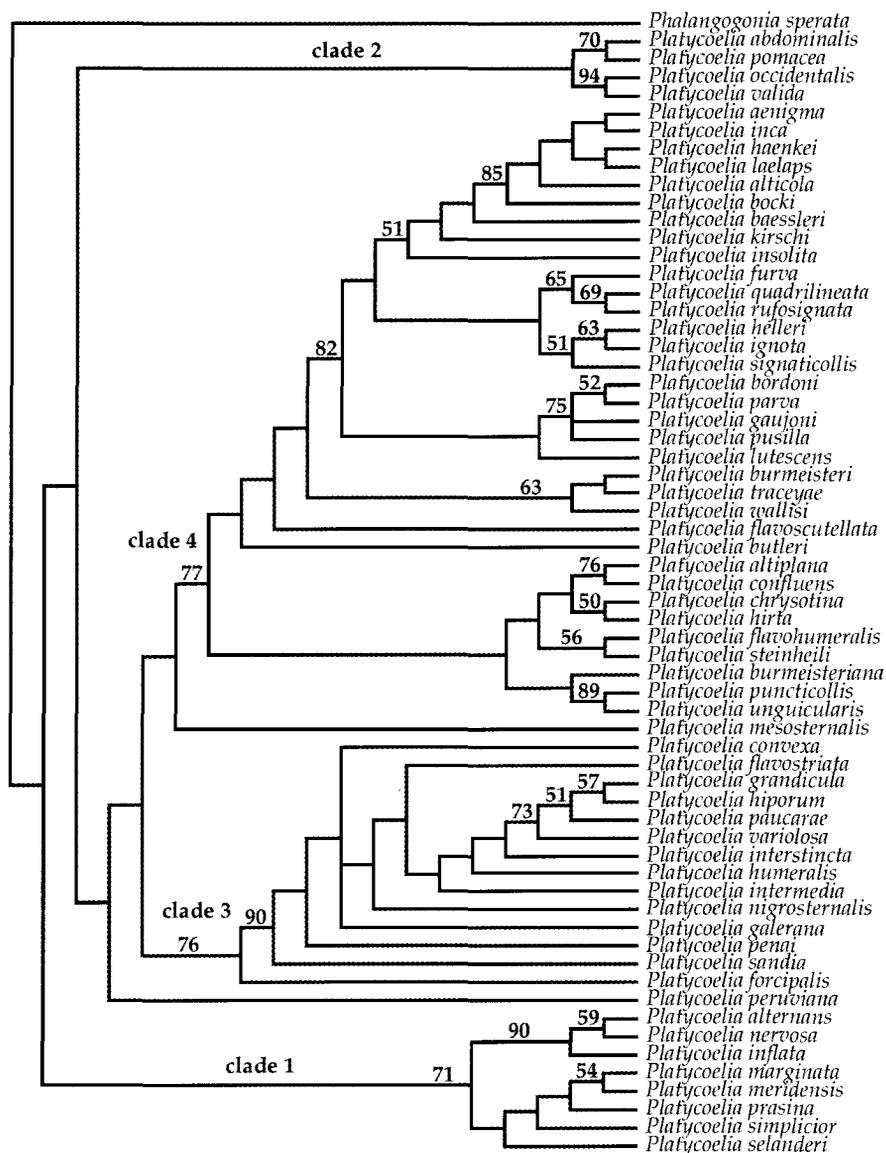


Fig. 37. Strict consensus tree of the species in the genus *Platycoelia* based on 9 equally parsimonious trees with bootstrap support values for the clades.

metaanguitactor plate usually with 1 apical, 1 subapical seta (characters 64, 70); and each paramere apically rounded, usually not expanded, and usually without a setose patch (characters 74, 75, 78). This clade was part of the "flavostriata group" of Ohaus (1904b) and was split into various groups by Machatschke (1965). The clade is found in the Andes Mountains from Venezuela to Bolivia. Members of this clade generally occur in the Montane Wet Forest regions on the eastern slope of the Andes Mountains but several groups also occur in the high elevation Páramo and Puna regions. The Páramo region is a patchwork of

moist habitats from Venezuela to northern Perú above continuous treeline. The Puna region is an extensive area in Perú, Bolivia, and northern Argentina above continuous treeline but much drier than the Páramo region. Several species in this clade have adaptations and modifications that presumably allow for survival in harsh, montane conditions present in the Páramo and Puna regions. The increasing elevation of the Andes Mountains throughout the Tertiary resulted in the Páramo and Puna regions and probably facilitated speciation within this clade of *Platycoelia*.

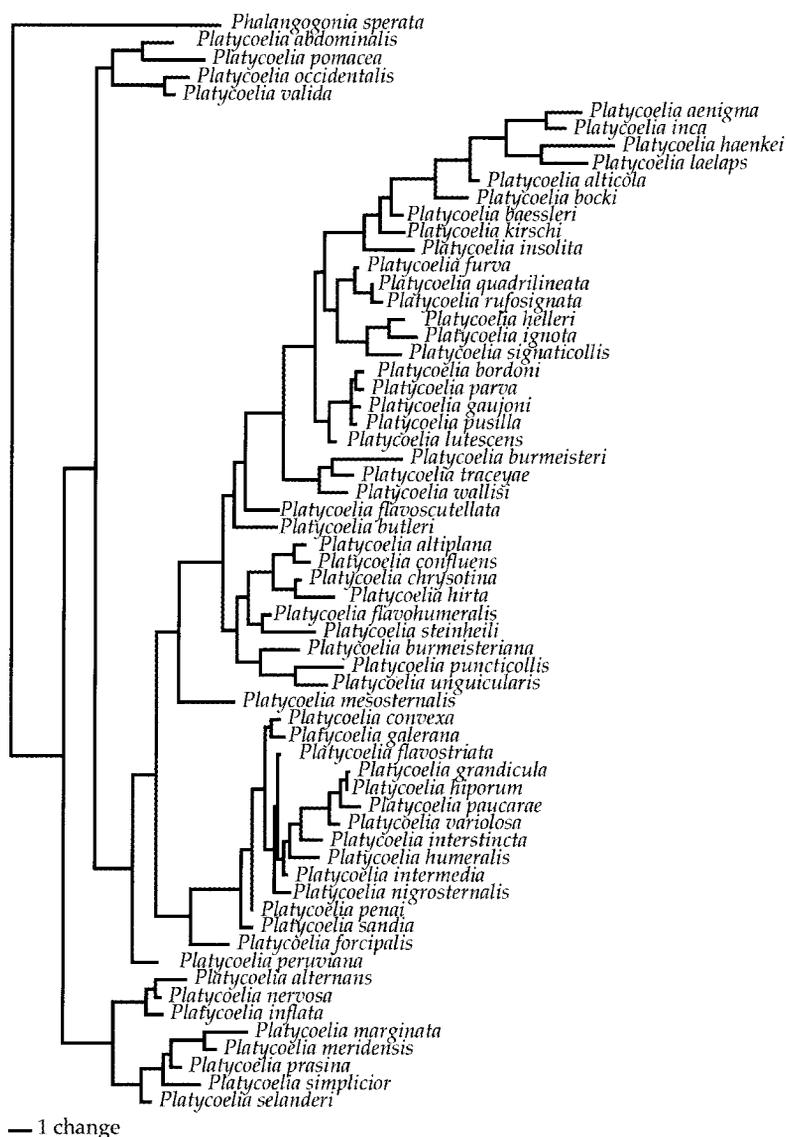


Fig. 38. Phylogram of the species in the genus *Platycoelia*. This is one of the 9 equally parsimonious trees found after successive approximation weighting. The treelength = 157.5; consistency index = 0.401; retention index 0.724; rescaled consistency index = 0.290.

Key to the Neotropical Genera of Anoplognathini

1. Elytral margin with clear, membranous border (best seen at apex of elytra). Central Chile and Argentina to Tierra del Fuego (Brachysternina)..... 2
- 1'. Elytral margin without clear membranous border. Central México to northern Argentina..... 4
- 2(1). Unguitractor plate with 3 or more setae. Elytron bearing white, scale-like setae (sometimes absent due to abrasion). Claws simple. Tarsomere 5 with ventromedial tooth..... **Hylamorpha Arrow**
- 2'. Unguitractor plate with 2 setae. Elytron glabrous or bearing white to orange, hair-like, slender or thick setae. Claws split, toothed, or simple (if simple, then tarsomere 5 without tooth). Tarsomere 5 with or without ventromedial tooth..... 3
- 3(2'). Dorsal color green. Pygidium and abdominal sternites with distinct thick, white setae (especially laterally at base) when viewed without magnification. Apex of female terminal abdominal sternite moderately to deeply emarginate. Male paramere with ventral and lateral sclerites.....
..... **Brachysternus Guérin-Ménéville**
- 3'. Dorsal color brown to olive green. Pygidium and abdominal sternites usually with hair-like, slender, inconspicuous setae when viewed without magnification. Apex of female terminal abdominal sternite rounded. Male paramere lacking ventral and lateral sclerites.....
..... **Aulacopalpus Guérin-Ménéville**
- 4(1'). Protibial spur absent. Mesotibia and metatibia robust, similar in thickness to femora. Tarsomeres robust, thickened, often wider than long. Central México to Panamá. (Phalangogoniina)..... **Phalangogonia Burmeister**
- 4'. Protibial spur present. Mesotibia and metatibia slender in comparison with femora. Tarsomeres not thickened, often longer than wide. Central México to northern Argentina. (Platycoeliina)..... **Platycoelia Dejean**

Clave para los géneros neotropicales de Anoplognathini

1. Margen elitral con borde mebranoso bien definido (mas notorio en el apice del élitro). Chile Central y Argentina hasta Tierra del Fuego (Brachysternina)..... 2
- 1'. Margen elitral sin borde mebranoso bien definido. México Central hasta el norte de Argentina..... 4
- 2(1). Lóbulo del unguitractor con tres o mas setas. Elitro con setas como escamas blancas (a veces ausentes por abrasión). Uñas simples. Tarsómero 5 con diente ventromedial..... **Hylamorpha Arrow**
- 2'. Lóbulo del unguitractor con dos setas. Elitro glabro o con gruesas setas como pelos blancas o anaranjadas. Uñas bifurcadas con diente o simples (si es simple entonces el tarsómero 5 no tiene diente). Tarsómero 5 con o sin diente ventromedial..... 3
- 3(2'). Color dorsal verde. Pigidio y esternitos abdominals con setas blancas (especialmente en la parte lateral de la base) claramente vistas sin magnificación. Apice del esternito terminal de la hembra moderadamente a profundamente emarginado. Parámero del macho con escleritos laterals.....
..... **Brachysternus Guérin-Ménéville**
- 3'. Color dorsal marrón a verde oliva. Pigidio y esternitos abdominals con finas e inconspicuas setas como pelos cuando vistas sin magnificación. Apice del esternito terminal de la hembra moderadamente redondeado. Parámero del macho sin escleritos laterals o ventrales.....
..... **Aulacopalpus Guérin-Ménéville**

- 4(1'). Espina de la protibia ausente. Mesotibia y metatibia robustas, de igual grosor que los fémures. Tarsómeros robustos, gruesos, usualmente mas anchos que largos. México Central hasta Panamá. (*Phalangoniina*)
..... ***Phalangonia* Burmeister**
- 4'. Espina de la protibia presente. Mesotibia y metatibia delgadas, mas delgadas en comparación con los fémures. Tarsómeros nos robustos, usualmente mas largos que anchos. México Central hasta Argentina. (*Platycoeliina*)..... ***Platycoelia* Dejean**

Subtribe **PLATYCOELIINA** **Burmeister, 1844**

Platycoeliina Burmeister, 1844 (valid name)
CATALOG. *Platycoeliidae*, Burmeister 1844: 451 [original description]; Ohaus 1904b:257, 261, 273 [comparison with other Anoplognathiden, key to American Anoplognathiden, redescription].

Platycoelien, Ohaus 1904a:64, 74 [comparison with other Anoplognathiden].

Platycoeliiden, Ohaus 1905:124 [comparison with *Brachysterniden*]; Ohaus 1908:386 [distribution].

Platycoeliina, Ohaus 1918:176 [catalog listing]; Blackwelder 1944:246 [checklist]; Gutiérrez 1951:113 [comparison with *Brachysternina*]; Ohaus 1952:8 [catalog listing]; Machatschke 1965:8, 13, 55 [comparison with other *Rutelinae*, distribution, catalog listing]; Machatschke 1972:300 [catalog listing]; Martínez 1976:327 [distribution]; Morón 1995:195 [comment on Mexican species]; Morón 1997:50 [redescription]; Delgado *et al.* 2000:31 [key to genera of Mexican *Scarabaeoidea*]; Smith 2002a:380, 389 [distribution, key to Neotropical genera of *Anoplognathini*].

TYPE GENUS. *Platycoelia* Dejean, 1833.

DESCRIPTION. See description of *Platycoelia*.

Genus **PLATYCOELIA** Dejean, 1833 (Figs. 1-36, 39-78)

Platycoelia Dejean, 1833 (valid name)

Callichloris Burmeister 1844 (junior synonym)

Leucopelaea Bates 1891 (junior synonym)

Epicallichloris Gutiérrez, 1951 (junior synonym)

CATALOG. *Platycoelia*, Dejean 1833:154 [original designation]; Dejean 1836:171

[checklist]; Burmeister 1844:432, 436, 451, 452 [key to genera of *Anoplognathidae*, description]; Blanchard 1845:217 [catalog listing]; Erichson 1847:99 [catalog listing]; Blanchard 1851:227 [catalog listing]; Burmeister 1855:524 [key to species]; Guérin-Méneville 1855:585 [catalog listing]; Lacordaire 1856:368, 371 [key to genera of *Anoplognathides*, redescription]; Harold 1869:1230 [catalog listing]; Bates 1888:293 [distribution]; Bates 1891a:4 [distribution]; Ohaus 1904a:63, 64, 98 [comparison with other genera of *Anoplognathiden*]; Ohaus 1904b:273, 277, 278, 338 [redescription, species list]; Ohaus 1905:120 [comparison with *Leucopelaea*]; Ohaus 1918:176 [catalog listing]; Blackwelder 1944:246 [checklist]; Ohaus 1952:8 [catalog listing]; Machatschke 1965:13, 55 [distribution, catalog listing]; Machatschke 1972:300 [catalog listing]; Martínez 1976:327 [distribution]; Zunino and Monteresino 1990:5 [morphology of genitalia]; Morón 1994a:18 [checklist]; Morón 1994b:17 [distribution]; Martínez and Martínez 1994:545, 548 [distribution]; Morón 1995:195 [comment on distribution]; Morón 1997:50 [redescription]; Smith and Paucar-Cabrera 2000:408, 411 [comment on distribution, comment on morphology]; Delgado *et al.* 2000:31 [key to genera of Mexican *Scarabaeoidea*]; Smith and Jameson 2001:103 [comparison with *Eremophygus bicolor*, comment on morphology]; Ratcliffe 2002:26 [checklist]; Ratcliffe and Ocampo 2002:368 [comment on nomenclature]; Smith 2002a:389 [key to Neotropical genera of *Anoplognathini*]; Paucar-Cabrera and Smith 2002:438 [larval descriptions].

Callichloris, Burmeister 1844:455, 465 [original description]; Blanchard 1851:227 [catalog listing]; Burmeister 1855:526 [comment on morphology]; Lacordaire 1856:372, 377 [key to genera of *Brachysternides*, redescription]; Harold 1869:1232 [catalog listing];

Arrow 1899:369 [comment on morphology]; Ohaus 1904b:258, 273, 277, 307, 332, 339 [redescription, species list]; Ohaus 1905:120 [comparison with *Leucopelaea*]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Gutiérrez 1951:112, 113, 115 [redefinition of genus]; Ohaus 1952:9 [catalog listing]; Machatschke 1965:13, 55 [distribution, placed in synonymy with *Platycoelia*]; Machatschke 1972:301 [catalog listing as synonym of *Platycoelia*]; Martínez 1976:327 [distribution]; Morón 1997:50 [comment on nomenclature]; Smith and Jameson 2001:104 [comment on nomenclature]; Ratcliffe and Ocampo 2002:368 [comment on nomenclature].

Leucopelaea, Bates 1891a:4 [distribution]; Bates 1891b:30 [original description]; Whymper 1892:137 [biology]; Arrow 1899:369 [comparison with *Callichloris*]; Ohaus 1904b:258, 277 [comment on morphology]; Ohaus 1905:120, 164 [redescription, species list]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:13, 55 [distribution, placed in synonymy with *Platycoelia*]; Machatschke 1972:301 [catalog listing as synonym of *Platycoelia*]; Martínez 1976:327 [distribution]; Morón 1997:50 [comment on nomenclature]; Smith and Paucar-Cabrera 2000:412 [comment on classification]; Smith and Jameson 2001:104 [comment on nomenclature].

Callichloris (Callichloris), Gutiérrez 1951:115 [redescription as subgenus, key to species].

Callichloris (Epicallichloris), Gutiérrez 1951:115 [original description of subgenus, key to species]; Smith and Jameson 2001:104 [comment on nomenclature].

Epicallichloris, Machatschke 1965:60 [placed in synonymy with *Platycoelia*]; Machatschke 1972:304 [catalog listing as synonym of *Platycoelia*].

TYPE SPECIES. *Platycoelia* Dejean, 1833. Type species *Melolontha flavostriata* Latreille, 1813 by monotypy. Gender: feminine.

Callichloris Burmeister, 1844. Type species *Callichloris signaticollis* Burmeister, 1844 by monotypy. Gender: feminine.

Leucopelaea Bates, 1891. Type species *Leucopelaea albescens* Bates, 1891 by monotypy. Gender: feminine.

Epicallichloris Gutiérrez, 1951. Type species *Callichloris alticola* Gutiérrez, 1951 by original designation. *Epicallichloris* was originally described as a subgenus of *Callichloris*. Gender: feminine.

DESCRIPTION. Length 10.5-34.0 mm, width 6.2-19.3 mm. Color usually lime green to olive green or yellow, sometimes dark green or brown to black. Body usually ovate, strongly to weakly convex. *Head:* Dorsal surface punctate, usually glabrous. Clypeal apex rounded to trapezoidal. Frontoclypeal suture complete or obsolete medially. Labrum projecting ventrally, perpendicular to clypeus. Apex of labrum with medial tooth. Mentum apically with notch or medial tooth. Antenna 9-segmented or 10-segmented. *Pronotum:* Surface usually glabrous, always punctate. Marginal bead weak laterally, usually absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae impressed or not impressed, punctate or impunctate. Suture apically rounded, angled, or with acute spine. *Pygidium:* Surface convex, punctate, setose. *Venter:* Thorax setose. Mesothoracic process present, often projecting anteriorly to procoxa. Abdomen sparsely setose or glabrous. Apical spiracles sometimes extruding. *Legs:* Protibia with 1-3 teeth. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomeres 3-4 in males often with internoapical stridulatory ridge. Protarsomere 5 in males often with internomedial, stridulatory tooth. Unguitractor plate cylindrical with 2 setae. Modified protarsal claw in males thickened, elongate when compared with other claw, apex unevenly bifurcate. Modified protarsal claw in females with ventral tooth, not thickened. Modified mesotarsal claw weakly thickened, elongate when compared with other claw, apex unevenly bifurcate or with ventral tooth, not thickened. Modified metatarsal claw elongate with ventral tooth, not thickened. *Male Genitalia:* Phallobase not fused with parameres. Parameres not fused but longitudinally contiguous. *Female Genitalia:* Generally not diagnostic.

LARVAE. Our knowledge of *Platycoelia* larvae is scant. Ohaus (1908, 1909a) published some rudimentary observations of *P. gaujoni*

larvae, and Paucar-Cabrera and Smith (2002) formally described the larvae of *P. gaujoni* and *P. lutescens*. The fact that these two species are closely related (see phylogeny) make it impossible to generalize about generic diagnostic characters. This is confounded by the lack of knowledge of larvae in closely related groups (Paucar-Cabrera and Smith [2002] review the literature on Anoplognathini larvae). Based on Paucar-Cabrera and Smith (2002), *Platycoelia* larvae have the following combination of characters: apical antennal segment with single, dorsal, sensory spot; labrum asymmetrical; haptomerum of epipharynx with beak-like process, weak row of basal heli, or process entirely absent; mandible with ventral, oval, stridulatory area consisting of transverse ridges; maxilla with galea and lacinia fused forming mala; lacinia of maxilla with 3 well-developed, terminal unci; maxillary stridulatory area with 6-11 sharp, recurved teeth; palidia absent; anal slit straight or slightly curved.

DIAGNOSIS. *Platycoelia* is distinguished from all other genera of Anoplognathini by the following combination of characters: elytron without membranous border, usually glabrous; mesothoracic process usually well-developed; protibia with spur; mesotibia and metatibia gracile; tarsomere 5 with claws split or toothed (not simple); unguitractor plate with 2 setae; male genitalia with phallobase and parameres not fused; parameres with apices close together (not widely separated), not fused.

DISTRIBUTION. Andes Mountains of South America and montane areas of Central America from Hidalgo, México to La Rioja, Argentina.

Remarks on Identification of *Platycoelia* species

The surface color and color patterns can be both helpful and deceiving in the identification of *Platycoelia* species. Some species of *Platycoelia* can have both yellow and green individuals. In fact, the color can change throughout the life of individual *Platycoelia*. Why there are two different color forms within some species is unknown. I suspect that it may have something to do with the diet of the beetles and perhaps to aid in camouflage in yellow or green foliage. This is a fertile area for future research. Although green versus yellow is often deceiving, other color patterns can be extremely helpful in identification. Species with black, brown, tan, or bi-colored dorsal coloration are consistently the same color. Dark areas on the metasternum and abdominal sternites are also often diagnostic character states at the species level. The color of the scutellum, metasternal process, and legs can also be useful.

Males and females of *Platycoelia* can easily be separated by examining the front claws (Fig. 39). In all species, males have the modified protarsal claw noticeably thickened and dorsoventrally split whereas females have the modified protarsal claw not thickened and with a ventral tooth. For explanations of characters and states in keys and descriptions, see the section on "Character Definition."

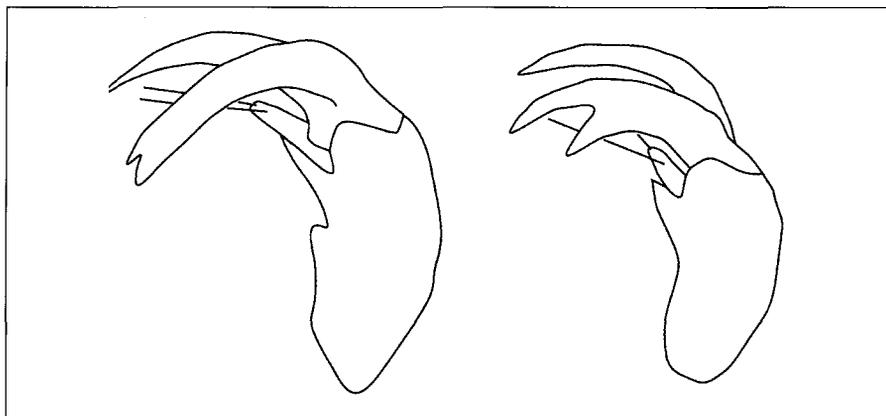


Fig. 39. Typical form of male (right) and female (left) front claws.

Key to the Species of *Platycoelia*

1. Mesothoracic process short, not projecting anteriorly beyond mesocoxa (or projecting weakly past mesocoxa) (Fig. 10)..... 2
- 1'. Mesothoracic process long, projecting anteriorly near or beyond base of procoxa (Figs. 7-9)..... 22
- 2(1). Elytral sutural apex with acute spine (similar to Fig. 8).....
..... **51. *Platycoelia insolita* Smith**
- 2'. Elytral sutural apex angled or rounded, without acute spine..... 3
- 3(2'). Dorsally bicolored with head and pronotum black, elytron brown..... 4
- 3'. Dorsally unicolored or with different coloration pattern than above..... 6
- 4(3). Pronotum covered with long setae (Fig. 78).....
..... **61. *Platycoelia haenkei* (Gutiérrez)**
- 4'. Pronotum glabrous or with scattered patches of setae..... 5
- 5(4'). Pygidium smooth with well-defined punctures.....
..... **58. *Platycoelia bocki* (Ohaus)**
- 5'. Pygidium rugose to granulate..... **59. *Platycoelia alticola* (Gutiérrez)**
- 6(3'). Dorsal and ventral surface cream-colored to tan.....
..... **43. *Platycoelia lutescens* Blanchard**
- 6'. Dorsal and ventral surface with at least some darker coloration (green, brown, black)..... 7
- 7(6'). Head, pronotum, and scutellum cream-colored to tan, elytron dark brown..... **60. *Platycoelia inca* Smith**
- 7'. Head, pronotum, and scutellum with darker coloration (green, brown, black) or elytron not dark brown..... 8
- 8(7'). Elytron green or yellow with thick, brown to black sutural line..... 9
- 8'. Elytron brown to black or without dark sutural line..... 10
- 9(8). Femora and tibiae yellow..... **62. *Platycoelia laelaps* (Gutiérrez)**
- 9'. Femora and tibiae reddish-brown to black.....
..... **53. *Platycoelia helleri* (Ohaus)**
- 10(8'). Dorsal color primarily green or yellow, sometimes with black maculations on frons and pronotum (extensive in *P. furva*)..... 11
- 10'. Dorsal coloration not primarily green or yellow..... 19
- 11(10). Mentum with deep basomedial impression on either side of midline (Fig. 33). Perú to Bolivia..... **50. *Platycoelia rufosignata* Ohaus**
- 11'. Mentum usually flat, without deep impressions..... 12
- 12(11'). Ventral surface and pygidium black. Frons, pronotum and elytron with prominent, dark maculations. Ecuador.....
..... **48. *Platycoelia furva* Smith**
- 12'. Ventral surface and pygidium not entirely black. Frons, pronotum and elytron unicolored or sometimes pronotum with prominent maculations..... 13
- 13(12'). Apical 2 spiracles not extruding. Pronotum often with dark maculations..... 14
- 13'. Apical 2 spiracles extruding, cylindrical (more prominent in males) (Fig. 35). Pronotum with uniform coloration..... 16
- 14(13). Body length greater than 20 mm (often over 25 mm). Colombia to Perú..... **49. *Platycoelia quadrilineata* Burmeister**
- 14'. Body length less than 18 mm. Colombia..... 15
- 15(14'). Pronotum with black markings (Fig. 75). Colombia.....
..... **52. *Platycoelia signaticollis* (Burmeister)**
- 15'. Pronotum uniformly green. Argentina.....
..... **8. *Platycoelia simplicior* Ohaus**
- 16(13'). Body length short, males usually less than 19 mm, females usually less than 22 mm. Frons not depressed medioapically..... 17

- 16'. Body length longer, males usually greater than 19 mm, females usually greater than 22 mm. Frons weakly depressed medioapically..... 18
- 17(16). Antennal club of males with length approximately equal to other segments combined. Southern Ecuador..... **44. *Platycoelia gaujoni* Ohaus**
- 17'. Antennal club of males with length shorter than other segments combined. Southern Colombia..... **45. *Platycoelia pusilla* Smith**
- 18(16'). Metasternum moderately setose. Southern Colombia..... **46. *Platycoelia bordoni* Martínez**
- 18'. Metasternum densely setose. Southern Colombia to Ecuador..... **47. *Platycoelia parva* Kirsch**
- 19(10'). Antenna 9-segmented..... **54. *Platycoelia ignota* Smith**
- 19'. Antenna 10-segmented..... 20
- 20(19'). Clypeus strongly angled apicolaterally, apex moderately reflexed..... **57. *Platycoelia aenigma* Smith**
- 20'. Clypeus rounded with no apicolateral angles, apex weakly reflexed..... 21
- 21(20'). Frons with broad apicomedia depression..... **55. *Platycoelia kirschi* (Ohaus)**
- 21'. Frons without broad apicomedia depression..... **56. *Platycoelia baessleri* (Ohaus)**
- 22(1'). Apex of labrum with tooth well-developed, truncate, strongly overlapping apex of mentum (similar to Fig. 2)..... 23
- 22'. Apex of labrum with tooth triangular to reduced, not truncate, weakly overlapping or not overlapping apex of mentum (similar to Fig. 3)..... 49
- 23(22). Antenna 9-segmented. Pygidium never covered by apices of elytra..... 24
- 23'. Antenna 10-segmented (occasionally 9-segmented). Pygidium sometimes covered by apices of elytra at rest..... 30
- 24(23). Metasternum and abdominal sternites brown or black (at least medially)..... **4. *Platycoelia marginata* Burmeister**
- 24'. Metasternum and abdominal sternites yellow to green (sometimes with latitudinal black stripes)..... 25
- 25(24'). Elytral intervals 2, 4, 6 with thick, longitudinal, yellow stripes (elytral interval 6 with weaker stripe) (Fig. 44). Venezuela..... **5. *Platycoelia meridensis* Smith**
- 25'. Elytral intervals not as above. Not from Venezuela..... 26
- 26(25'). Mesothoracic process weakly diamond-shaped to conical. Body length usually greater than 21 mm..... 27
- 26'. Mesothoracic process elongate-conical to cylindrical. Body length less than 25 mm..... 29
- 27(26). Elytron with well-defined, yellow longitudinal lines (Fig. 41)..... **2. *Platycoelia inflata* Ohaus**
- 27'. Elytron with weakly defined, light green longitudinal lines..... 28
- 28(27'). Protibia in males with 1 apical tooth (similar to Fig. 36). Colombia to Ecuador..... **3. *Platycoelia nervosa* Kirsch**
- 28'. Protibia in males with 2 teeth in apical half. Perú to Bolivia..... **1. *Platycoelia alternans* Erichson**
- 29(26'). Dorsal coloration olive green with yellow stripes and margins (especially on elytron)..... **7. *Platycoelia prasina* Erichson**
- 29'. Dorsal coloration olive green with no distinct yellow stripes on elytron (sometimes with yellow margins) (Fig. 45)..... **6. *Platycoelia selanderi* Martínez and Martínez**
- 30(23'). Elytra capable of entirely covering pygidium. Males with modified protarsal claw with 1 bifurcation twisted beneath the other in ventral view (Fig. 13)..... 31
- 30'. Pygidium exposed past elytral apices (sometimes weakly). Males with modified protarsal claw bifurcate but neither is twisted beneath the other in ventral view..... 34

31(30).	Metasternum and abdominal sternites black (at least medially).....	
	.....	25. <i>Platycoelia variolosa</i> Ohaus
31'.	Metasternum and abdominal sternites green.....	32
32(31').	Frontoclypeal suture complete. Ecuador.....	
	.....	28. <i>Platycoelia paucarae</i> Smith
32'.	Frontoclypeal suture incomplete.....	33
33(32').	Scutellum mainly yellow. Costa Rica to Panamá.....	
	.....	26. <i>Platycoelia grandicula</i> Smith
33'.	Scutellum green (sometimes entire dorsal surface yellow). Southern Colombia to northern Ecuador.....	
	.....	27. <i>Platycoelia hiporum</i> Smith
34(30').	Mesotarsomere 4 and metatarsomere 4 in males without noticeable apical stridulatory ridge (under high magnification). Protibial spur with apex even with, or surpassing, adjacent protibial apex. Pygidial surface obscured by elytra, often entirely setose. Eyes separated by more than 4.7 transverse eye widths. Elytral intervals with dense, small punctures. Frontoclypeal suture complete.....	35
34'.	Mesotarsomere 4 and metatarsomere 4 in males with distinct apical stridulatory ridge (under high magnification). Protibial spur with apex distinctly shorter than adjacent protibial apex (sometimes even with adjacent protibial apex). Pygidial surface visible, setose only near apical margin. Eyes separated by less than 4.5 transverse eye widths. Elytral intervals with sparse, small punctures. Frontoclypeal suture often incomplete (complete in some species).....	41
35(34).	Elytron with strongly impressed striae (easily visible without magnification). Parameres with ventrally projecting hook (Figs. 20, 28). Ecuador.....	
	.....	15. <i>Platycoelia forcipalis</i> Ohaus
35'.	Elytron with weakly impressed striae or smooth. Parameres without ventrally projecting hook.....	36
36(35').	Mesothoracic process distinctly diamond shaped (Fig. 7). Costa Rica to Panamá	
	.....	13. <i>Platycoelia mesosternalis</i> Ohaus
36'.	Mesothoracic process conical-elongate, not diamond shaped.....	37
37(36').	Elytron green along elytra suture, with thick yellow band along basal half of elytral interval 2 (similar to Fig. 49).....	38
37'.	Elytron with yellow band along elytral suture, elytral interval 2 green (similar to Fig. 51).....	39
38(37).	Mesothoracic process yellow, protibia yellow.....	
	.....	11. <i>Platycoelia occidentalis</i> Ohaus
38'.	Mesothoracic process green, protibia with at least some obvious green coloration.....	
	.....	12. <i>Platycoelia valida</i> Burmeister
39(37')	Elytral apex with acute spine (Fig. 5).....	40
39'.	Elytral apex rounded, without spine... 14. <i>Platycoelia peruviana</i> Smith	
40(39).	Metasternum bicolored, light green laterally with reddish-brown medial stripe (Fig. 34).....	
	.....	9. <i>Platycoelia abdominalis</i> Ohaus
40'.	Metasternum unicolored, light green.....	
	.....	10. <i>Platycoelia pomacea</i> Erichson
41(34').	Elytral intervals 1, 3, 5, 7 lighter green or yellow than rest of elytron (Fig. 59). Scutellum yellow (occasionally green medially). México to Panamá.....	
	.....	21. <i>Platycoelia humeralis</i> Bates
41'.	Elytron colored differently than above or not. Disc of scutellum usually green. South America.....	42
42(41').	Metasternum black to reddish-brown (with at least a broad, medial patch)....	
	.....	43
42'.	Metasternum green (sometimes with thin, medial, black line).....	46
43(42).	Elytron with obvious longitudinal stripes or spots.....	44
43'.	Elytron with weak longitudinal spots or immaculate. Perú.....	
	.....	23. <i>Platycoelia convexa</i> Smith

- 44(43). Abdominal sternites green..... **20. *Platycoelia nigrosternalis* Ohaus**
 44'. Abdominal sternites black to reddish-brown (at least medially)..... 45
 45(44'). Frontoclypeal suture complete..... **16. *Platycoelia sandia* Smith**
 45'. Frontoclypeal suture absent medially..... **18. *Platycoelia galerana* Smith**
 46(42'). Elytral striae 1-7 with thin, greenish-yellow, longitudinal lines (Fig. 57 and back cover)..... **19. *Platycoelia flavostriata* (Latreille)**
 46'. Elytral striae 1-7 without thin, greenish-yellow, longitudinal lines..... 47
 47(46'). Elytral striae punctate, with dark spots. Male protibia with 1 apical tooth. Colombia..... **24. *Platycoelia interstincta* Smith**
 47'. Elytral striae punctate but without obvious spots. Male protibia with 2 teeth. Ecuador..... 48
 48(47'). Frontoclypeal suture complete..... **17. *Platycoelia penai* Frey**
 48'. Frontoclypeal suture absent medially...**22. *Platycoelia intermedia* Ohaus**
 49(22'). Antenna 9-segmented..... 50
 49'. Antenna 10-segmented (or if antenna 9-segmented, elytron with medial yellow, longitudinal line forked medially, bifurcating in basal half of elytron).. 52
 50(49). Abdominal sternites black. Colombia to Ecuador.....
 **37. *Platycoelia steinheili* Ohaus**
 50'. Abdominal sternites green..... 51
 51(50'). Elytron with distinctly elevated intervals (especially near apex). Colombia...
 **35. *Platycoelia wallisi* Ohaus** (in part)
 51'. Elytron without distinctly elevated intervals. Perú to Bolivia.....
 **33. *Platycoelia burmeisteri* Arrow**
 52(50'). Elytron with weakly raised, reticulated, yellow pattern (see cover illustration)..... **39. *Platycoelia butleri* Smith**
 52'. Elytron without reticulated pattern, often with yellow longitudinal lines...
 53
 53(52'). Pygidium with disc entirely setose..... 54
 53'. Pygidium with disc setose in apical half..... 55
 54(53'). Scutellum green medially (sometimes entire body yellow). Body length usually greater than 24 mm. Perú to Bolivia.....
 **32. *Platycoelia burmeisteriana* Ohaus**
 54'. Scutellum yellow. Body length less than 24 mm. Bolivia.....
 **29. *Platycoelia flavoscutellata* Ohaus**
 55(53'). Elytron with medial yellow, longitudinal line forked medially, bifurcating towards basal half of elytron (similar to Fig. 69)..... 56
 55'. Elytron with yellow, longitudinal lines not forked or bifurcating in basal half..... 57
 56(55). Apex of mentum with medial notch. Elytral base without yellow spot. Bolivia..... **42. *Platycoelia confluens* Ohaus**
 56'. Apex of apex of mentum with distinct tooth. Elytral base with yellow spot. Colombia..... **36. *Platycoelia flavohumeralis* Smith**
 57(55'). Elytral suture green; yellow longitudinal lines on intervals 2, 4, 6, 8, 10. Metasternum and often abdominal sternites brown to black (at least medially). Perú to Bolivia..... **38. *Platycoelia chrysochina* Ohaus**
 57'. Elytral suture green or yellow; if green, then longitudinal lines on interval not as above. Metasternum and abdominal sternites with or without dark coloration..... 58
 58(57'). Elytron with irregular, translucent spots giving a "blotchy" appearance. Perú to Bolivia..... **40. *Platycoelia hirta* Ohaus**
 58'. Elytron without a "blotchy" appearance..... 59
 59(58'). Elytral sutural apex with acute spine. Elytron with discal, yellow, longitudinal line distinctly thicker than other longitudinal lines (Fig. 64). Venezuela to Ecuador..... **30. *Platycoelia puncticollis* Ohaus**

- 59'. Elytral sutural apex with weak spine or nub. Elytron with discal, yellow, longitudinal line not distinctly thicker than other longitudinal lines..... 60
- 60(59'). Abdominal sternites with some dark coloration. Venezuela.....
..... **31. *Platycoelia unguicularis* Ohaus**
- 60'. Abdominal sternites without dark coloration..... 61
- 61(60'). Elytron with distinctly elevated intervals (especially near apex). Colombia.....
..... **35. *Platycoelia wallisi* Ohaus** (in part)
- 61'. Elytron with weakly elevated intervals..... 62
- 62(61'). Eyes with thick yellow border (Fig. 67). Elytra widest in apical third. Ecuador.....
..... **34. *Platycoelia traceyae* Smith**
- 62'. Eyes with narrow yellow border. Elytra of uniform width. Bolivia.....
..... **41. *Platycoelia alti plana* Smith**

Clave para las especies de *Platycoelia*

1. Proceso mesotorásico corto, no proyectado anteriormente mas alla de la mesocoxa (o proyectado levemente pasando la mesocoxa) (Fig. 10).....2
- 1'. Proceso mesotorásico largo, proyectado anteriormente cerca o mas alla de la mesocoxa (Figs. 7-9).....22
- 2(1). Sutura elitral con espina apical aguda (similar a Fig. 8).....
..... **51. *Platycoelia insolita* Smith**
- 2'. Sutura elitral con ápice anguloso o redondeado, sin espina aguda..... 3
- 3(2'). Bicoloreado dorsalmente con la cabeza y el pronoto negros, élitro marrón.....
..... 4
- 3'. Dorsalmetnte de un sólo color o con diferente patrón de coloración que arriba..... 6
- 4(3). Pronoto cubierto con setas largas (Fig. 78).....
..... **61. *Platycoelia haenkei* (Gutiérrez)**
- 4'. Pronoto glabro o con parches aislados de setas..... 5
- 5(4'). Pigidio liso con puntuaciones bien definidas.....
..... **58. *Platycoelia boeki* (Ohaus)**
- 5'. Pigidio rugoso o granulado.....
..... **59. *Platycoelia alticola* (Gutiérrez)**
- 6(3'). Dorso y superficie ventral color crema o castáneo claro.....
..... **43. *Platycoelia lutescens* Blanchard**
- 6'. Dorso y superficie ventral con por lo menos alguna coloración oscura (verde, marrón, o negra)..... 7
- 7(6'). Cabeza, pronoto, y escutelum color crema, élitro marrón oscuro.....
..... **60. *Platycoelia inca* Smith**
- 7'. Cabeza, pronoto, y escutelo, con coloración oscura (verde, marrón, o negra) o élitro no marrón oscuro..... 8
- 8(7'). Elitro verde o amarillo con linea sutural gruesa marrón o negra..... 9
- 8'. Elitro marrón a negro sin linea sutural oscura..... 10
- 9(8). Fémures y tibias amarillos..... **62. *Platycoelia laelaps* (Gutiérrez)**
- 9'. Fémures y tibias rojo-marrón a negro..... **53. *Platycoelia helleri* (Ohaus)**
- 10(8'). Color dorsal primeramente verde o amarillo, a veces negro con máculas en la frente y el pronoto (extendidas en *P. furva*)..... 11
- 10'. Coloración dorsal primariamente no amarilla..... 19
- 11(10). Mentón con profunda impresión sobre cada lado de la linea media (Fig. 33). Perú hasta Bolivia..... **50. *Platycoelia rufosignata* Ohaus**
- 11'. Mentón usualmente achatado, sin profunda impresión sobre cada lado de la linea media..... 12
- 12(11'). Superficie ventral y pigidio negros. Frente pronoto y élitro con máculas prominentes. Ecuador..... **48. *Platycoelia furva* Smith**
- 12'. Superficie ventral y pigidio no enteramente negros. Frente, pronoto y élitro a veces de un sólo color o a veces pronoto con máculas prominentes..... 13

- 13(12'). Los 2 espiráculos apicales not protruidos. Pronoto usualmente con máculas prominentes..... 14
- 13'. Los 2 espiráculos apicales not protruidos, cilíndricos (mas prominetes en los machos) (Fig. 35). Pronoto con coloración uniforme..... 16
- 14(13). Largo del cuerpo mayor de 20 mm (generalmente mas de 25 mm). Colombia hasta Perú..... **49. *Platycoelia quadrilineata* Burmeister**
- 14'. Largo del cuerpo menor de 18 mm. Colombia..... 15
- 15(14'). Pronoto con márgenes blancos (Fig. 75). Colombia..... **52. *Platycoelia signaticollis* (Burmeister)**
- 15'. Pronoto uniformemente verde. Argentina..... **8. *Platycoelia simplicior* Ohaus**
- 16(13'). Cuerpo corto, machos usualmente menores de 19 mm, hembras usualmente menores de 22 mm. Frente no deprimida medialmente..... 17
- 16'. Cuerpo largo, machos usualmente mayores de 19 mm, hembras usualmente mayors de 22 mm. Frente ligeramente deprimida medialmente..... 18
- 17(16). Largo de la claba de la antena de los machos aproximadamente igual a los demás segmentos combinados. Sur de Ecuador..... **44. *Platycoelia gaujoni* Ohaus**
- 17'. Largo de la claba de la antena de los machos mas corta a los demás segmentos combinados. Sur de Colombia..... **45. *Platycoelia pusilla* Smith**
- 18(16'). Metasterno moderadamente setoso. Sur de Colombia..... **46. *Platycoelia bordoni* Martínez**
- 18'. Metasterno densamente setoso. Sur de Colombia hasta Ecuador..... **47. *Platycoelia parva* Kirsch**
- 19(10'). Antena con 9 segmentos..... **54. *Platycoelia ignota* Smith**
- 19'. Antena con 10 segmentos..... 20
- 20(19'). Clípeo fuertemente anguloso en el la parte lateral del ápice, ápice moderadamente recurvado..... **57. *Platycoelia aenigma* Smith**
- 20'. Clípeo redondeado, no anguloso en el la parte lateral del ápice, ápice pobremente recurvado..... 21
- 21(20'). Frente con amplia depresión en el la parte media del ápice..... **55. *Platycoelia kirschi* (Ohaus)**
- 21'. Frente sin amplia depresión en el la parte media del ápice..... **56. *Platycoelia baessleri* (Ohaus)**
- 22(1'). Apice del labro con diente bien desarrollado, truncado, fuertemente superpuesto sobre el ápice del mentón (similar a Fig. 2)..... 23
- 22'. Apice del labro con diente triangular a reducido, no truncado, debilmente superpuesto sobre el ápice del mentón. (similar to Fig. 3)..... 49
- 23(22). Antena con 9 segmentos. Pigidio nunca cubierto por el ápice del élitro.... 24
- 23'. Antena con 10 segmentos (ocasionalmente con 9 segmentos). Pigidio a veces cubierto por el ápice del élitro cuando en reposo..... 30
- 24(23). Metasterno y esternitos abdominales marrones o negros (por lo menos medialmente)..... **4. *Platycoelia marginata* Burmeister**
- 24'. Metasterno y esternitos abdominales amarillos o verdes (a veces con bandas longitudinales negras)..... 25
- 25(24'). Intervalos elitrales 2, 4, 6 con anchas bandas longitudinales amarillas (Fig. 44). Venezuela..... **5. *Platycoelia meridensis* Smith**
- 25'. Intervalos elitrales no como arriba. No en Venezuela..... 26
- 26(25'). Proceso mesotorácico pobremente con forma de diamante a cónico. Largo del cuerpo usualmetne mayor de 21 mm..... 27
- 26'. Proceso mseotorácico alargado a cilíndrico. Largo del cuerpo menor de 25 mm 29
- 27(26). Elitro con líneas longitudinales bien definidas, amarillas (Fig. 41)..... **2. *Platycoelia inflata* Ohaus**
- 27'. Elitro con líneas longitudinales pobremente definidas, verde claras..... 28

- 28(27'). Machos con protibia con 1 diente apical (similar a Fig. 36). Colombia hasta Ecuador..... **3. *Platycoelia nervosa* Kirsch**
- 28'. Machos con protibia con 2 dientes en la mitad apical. Perú hasta Bolivia...
..... **1. *Platycoelia alternans* Erichson**
- 29(26'). Coloración dorsal verde oliva con márgenes y bandas amarillas (especialmente sobre el élitro)..... **7. *Platycoelia prasina* Erichson**
- 29'. Coloración dorsal verde oliva sin márgenes y bandas amarillas (a veces con márgenes amarillos) (Fig. 45).....
..... **6. *Platycoelia selanderi* Martínez and Martínez**
- 30(23'). Elitros capaces de cubrir completamente el pigidio. Machos con uñas protarsales modificadas con una bifurcación torcida debajo de la otra bifurcación en vista ventral (Fig. 13)..... 31
- 30'. Pigido expuesto, pasando el ápice de los élitros (a veces pobremente). Machos con uñas protarsales modificadas con una bifurcación pero no torcida debajo de la otra bifurcación en vista ventral..... 34
- 31(30). Metasterno y esternitos abdominales negros (por lo menos medialmente)
..... **25. *Platycoelia variolosa* Ohaus**
- 31'. Metasterno y esternitos abdominales verdes.....32
- 32(31'). Sutura frontoclipeal completa. Ecuador.....
..... **28. *Platycoelia paucarae* Smith**
- 32'. Sutura frontoclipeal incompleta..... 33
- 33(32'). Escutelo mayormente amarillo. Costa Rica hasta Panamá.....
..... **26. *Platycoelia grandicula* Smith**
- 33'. Escutelo verde (a veces superficie dorsal amarilla). Sur de Colombia hasta norte de Ecuador..... **27. *Platycoelia hiporum* Smith**
- 34(30'). Mesotarsómero 4 y metatarsómero 4 de los machos sin margen estridulatorio notorio (bajo magnificación). Espina protibial con el ápice de ancho parejo, o que sobrepasa al ápice de la protibia. Superficie del pigidio tapada por los élitros, usualmente setosa. Ojos separados por mas de 4.7 veces al ancho entre ellos. Intervalos elitrales con puntuaciones pequeñas, densas. Sutura frontoclipeal completa..... 35
- 34'. Mesotarsómero 4 y metatarsómero 4 de los machos con margen estridulatorio notorio (bajo magnificación). Espina protibial con el ápice notoriamente mas corto que el ápice de la protibia (a veces igual de largo que ápice de la protibia). Superficie del pigidio visible, setosa solo acerca del margen apical. Ojos separados por menos de 4.7 veces al ancho entre ellos. Intervalos elitrales con puntuaciones pequeñas, dispersas. Sutura frontoclipeal generalmente incompleta (complete en algunas especies)... 41
- 35(34). Elitro con estrias fuertemente impresas (fácilmente visibles sin magnificación). Parámetros con un gancho proyectado ventralmente (Figs. 20, 28). Ecuador..... **15. *Platycoelia forcipalis* Ohaus**
- 35'. Elitro con estrias debilmente impresas o liso. Parámetros sin un gancho proyectado ventralmente..... 36
- 36(35'). Proceso mesotorácico con forma de diamante (Fig. 7). Costa Rica hasta Panamá..... **13. *Platycoelia mesosternalis* Ohaus**
- 36'. Proceso mesotorácico conico-alargado, sin forma de diamante..... 37
- 37(36'). Elitro verde a lo largo del la sutura elitral, con bandas amarillas gruesas a lo largo mitad basal de los intervalos elitrales 2 (similar a Fig. 49)..... 38
- 37'. Elitro con banda amarilla a lo largo de la sutura, intervalos elitrales 2 verdes (similar a Fig. 51)..... 39
- 38(37). Proceso mesotorácico amarillo, protibia amarilla.....
..... **11. *Platycoelia occidentalis* Ohaus**
- 38'. Proceso mesotorácico verde, protibia por lo menos con alguna parte verde...
..... **12. *Platycoelia valida* Burmeister**
- 39(37') Apice elitral con espina aguda (Fig. 5)..... 40
- 39'. Apice elitral redondeado, sin espina.... **14. *Platycoelia peruviana* Smith**

- 40(39). Metasterno bicoloreado, verde claro lateralmente con banda medial rojo-marrón (Fig. 34)..... **9. *Platycoelia abdominalis* Ohaus**
- 40'. Metasterno de un sólo color, verde claro..... **10. *Platycoelia pomacea* Erichson**
- 41(34'). Intervalos elitrales 1, 3, 5, 7 mas verde claros o amarillos que el resto del élitro (Fig. 59). Escutelo amarillo. (ocasionalmante verde en el medio). México hasta Panamá..... **21. *Platycoelia humeralis* Bates**
- 41'. Elitros coloreados diferentemente de arriba o no. Disco del escutelo usualmente verde. Sudamérica..... 42
- 42(41'). Metasterno negro a rojo-marrón (por lo menos un parche medio)..... 43
- 42'. Metasterno verde (a veces con una fina banda negra en el medio)..... 46
- 43(42). Elitro bandas longitudinales o puntos obvios..... 44
- 43'. Elitro con débiles puntos o inmaculado. Perú..... **23. *Platycoelia convexa* Smith**
- 44(43). Esternitos abdominales verdes.... **20. *Platycoelia nigrosternalis* Ohaus**
- 44'. Esternitos abdominales negroas a rojo-marrón (por lo menos en el medio)..... 45
- 45(44') Sutura frontoclipeal completa..... **16. *Platycoelia sandia* Smith**
- 45'. Sutura frontoclipeal ausente en el medio..... **18. *Platycoelia galerana* Smith**
- 46(42'). Estrias elitrales 1-7 con finas lineas longitudinales verde-amarillas (Fig. 57)..... **19. *Platycoelia flavostriata* (Latreille)**
- 46'. Estrias elitrales 1-7 sin finas lineas longitudinales verde-amarillas..... 47
- 47(46'). Estrias elitrales punteadas con puntos negros. Protibia del macho con 1 diente apical. Colombia..... **24. *Platycoelia interstincta* Smith**
- 47'. Estrias elitrales punteadas pero puntos no obvios. Protibia del machos con 2 dientes. Ecuador..... 48
- 48(47'). Sutura frontoclipeal completa..... **17. *Platycoelia penai* Frey**
- 48'. Sutura frontoclipeal ausente en el medio..... **22. *Platycoelia intermedia* Ohaus**
- 49(22'). Antena con 9 segmentos..... 50
- 49'. Antena con 10 segmentos (o si antenna con 9 segmentos, élitro con ramificación amarilla, madia, longitudinal, bifurcación an la parte basal del élitro)..... 52
- 50(49). Esternitos abdominales negros. Colombia hasta Ecuador..... **37. *Platycoelia steinheili* Ohaus**
- 50'. Esternitos abdominales verdes..... 51
- 51(50'). Elitro con internados elevados (peticularmente cerca del ápice). Colombia..... **35. *Platycoelia wallisi* Ohaus** (en parte)
- 51'. Elitro sin intervalos elevados. Perú hasta Bolivia..... **33. *Platycoelia burmeisteri* Arrow**
- 52(50'). Elitro con patrón reticulado amarillo debilmente elevado, (ver ilustración de tapa)..... **39. *Platycoelia butleri* Smith**
- 52'. Elitro sin patrón reticulado amarillo, a veces con lineas longitudinales amarillas..... 53
- 53(52'). Pigidio con el disco enteramente setoso..... 54
- 53'. Pigidio con el disco setoso en la mitad apical..... 55
- 54(53'). Escutelo verde medialmente (a veces el cuerpo enteramente amarillo). Largo del cuerpo usualmente mayor que 24 mm. Perú hasta Bolivia..... **32. *Platycoelia burmeisteriana* Ohaus**
- 54'. Escutelo amarillo. Largo del cuerpo menor que 24 mm. Bolivia..... **29. *Platycoelia flavoscutellata* Ohaus**
- 55(53'). Elitro con linea madialmante ramificada, longitudinal bifurcada hacia la mitad basal del élitro (similar a Fig. 69)..... 56
- 55'. Elitro con linea amarilla, longitudinal no ramificada o bifurcada hacia la mitad basal..... 57

- 56(55). Mentón con ápice con inserción media. Base del élitro sin punto amarillo Bolivia..... **42. *Platycoelia confluens* Ohaus**
- 56'. Apice del ápice del mentón con diente notorio. Base del élitro con punto amarillo. Colombia..... **36. *Platycoelia flavohumeralis* Smith**
- 57(55'). Sutura elitral verde; líneas longitudinales en los intervalos 2, 4, 6, 8, 10. Metasterno y a veces esternitos abdominales marrones a negros (por lo menos medialmente). Perú hasta Bolivia..... **38. *Platycoelia chrysothina* Ohaus**
- 57'. Sutura elitral verde o amarilla; si es verde entonces las líneas longitudinales no como arriba. Metasterno y esternitos abdominales con o sin coloración oscura... .. 58
- 58(57'). Elitro con puntos irregulares translúcidos que le dan una apariencia manchada. Perú hasta Bolivia..... **40. *Platycoelia hirta* Ohaus**
- 58'. Elitro sin apariencia manchada..... 59
- 59(58'). Sutura elitral con el ápice con espina aguda. Elitro con disco amarillo, línea longitudinal distintivamente más gruesa que otras líneas (Fig. 64). Venezuela hasta Ecuador..... **30. *Platycoelia puncticollis* Ohaus**
- 59'. Sutura elitral con el ápice con débil espina. Elitro con disco amarillo, línea longitudinal no distintivamente más gruesa que otras líneas..... 60
- 60(59'). Esternitos abdominales con alguna coloración oscura. Venezuela..... **31. *Platycoelia unguicularis* Ohaus**
- 60'. Esternitos abdominales sin coloración oscura..... 61
- 61(60'). Elitros con intervalos distintivamente elevados (particularmente cerca del ápice). Colombia..... **35. *Platycoelia wallisi* Ohaus** (en parte)
- 61'. Elitros con intervalos débilmente elevados..... 62
- 62(61'). Ojos con bordes gruesos amarillos (Fig. 67). Elitro más ancho en el tercio apical. Ecuador..... **34. *Platycoelia traceyae* Smith**
- 62'. Ojos con borde amarillo angosto. Elitro con ancho uniforme. Bolivia..... **41. *Platycoelia alti plana* Smith**

1. *Platycoelia alternans* Erichson, 1847

(Figs. 11, 15, 25, 40)

Platycoelia alternans Erichson, 1847 (valid name)

CATALOG. *Platycoelia alternans*, Erichson 1847:100 [original description]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Ohaus 1904b:290, 338 [redescription]; Ohaus 1909b:442 [comparison with *Platycoelia simplicior*]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:246 [checklist]; Ohaus 1952:9 [distribu-

tion]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:301 [catalog listing]; Martínez 1976:328 [comparison with *Platycoelia scutellata*].

TYPE SPECIMENS. *Platycoelia alternans* Erichson lectotype female at ZMHB labeled a) "11467" (typeface), b) "Type" (orange label, typeface), c) "alternans Er.* mont Phil" (green label, handwritten), d) "PLATYCOELIA ALTERNANS ERICHSON ♀ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Taxonomic Methods and Materials section for a statement of taxonomic purpose.

Erichson (1847) did not state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Type locality: Perú.

DESCRIPTION. Male (n=8). Length 19.5-20.7 mm, width 12.0-12.6 mm. Color olive green or yellow; elytral intervals 3 and 5 with light green, longitudinal stripe; head, pronotum, scutellum, elytron with yellow lateral margin. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 4.5 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum with apicomedial tooth curved into oral cavity. Antenna 9-segmented; club slightly shorter than other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, moderately to densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture apically with weak spine (sometimes worn down). *Pygidium:* Width approximately 2.1 times length medially. Surface weakly convex, densely punctate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter:* Thorax moderately setose, setae cream colored. Mesothoracic process projecting anteriorly to procoxa; shape conical, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth small. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotar-

somere and metatarsomere 5 with interno-medial tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw slightly shorter than protarsomere 5, thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate (Fig. 11). Modified mesotarsal and metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.9 times longer than length of parameres. Parameres with apex rounded, setose, expanded (Fig. 25).

Female (n=12). Length 20.5-23.6 mm, width 12.2-13.9 mm. As male except in the following respects. *Legs:* Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal and mesotarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; elytral striae 3 and 5 with distinct yellow coloration; mesothoracic process conical; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; modified protarsal claw diagonally flattened; modified mesotarsal claw with a ventral tooth; parameres at apex distinctly expanded.

DISTRIBUTION (Fig. 40). Andes Mountains from southern Perú to central Bolivia.

LOCALITY DATA. 20 specimens examined from CASC, FMNH, FSCA, ISNB, MNHN, RFMC, SMFD, ZMHB.

PERÚ (12). CUSCO (1): Cosñipata (highway km 165). JUNÍN (9): Chanchamayo, Río Toro. NO DATA (2).

BOLIVIA (8). COCHABAMBA (2): Cristal-Mayu. SANTA CRUZ (6): Buena Vista.

TEMPORAL DATA. August (1), October (7), November (1).

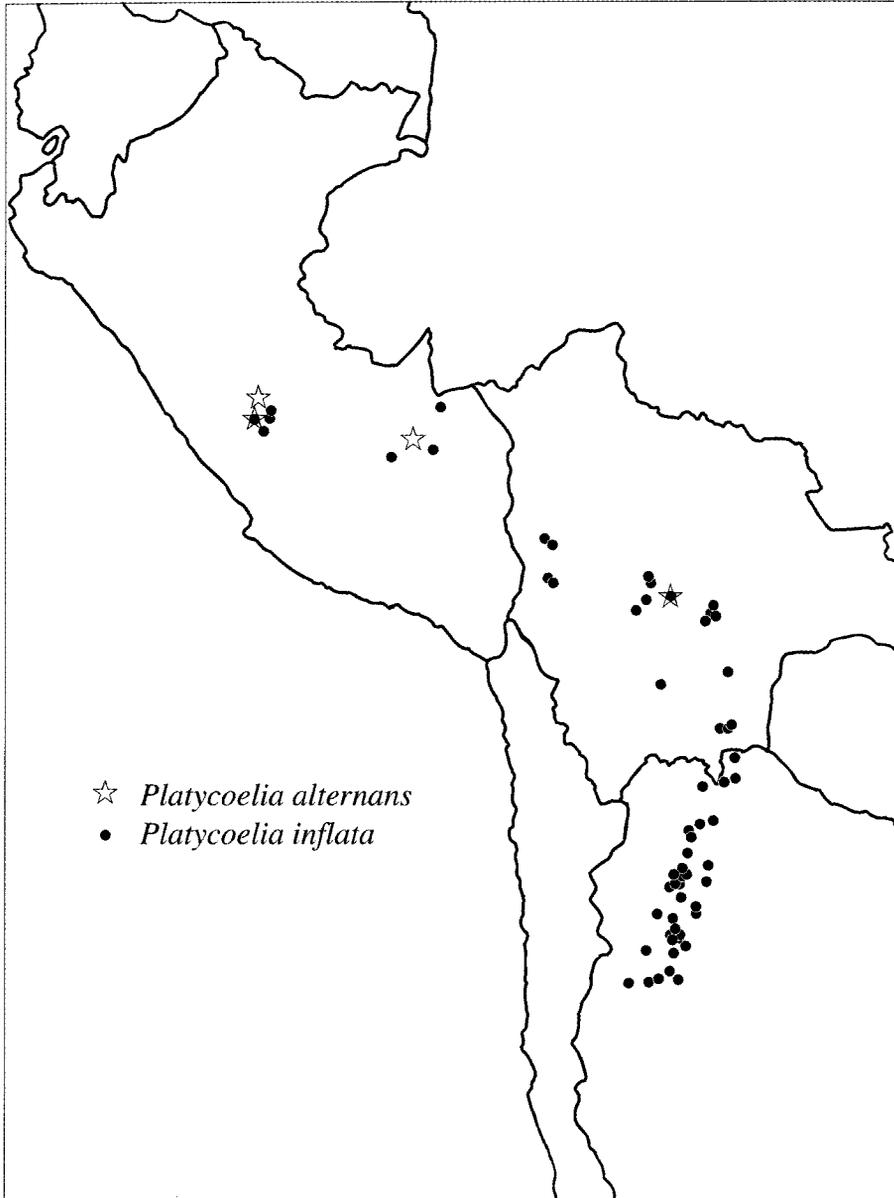


Fig. 40. Distribution of *Platycoelia alternans* and *P. inflata* in Perú, Bolivia, and Argentina.

2. *Platycoelia inflata* Ohaus, 1904
(Figs. 16, 36, 40, 41)

Platycoelia inflata Ohaus, 1904 (valid name)
Platycoelia tucumana Ohaus 1904 (junior synonym)

CATALOG. *Platycoelia inflata*, Ohaus 1904b: 286, 312, 338, 340 [original description]; Ohaus

1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:301 [catalog listing]; Martínez 1976:329 [comparison with *Platycoelia scutellata*]; Martínez and Martínez 1994:548 [comparison with *Platycoelia selanderi*].

Platycoelia inflata tucumana, Ohaus 1904b:288, 338 [original description as sub-

species]; Ohaus 1918:178 [catalog listing as subspecies]; Blackwelder 1944:247 [checklist as subspecies]; Machatschke 1965:57 [catalog listing as subspecies]; Machatschke 1972:301 [catalog listing as subspecies].

TYPE SPECIMENS. *Platycoelia inflata* Ohaus lectotype male at ZMHB labeled a) "Bolivia Potosi" (handwritten), b) "Platycoelia inflata Type Ohs." (orange label, handwritten), c) "PLATYCOELIA INFLATA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Bolivia" (typeface), b) "Platycoelia inflata Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA INFLATA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivie Prov. Cochabamba P.Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. inflata Ohaus ♂" (typeface and handwritten), d) "PLATYCOELIA INFLATA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "PERU" (typeface), b) "C. Bts. Obrth." (typeface), c) "Cotypus!" (red label, typeface), d) "inflata Reich Blanch." (handwritten), e) "PLATYCOELIA INFLATA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "PERU" (typeface), b) "♀" (typeface), c) "Platycoelia inflata Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA INFLATA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Bolivie Prov. Cochabamba P.Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "PLATYCOELIA INFLATA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). The existence and location of other specimens from Ohaus' original type series are unknown. Type locality: Potosí, Bolivia.

Platycoelia inflata tucumana Ohaus lectotype male at ZMHB labeled a) "R. A. Tucuman Febrero 3/1898 P. Girard" (handwritten), b) "♂" (typeface), c) "Typus!" (red label, typeface), d) "tucumana Ohaus" (red label, handwritten), e) "PLATYCOELIA INFLATA TUCUMANA OHAUS LECTOTYPE ♂ A.B.T.SMITH 2001" (red label, handwritten and typeface), f) "*Platycoelia inflata* Ohaus, 1904 ♂ Det: A.B.T. Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "R. A. Tucuman Febrero 3/1898 P. Girard" (handwritten), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "tucumana Ohaus" (red label, handwritten), e) "PLATYCOELIA INFLATA TUCUMANA OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface), f) "*Platycoelia inflata* Ohaus, 1904 ♀ Det: A.B.T. Smith 2002" (typeface). One male paralectotype at ZMHB labeled a) "R. A. Tucuman Marz 7/1898 P. Girard" (handwritten), b) "♂" (typeface), c) "Pl. inflata tucumana Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA INFLATA TUCUMANA OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface), e) "*Platycoelia inflata* Ohaus, 1904 ♂ Det: A.B.T. Smith 2002" (typeface). One male paralectotype at ZMHB labeled a) "ARGENTINE PROV. TUCUMAN LA CRIOLLA 1500 m G. A. BAER I-1903" (typeface), b) "♂" (typeface), c) "Pl. inflata tucumana Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA INFLATA TUCUMANA OHAUS PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface), e) "*Platycoelia inflata* Ohaus, 1904 ♂ Det: A.B.T. Smith 2002" (typeface). One male paralectotype at ZMHB labeled as previous paralectotype omitting label b. Five female paralectotypes at ZMHB labeled a) "ARGENTINE PROV. TUCUMAN LA CRIOLLA 1500 m G. A. BAER I-1903" (typeface), b) "♀" (typeface), c) "Pl. inflata tucumana Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA INFLATA TUCUMANA OHAUS PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, hand-

written and typeface), e) "*Platycoelia inflata* Ohaus, 1904 ♀ Det: A.B.T. Smith 2002" (typeface). The existence and location of other specimens from Ohaus' original type series are unknown. I observed no consistent differences in the Argentinian and Bolivian, and Peruvian populations of *P. inflata*. Therefore, I am placing the subspecific name *P. inflata tucumana* in synonymy with *P. inflata*. Type locality: Tucumán, Argentina. **NEW SYNONYMY.**

DESCRIPTION. Male (n=198). Length 17.3-27.4 mm, width 10.4-16.5 mm. Color olive green to lime green or yellow (sometimes darkened to brownish-green or dark yellow); elytral interval 4, 6 with thick, yellow, longitudinal stripe; pronotum and elytron with yellow lateral margin. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.3 transverse eye-widths. Labrum moderately punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with truncate, triangular, medial tooth, apex of tooth overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 2 teeth, outer tooth cup-shaped. Mentum with apicomedial tooth curved into oral cavity. Antenna 9-segmented; club slightly shorter than other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, moderately to densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly impressed or not impressed, punctate; punctures moderate with dark coloration; intervals moderately punctate, punctures small. Suture apically with acute spine. *Pygidium:* Width approximately 2.3 times length medially. Surface weakly convex, densely punctate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter:* Thorax moderately setose, setae cream colored. Mesothoracic process projecting anteriorly past mesocoxa, weakly

diamond-shaped, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 1 apical tooth (Fig. 36). Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4, mesotarsomere 4, metatarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with interno-medial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate. Modified mesotarsal claw thickened, elongate when compared with other claw, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded, setose, weakly dorsoventrally flattened (Fig. 16).

Female (n=436). Length 18.2-28.7 mm, width 10.8-17.5 mm (Fig. 41). As male except in the following respects. *Legs:* Protibia with 3 teeth in apical half, apical 2 teeth subequal in size, third tooth small, obsolete. Tarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal and mesotarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; elytral striae 3 and 5 with distinct yellow coloration; mesothoracic process conical; protibia with 1 prominent tooth; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; protarsal claw diagonally flattened; modified mesotarsal claw with the apex bifurcate, dorsoventrally flattened; paramere with apex distinctly expanded.

DISTRIBUTION (Fig. 40). Andes Mountains from southern Perú to Northern Argentina.

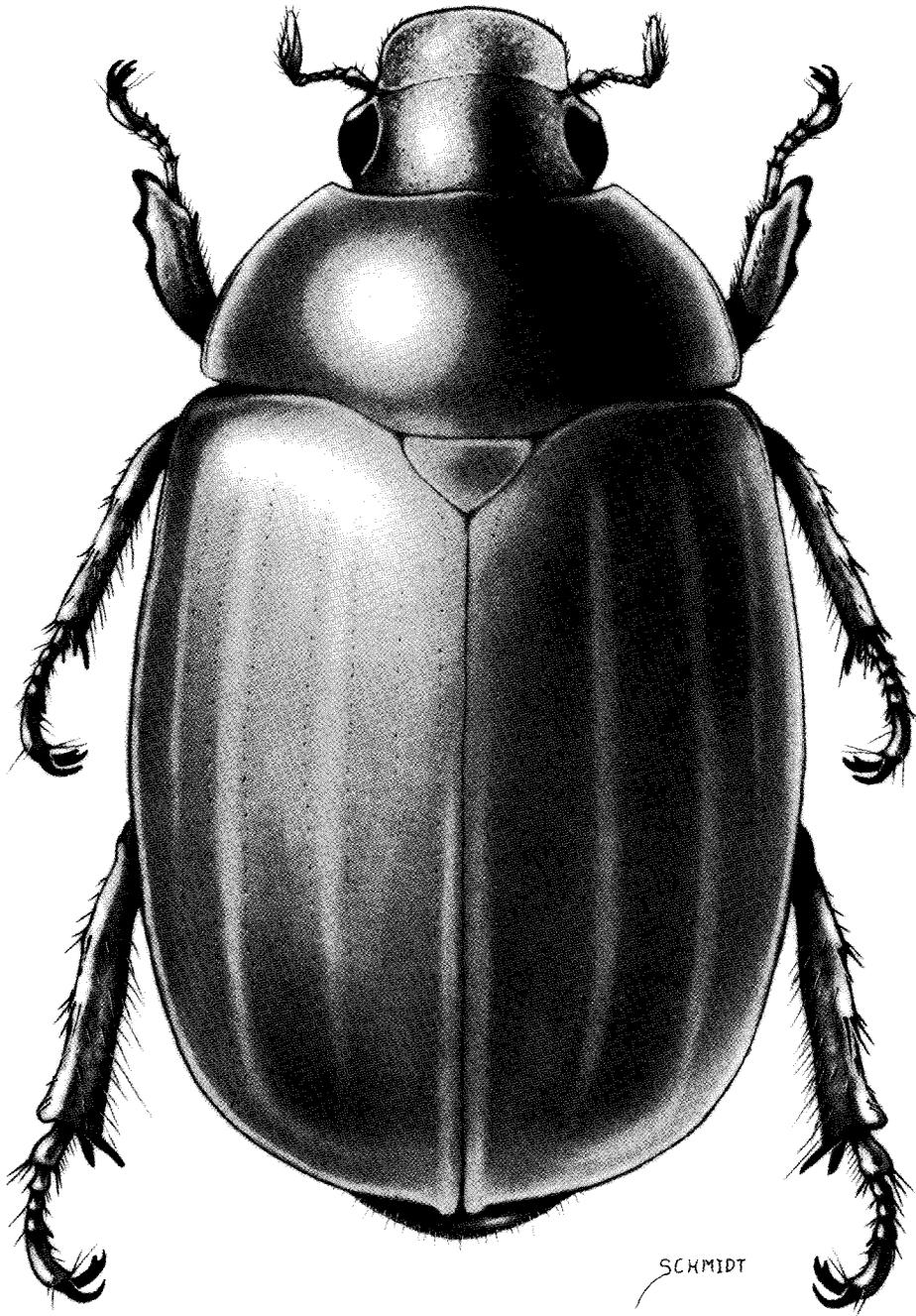


Fig. 41. *Platycoelia inflata* female.

LOCALITY DATA. 634 specimens examined from ABTS, AMNH, ANCB, ANSP, ARLG, BCRC, BDGC, BMNH, CASC, CBAC, CMNC, DJCC, EAPZ, FCOC, FMNH, FSCA, HAHC, HNHM, LACM, MCZC, MGFT, MLJC, MLPA, MNHN, MNNC, NHMB, RACC, RFMC, SLTC, SMFD, SMTD, UAIC, UCDC, UCRC, UNSM, USNM, ZMHB, ZMUH, ZSMC.

PERÚ (27). CUSCO (6): Paucartambo, Quince Mil. JUNÍN (8): Chanchamayo, La Merced, Perené, Vitoc. MADRE DE DIOS (7): Avispas. NO DATA (6).

BOLIVIA (99). CHUQUISACA (1): Monteagudo. COCHABAMBA (44): Chaparé, Cochabamba, Cristal-Mayu, Incachaca, Vacas. LA PAZ (7): Guanay, Mapiro, Yanacachi, Yungas de La Paz. POTOSÍ (2): No Data. SANTA CRUZ (28): Comarapa, Mataral, Samaipata, Santa Cruz No Data. TARIJA (9): Salinas, Villa Montes, Yacuiba. NO DATA (8).

ARGENTINA (488). CATAMARCA (40): Andalgalá, Belén, El Alto, El Rodeo, La Merced, La Viña, Los Ángeles, Mutquín. JUJUY (59): Jujuy, Parque Nacional Calilegua, Quemado, Río Lozano. LA RIOJA (2): Chuquis. SALTA (258): Campo Quijano, Cerrillos, Chicoana (12 km W), Coronel Moldes, El Carril, El Naranjo, La Caldera (20 km N), Las Víboras, Macueta, Metán, Parque Nacional El Rey, Rosario de Lerma, Salta, San Carlos, San Lorenzo, San Martín, Tablillas, Urundel. TUCUMÁN (96): Ciudad Universitaria, El Infiernillo, La Criolla, Monteros, Quebrada de Lules, Río Tapia, San Javier, San Miguel de Tucumán, San Pedro de Colalao, Tacanas, Tafí del Valle, Villa Nougues. NO DATA (33).

NO DATA (20).

Two specimens labeled "Columbia" were considered to have no data.

TEMPORAL DATA. January (105), February (239), March (22), April (15), May (2), July (2), August (2), September (13), October (13), November (31), December (83).

3. *Platycoelia nervosa* Kirsch, 1871 (Fig. 42)

Platycoelia nervosa Kirsch, 1871 (valid name)

CATALOG. *Platycoelia nervosa*, Kirsch 1871:369 [original description]; Ohaus 1904b:285, 287, 289, 338, 341 [redescription]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:301 [catalog listing]; Martínez 1976:329 [comparison with *Platycoelia scutellata*].

TYPE SPECIMENS. *Platycoelia nervosa* Kirsch lectotype female at SMTD labeled a) "Bogota Kirsch" (green label, handwritten), b) "Type" (green label, handwritten), c) "Typus!" (pink label, typeface), d) "PLATYCOELIA NERVOSA KIRSCH ♀ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface), e) "nervosa Kirsch 1870" (green label, handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Kirsch (1871) did not state how many specimens were in the original type series. The existence and location of paralectotypes are unknown. Type locality: Bogotá, Colombia.

DESCRIPTION. Male (n=2). Length 19.3-24.1 mm, width 11.9-14.4 mm. Color olive green (sometimes darkened to brownish-green); elytral interval 3, 5 with lighter green, longitudinal stripe; head, pronotum, scutellum, elytron with yellow lateral margin. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.8 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum with apicomedial tooth curved into oral cavity. Antenna 9-segmented; club slightly shorter than other segments combined, slightly shorter than length of



Fig. 42. Distribution of *Platycoelia nervosa*, *P. marginata*, and *P. meridensis* in Venezuela, Colombia, Ecuador, and Perú.

frons. *Pronotum*: Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae not impressed, punctate; punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture apically with weak spine. *Pygidium*: Width approximately 2.4 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter*: Thorax moderately setose (ex-

cept glabrous medially), setae cream colored. Mesothoracic process projecting anteriorly to procoxa, weakly diamond shaped, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 1 apical tooth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internominal stridulatory ridge. Protarsomere 5 with internominal, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internominal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw

length slightly shorter than protarsomere 5, thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate. Modified mesotarsal claw thickened, elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia*: Parameres approximately 1.4 times longer than length of phallobase. Parameres with apex rounded, slightly dorsoventrally flattened, weakly expanded.

Female (n=9). Length 21.7-26.4 mm, width 13.3-15.3 mm. As male except in the following respects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal and mesotarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping mentum; antenna 9-segmented; elytral striae 3 and 5 with light green coloration; mesothoracic process conical; protibia with 1 prominent tooth; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; protarsal claw diagonally flattened; modified mesotarsal claw with the apex bifurcate, dorsoventrally flattened; apex of paramere distinctly expanded.

DISTRIBUTION (Fig. 42). Eastern slope of the Andes Mountains from central Colombia to central Ecuador.

LOCALITY DATA. 11 specimens examined from FMNH, ISNB, QCAZ, SMTD, UMRM, ZMHB.

COLOMBIA (6). BOYACÁ (3): Muzo. DISTRITO CAPITAL (2): Bogotá. NO DATA (1).

ECUADOR (5). MORONA SANTIAGO (1): Macas. NAPO (1): Sarayacu. PASTAZA (2): Canelos, Mera. SUCUMBÍOS (1): Lumbaqui.

TEMPORAL DATA. August (1), December (2).

4. *Platycoelia marginata* Burmeister, 1844

(Figs. 42, 43)

Platycoelia marginata Burmeister, 1844 (valid name)

Platycoelia olivacea Blanchard, 1851 (junior synonym)

Platycoelia laevis Burmeister, 1855 (junior synonym)

Platycoelia scutellata Guérin-Ménéville, 1855 (junior synonym)

CATALOG. *Platycoelia marginata*, Burmeister 1844:453 [original description]; Blanchard 1851:227 [catalog listing]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Ohaus 1904b:282, 284, 285, 287, 289, 290, 325, 338, 340 [redescription]; Ohaus 1905:121, 167 [comparison with *Leucopelaea*, illustration]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:9 [distribution]; Machatschke 1965:57, 145 [catalog listing, illustration]; Machatschke 1972:301 [catalog listing]; Martínez 1976:328 [comparison with *Platycoelia scutellata*]; Martínez and Martínez 1994:548 [comparison with *Platycoelia selanderi*].

Platycoelia olivacea, Blanchard 1851:227 [original description]; Burmeister 1855:525 [listed as male of *Platycoelia laevis*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing as synonym of *Platycoelia prasina*]; Ohaus 1904b:338 [checklist as possible synonym of *Platycoelia marginata*]; Ohaus 1918:178 [catalog listing as synonym of *Platycoelia marginata*]; Blackwelder 1944:247 [checklist as synonym of *Platycoelia marginata*]; Machatschke 1965:57 [catalog listing as synonym of *Platycoelia marginata*]; Machatschke 1972:301 [catalog listing as synonym of *Platycoelia marginata*].

Platycoelia laevis, Burmeister 1855:525 [original description, key to species of *Platycoelia*]; Ohaus 1904b:284 [placed in synonymy with *Platycoelia marginata*]; Ohaus 1918:177, 178 [catalog listing as synonym of *Platycoelia prasina* and *Platycoelia marginata*]; Blackwelder 1944:247 [checklist as synonym of

Platycoelia marginata and *Platycoelia prasinalis*; Machatschke 1965:57 [catalog listing as synonym of *Platycoelia marginata*]; Machatschke 1972:301 [catalog listing as synonym of *Platycoelia marginata*].

Platycoelia scutellata, Guérin-Méneville 1855:585 [original description]; Harold 1869:1230 [catalog listing]; Ohaus 1904b:284, 338 [redescription]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:9 [distribution]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:301 [catalog listing]; Martínez 1976:328, 335 [redescription]; Martínez and Martínez 1994:545, 548 [comparison with *Platycoelia selanderi*].

Platycoelia levis (= *Platycoelia laevis*, *lapsus calami*), Harold 1869:1230 [catalog listing as synonym of *Platycoelia prasinalis*]; Ohaus 1904b:338 [checklist as synonym of *Platycoelia marginata*].

TYPE SPECIMENS. *Platycoelia marginata* Burmeister lectotype male at MLUH labeled a) "Merida" (handwritten), b) "PLATYCOELIA MARGINATA BURMEISTER ♂ DET: A.B.T.SMITH 2001 LECTOTYPE" (red label, handwritten and typeface), c) "marginata * Quito Dup." (green label, handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at MLUH labeled a) "PLATYCOELIA MARGINATA BURMEISTER ♀ PARALECTOTYPE DET: A.B.T. SMITH 2001" (yellow label, handwritten and typeface). Burmeister (1844) did not state how many specimens were in the type series. The existence and location of other paralectotypes are unknown. Type locality: Mérida, Venezuela.

Platycoelia olivacea Blanchard lectotype male at MNHN labeled a) "4 51" (round label, green on upperside, handwritten on underside), b) "P. olivacea. Cat. Mus. Brésil." (green label, handwritten), c) "PLATYCOELIA OLIVACEA BLANCHARD LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface), d) "*Platycoelia marginata* Burmeister, 1844 ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a state-

ment of taxonomic purpose. Blanchard (1851) did not explicitly state how many specimens were in the type series. The existence and location of paralectotypes are unknown. First placed in synonymy with *P. marginata* by Ohaus (1904b). Ohaus (1904b) discussed the variability (especially of color) of *P. marginata* when he placed *P. olivacea* in synonymy. After examination of the lectotype, I concur with his decision and maintain the synonymy. Type locality: Andes Mountains of northern South America (Blanchard [1851] stated "Brésil" in the original description but this is erroneous).

Platycoelia laevis Burmeister lectotype male at MLUH labeled a) "PLATYCOELIA LAEVIS BURMEISTER LECTOTYPE A.B.T. SMITH 2001" (red label, handwritten and typeface), b) "laevis * Columb. Merida [illegible]" (green label, handwritten), c) "*Platycoelia marginata* Burmeister, 1844 ♂ Det: A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at MLUH labeled a) "PLATYCOELIA LAEVIS BURMEISTER ♀ PARALECTOTYPE DET: A.B.T.SMITH 2001" (yellow label, handwritten and typeface), b) "*Platycoelia marginata* Burmeister, 1844 ♀ Det:A.B.T. Smith 2002" (typeface). Burmeister (1855) did not state how many specimens were in the type series. The existence and location of other paralectotypes are unknown. First placed in synonymy with *P. marginata* by Ohaus (1904b). Ohaus (1904b) commented that Burmeister (1844) described *P. laevis* using a discolored, large specimen of *P. marginata* when he placed the two names in synonymy. After examination of the lectotype I concur with his decision and maintain the synonymy. Type locality: Mérida, Venezuela.

Platycoelia scutellata Guérin-Méneville lectotype male at MNHN labeled a) "Scutellata Boliv Guérin Type" (handwritten), b) "Ex.Musæo Mniszech" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA SCUTELLATA GUÉRIN-MÉNEVILLE LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface), e) "*Platycoelia marginata* Burmeister, 1844 ♂

Det: A.B.T. Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Although the lectotype is labeled "Boliv," this species does not occur in Bolivia. Gaetano Osculati collected the lectotype in the Napo region of Ecuador during his trip there in 1847 (Guérin-Méneville 1855; Papavero 1973). The description of *P. scutellata* by Guérin-Méneville (1855) did not explicitly state where the type series was collected. The purpose of that paper was to describe beetles collected by Gaetano Osculati (also spelled Cajetano Osculati) during his travels to Argentina, Chile, and Perú (1834-1836) and Ecuador and Brazil (1847-1848) (Guérin-Méneville 1855). Although the lectotype was labeled "Boliv," this specimen was obviously collected on the eastern slopes of the Andes Mountains in Ecuador. This is evident from the distinct coloration of the abdominal sternites (dark brown medially, green laterally) and the large size (26.8 mm long) characteristic of *P. marginata* specimens collected in Napo, Ecuador. According to a published itinerary of Osculati's trip (Papavero 1973); he collected around Baeza, Cosanga, and Archidona in Ecuador from 19 June – 28 July 1847. This is undoubtedly when the lectotype was collected. It is unknown how the lectotype got from Osculati to Mniszech (and ultimately to the MNHN); but at the time it was common for insect collectors to buy, sell, and trade specimens. The name *P. scutellata* was erroneously used for specimens of *P. selanderi* from southern Perú and Bolivia by several authors, including Ohaus (1904b), Martínez (1976), and Martínez and Martínez (1994). *Platycoelia scutellata* is a larger form of *P. marginata* that occurs on the eastern slope of the Andes Mountains. There are no consistent differences between the character states of the eastern Ecuadorian and other populations. Therefore these names are here synonymized. Guérin-Méneville (1855) did not explicitly state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Type locality: in the vicinity of Baeza, Cosanga, and Archidona in Napo, Ecuador. **NEW SYNONYMY.**

DESCRIPTION. Male (n=334). Length 17.8-26.4 mm, width 9.5-14.6 mm. Color of dorsal surface olive green to lime green or yellow (sometimes darkened to brownish-green or dark yellow); pronotum, scutellum, elytron sometimes with yellow lateral margin; scutellum sometimes yellow. Ventral surface black to dark brown medially, sometimes olive green or yellowish-green laterally. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.0 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth overlapping apex of mentum. Mandibular scissorial region with 1 tooth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum apically with medial tooth curved into oral cavity. Antenna 9-segmented; club approximately equal to other segments combined, approximately equal to length of frons. *Pronotum:* Surface glabrous, moderately to densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly impressed or not impressed, punctate; punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture apically with acute spine (sometimes worn down). *Pygidium:* Width approximately 1.7 times length medially. Surface weakly convex, sparsely to moderately punctate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter:* Thorax moderately setose (glabrous medially), setae cream colored. Mesothoracic process projecting anteriorly past mesocoxa; shape conical, ventrally flattened. Abdomen sparsely setose to glabrous. Apical spiracles not extruding. *Legs:* Protibia with 1 apical tooth (second weak tooth sometimes visible). Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Meso-

tarsomere and metatarsomere 5 with or without internal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded, setose, expanded.

Female (n=167). Length 19.0-29.4 mm, width 10.2-15.5 mm (Fig. 43). As male except in the following respects. *Legs*: Protibia with 3 distinct teeth in apical half. Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal and mesotarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; mesothoracic process cylindrical; metasternum brown to black; abdominal sternites dark brown to black (at least medially); protibia with 1 prominent tooth; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; modified mesotarsal claw with a ventral tooth; paramere with apex distinctly expanded.

DISTRIBUTION (Fig. 42). Eastern slope of the Andes Mountains from western Venezuela to northern Perú.

LOCALITY DATA. 501 specimens examined from ABTS, AJRC, AMNH, ANSP, BMNH, CASC, CMNC, CMNH, CNCI, DCCC, DEIC, DJCC, FGIC, FMNH, FSCA, HAHC, HNHM, HSIC, ISNB, LACM, LEMQ, MGFT, MIZA, MLUH, MNHN, QCAZ, RACC, SEMC, SLTC, SMFD, SMTD, UNSM, USNM, VMCP, ZMHB.

VENEZUELA (281). MÉRIDA (259): Chachopo, Culata, La Mucuy, Mérida, Santo Domingo,

Timotes, Valle Grande. TÁCHIRA (2): Betania. TRUJILLO (8): Boconó, Escora, Teta de Niquitao. NO DATA (12).

COLOMBIA (24). BOYACA (1): Villa de Leiva. CAUCA (1): No Data. CUNDINAMARCA (3): Cordillera de Veraguas, Monterredondo. DISTRITO CAPITAL (7): Bogotá. HUILA (2): Gigante. NORTE DE SANTANDER (1): Pamplona (13 km SW). QUINDÍO (1): Salento. NO DATA (8).

ECUADOR (187). AZUAY (3): Cuenca, Valle de Yunguilla. CARCHI (6): Maldonado (18 km SE), Tufiño (50 km W), Tulcán. CHIMBORAZO (2): Riobamba. COTOPAXI (5): Otongo. IMBABURA (26): Atuntaquí, Chachimbiro, Cotacachi, Ibarra, Lago San Pablo, Otavalo, Peguche. LOJA (9): Loja, Rocafuerte, San Lucas. NAPO (50): Baeza, Cosanga, Hacienda San Isidro, Las Palmas, Papallacta (11 km W), Puente Azuela, Río Chapli Grande, Río Salado, Sarayacu, Sierrazul. PASTAZA (2): Canelos. PICHINCHA (70): Alóag, Argelia, Chiriboga, Conocoto, Guayllabamba, Hacienda La Esperie, La Armenia, La Virgen, Las Laureles, Machachi (26 km WNW), Nayón, Quito, Palmeras, Puerto Quito, Río Guajalito, San Antonio de Pichincha, San Rafael, Tandapi, Tinalandia, Toachi, Valle de los Chillos. SUCUMBÍOS (10): Dureno, Lumbaqui, Reventador, Santa Bárbara, Sebundoy. TUNGURAHUA (1): Baños. ZAMORA CHINCHIPE (2): Zamora. NO DATA (1).

PERÚ (5). AMAZONAS (1): Chachapoyas (70 km E). CAJAMARCA (2): Hacienda Taulis. SAN MARTÍN (2): Almirante (55 km W of Rioja), Huallaga.

NO DATA (4).

TEMPORAL DATA. January (18), February (37), March (15), April (13), May (26), June (13), July (3), August (3), September (10), October (28), November (36), December (10).

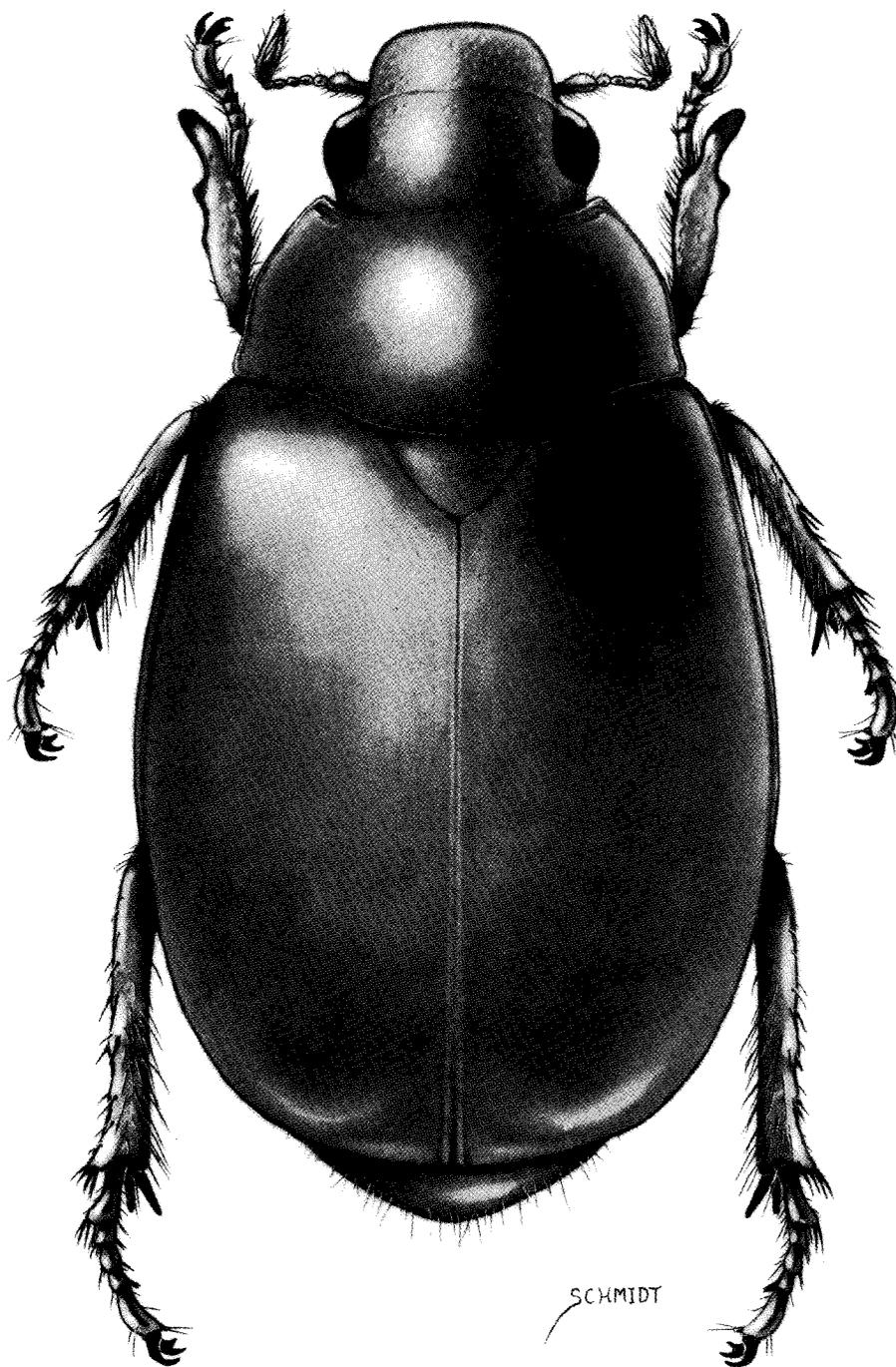


Fig. 43. *Platycoelia marginata* female.

5. *Platycoelia meridensis* new species

(Figs. 42, 44)

TYPE SPECIMENS. Male holotype, female allotype and 15 paratypes (1 male, 14 female). Holotype male at MIZA labeled "Venezuela Meri-da. 2,200 m 12-VIII-1976," "La Mucuy," "Donación Mattei" and "LA MUCUY Edo. MERIDA 2200 mts 12-VIII-76." Allotype female and one female paratype at MIZA, one female paratype at ABTS, and one female paratype at UNSM labeled "Venezuela Meri-da. 2000 m., "La Mucuy 8-14-VIII-88," and "col. F. Cerda." One male paratype at ABTS labeled "La Mucuy, 2300 m (Edo. Mérida) VENEZ. Bordón leg. 13 VIII 1978." One female paratype at MIZA labeled "Venezuela Meri-da. 2000 m. 8-14-VIII-88," "La Mucuy," and "col. F. Cerda." One female paratype at CBAC labeled "La Mucuy, 2300 Tabay (MERIDA) VENEZ. Bordón leg. 19-31 V 1977." One female paratype at MIZA labeled "Venezuela- La Mucuy Merida 2,400 m. 7-IX-56" and "C.J. Rosales col." Three female paratypes at CMNC and one female paratype at ABTS labeled "VEN: Merida, Tabay LaMucuyValley 15.VI-30.VII.89 agric. Zone, UVlight 1900m, S&JPeck." One female paratype at ZMHB labeled "Merida (Venez.) 14.7.1934 Farenholtz E. 6687," "♀," and "Platycoelia limbata Ohs." One female paratype at CBAC labeled "Mucuchíes 2700m. Mérida. VENEZ. Bordón 16 VI 93." One female paratype at ABTS labeled "VENEZUELA: Mérida Tabay, La Mucuy 19-31 V 1977 2300 m C. Bordón." One male paratype at UCDC labeled "La Mucuy Pedraza Barinas VZLA VIII 4 1979" and "R. W. Brooks A. A. Grigarick J. McLaughlin R. O. Schuster." Type locality: La Mucuy, Mérida, Venezuela.

HOLOTYPE. Male: length 19.4 mm, width 11.3 mm. Color of dorsal surface olive green; elytral intervals 2, 4, 6 yellow; elytral margin with thick yellow stripe. Ventral surface olive green to brownish-green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely

punctate, clypeus rugopunctate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.5 transverse eye-widths. Labrum moderately punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth weakly overlapping with apex of mentum. Apex of mentum with medial tooth curved into oral cavity. Antenna 9-segmented; club approximately equal to other segments combined, approximately equal to length of clypeus. *Pronotum:* Surface glabrous, moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae impressed, punctate, punctures moderate. Sutural apex angled, without spine. *Pygidium:* Width approximately 2.1 times length medially. Surface weakly convex, sparsely punctate; punctures moderate, setose (near apex); setae long, tawny. *Venter:* Thorax densely setose, setae cream colored. Mesothoracic process projecting anteriorly to procoxa; shape conical, dorsoventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. *Legs:* Protibia with 1 apical tooth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with apical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.2 times longer than length of parameres. Paramere with apex rounded, setose, expanded.

ALLOTYPE. Female: length 21.3 mm, width 12.3 mm. As holotype except in the following respects. *Legs:* Protibia with 3 distinct teeth

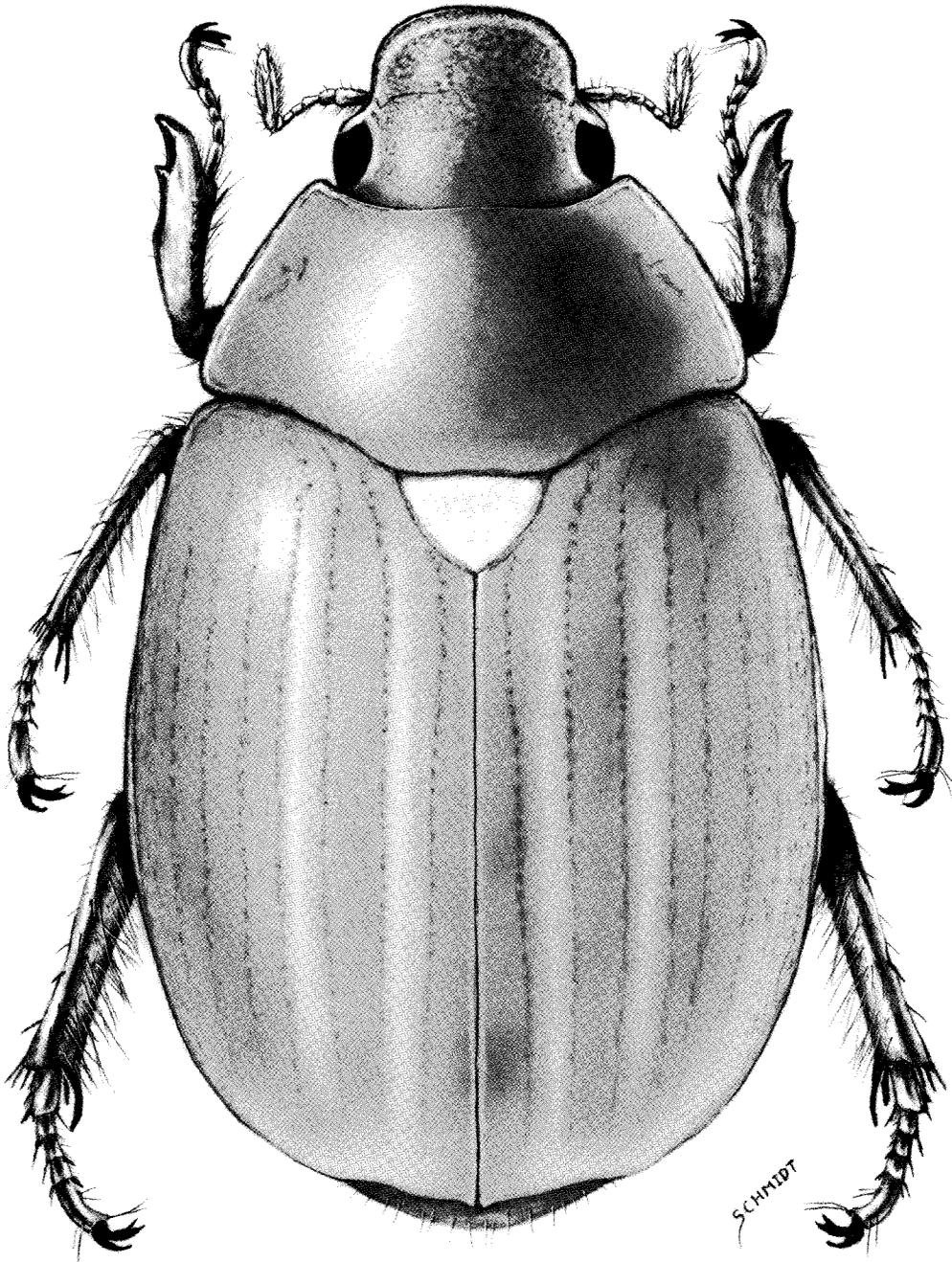


Fig. 44. *Platycoelia meridensis* female.

in apical half. Protarsomere 4 without apical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw elongate, with ventral tooth, not thickened.

VARIATION. Male (n=1). Length 23.3-23.5 mm, width 12.9-13.4 mm. Female (n=14). Length 18.9-23.2 mm, width 11.3-13.7 mm (Fig. 44). The paratypes differ from the holotype and allotype in the following respects. Color sometimes yellow to dark yellow.

ETYMOLOGY. *Platycoelia meridensis* is named after the region of Venezuela to which it is endemic.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; mesothoracic process cylindrical; protibia with 2 prominent teeth; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; modified mesotarsal claw with a ventral tooth; paramere with apex distinctly expanded.

DISTRIBUTION (Fig. 42). Mérida province in Venezuela.

LOCALITY DATA. 18 specimens examined from ABTS, CBAC, CMNC, MIZA, UCDC, ZMHB.

VENEZUELA (17). **MÉRIDA** (17): La Mucuy, Mucuchíes, Tabay, No Data.

NO DATA (1).

One female specimen at ZMHB was labeled "Borneo." I excluded this specimen from the type series because of the erroneous label data.

TEMPORAL DATA. May (2), June (1), July (6), August (7), November (1).

6. *Platycoelia selanderi* Martínez and Martínez, 1994

(Figs. 45, 46)

Platycoelia selanderi Martínez and Martínez, 1994 (valid name)

CATALOG. *Platycoelia selanderi*, Martínez and Martínez 1994:545 [original description].

TYPE SPECIMENS. *Platycoelia selanderi* Martínez and Martínez holotype male at MACN labeled a) "ARGENTINA SALTA D₀ Capital San Lorenzo Coll. Martínez Ene.-948" (handwritten), b) "HOLOTYPUS" (orange label, typeface), c) "Platycoelia selanderi ♂ sp. nov. Adrian y A.MARTINEZ-DET.1992" (red label, handwritten and typeface), d) "Platycoelia limbata Ohs R. Gutiérrez-Det.50" (handwritten and typeface), e) "PLATYCOELIA SELANDERI MARTÍNEZ & MARTÍNEZ ♂ HOLOTYPE" (red label, handwritten and typeface). Allotype female at MACN labeled a) "ARGENTINA SALTA D₀ La Caldera El Ucumar, 1550 m. Coll. Martínez Dic.-985" (handwritten), b) "ALLOTYPUS" (orange label, typeface), c) "Platycoelia selanderi ♀ sp. nov. Adrian y A.MARTINEZ-DET.1992" (red label, handwritten and typeface), d) "PLATYCOELIA SELANDERI MARTÍNEZ & MARTÍNEZ ♀ ALLOTYPUS" (red label, handwritten and typeface). One male paratype at HAHC labeled a) "ARGENTINA JUJUY D₀ Capital Yala Prosen-leg. Coll-Martínez" (handwritten), b) "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." (typeface), c) "PARATIPO" (typeface), d) "Platycoelia selanderi ♂ sp. nov. Adrian y A.MARTINEZ-DET.1992" (handwritten and typeface), e) "PLATYCOELIA SELANDERI MARTÍNEZ & MARTÍNEZ ♂ PARATYPE" (yellow label, handwritten and typeface). One female paratype at HAHC labeled a) "ARGENTINA SALTA D₀ La Caldera El Ucumar Coll. Martínez Feb.-982" (handwritten), b) "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." (typeface), c) "PARATIPO" (typeface), d) "Platycoelia selanderi ♀ sp. nov. Adrian y A.MARTINEZ-DET.1992" (handwritten and typeface), e) "PLATYCOELIA SELANDERI MARTÍNEZ & MARTÍNEZ ♀ PARATYPE" (yellow label, handwritten and typeface).

There are a holotype, allotype, and two paratypes in the type series (Martínez and Martínez 1994). Martínez and Martínez (1994) considered that Bolivian and Peruvian specimens that they saw were a different species. My definition of this species is much broader than their ideas and I could find no consistent character states differing between the Argentinian specimens and the specimens from Bolivia and Perú. Martínez and Martínez (1994) erroneously considered these specimens to be *P. scutellata* (a synonym of *P. marginata* that does not occur in these countries). Type locality: San Lorenzo, Salta, Argentina.

DESCRIPTION. Male (n=132). Length 19.5-24.3 mm, width 10.7-14.0 mm (Fig. 45). Color of dorsal surface olive green to lime green or yellow (sometimes darkened to brownish-green or dark yellow); pronotum, scutellum, elytron sometimes with yellow lateral margin; scutellum sometimes yellow. Ventral surface olive green or yellow; metasternum with black to dark brown medial line (sometimes widened); abdominal sternites with apical and basal latitudinal black lines, middle of each sternite olive green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.2 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth overlapping apex of mentum. Mentum apically with medial tooth curved into oral cavity. Antenna 9-segmented; club approximately equal to other segments combined, slightly longer than frons. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae not impressed, punctate; punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture apically angled (sometimes with weak, posteriorly projecting nub). *Pygidium:* Width approximately 2.1 times length medially. Surface convex, sparsely to moderately punc-

tate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter:* Thorax moderately setose (glabrous medially), setae tawny. Mesothoracic process projecting anteriorly just basal to procoxa; shape conical, dorsoventrally flattened. Abdomen sparsely setose to glabrous. Apical spiracles not extruding. *Legs:* Protibia with 1 apical tooth (second and third weak teeth sometimes visible). Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate. Modified mesotarsal claw weakly thickened and elongate when compared with other claw, diagonally flattened, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded, setose, expanded.

Female (n=199). Length 21.2-28.9 mm, width 12.2-15.1 mm. As male except in the following respects. *Legs:* Protibia with 3 distinct teeth in apical half. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal and mesotarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; mesothoracic process cylindrical; metasternum with a brown to black medial patch; abdominal sternites with dark apical and basal borders; protibia with 1 prominent tooth; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; modified mesotarsal claw with the apex bifurcate, dorsoventrally flattened; paramere with apex distinctly expanded.

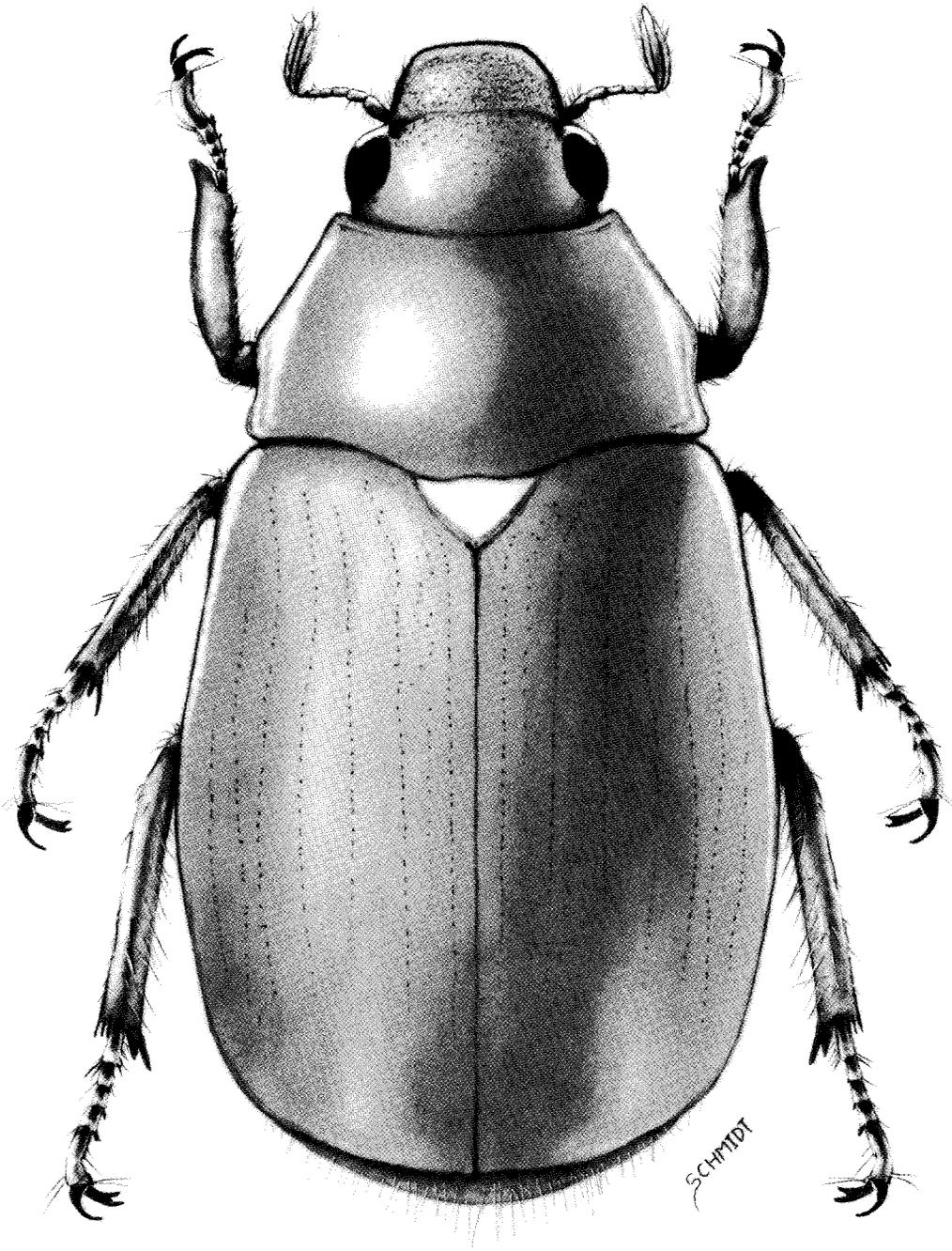


Fig. 45. *Platycoelia selanderi* male.

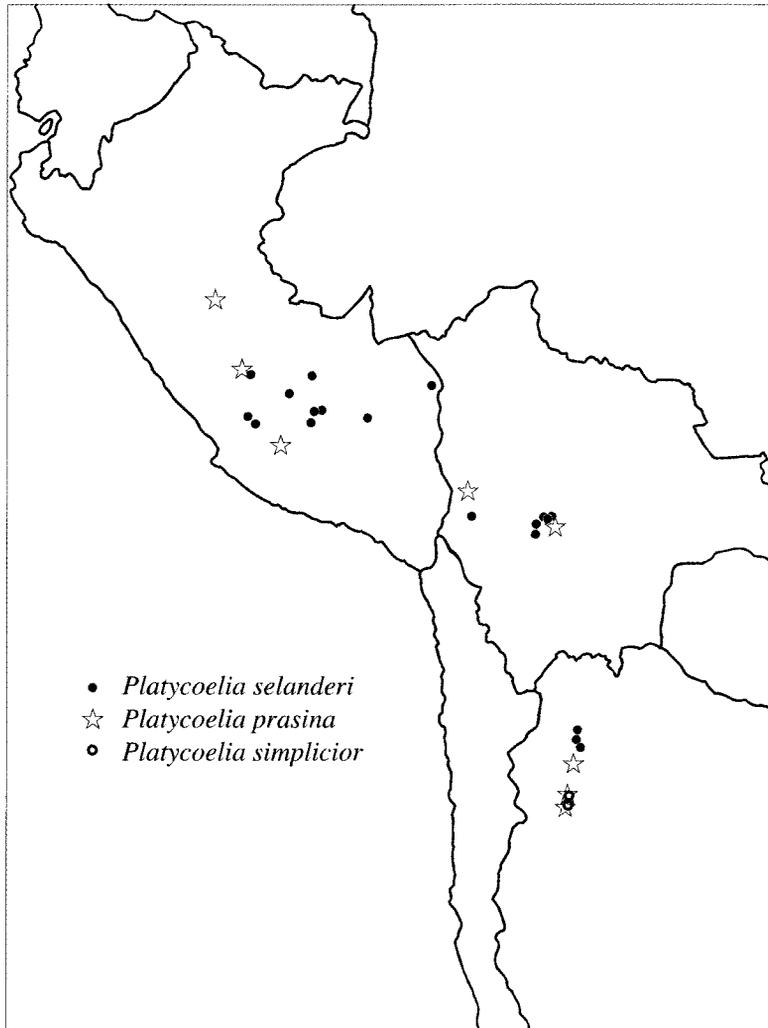


Fig. 46. Distribution of *Platycoelia selanderi*, *P. prasina*, and *P. simplicior* in Perú, Bolivia, and Argentina.

DISTRIBUTION (Fig. 46). Occurs on the eastern slope of the Andes Mountains from central Perú to northern Argentina.

LOCALITY DATA. 331 specimens examined from ABTS, AMNH, BCRC, CASC, CBAC, CMNH, CNCI, DJCC, FMNH, HAHC, HNHM, LACM, MACN, MGFT, MLJC, MLPA, MXAL, OSAC, SLTC, UCRC, USNM, ZSMC.

PERÚ (30). AYACUCHO (1): Ayacucho. CUSCO (24): Buenos Aires, Calca (80 km N), Machupicchu, Quince Mil, Río Pampaconas, Valle de Lares (75 km NW Calca). HUANCABELICA (1): Mayocc. JUNÍN (1): Acobamba. MADRE DE DIOS (3): Bosque de las Nublas (Puente Unión).

BOLIVIA (296). COCHABAMBA (253): Alto Palmar, Chapare, Cochabamba, Corani, Incachaca, Limbo, Santa Cruz – Cochabamba Road (km 365), Yungas del Palmar. LA PAZ (8): La Paz. SANTA CRUZ (28): Parque Nacional Amboró, Santa Cruz. NO DATA (7).

ARGENTINA (4). JUJUY (1): Yala. SALTA (3): El Ucumar, San Lorenzo.

NO DATA (1).

TEMPORAL DATA. January (9), February (72), March (20), April (22), June (3), August (1), September (7), October (58), November (9), December (19).

7. *Platycoelia prasina* Erichson, 1847

(Figs. 17, 46)

Platycoelia prasina Erichson, 1847 (valid name)

Platycoelia limbata Ohaus, 1904 (junior synonym)

CATALOG. *Platycoelia prasina*, Erichson 1847:100 [original description]; Blanchard 1851:227 [catalog listing]; Burmeister 1855:525 [listed as female of *Platycoelia laevis*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Bates 1891b:29 [distribution]; Ohaus 1904b:322, 339 [redescription]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:8 [distribution]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

Platycoelia limbata, Ohaus 1904b:288, 338 [original description]; Ohaus 1909b:441 [comparison with *Platycoelia simplicior*]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:301 [catalog listing]; Martínez 1976:328 [comparison with *Platycoelia scutellata*].

TYPE SPECIMENS. *Platycoelia prasina* Erichson lectotype male at ZMHB labeled a) "11468" (typeface), b) "Type" (orange label, typeface), c) "Prasina (N.) Er.* Peru. Pavon" (green label, handwritten), d) "PLATYCOELIA PRASINA ERICHSON ♂ DET: A.B.T. SMITH 2002 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Erichson (1847) did not state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Type locality: Perú.

Platycoelia limbata lectotype male at ZMHB labeled a) "Rep.Argent. Salta" (typeface), b) "Typus!" (red label, typeface), c) "Pl. limbata Ohaus" (red label, handwritten), d) "PLATYCOELIA LIMBATA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface), e) "*Platycoelia prasina* Erichson, 1847 ♂ Det: A.B.T. Smith

2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Ohaus (1904b) did not state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Although *P. prasina* has some variable traits, I could find no consistent differences that justify maintaining *P. limbata* as a separate species. Therefore I am synonymizing the two names. The specimens of *P. prasina* that I examined from Perú, Bolivia, and Argentina are variable within each area and more specimens will have to be examined to properly assess this variation. Type locality: Salta, Argentina. **NEW SYNONYMY.**

DESCRIPTION. Male (n=15). Length 17.2-21.2 mm, width 9.6-12.8 mm. Color of dorsal surface olive green; pronotum, scutellum, elytron with yellow margins. Ventral surface yellowish-green to olive green, metasternum sometimes with dark medial patch. Body ovate, convex. **Head:** Dorsal surface glabrous. Frons densely punctate, clypeus rugo-punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 4.3 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum apical tooth curved into oral cavity. Antenna 9-segmented; club approximately equal to other segments combined, slightly longer than length of frons. **Pronotum:** Surface glabrous, moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae impressed, punctate; punctures moderate with dark coloration; intervals impunctate. Suture apically angled, without acute spine (sometimes with weak nub). **Pygidium:** Width approximately 1.9 times length medially. Surface weakly convex, sparsely to moderately punctate; punctures moderately large to moderate, setose (near

apex); setae short, tawny. *Venter*: Thorax moderately setose (except glabrous medially), setae cream colored. Mesothoracic process projecting anteriorly to procoxa; cylindrical, dorsoventrally flattened. Abdomen glabrous. Apical spiracles weakly extruding. *Legs*: Protibia with 1 apical tooth, 2 short, obsolete medial teeth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4, mesotarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal claw thickened, elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded, setose, expanded (Fig. 17).

Female (n=13). Length 18.5-20.9 mm, width 10.3-12.2 mm. As male except in the following respects. *Head*: Antennal club slightly shorter than other segments combined. *Legs*: Protibia with 3 subequal in size teeth in apical half. Protarsomere 4, mesotarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internomedial tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Modified protarsal and mesotarsal claw elongate, with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; elytral striae 3 and 5 with distinct yellow coloration; mesothoracic process cylindrical; protibia with 1 prominent tooth; protibial apical tooth acuminate; protar-

somere 5 with an internoapical stridulatory tooth; modified mesotarsal claw with the apex bifurcate, dorsoventrally flattened; paramere with apex distinctly expanded.

DISTRIBUTION (Fig. 46). Andes Mountains from southern Perú to northern Argentina.

LOCALITY DATA. 28 specimens examined from BMNH, CASC, HAHC, MGFT, MLPA, MNHN, MNNC, SEMC, SMFD, ZMHB.

PERÚ (6). APURÍMAC (1): Abancay. HUANUCO (2): Cushi, Piedras Grandes. JUNÍN (1): Chanchamayo. NO DATA (2).

BOLIVIA (11). COCHABAMBA (10): Carrasco. LA PAZ (1): Sorata.

ARGENTINA (9). SALTA (1): No Data. TUCUMÁN (8): Tafi del Valle, Villa Nougues, No Data.

NO DATA (2).

TEMPORAL DATA. January (6), February (1), March (2), April (1), November (2), December (8).

8. *Platycoelia simplicior* Ohaus, 1909 (Fig. 46)

Platycoelia simplicior Ohaus, 1904 (valid name)

CATALOG. *Platycoelia simplicior*, Ohaus 1909b:441 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1972:301 [catalog listing]; Martínez 1976:328 [comparison with *Platycoelia scutellata*].

TYPE SPECIMENS. *Platycoelia simplicior* Ohaus lectotype male at ZMHB labeled a) "Typus!" (red label, typeface), b) "Pl. simplicior Ohs." (red label, handwritten), c) "15" (handwritten), d) "ARGENTINA BOR. TUCUMAN, TAFITAL (C. BRUCH VON DR. LILLO ERH.) - OHAUS 1909 Det:A.B.T. Smith 2002" (hand-

written and typeface), e) "PLATYCOELIA SIMPLICIOR OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Ohaus (1909b) did not explicitly state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Type locality: Tafi del Valle, Tucumán, Argentina.

DESCRIPTION. Male (n=4). Length 16.6-17.7 mm, width 9.2-9.5 mm. Color of dorsal surface olive green, ventral surface yellowish-green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.7 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum apical tooth curved into oral cavity. Antenna 9-segmented; club approximately equal to other segments combined, approximately equal to length of frons. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae impressed, punctate; punctures moderate; intervals sparsely punctate, punctures moderate. Suture apically angled, without acute spine (sometimes with weak nub). *Pygidium:* Width approximately 1.9 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderately large to moderate, setose (near apex); setae short, tawny. *Venter:* Thorax densely setose (except moderately setose medially), tawny colored. Mesothoracic process weakly projecting anteriorly past mesocoxa; cylindrical, dorsoventrally flattened. Abdomen sparsely setose, setae tawny. Apical spiracles not ex-

truding. *Legs:* Protibia with 3 teeth; 2 apical teeth subequal in size, third tooth short, obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal claw thickened, elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.2 times longer than length of parameres. Parameres with apex rounded, setose, expanded.

Female: unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frons with scattered lateral setae; labrum with a broad, triangular apical tooth strongly overlapping the mentum; antenna 9-segmented; mesothoracic process cylindrical; protibial apical tooth acuminate; protarsomere 5 with an internoapical stridulatory tooth; modified mesotarsal claw with the apex bifurcate, dorsoventrally flattened; paramere with apex distinctly expanded.

DISTRIBUTION (Fig. 46). Known from Tucumán Province, Argentina.

LOCALITY DATA. 4 specimens examined from BMNH, HAHC, ZMHB.

ARGENTINA (4). TUCUMÁN (4): Cumbre del Garrabatal, Siambón, Tafi del Valle.

TEMPORAL DATA. February (1), December (1).

9. *Platycoelia abdominalis* Ohaus, 1904

(Figs. 5, 18, 34, 47)

Platycoelia abdominalis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia abdominalis*, Ohaus 1904b:276, 297, 299, 338 [original description]; Ohaus 1905:167 [illustration]; Ohaus 1918:176 [catalog listing]; Blackwelder 1944:246 [checklist]; Ohaus 1952:8 [distribution]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:302 [catalog listing].

TYPE SPECIMENS. *Platycoelia abdominalis* Ohaus lectotype male at ZMHB labeled a) "Callanga Peru" (typeface), b) "Typus!" (red label, typeface), c) "Pl. abdominalis Ohaus" (red label, handwritten), d) "PLATYCOELIA ABDOMINALIS OHAUS ♂ DET: A.B.T. SMITH 2001 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Callanga Peru" (typeface), b) "♂" (typeface), c) "Platycoelia abdominalis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA ABDOMINALIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivia Ocobamba G. Garlepp" (typeface), b) "Ohaus determ. Pl. abdominalis Ohaus ♂" (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA ABDOMINALIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2001 LECTOTYPE" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Callanga Peru" (typeface), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "Pl. abdominalis Ohaus" (red label, handwritten), e) "PLATYCOELIA ABDOMINALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Peru" (typeface), b) "♀" (typeface), c) "Platycoelia abdominalis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA ABDOMINALIS

OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Perou Chanchamayo Thamm" (typeface), b) "Ohaus determ. abdominalis Ohaus ♀" (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA ABDOMINALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Chanchamayo" (handwritten), b) "pomacea Erichs." (handwritten), c) "Ex. Musæo H.W.BATES 1892" (typeface), d) "Ohaus determ. abdominalis Ohaus ♀" (typeface and handwritten), e) "Dr Ohaus Vidit 1903." (typeface), f) "PLATYCOELIA ABDOMINALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Chanchamayo. Peru." (handwritten), b) "Ex. Musæo D.SHARP 1890" (typeface), c) "Ohaus determ. abdominalis Ohaus ♀" (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA ABDOMINALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface). The existence and location of other specimens from Ohaus' original type series are unknown. Type locality: Callanga, Lima, Perú.

DESCRIPTION. Male (n=17). Length 19.5-24.5 mm, width 12.0-14.3 mm. Color dorsally light green with yellow scutellum, thick elytral suture, head margins. Ventrally reddish-brown abdominal sternites, metacoxa, medial metasternum, mesothoracic process; light green lateral metasternum (Fig. 34); yellowish-brown legs, thoracic pleura, prothorax, head. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons and clypeus sparsely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 4.0 transverse eye-widths. Labrum with microsculpturing; sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular medial tooth, extending past apex of

mentum. Apex of mentum with triangular medial tooth. Antenna 10-segmented; club slightly shorter than other segments combined, approximately equal to clypeal length. *Pronotum*: Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals sparsely punctate to impunctate. Suture with distinct apical spine (Fig. 5). *Pygidium*: Width approximately 2.4 times length medially. Surface weakly rugose, weakly convex, glabrous except near apex; setae short, tawny. *Venter*: Thorax sparsely setose; setae cream-colored. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; apex rounded; shape conical-elongate, ventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; first tooth largest, second, third teeth sequentially smaller. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth bearing stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw longer than protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres 1.2 times longer than length of phallobase. Parameres smooth, with sharp lateral hook near apex (Fig. 18).

Female (n=26). Length 22.7-27.4 mm, width 13.6-17.5 mm. As male except in the following respects. *Head*: Antennal club approximately equal to segments 2-7. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth absent. Mesotarsomere and metatarsomere 5 internobasal tooth reduced to swelling or absent. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of clypeus not reflexed; labrum with a broad, triangular apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; protibia with 3 prominent teeth; elytral suture distinctly yellow, with the apex forming an acute spine; elytron without yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; metasternum with a broad, reddish-brown medial stripe; abdominal sternites reddish-brown; parameres with the apex rounded, expanded; parameres apicolaterally with a triangular hook.

DISTRIBUTION (Fig. 47). Central to southern Perú. Found primarily in the puna and yungas regions of the Andes Mountains.

LOCALITY DATA. 43 specimens examined from AMNH, CASC, DEIC, DJCC, HAHC, ISNB, LACM, MGFT, SMTD, USNM, ZMHB, ZSMC.

PERÚ (41). CUSCO (2): Vilcanota. LIMA (3): Callanga. HUÁNUCO (4): Tingo María. JUNÍN (26): Chanchamayo, La Merced, Perené, Vitoc. NO DATA (6).

NO DATA (2).

One paralectotype is labeled "Bolivia Ocobamba." Since there are several localities called Ocobamba in Perú but none in Bolivia I considered this specimen to be from Perú with no further data. One specimen labeled "Zatzayacu, Ecuador" is considered to have no data. This locality is far out of range for the species and too low in elevation to support populations of most *Platycoelia* species.

TEMPORAL DATA. January (1), March (4), June (1), October (13), December (1).

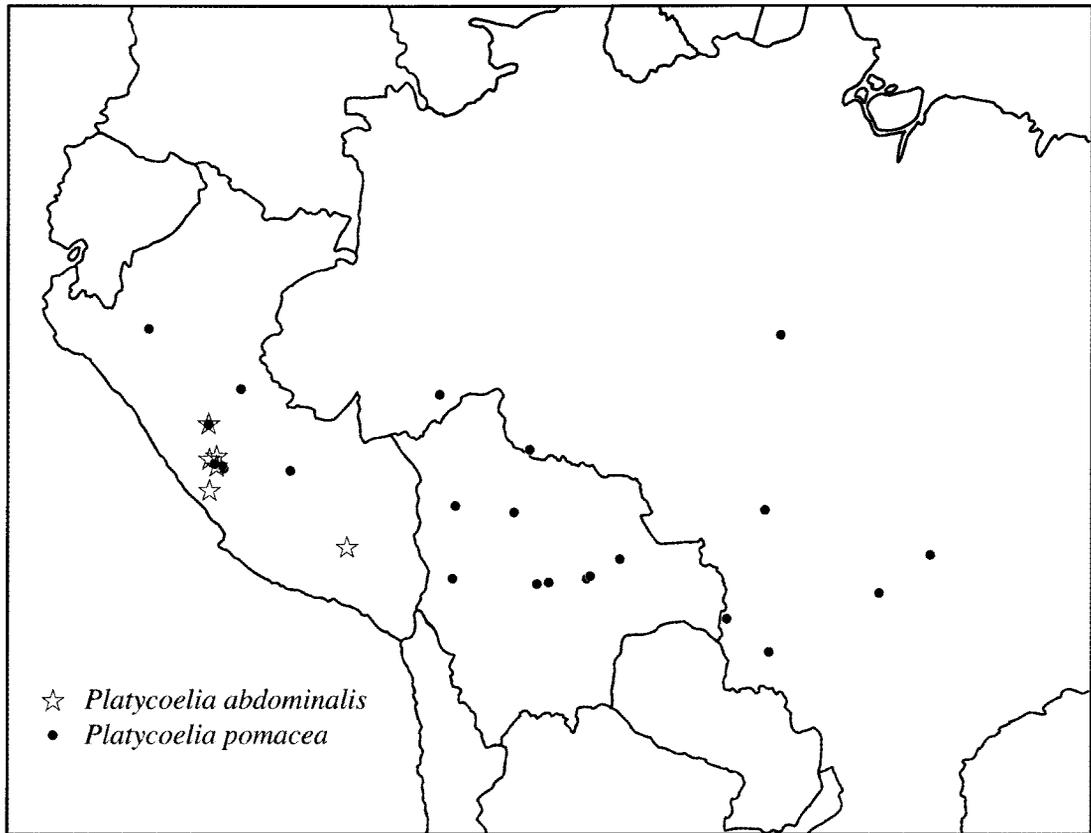


Fig. 47. Distribution of *Platycoelia abdominalis* and *P. pomacea* in Perú, Bolivia, and Brazil.

10. *Platycoelia pomacea* Erichson, 1847

(Fig. 47)

Platycoelia pomacea Erichson, 1847 (valid name)

Platycoelia boliviensis Blanchard, 1851 (junior synonym)

Platycoelia brasiliensis Ohaus, 1904 (junior synonym)

CATALOG. *Platycoelia pomacea*, Erichson 1847:100 [original description]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Kirsch 1873:343 [comment on morphology]; Ohaus 1904b:286, 297, 299, 338 [redescription]; Ohaus 1905:167 [illustration]; Ohaus 1918:177 [catalog list-

ing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:8 [distribution]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

Platycoelia boliviensis, Blanchard 1851:227 [original description]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Ohaus 1918:176 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

Platycoelia pomacea brasiliensis, Ohaus 1904b:298, 338 [original description as subspecies]; Ohaus 1918:177 [catalog listing as subspecies]; Blackwelder 1944:247 [checklist as subspecies]; Machatschke 1965:57, 58 [catalog listing as subspecies]; Machatschke

1972:302 [catalog listing as subspecies]; Martínez 1976:327 [distribution].

Platycoelia pomacea pomacea, Martínez 1976:327 [distribution].

TYPE SPECIMENS. *Platycoelia pomacea* Erichson lectotype female at ZMHB labeled a) "11465" (typeface), b) "Type" (orange label, typeface), c) "Pomacea (N.) Er.* Peru. Pavon." (green label, handwritten), d) "PLATYCOELIA POMACEA ERICHSON ♀ DET:A.B.T. SMITH 2001 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Erichson (1847) did not state how many specimens were in the type series. The existence and location of paralectotypes are unknown. Type locality: Perú.

Platycoelia boliviensis Blanchard lectotype male at MNHN labeled a) "6436 34" (round, green label, handwritten on underside), b) "P. boliviensis. Cat. Mus. Santa-Cruz. (Bolivie). M. d'Orbigny." (green label, handwritten), c) "PLATYCOELIA BOLIVIENSIS BLANCHARD ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface), d) "*Platycoelia pomacea* Erichson, 1847 ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Blanchard (1851) did not indicate how many specimens were in the type series (although the range of lengths indicates more than one). The location of the paralectotype(s) is unknown. Some of d'Orbigny's handwritten notebooks on the specimens in his collection are at the MNHN library. The entry for the type series of this name states "Areoda 1437. Melolontha. Viz dans les grande forêt, sur les tigre de arbuste. Je en nocturne ou au moisse crépusculaire." Ohaus (1904b) misapplied the name *P. boliviensis* to *P. peruviana*. He did examine the lectotype of *P. boliviensis* during his visit to Paris during 1903, but he did not carefully examine it or dissect the genitalia. The lectotype of *P. boliviensis* is, without a doubt, *P. pomacea*. Therefore I am placing these names in synonymy. Type locality: Santa Cruz, Bolivia. **NEW SYNONYMY.**

Platycoelia pomacea brasiliensis Ohaus lectotype male at ZMHB labeled a) "Planalto d. Parecis" (typeface), b) "Pl. pomacea brasiliensis Type Ohs." (orange label, handwritten), c) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface), d) "*Platycoelia pomacea* Erichson, 1847 ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Three male and one female paralectotypes at MNHN labeled a) "Jatahy Etat de Goyaz Ch. Pujol 1895-96" (typeface), b) "Ohaus determ. Pl. pomacea Er. v. brasiliensis Ohs. [♂/♀]" (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS PARALECTOTYPE A.B.T. SMITH 2001" (yellow label, handwritten and typeface), e) "*Platycoelia pomacea* Erichson, 1847 [♂/♀] Det:A.B.T.Smith 2002" (typeface). Four female paralectotypes at MNHN labeled as previous paralectotype omitting label b. One male paralectotype at ZMHB labeled a) "Jatahy (GOYAZ)" (typeface), b) "♂" (typeface), c) "Pl. pomacea brasiliensis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface), e) "*Platycoelia pomacea* Erichson, 1847 ♂ Det:A.B.T.Smith 2002" (typeface). One female paralectotype at ZMHB labeled as previous paralectotype except label b) "♂" (typeface). One male paralectotype at ZMHB labeled a) "Jatahy Goyaz" (typeface), b) "Pl. pomacea brasiliensis Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface), d) "*Platycoelia pomacea* Erichson, 1847 ♂ Det: A.B.T. Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "Jatahy Goyaz" (typeface), b) "Sept-Nov. 97." (handwritten), c) "♀" (typeface), d) "Pl. pomacea brasiliensis Cotype Ohs." (orange label, handwritten), e) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and type-

face), f) "*Platycoelia pomacea* Erichson, 1847 ♀ Det: A.B.T. Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "Miranda, XI.94.-II. 95. (Ander)" (typeface), b) "♀" (typeface), c) "Pl. pomacea brasiliensis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA POMACEA BRASILIENSIS OHAUS PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface), e) "*Platycoelia pomacea* Erichson, 1847 ♀ Det: A.B.T. Smith 2002" (typeface). The existence and location of other paralectotypes are unknown. There is no character-based justification for maintaining this subspecies as separate from *P. pomacea*, therefore I am placing the two names in synonymy. Type locality: Planalto do Panecis, Mato Grosso, Brazil.

NEW SYNONYMY.

DESCRIPTION. Male (n=68). Length 21.2-27.1 mm, width 12.9-17.1 mm. Color light green with thick yellow elytral suture; yellow tarsi, mouthparts; yellow or brown around some margins, sutures. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons and clypeus sparsely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.5 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular medial tooth, apex of tooth truncate, extending past apex of mentum. Mandibular scissorial region with strong apical tooth, weak medial tooth; molar region with well-developed lamellae. Maxilla with 3 apical, cup-like teeth. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly longer than other segments combined, subequal to length of frons. *Pronotum:* Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals sparsely punctate to impunctate. Suture with distinct apical spine. *Pygidium:* Width approximately 3.0 times length medially. Surface rugose, weakly con-

vex, glabrous except near apex; setae short, tawny. *Venter:* Thorax glabrous. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; apex rounded; shape triangular-elongate, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 2 teeth in apical half; apical tooth longer. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with elongated internomedial tooth bearing stridulatory ridge. Mesotarsomere and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw length less than protarsomere 5, thickened and elongate when compared with other claw, dorsolaterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.1 times longer than length of parameres. Parameres smooth, with weak apical bulb.

Female (n=57). Length 23.0-29.0 mm, width 14.9-16.5 mm. As male except in the following respects. *Head:* Antennal club approximately equal to segments 2-7. *Legs:* Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth absent. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the clypeus not reflexed; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; protibia with 2 prominent teeth; modified protarsal claw of male diagonally flattened; elytral suture distinctly yellow, with the apex forming an acute spine; elytron without yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; metasternum glabrous; metasternum and abdominal sternites uniformly

green to yellow; parameres with the apex rounded, expanded; parameres apicolaterally without a triangular hook or diagonal striae.

DISTRIBUTION (Fig. 47). Eastern slope of the Andes Mountains in Perú and Bolivia though the Rondonia, chaqueña, and cerrado highlands of central Brazil.

LOCALITY DATA. 125 specimens examined from AMNH, BMNH, CMNH, FSCA, HAHC, HNHM, ISNB, LACM, MGFT, MIZA, MLJC, MLPA, MNHN, RFMC, SEMC, SMFD, SMTD, USNM, ZMHB, ZMUH, ZSMC.

PERÚ (49). CUSCO (1): Río Urubamba. HUÁNUCO (15): Tingo María, No Data. JUNÍN (26): Chanchamayo, La Merced, Río Oxabamba, Vitoc. PASCO (1): Pozuzo. SAN MARTÍN (1): Moyobamba. UCAYALI (1): No Data. NO DATA (4).

BOLIVIA (30). BENI (1): Trinidad. COCHABAMBA (3): Cristal-Mayu, Yungas del Palmar. LA PAZ (3): Tumupasa, Yungas de La Paz. SANTA CRUZ (19): Buena Vista, San Javier, Sara. NO DATA (4).

BRAZIL (41). ACRE (1): Rio Branco. AMAZONAS (1): No Data. GOIÁS (18): Jatahy, Leopoldo de Bulhões. MATO GROSSO (6): Corumbá, Miranda, Planalto do Panecis. PARÁ (10): Cachimbo. RONDÔNIA (3): Forte Príncipe da Beira. NO DATA (2).

NO DATA (5).

One specimen labeled Baños, Ecuador and one labeled Linares, Chile were considered erroneous. These localities are far out of range for this species.

TEMPORAL DATA. March (6), April (1), August (1), September (2), October (15), November (24), December (5).

11. *Platycoelia occidentalis* Ohaus, 1904

(Figs. 19, 48)

Platycoelia occidentalis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia occidentalis*, Ohaus 1904b:257, 296, 338 [original description]; Ohaus 1905:167 [illustration]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

TYPE SPECIMENS. *Platycoelia occidentalis* Ohaus lectotype male at ZMHB labeled a) "R. Dagua, Colombia W. Rosenberg" (typeface), b) "Typus!" (red label, typeface), c) "Pl. occidentalis Ohaus" (red label, handwritten), d) "PLATYCOELIA OCCIDENTALIS OHAUS ♂ LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Two male and one female paralectotypes at ZMHB bearing labels similar to the lectotype and my yellow paralectotype label. The existence and location of other specimens from Ohaus' original type series are unknown. Type locality: Río Dagua, Valle del Cauca, Colombia.

DESCRIPTION. Male (n=16). Length 20.9-24.2 mm, width 13.5-14.9 mm. Color light green with thick yellow marginal band along basal half of elytral interval 2, lateral margin of elytron, medial base of elytron; yellow tarsi, protibia, mesothoracic process, head margins; weak, thin, longitudinal bands along elytral striae 1-6 (sometimes not visible). Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons sparsely punctate, clypeus densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.0 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth weakly truncate, extending past apex of mentum. Mandibular

scissorial region with strong apical tooth, weak medial tooth; molar region with well-developed lamellae. Maxilla with 3 apical, cup-like teeth. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than other segments combined, approximately equal to clypeal length. *Pronotum*: Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals sparsely punctate to impunctate. Suture with distinct apical spine (sometimes worn down). *Pygidium*: Width approximately 2.8 times length medially. Surface rugose, weakly convex, glabrous except near apex; setae short, tawny. *Venter*: Thorax sparsely setose, setae white. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; apex rounded; shape conical-elongate, not flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth weak. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.1 times longer than length of parameres. Parameres smooth, with strong lateral hook at apex (Fig. 19).

Female (n=18). Length 23.0-28.7 mm, width 14.3-16.9 mm. As male except in the following respects. *Head*: Antennal club shorter than segments 2-7. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the clypeus not reflexed; labrum with a broad, triangular apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; protibia dorsally without green coloration; elytron with the apex forming a weak nub or spine; elytron with yellow, longitudinal lines on interval 2 and base of striae 1; elytral apices not capable of completely covering the pygidium; metasternum and abdominal sternites uniformly green to yellow; mesothoracic process without strong green coloration; parameres with the apex rounded, expanded; parameres apicolaterally with a triangular hook and diagonal striae.

DISTRIBUTION (Fig. 48). Northwestern Andes Mountains in western Colombia.

LOCALITY DATA. 34 specimens examined from BCRC, BMNH, CASC, DEIC, ISNB, LACM, MGFT, USNM, ZMHB.

COLOMBIA (25). ANTIOQUIA (6): Jericó, Medellín, Quebrada Honda. BOLÍVAR (2): Carmen. CHOCÓ (2): El Siete, Río Atrato. VALLE DEL CAUCA (5): Cali, Río Dagua. NO DATA (10).

NO DATA (9).

TEMPORAL DATA. February (2), March (4), August (1).



Fig. 48. Distribution of *Platycoelia occidentalis* and *P. valida* in Colombia.

12. *Platycoelia valida* Burmeister, 1844

(Figs. 1, 6, 12, 26, 48, 49)

Platycoelia valida Burmeister, 1844 (valid name)

CATALOG. *Platycoelia valida*, Burmeister 1844:453 [original description] Blanchard

1851:227 [catalog listing]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Kirsch 1871:369 [comparison with *Platycoelia nervosa*]; Kirsch 1873:343 [comparison with *Platycoelia nervosa*]; Ohaus 1904b:277, 295, 296, 297, 323, 338 [redescription]; Ohaus 1905:167 [illustration]; Ohaus

1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57, 58 [cited as type species for *Platycoelia*, catalog listing]; Machatschke 1972:302 [catalog listing].

TYPE SERIES. *Platycoelia valida* Burmeister lectotype female at MLUH labeled a) "valida x Riche Nova Granad" (green label with black border, handwritten), b) "PLATYCOELIA VALIDA BURMEISTER ♀ LECTOTYPE A.B.T.SMITH 2001" (red label, handwritten and typeface), c) "MLU Halle WB Zoologie S.-Nr. 8/3/10 T.-Nr." (typeface and handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. The existence and location of other specimens from Burmeister's original type series are unknown. Type locality: Colombia.

DESCRIPTION. Male (n=118): length 21.3-26.0 mm, width 12.9-16.2 mm (Fig. 49). Color light green (occasionally yellow) with thick yellow marginal band along basal half of elytral interval 2, lateral margin of elytron, medial base of elytron; yellow tarsi, head margins, portions of legs. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons sparsely punctate, clypeus densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.0 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular medial tooth, apex of tooth weakly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity (Fig. 1). Antenna 10-segmented; club slightly shorter than other segments combined, approximately equal to clypeal length. **Pronotum:** Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. **Elytron:** Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals impunctate. Suture with distinct apical spine (sometimes worn down) (Fig. 6). **Pygidium:** Width approximately 2.5 times length medially. Surface rugose, weakly

convex, glabrous except near apex; setae short, tawny. **Venter:** Thorax sparsely setose, setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; apex rounded; shape conical-elongate, ventrally flattened. Abdomen glabrous. Apical spiracles not extruding. **Legs:** Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth weak. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth or swelling. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate (Fig. 12). Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. **Male Genitalia:** Parameres 1.2 times longer than length of phallobase (Fig. 26). Parameres smooth, with 3-8 strong lateral grooves at apex.

Female (n=63). Length 24.1-29.0 mm, width 15.1-17.7 mm. As male except in the following respects. **Head:** Antennal club approximately equal to segments 2-7. **Legs:** Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth or swelling. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the clypeus not reflexed; labrum with a broad, triangular apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; protibia dorsally green; elytron with an apex forming a weak nub or spine; elytron with yellow, longitudinal lines on interval 2 and base of striae 1; elytral apices not capable of completely covering the pygidium; mesothoracic process, metasternum, and abdominal sternites uniformly green to yellow; parameres with the apex rounded, expanded;

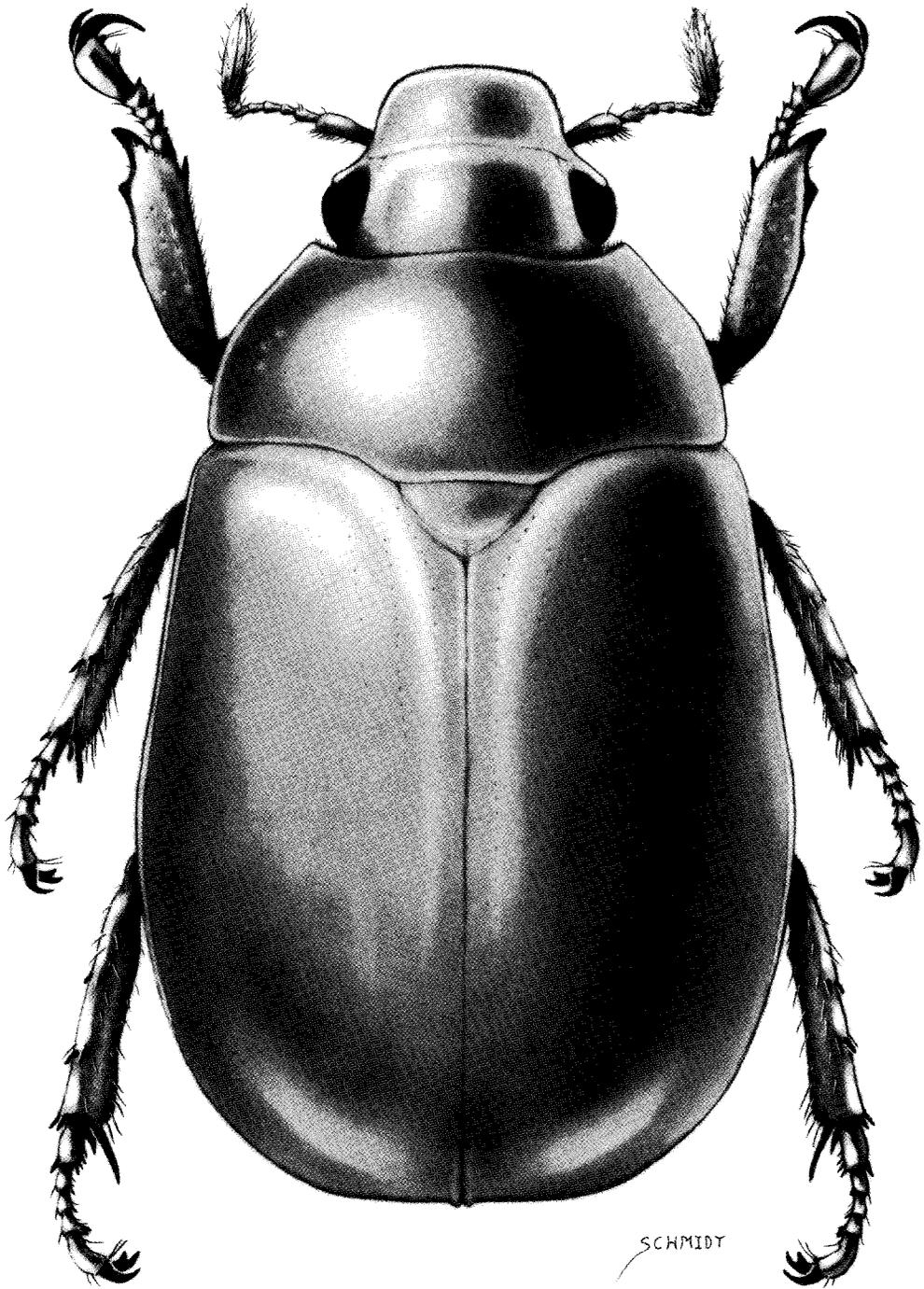


Fig. 49. *Platycoelia valida* male.

parameres apicolaterally with diagonal striae, without a triangular hook.

DISTRIBUTION (Fig. 48). Eastern cordillera of the Andes Mountains through Colombia. Found mainly in the Páramo biogeographic region (defined by Luteyn 1999, Morrone 1999).

LOCALITY DATA. 181 specimens examined from ABTS, AMNH, BCRC, CASC, CMNH, DJCC, FMNH, FSCA, HAHC, HNHM, MGFT, MIZA, MLUH, MXAL, PKLC, RACC, ROME, SEMC, SLTC, SMFD, SMTD, UNSM, USNM, ZMHB.

COLOMBIA (177). BOYACÁ (6): Muzo. CAQUETA (17): Gigante (vicinity), Vega del Caqueta, Yarí. CAUCA (4): Popayán, Tierra Adentro, No data. CUNDINAMARCA (17): Nimaima, Pacho, Villeta. DISTRITO CAPITAL (2): Bogotá. HUILA (110): Gigante, San Agustín. SANTANDER (7): La Carmen, La Cimitarra, Vélez. VALLE DEL CAUCA (2): Cali, Cartago. NO DATA (13).

NO DATA (4).

Specimens erroneously labeled Quito, Ecuador; Caracas, Venezuela; and Birmingham, Alabama were considered to have erroneous data.

TEMPORAL DATA. January (2), February (77), March (34), April (3), May (3), August (12), September (2), October (3), November (7), December (1).

13. *Platycoelia mesosternalis* Ohaus, 1904 (Figs. 7, 50)

Platycoelia mesosternalis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia mesosternalis*, Ohaus 1904b:286, 300, 339, 341 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing]; Martínez 1976:328 [distribution]; Ratcliffe 2002:26 [checklist].

TYPE SPECIMENS. *Platycoelia mesosternalis* Ohaus lectotype male at ZMHB labeled a) "Chirripo Atlantique Donkeir" (handwritten), b) "Typus!" (red label, typeface), c) "Pl. mesosternalis Ohaus" (red label, handwritten), d) "PLATYCOELIA MESOSTERNALIS OHAUS ♂ DET.A.B.T. SMITH 2001 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "Panama" (typeface), b) "♀" (typeface), c) "Platycoelia mesosternalis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA MESOSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Columb. Rio Dagua" (typeface), b) "♀" (typeface), c) "Platycoelia mesosternalis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA MESOSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). The existence and location of other paralectotypes are unknown. Type locality: Chirripó Valley, Cartago, Costa Rica.

DESCRIPTION. Male (n=74). Length 20.3-24.4 mm, width 12.7-14.9 mm. Color dorsally light green (sometimes darkened to brownish-green after death); yellow elytral, pronotal, head margin; weak yellowish-green longitudinal stripes on elytron. Ventrally light green, yellow. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons sparsely punctate (base) to moderately punctate (apex), clypeus densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded, weakly elevated. Eyes separated by approximately 5.3 transverse eye-widths. Labrum densely punctate; punctures moderately large, setose; setae tawny. Apex of labrum with large, triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Mandibular scissorial region with strong apical tooth, weak medial tooth; molar region with well-developed lamellae. Maxilla with 1 apical, cup-like tooth enveloping 1 re-

duced tooth. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than other segments combined, slightly shorter than clypeal length. *Pronotum*: Surface glabrous, sparsely to moderately punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals sparsely punctate to impunctate. Suture rounded apically. *Pygidium*: Width approximately 2.6 times length medially. Surface densely punctate, weakly convex, glabrous except near apex; setae short, tawny. *Venter*: Thorax glabrous. Mesothoracic process strongly produced, projecting anteriorly to procoxa; apex broadly rounded; distinctly diamond-shaped, ventrally flattened (Fig. 7). Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; first tooth largest, second, third teeth sequentially shorter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere, mesotarsomere, metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally (slightly diagonally) flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.6 times longer than length of parameres. Parameres smooth, slightly curved dorsally.

Female (n=43). Length 23.1-25.7 mm, width 13.8-15.9 mm. As male except in the following respects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of charac-

ters: frontoclypeal suture complete; eyes separated by more than 5 transverse eye-widths; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; antennal club shorter in length than the other segments combined, shorter than the clypeal length; elytral apices not capable of completely covering the pygidium; mesothoracic process diamond-shaped; mesosternum and abdominal sternites glabrous; protibial spur not noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males without apical stridulatory ridge; tarsomere 5 on all legs without an internal tooth; parameres with apex rounded, not expanded.

DISTRIBUTION (Fig. 50). Mid to low elevation montane areas of Costa Rica.

LOCALITY DATA. 121 specimens examined from ABTS, AMNH, AJRC, BCRC, INBC, MLJC, PKLC, RACC, SLTC, UCDC, UCRC, UNSM, USNM, ZMHB.

COSTA RICA (117). ALAJUELA (5): Estación San Ramón, Parque Nacional Rincon de la Vieja. CARTAGO (82): Chirripó Indian Reserve, Chirripó Valley, Grano de Oro, Irazú, Moravia, Pejibaya, Turrialba. GUANACASTE (24): Estación Cacao, Estación Pitilla. HEREDIA (2): Las Horquetas de Sarapiquí. LIMÓN (1): Batán. SAN JOSÉ (3): Estación Carrillo.

PANAMÁ (1). NO DATA (1).

NO DATA (3).

One paralectotype labeled "Columb. Rio Dagua" was considered to have no data. This disjunct record is unlikely, since no other specimens are known from Colombia. The Panamá record is somewhat dubious, but more likely considering the close proximity to some known localities for *P. mesosternalis* in Costa Rica.

TEMPORAL DATA. March (19), April (39), May (37), June (18), July (1).

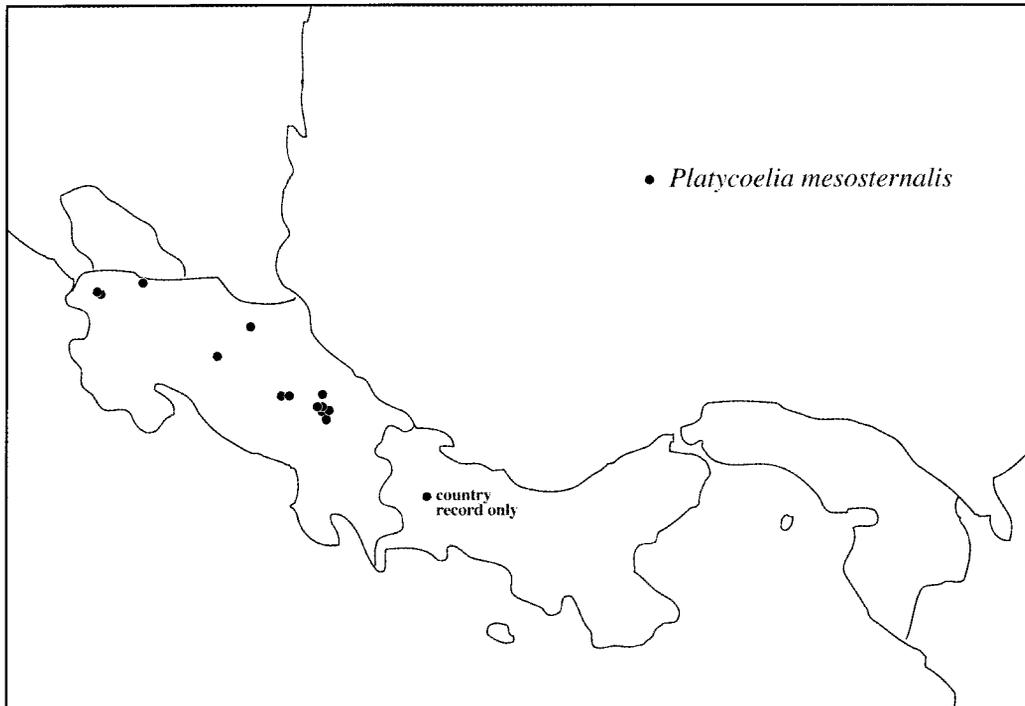


Fig. 50. Distribution of *Platycoelia mesosternalis* in Costa Rica and Panamá.

14. *Platycoelia peruviana* new species

(Figs. 27, 51, 52)

CATALOG. *Platycoelia boliviensis* (misapplied), Ohaus 1904b:276, 300, 303, 339 [description].

TYPE SPECIMENS. Male holotype, female allotype and 32 paratypes (19 male, 13 female). Holotype male and allotype female at AMNH, labeled "Mishqui-yacu Moyobamba San Martin, Peru VIII - 1947 Alt. 1200m." and "Felix Woytkowski Collector." Two male paratypes at MGFT and one male paratype at ABTS labeled "Perene Peru." One male paratype at ABTS labeled "Oxapampa Peru." One male paratype at ABTS labeled "Chanchamayo, Peru." "ExMusæo D.Sharp 1890," "Dr Ohaus Vidit 1903.," and "Ohaus determ. Pl. boliviensis Blanch. ♂." One male paratype at SMTD labeled "Dr. Bässler Chanchomayo," "Det Dr.Ohaus boliviensis

Blanch.," and "12205." One male paratype at UNSM labeled "Chanchamayo, Peru III.28 F 6032" and "H.Bassler Collection Acc. 33591." One male paratype at MNHN labeled "Paucartambo (Pérou) Coll.J.Clermont" and "MUSÉUM PARIS 1944 Coll. E. BENDERITTER." One male paratype from CASC labeled "M. Sani Beni Lima Peru,35" and "LWSaylor Colln." One male paratype at UNSM and one female paratype at CASC labeled "Peru." and "L.W. Saylor Collection." One male paratype at ZMHB labeled "Peruvio" and "boliviensis Bl. M.d. Type vergl. Paris XI.92." One male paratype at MGFT labeled "Peru Gerstner. 1912." One male paratype at CASC labeled "Peru," "Ohaus determ. *Platycoelia boliviensis* ♂. Blanch.," "L.W. Saylor Collection," and "P. boliviensis Bl. DET. L. W. SAYLOR." One male paratype at MNHN labeled "E. Peru," "ExMusæo H.W.BATES 1892," "Dr Ohaus Vidit 1903.," and "Ohaus determ. Pl. boliviensis Blanch. ♂." One male paratype at MNHN labeled "Perou," "ExMusæo

Mnisnech," "Dr Ohaus Vidit 1903.," and "Ohaus determ. Pl. boliviensis Blanch. ♂." One male paratype at CASC labeled "E. P. Reed Collection." One male paratype at ABTS labeled "Sta-Cruz Bolivia" and "Platycoelia boliviensis Blanch." One female paratype at ZMHB labeled "Oxapampa Peru," "♀," and "Platycoelia boliviensis Bl." Two female paratypes at ZMHB labeled "Peru Chanchamayo M. Freymann G." One female paratype at ABTS labeled "Chanchamago Peru," "F. SCHNEIDER," "45," and "Platycoelia boliviensis Bl." One female paratype at HNHM labeled "Chanchamayo" and "364. 42." One female paratype at SMFD labeled "Peruvia," "Coll. B. Schwarzer," and "Dr.Ohaus det. Platycoelia boliviensis Bl." One female paratype at MNHN labeled "boliviensis Bl. Perou," "ExMusæo A.SALLÉ 1897," "Dr Ohaus Vidit 1903.," and "Ohaus determ. Pl. boliviensis Blanch. ♀." One female paratype at ABTS and one female paratype at ZMHB labeled "PERU Rio Toro LaMerced/Chanchamayo." One female paratype at ZMHB labeled "PÉROU PROV. HUALLAGA RIO MIXIOLLO 1200m G.A. BAER 7-8-1900," "♀," and "Platycoelia boliviensis Bl." One female paratype at ZMHB labeled "S.Antonio Mapiri Bolivia," "♀," "boliviensis Blanch.," and "Platycoelia boliviensis Blanch." One female paratype at ISNB labeled "Oxapampa Peru," "Ohaus determ. Platycoelia nigrosternalis Ohs. ♀.," "R. I. Sc. N. B. 16.117L. Burgeon, coll. et det." One male paratype at ZSMC labeled "alte Sammlung," "Nova Grenada," and "boliviensis Blanch." One male paratype at ZSMC labeled "alte Sammlung." Type locality: Moyobamba, San Martín, Perú.

HOLOTYPE. Male: Length 21.7 mm, width 12.9 mm. Color light green with thick yellow elytral suture; yellow tarsi; legs partially yellow; elytral striae with dark punctures; elytral intervals 3, 5, 7 with weak yellow longitudinal line. Body ovate with elytral apex truncate, strongly convex. *Head:* Dorsal surface glabrous. Frons and clypeus moderately to densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeus trapezoidal. Eyes separated by approximately 3.5 transverse eye-widths. Labrum densely punctate, with

moderately large, setose punctures, setae tawny. Apex of labrum with triangular medial tooth, apex of tooth truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to segments 2-7, approximately equal to clypeal length. *Pronotum:* Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals impunctate. Suture rounded apically, without spine. *Pygidium:* Width approximately 2.4 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderate, glabrous except near apex; setae short, tawny. *Venter:* Thorax sparsely setose, setae white. Mesothoracic process strongly produced, projecting anteriorly to prothorax; shape triangular-elongate, apex rounded, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 2 teeth in apical quarter; apical tooth longer. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internopical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 with internobasal swelling. Prounguitractor plate cylindrical, with 2 sub-apical setae. Mesounguitractor plate and metaunguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length less than protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.5 times longer than length of parameres (similar to Fig. 27). Parameres smooth, dorsoventrally flattened.

ALLOTYPE. Length 25.1 mm, width 14.5 mm. As male except in the following respects. *Head:* Antennal club shorter than segments 2-7. *Legs:* Protarsomere 4 without internopical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

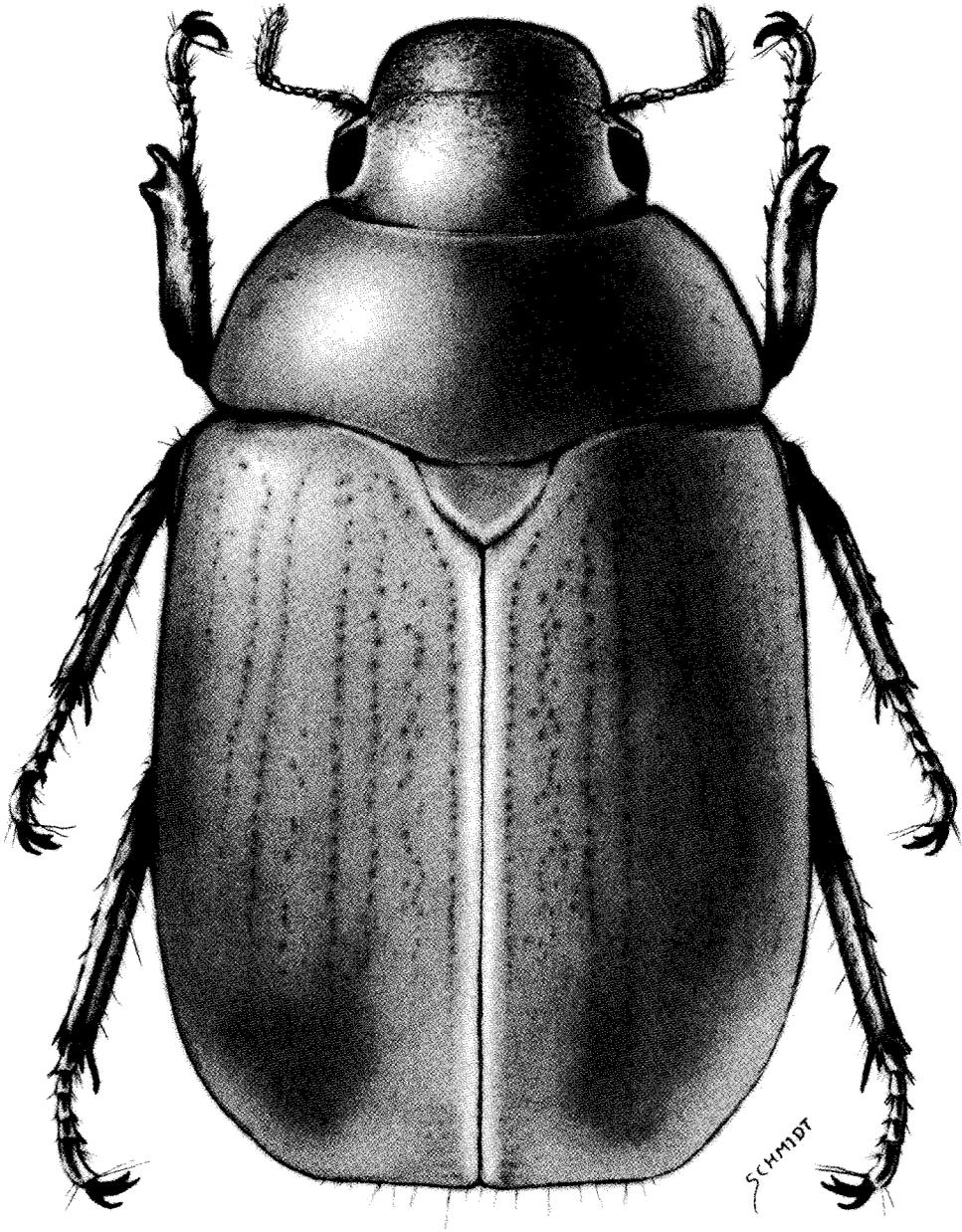


Fig. 51. *Platycoelia peruviana* male.

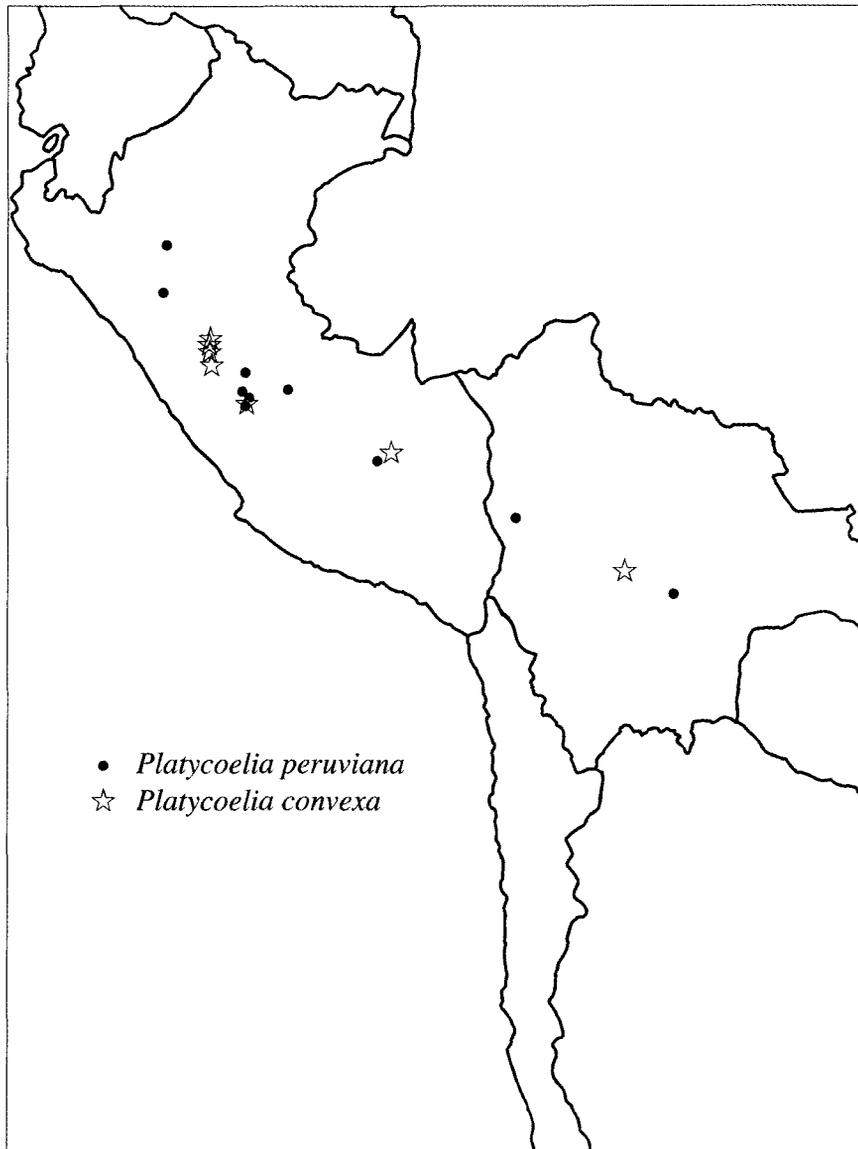


Fig. 52. Distribution of *Platycoelia peruviana* and *P. convexa* in Perú and Bolivia.

VARIATION. Male (n=19). Length 19.2-23.2 mm, width 11.7-13.5 mm (Fig. 51). Female (n=13). Length 19.9-25.4 mm, width 12.9-14.8 mm. Paratypes similar to holotype and allotype except in the following respects. Color of elytral intervals 3, 5, 7 sometimes without yellow longitudinal line, body sometimes yellow. Additional characters as follows. *Head:*

Mandibular scissorial region with strong apical tooth, no medial tooth; molar region with well-developed lamellae. Maxilla with 3 apical, cup-like teeth.

ETYMOLOGY. *Platycoelia peruviana* is derived from Latin meaning "the Peruvian *Platycoelia*."

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; antennal club shorter in length than other segments combined, shorter than clypeal length; elytron with a distinct yellow suture; elytral apices not capable of completely covering the pygidium; protibia in males with 2 prominent teeth; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males without an apical stridulatory ridge; protarsomere 5 in males with an internal stridulatory patch, without an internal tooth; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened, expanded.

DISTRIBUTION (Fig. 52). Northern Perú to central Bolivia in the puno and yungas regions of the Andes Mountains.

LOCALITY DATA. 34 specimens examined from AMNH, CASC, HNHM, ISNB, MGFT, MNHN, SMFD, SMTD, ZMHB, ZSMC.

PERÚ (29). CUSCO (1): Paucartambo. JUNÍN (13): Chanchamayo, Perené, Río Toro, Sanibeni. SAN MARTÍN (3): Moyobamba, Río Mixiollo. PASCO (3): Oxapampa. NO DATA (9).

BOLIVIA (2). LA PAZ (1): Mapiri. SANTA CRUZ (1): No Data.

NO DATA (3).

TEMPORAL DATA. March (1), August (3).

15. *Platycoelia forcipalis* Ohaus, 1904

(Figs. 20, 28, 53, 54)

Platycoelia forcipalis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia forcipalis*, Ohaus 1904b:276, 293, 310, 338, 341 [original description]; Ohaus 1905:167 [illustration]; Ohaus 1908:404 [distribution]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:302 [catalog listing]; Onore 1997:280 [entomophagy].

TYPE SPECIMENS. *Platycoelia forcipalis* Ohaus lectotype male at ZMHB labeled a) "Ecuador Quito" (typeface), b) "Typus!" (red label, typeface), c) "Pl. forcipalis Ohaus" (red label, handwritten), d) "PLATYCOELIA FORCIPALIS OHAUS ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "Ecuador Quito" (typeface), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "Pl. forcipalis Ohaus" (red label, handwritten), e) "Platycoelia forcipalis cotype Ohs" (orange label, handwritten), f) "PLATYCOELIA FORCIPALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. forcipalis ♂ Ohaus cotyp." (typeface and handwritten), d) "PLATYCOELIA FORCIPALIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. forcipalis ♀ Ohaus cotyp." (typeface and handwritten), d) "PLATYCOELIA FORCIPALIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Ohaus (1904b) had only the above four type specimens in the original type series. One specimen at ZMHB had an orange

"*Platycoelia forcipalis* cotype Ohs." label in Ohaus' handwriting and the label "Ecuador Pichincha." Since this locality is not mentioned in the original description and all four types are accounted for, this specimen is not part of the type series. Type locality: Quito, Ecuador.

DESCRIPTION. Male (n=37). Length 18.3-22.5 mm, width 11.4-12.8 mm (Fig. 53). Color dorsally light green to yellow (sometimes darkened to dark green after death); yellow elytral margin; yellow stripes on elytral intervals 1, 3, 5 (sometimes obsolete). Ventrally light green to yellow. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons sparsely punctate (base) to densely punctate (apex), clypeus densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded, weakly elevated. Eyes separated by approximately 5.3 transverse eye-widths. Labrum moderately punctate; punctures moderately large, setose; setae tawny. Apex of labrum with large, triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Mandibular scissorial region with strong apical tooth, molar region with well-developed lamellae. Maxilla with 2 slender teeth bracketing 1 large, cup-like tooth. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly longer than clypeal length. *Pronotum:* Surface glabrous, sparsely to moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae strongly impressed, punctate, punctures moderate with dark coloration; intervals impunctate. Suture with distinct apical spine (sometimes worn down). *Pygidium:* Width approximately 2.3 times length medially. Surface densely punctate, weakly convex, glabrous except near apex; setae short, tawny. *Venter:* Thorax moderately setose, setae cream colored. Mesothoracic process strongly produced, projecting anteriorly to procoxa; apex broadly rounded; shape conical-elongate, dorsoventrally flattened. Abdomen glabrous. Apical

spiracles not extruding. *Legs:* Protibia with 2 teeth in apical quarter; second tooth subequal in size to first tooth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length slightly greater than protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened with strong mediolateral curve, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Parameres 1.1 times longer than length of phallobase (Fig. 28). Parameres strongly dorsoventrally flattened with apicolateral tooth (Fig. 20), strongly projecting ventral hook.

Female (n=45). Length 22.0-26.5 mm, width 14.3-15.1 mm. As male except in the following respects. *Legs:* Protibia with 3 teeth in apical half. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth absent. Mesotarsomere and metatarsomere 5 internobasal tooth reduced to swelling or absent. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; eyes separated by more than 5 transverse eye-widths; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; elytral striae strongly impressed; apex of the elytral suture with a nub or weak spine; elytral apices not capable of completely covering the pygidium; metasternum with a dark medial patch; protibia in males with 2 prominent teeth; protibial spur not noticeably shorter than adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males without an apical stridulatory ridge; protarsomere 5 in

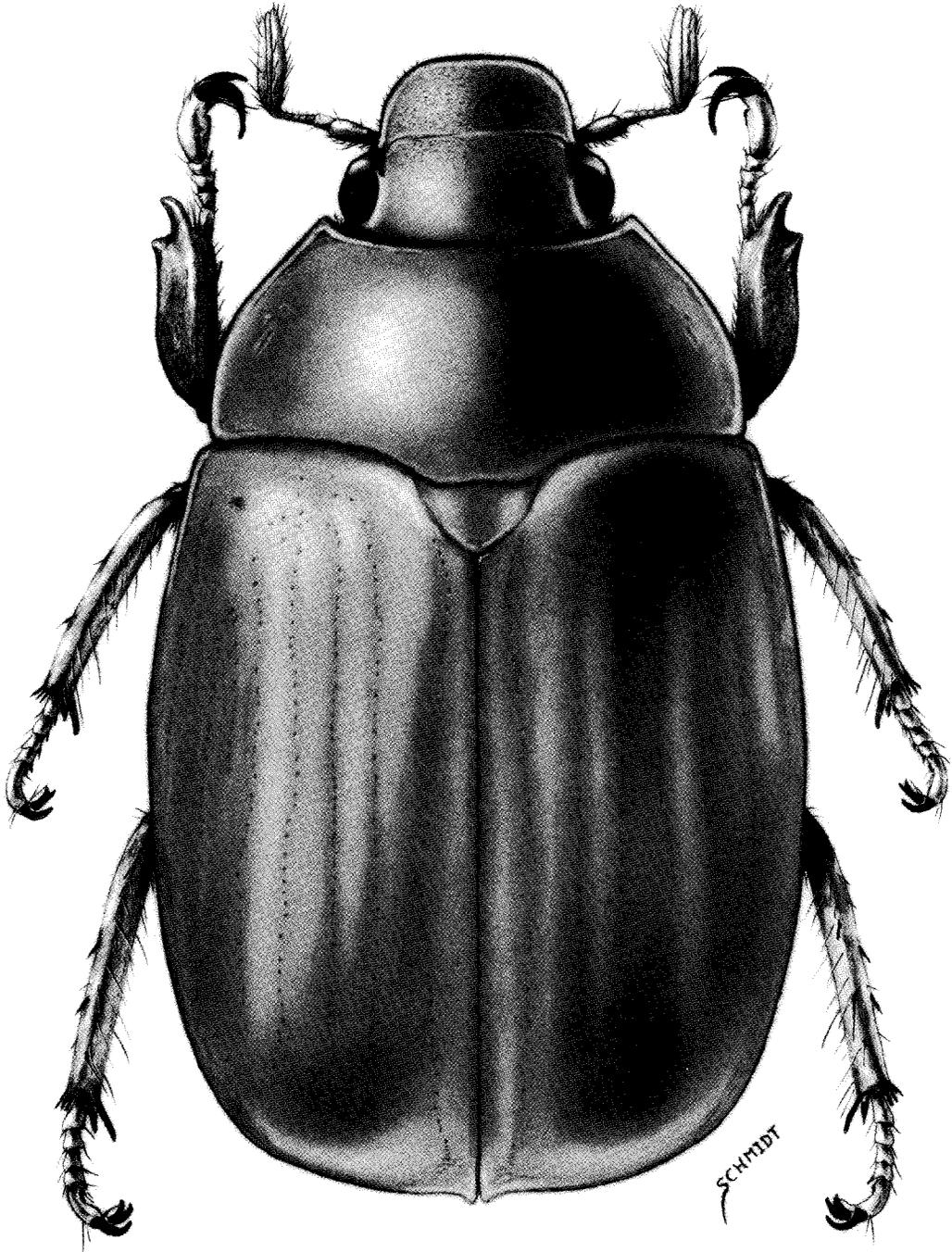


Fig. 53. *Platycœlia forcipalis* male.



Fig. 54. Distribution of *Platycoelia forcipalis*, *P. sandia*, and *P. penai* in Ecuador.

males with internomedial stridulatory tooth; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened, expanded, with a strongly projecting ventral tooth.

DISTRIBUTION (Fig. 54). Andes Mountains of central and southern Ecuador.

LOCALITY DATA. 82 specimens examined from BMNH, CMNH, HAHC, LACM, MNHN, QCAZ, RACC, USNM, VMCP, ZMHB.

ECUADOR (81). COTOPAXI (57): Las Pampas, Latacunga, Los Libres, Otonga, Palo Quemado. LOJA (5): Loja. PICHINCHA (18): Las Palmas, Palmeras, Pichincha, Quito, Santo Domingo, Tandapi. NO DATA (1).

NO DATA (1).

One specimen labeled "Bolivia, La Paz, Sorata" was considered to have no data.

TEMPORAL DATA. January (1), February (6), March (2), April (2), June (7), August (1), October (6), November (43).

16. *Platycoelia sandia* new species
(Figs. 54, 55)

TYPE SPECIMENS. Male holotype, female allotype and 10 paratypes (7 male, 3 female). Holotype male at HAHC labeled "ECUADOR Pcia. Napo Puente Azuela 1650 m a Venedictoff. Leg. Coll. Martínez Abr.-976" and "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." Allotype female at USNM labeled "ECUADOR: Morona Prov., Santiago la Esperanza, 1900m. 16 May 1976 Gordon Armstrong." One male and one female paratype at DJCC labeled "ECUADOR; NAPO HUACAMAYOS CUROE X-93." One male paratype at UNSM labeled "Sucula Macas 800m Ecuador." One male paratype at ZMHB labeled "Macas Ecuador or." One male paratype as SMTD labeled "Ecuador Stübel," "4406," and "flavostriata Blanch. 50." One male paratype at DCCC and one male and one female paratypes at ABTS labeled "ECUADOR Napo Pr. Cosanga, at lights 25 March 2000 Coll. D.C. Carlson." One male and one female paratypes at CASC labeled "ECUADOR: Napo: Cosanga: San Isidro Ranch. 0° 30' S 77° 54' W 2000m May 7, 1996 in cloud forest E.S. Ross collector California Academy of Sciences." Type locality: Puente Azuela, Napo, Ecuador.

HOLOTYPE. Male: length 23.1 mm, width 13.3 mm. Color dorsally lime green with lighter green elytral striae 1-5; yellow head, pronotum, scutellum, elytron margins; pygidium yellow with medial brown patch. Ventrally lime green with dark brown metasternum, abdominal sternites. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.1 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club

slightly longer than other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak apicolaterally, laterally, absent elsewhere. *Elytron:* Surface glabrous, densely punctate; punctures small; longitudinal striae distinguished only by yellow coloration. Suture angled apically, without spine. *Pygidium:* Width approximately 2.5 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae cream colored. *Venter:* Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose laterally, setae white. Apical spiracles not extruding. *Legs:* Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with weak internal stridulatory pad. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

ALLOTYPE. Female: length 25.1 mm, width 14.4 mm. As male except in the following respects. *Head:* Antennal club slightly shorter than other segments combined. *Legs:* Protibia with 3 teeth in apical half, third tooth obsolete. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal pad. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=7). Length 21.6-23.5 mm, width 12.6-12.9 mm (Fig. 55). Female (n=3). Length 25.6-25.7 mm, width 14.4-14.5 mm. Paratypes similar to holotype and allotype except in the following respects. Color of body sometimes dark green or brownish-

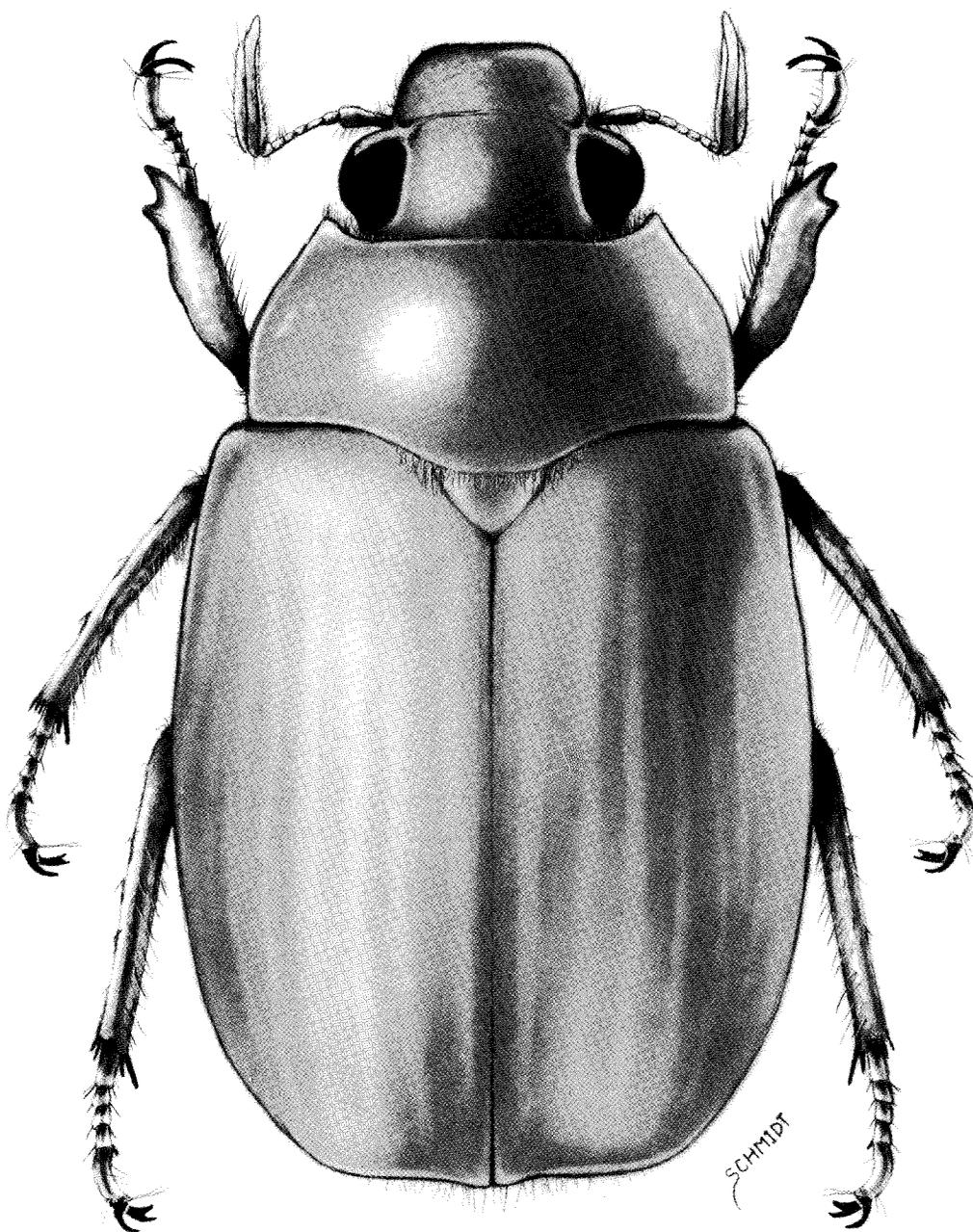


Fig. 55. *Platycoelia sandia* male.

green with lighter striae. Additional characters as follows. *Male Genitalia*: Phallobase 1.2 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ETYMOLOGY. *Platycoelia sandia* named after the watermelon-like appearance of this species. Sandía is the Spanish word for watermelon.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented, club length greater than other segments combined; pronotum surface densely punctate with mix of small and moderate punctures; elytron with yellow to light green, longitudinal lines on all striae; elytral apices capable of completely covering pygidium; pygidium entirely setose; metasternum and abdominal sternites dark brown to black; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 54). Occurs on the eastern slope of the Andes Mountains in Ecuador.

LOCALITY DATA. 12 specimens examined from CASC, DCCC, DJCC, HAH, SMTD, USNM, ZMHB.

ECUADOR (12). MORONA SANTIAGO (3): La Esperanza, Macas. NAPO (8): Cosanga, Hacienda San Isidro, Huacamayos, Puente Azuela. NO DATA (1).

TEMPORAL DATA. March (3), April (1), May (3), October (2).

17. *Platycoelia penai* Frey, 1967 (Fig. 54)

Platycoelia penai Frey, 1967 (valid name)

CATALOG. *Platycoelia penai*, Frey 1967:377 [original description]; Machatschke 1972:301 [catalog listing].

TYPE SPECIMENS. *Platycoelia penai* Frey holotype male at MGFT labeled a) "Ecuador, Quito S.Domingo, 2400m Pena, II.1965" (typeface), b) "TYPUS" (red label, typeface), c) "Platycoelia penai n. sp. det.G.Frey,1966 Type" (handwritten and typeface). Eight female paratypes with identical locality labels and similar type labels are at MGFT (6) and HAH (2). Frey (1967) stated that there are two males and seven females in the type series, but there are one holotype male and eight paratype females in the type series. Type locality: Santo Domingo (suburb of Quito), Pichincha, Ecuador.

DESCRIPTION. Male (n=4). Length 23.8-25.9 mm, width 14.4-14.9 mm. Color lime green to olive green (sometimes darkened to brownish-green) with elytral intervals 3, 5, 7 slightly lighter green; narrow yellow elytron, pronotum, scutellum margins; metasternum medially with longitudinal black line. Body ovate, strongly convex. *Head*: Dorsal surface glabrous. Frons moderately punctate (base) to rugopunctate (apex); clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.5 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, approximately equal to length of frons. *Pronotum*: Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punc-

tures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 2.5 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae cream colored. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. *Legs*: Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internopical stridulatory ridge. Protarsomere 5 with internal stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.5 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

Female (n=15). Length 25.4-29.1 mm, width 15.0-18.3 mm. As male except in the following respects. *Head*: Antennal club slightly shorter than other segments combined. *Legs*: Protibia with 3 teeth in apical half, third tooth shorter. Protarsomere 3-4 without internopical stridulatory ridge. Protarsomere 5 without internal tooth or ridge. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented, club length greater than other segments combined; pronotum surface densely punctate with mix of small and mod-

erate punctures; elytron with well-defined, yellow to light green, longitudinal lines on striae 3 and 5; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum and abdominal sternites green or yellow; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 54). Western slope of the Andes Mountains in north-central Ecuador.

LOCALITY DATA. 19 specimens examined from DCCC, HAHC, MGFT, QCAZ, UNSM.

ECUADOR (16). COTOPAXI (4): Otonga. PICHINCHA (12): Las Laureles, Santo Domingo (near Quito).

NO DATA (3).

Three specimens are at UNSM labeled "Zamora Chinchipe, Zamora." I consider this data to be unreliable (that locality is in the lowlands east of the Andes Mountains) and consider the specimens to be from Ecuador with no further data.

TEMPORAL DATA. February (15), March (1).

18. *Platycoelia galerana* new species (Fig. 56)

TYPE SPECIMENS. Male holotype, female allotype and 58 paratypes (40 male, 18 female). Holotype male at HAHC and one male paratype at ABTS labeled "ECUADOR Prov. NAPO Lumbaqui, 400 m Benedictoff leg. Coll. Martínez Marz.976" and "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." Allotype female and two male paratypes at HAHC and one female paratype at UNSM labeled "ECUADOR Pcia Napo Cosanga, 2150 m Nadia V.-leg. Coll. Martínez Marz.976" and "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." One male paratype at ZMUH labeled

“Coll. E. Ross Berlin N. 58,” “Valencia Venezuela,” “SS,” and “Coll. E. Ross Eing. Nr.6, 44.” One male paratype at ZMHB labeled “Santa Jnéz (Ecuad.) R. Haensch S.,” “Typus!,” “nigrosternalis Ohaus,” and “NOT A TYPE OF *P. NIGROSTERNALIS* Det: A.B.T. Smith 2002.” One male paratype at ZMHB labeled “Ecuador Baron,” “Cotypus!,” “Pl. nigrosternalis var. pygidialis Ohs.,” and “NOT A TYPE OF *P. NIGROSTERNALIS* Det: A.B.T. Smith 2002.” Nine male paratypes at QCAZ, two male paratypes at UNSM, one male paratype at ABTS, and one female paratype at MLJC labeled “ECUADOR NAPO SUMACO 10-20NOV 1995 ABarragán.” Four male paratypes at DCCC, one male and one female paratypes at BCRC, one male paratype at ABTS, one male paratype at MLJC, and one male paratype at UNSM labeled “ECUADOR Napo Pr. Cosanga, at lights 25 March 2000 Coll. D.C. Carlson.” One male paratype at USNM labeled “ECUADOR: Napo Baeza 7 March 1975 N. Vénédictoff.” One male paratype at USMN labeled “Ecuador, Napo Baeza 7 Mar. 1975.” One male paratype at UNSM labeled “ECUADOR, Napo Prov. vicinity Cosanga, 2050m Sept 17-30, 1996 E. Giesbert, coll.” One male paratype at UNSM labeled “Hacienda San Isidro May 8, 1996 attr. to mercury vapor light Carmen Bustamante.” Two male paratypes at DJCC labeled “ECUADOR; NAPO HUACAMAYOS CUROE X-93.” One male paratype at HNHM labeled “EQUADOR, Prov. Tena Puyo, Oriente 1998. I. 20.” One male paratype at SMTD labeled “Ecuador Stübil,” “4389,” “Staatl. Museum für Tierkunde Dresden,” and “marginata Burm.” One male paratype at QCAZ labeled “ECUADOR LOJA LA TOMA 1800m 22MAY1996 P. Salvador.” One male paratype at BMNH labeled “Ecuador: Prov. Loja 2220 metr. Prof. C. Carrión. B.M. 1928-69.” One male paratype at FMNH labeled “Nov. 64 Pur. R. de L. Zarayacu, Oriente Ecuador,” “A.C. Allyn Acc. 1969-20,” and “Pres. by Arthur C. Allyn.” One male paratype at ZMHB labeled “O. ECUADOR Macas Feyer,” “*Platycoelia variolosa* Ohs.,” and “Colombia Tatama.” One female paratype at HAHC and one female paratype at ABTS labeled “ECUADOR: Napo Baeza, 2000m 19-

29.II.1979 H.&A. Howden.” One female paratype at QCAZ labeled “ECUADOR NAPO LAS PALMAS 1858m 78°42'W 0°33'S 13 SEP1996 M. Vallejo.” One female paratype at ABTS labeled “San Antonio Banos Ecuador 2 VII 1937 SA WCMacIntyre” and “OL Cartwright Collection 1960.” One female paratype at USNM labeled “2200 M Banos Ecuador May 38 SA WCMacIntyre” and “OL Cartwright Collection 1960.” Two female paratypes at MNHN labeled “Normandia Ecuador or.” and “Museum Paris ex Coll. R. Oberthur.” One female paratype at LACM labeled “5.” One female paratype at USNM labeled “ECUADOR: Zamora- Chinchipe, Zamora 10 Feb 1978.” One female paratype at USNM labeled “ECUADOR: Morona-Santiago, 18.1km WSW Plan de Milagro, 3350m, 17:30-21:00hr 12 March 1990 S.J. Weller, M.J. Ryan P. Batra, D.&A. Hillis.” One female paratype at ABTS labeled “O. ECUADOR Rio Pastassa E. Feyer S.,” “♀,” and “*Platycoelia variolosa* Ohs.” One female paratype at ZMHB labeled “Loja Ostcordill. Sabanilla A.O.XI05-V06” and “*Platycoelia nigrosternalis* Ohs.” One female paratype at MGFT labeled “Ecuador Loja Pena, III. 1965.” One female paratype at ZMHB labeled “ECUADOR Riobamba-Macas 3400.1300 m. E. Feyer S.” and “*Platycoelia nigrosternalis* Ohs.” One female paratype at NMPC labeled “ECUADOR Riobamba-Macas 3400.1300 m. E. Feyer S.,” “COTYPE,” “Ohaus determ. *Platycoelia variolosa* Cotype ♀ Ohs.,” “*variolosa* Ohs” and “NOT A TYPE OF *P. VARIOLOSA* Det: A.B.T. Smith 2002.” One male paratype at ABTS labeled “ECUADOR: Pastaza, 20. V 2002 D. P. Velastigui.” One male paratype at SLTC labeled “ECUADOR: Pachinch. 16.I.2002 D. P. Velastigui” and “Collection Stephane Le Tirant.” Ohaus (1904b) gave the variety name “*P. nigrosternalis* var. *pygidialis*” to a specimen of *P. galerana*. This variety name is infrasubspecific, and is not an available name regulated by the ICZN. Type locality: Lumbaqui, Sucumbíos, Ecuador.

HOLOTYPE. Male: length 25.8 mm, width 14.0 mm. Color dorsally olive green with yellow elytron, pronotum, and scutellum mar-

gins. Ventrally with dark brown metasternum and abdominal sternites. Body ovate, strongly convex. *Head*: Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by approximately 3.4 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly shorter than length of frons. *Pronotum*: Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 2.6 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly past prothorax; shape conical-elongate, apex rounded, ventrally flattened. Abdomen sparsely setose, setae white. Apical spiracles not extruding. *Legs*: Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internobasal stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.5 times longer than length of

parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ALLOTYPE. Female: length 26.1 mm, width 14.8 mm. As male except in the following respects. *Head*: Antennal club approximately equal to segments 2-7. *Legs*: Protibia with 3 teeth in apical half, third tooth shorter. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=40). Length 23.7-26.7 mm, width 13.8-16.0 mm. Female (n=18). Length 28.2-31.4 mm, width 16.2-17.9 mm. Paratypes similar to holotype and allotype except in the following respects. Color of body sometimes dark green or brownish-green. Ventrally with black to reddish-brown metasternum and abdominal sternites (sometimes green along lateral edge).

ETYMOLOGY. *Platycoelia galerana* is named after the Cordillera Galeras, the region of the eastern Andes Mountains where much of the type series was collected.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented, club length greater than other segments combined; pronotum surface densely punctate with a mix of small and moderate punctures; scutellum disc usually green; elytron with well-defined, yellow, longitudinal lines on striae 3 and 5; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum black (at least medially); abdominal sternites dark; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

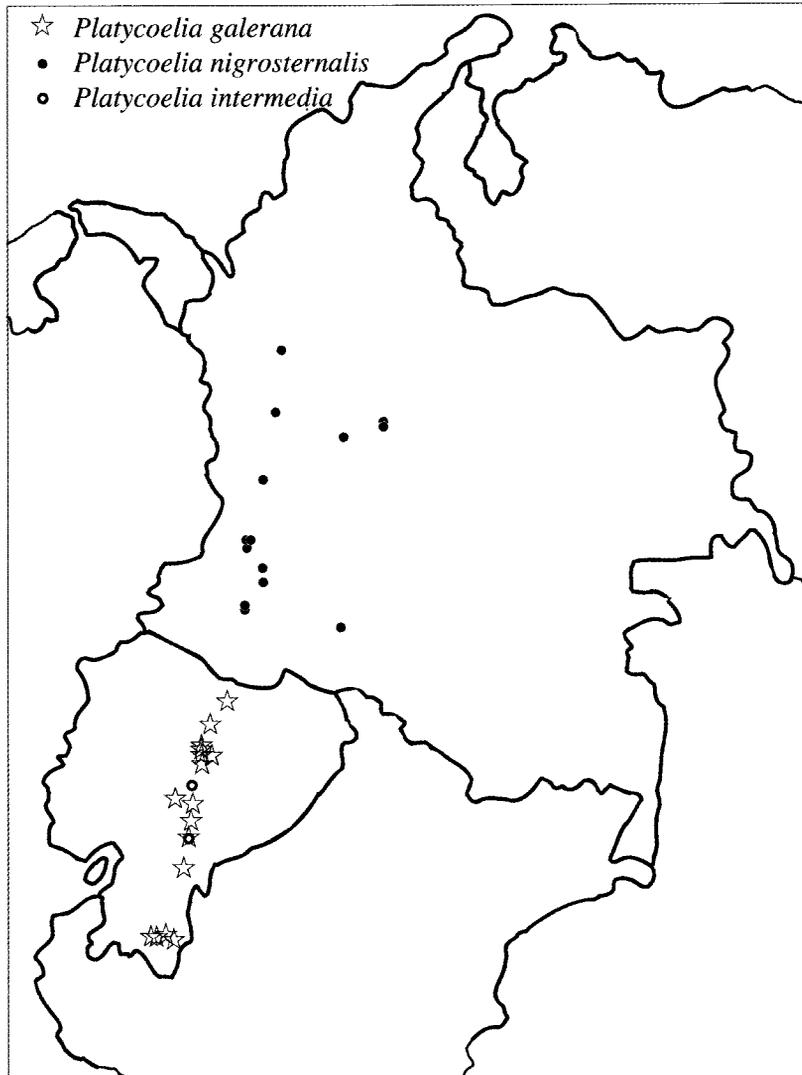


Fig. 56. Distribution of *Platycyelia galerana*, *P. nigrosternalis*, and *P. intermedia* in Colombia and Ecuador.

DISTRIBUTION (Fig. 56). Eastern slope of the Andes Mountains in Ecuador.

LOCALITY DATA. 60 specimens examined from BMNH, DCCC, DJCC, FMNH, HAHC, HNHM, HSIC, LACM, MGFT, MNHN, NMPC, QCAZ, SLTC, SMTD, UNSM, USNM, ZMHB, ZMUH.

ECUADOR (58). LOJA (3): La Toma, Loja, No Data. MORONA SANTIAGO (2): Macas, Plan de Milagro (18 km WSW). NAPO (37): Baeza, Cosanga, Huacamayos, Las Palmas, Sarayacu, Sumaco. PASTAZA (3): Puyo, Río Pastaza.

PICHINCHA (1): No Data. SUCUMBÍOS (2): Lumbaqui. TUNGURAHUA (2): Baños. ZAMORA CHINCHIPE (2): Zamora, Sabanilla. NO DATA (6).

NO DATA (2).

One specimen labeled "Valencia Venezuela" was considered to have no data. This locality is far outside the known range of the species.

TEMPORAL DATA. January (2), February (3), March (17), May (4), July (1), September (2), October (2), November (14).

19. *Platycoelia flavostriata* (Latreille, 1813)

(Figs. 21, 29, 57, 58, back cover)

Melolontha flavostriata Latreille, 1813 (original combination, valid name)

CATALOG. *Melolontha flavostriata*, Latreille 1813:58 [original description].

Platycoelia flavostriata, Dejean 1833:154 [new combination, checklist]; Dejean 1836:171 [checklist]; Blanchard 1851:227 [catalog listing]; Arrow 1899:369 [comment on nomenclature]; Ohaus 1904b:302, 304, 339 [redescription]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:58 [catalog listing]; Frey 1967:377 [comparison with *Platycoelia penail*]; Machatschke 1972:301, 302 [cited as type species for *Platycoelia*, catalog listing].

Platycoelia flavolineata (= *Platycoelia flavostriata*, *lapsus calami*), Ohaus 1904b:274, 340 [comment on morphology].

Platycoelia flavostriata variety *herbacea* (unavailable, infrasubspecific name), Ohaus 1904b:303, 339 [original description as variety]; Ohaus 1908:404 [distribution]; Ohaus 1918:177 [catalog listing as variety]; Blackwelder 1944:247 [checklist as variety]; Machatschke 1965:58 [catalog listing as form]; Machatschke 1972:302 [catalog listing as form].

TYPE SPECIMENS. *Melolontha flavostriata* Latreille lectotype male at BMNH labeled a) "Type" (round label with red border, typeface), b) "544." (handwritten), c) "67 45" (typeface), d) "*Platycoelia flavostriata* Latreille h. in Amer. Aequin. D. Bonpl." (green label, handwritten), e) "So named in Reiches Collection. C.W." (typeface), f) "MELOLONTHA FLAVOSTRIATA LATREILLE ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface), g) "*Platycoelia flavostriata* (Latreille, 1813) ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Latreille (1813) did not state how many specimens were in the type series. The lectotype was identified by Arrow (1899), who stated that "a type specimen (of *P. flavostriata*) received by Dejean

from Latreille is in the British Museum." The green label "d" on the lectotype (transcribed above) is in Dejean's handwriting and is the typical form for his labels (compared with an example in Horn and Kahle [1936]). Arrow (1899) speculated that there was only one specimen in the type series, but Latreille did not explicitly state this. The lectotype has no locality data but is most similar to specimens collected in Colombia. Humboldt and Bonpland traveled through Colombia in 1801-1802 (Papavero 1971). Although the date on Latreille's volume containing the original description of *P. flavostriata* was 1812, Sherborn (1899) determined that the actual publication date was 1813. Ohaus (1904b) described a variety (*P. flavostriata* variety *herbacea*) of this species based on one female specimen (from the Oberthür collection but now at ZMHB). This is an infrasubspecific (unavailable) name that is not regulated by the ICZN. Type locality: Colombia.

DESCRIPTION. Male (n=117). Length 22.0-30.1 mm, width 11.9-17.8 mm (Fig. 57). Color lime green to olive green (sometimes darkened to brownish-green) or yellow; yellow elytron, pronotum, scutellum margins; elytron with thin, greenish-yellow longitudinal stripes on elytral striae 1-7 (sometimes some are obsolete). Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially or complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.4 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented (sometimes appearing 9-segmented); club slightly shorter than other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron:* Surface glabrous; longitu-

dinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 2.8 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose laterally, setae white. Apical spiracles not extruding. *Legs*: Protibia with 2 large teeth in apical quarter; third, short tooth sometimes apparent (often obsolete). Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internobasal stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.5 times longer than length of parameres (Fig. 29). Parameres dorsoventrally flattened, apicomedialely acute (Fig. 21).

Female (n=142). Length 22.8-30.1 mm, width 14.1-17.9 mm. As male except in the following respects. *Head*: Antennal club slightly longer than segments 2-7. *Legs*: Protibia with 3 teeth in apical half, third tooth short. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; pronotum surface densely punctate

with a mix of small and moderate punctures; scutellum disc usually green; elytron with well-defined, yellow, longitudinal lines on striae 1-7; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum and abdominal sternites green; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 58). Most specimens are from the Andes Mountains from western Venezuela to central Colombia. A few specimens are from widely scattered localities along the eastern slope of the Andes Mountains from Ecuador to northern Argentina. More collecting needs to be done before any conclusions can be drawn about the exact range of this species south of Colombia.

LOCALITY DATA. 260 specimens examined from ABTS, AMNH, BMNH, CASC, CBAC, CMNH, DEIC, DJCC, FGIC, FMNH, FSCA, HAHC, HNHM, LACM, LEMQ, MCZC, MGFT, MIZA, MNHN, MNNC, SLTC, SMFD, SMTD, UCDC, UNSM, USNM, ZMHB, ZMUH.

VENEZUELA (213). ARAGUA (95): Carretera Maracay – Choroní, Carretera Maracay – Ocumare de la Costa, Choroní, El Limón, Estación Biológica Rancho Grande, La Tiara, Maracay, Pico Guacamaya, Portapan, Puerto Portochuelo (Parque Nacional Henri Pittier), Tejerias, Tiara, No Data. **DISTRITO FEDERAL** (1): Antímamo. **MÉRIDA** (32): Mérida. **MIRANDA** (16): Los Alpes, Los Charros. **TÁCHIRA** (48): Carretera Bramón – Delicias, Carretera Rubio – Delicias, Palmira, Rubio. **NO DATA** (21).

COLOMBIA (31). **BOYACÁ** (10): Muzo. **CAUCA** (2): No Data. **CUNDINAMARCA** (1): Monterredondo. **DISTRITO CAPITAL** (2): Bogotá. **HUILÉ** (1): Gigante. **MAGDALENA** (2): Cincinati, Sierra Nevada de Santa Marta. **NO DATA** (13).

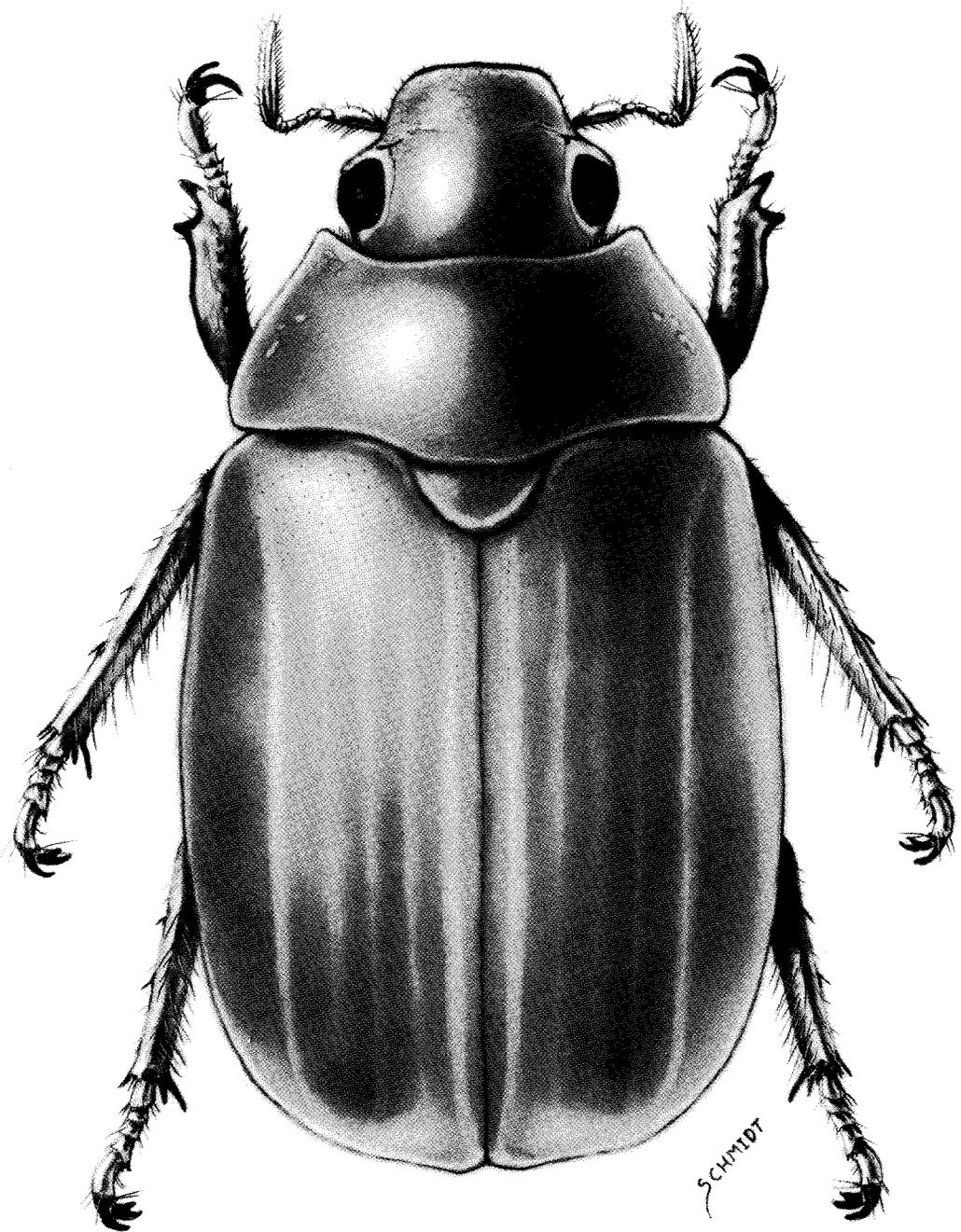


Fig. 57. *Platycoelia flavostriata* male.

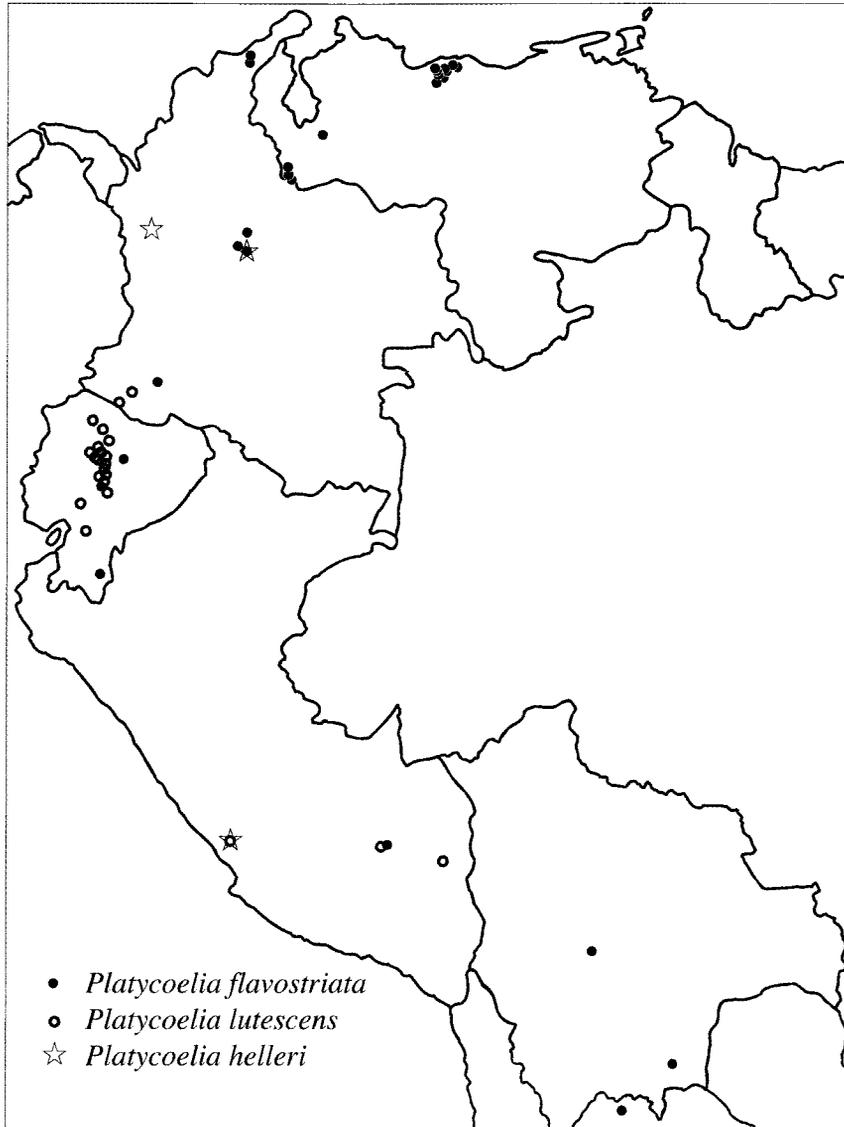


Fig. 58. Distribution of *Platycoelia flavostriata*, *P. lutescens*, and *P. helleri* in South America.

ECUADOR (4). NAPO (1): Sierra de Huacamayos. TUNGURAHUA (1): Ambato. ZAMORA CHINCHIPE (1): Zamora. NO DATA (1).

PERÚ (2). CUSCO (2): Paucartambo.

BOLIVIA (3). COCHABAMBA (1): Incachaca. TARIJA (2): Villa Montes.

ARGENTINA (1). JUJUY (1): No Data.

NO DATA (6).

Four specimens labeled "Caracas" and "Bolivar: El Dorado" were considered to be from Venezuela with no further data. The low elevation of these localities makes it unlikely that the specimens were collected there.

TEMPORAL DATA. January (1), February (2), March (2), April (20), May (32), June (43), July (11), August (12), September (3), October (2), November (3), December (46).

20. *Platycoelia nigrosternalis*

Ohaus, 1904

(Fig. 56)

Platycoelia nigrosternalis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia nigrosternalis*, Ohaus 1904b:305, 339 [original description]; Ohaus 1908:404 [biology]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

Platycoelia nigrosternalis variety *laevigata* (unavailable, infrasubspecific name), Ohaus 1904b:306, 339 [original description as variety]; Ohaus 1918:177 [catalog listing as variety]; Blackwelder 1944:247 [checklist as variety]; Machatschke 1965:58 [catalog listing as form]; Machatschke 1972:302 [catalog listing as form].

Platycoelia nigrosternalis variety *pygidialis* (unavailable, infrasubspecific name), Ohaus 1904b:306, 339 [original description as variety]; Ohaus 1918:177 [catalog listing as variety]; Blackwelder 1944:247 [checklist as variety]; Machatschke 1965:58 [catalog listing as form]; Machatschke 1972:302 [catalog listing as form].

TYPE SPECIMENS. *Platycoelia nigrosternalis* Ohaus lectotype male at ZMHB labeled a) "Colombia (Cauca) Distrito de Pereira Roman M. Valencia 1886." (typeface), b) "Platycoelia nigrosternalis Ohs. Cotype" (orange label, handwritten), c) "PLATYCOELIA NIGROSTERNALIS OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Venezuela" (typeface), b) "Platycoelia nigrosternalis Ohs. Cotype" (orange label, handwritten), c) "PLATYCOELIA NIGROSTERNALIS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Merida Venez." (typeface), b) "Platycoelia nigrosternalis Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA NIGROSTERNALIS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Colombie Popayan Abbé Gaujon 1899" (typeface), b) "Ohaus determ. Pl. nigrosternalis Ohaus ♂." (typeface and handwritten), c) "PLATYCOELIA NIGROSTERNALIS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "R.Dagua, Columbia W.Rosenberg," (typeface), b) "♀" (typeface), c) "Cotypus!" (red label, typeface), d) "Platycoelia nigrosternalis Ohs. Cotype" (orange label, handwritten), e) "PLATYCOELIA NIGROSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype from ZMHB labeled a) "Bogota Columb." (typeface), b) "Typus!" (red label, typeface), c) "nigrosternalis Ohaus" (red label, handwritten), d) "PLATYCOELIA NIGROSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Ohaus (1904b) did not state how many specimens were in the type series. The existence and location of other paralectotypes are unknown. Ohaus (1904b) described two varieties of this species each based on one specimen (both housed at ZMHB). These are infrasubspecific (unavailable) names that are not regulated by the ICZN. The specimens labeled by Ohaus as "types" of these varieties are excluded from the type series of *P. nigrosternalis* under ICZN Article 72.4.1. The male specimen considered to be of the variety "*pygidialis*" is at ZMHB labeled "Ecuador Baron." and is conspecific with *P. galerana*. The male specimen considered to be of the variety "*laevigata*" is at ZMHB labeled "Baranquilla Columb." Two female specimens from ZMHB labeled "VENEZ. Caracas," and "Columb. Cauca," both have Ohaus' orange "Platycoelia nigrosternalis Ohs. Cotype" labels. One female specimen at USNM labeled "Santé Fé de Bogota." has Ohaus' "Ohaus determ. Platycoelia nigrosternalis Cotype ♀ Ohs." label. One male specimen at ZMHB labeled "Santa Jnés (Ecuad.) R.Haensch S.," "Typus!," and "nigrosternalis Ohaus" These four specimens are not part of the original type series because

LECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Colombie Popayan Abbé Gaujon 1899" (typeface), b) "Ohaus determ. Pl. nigrosternalis Ohaus ♂." (typeface and handwritten), c) "PLATYCOELIA NIGROSTERNALIS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "R.Dagua, Columbia W.Rosenberg," (typeface), b) "♀" (typeface), c) "Cotypus!" (red label, typeface), d) "Platycoelia nigrosternalis Ohs. Cotype" (orange label, handwritten), e) "PLATYCOELIA NIGROSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype from ZMHB labeled a) "Bogota Columb." (typeface), b) "Typus!" (red label, typeface), c) "nigrosternalis Ohaus" (red label, handwritten), d) "PLATYCOELIA NIGROSTERNALIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Ohaus (1904b) did not state how many specimens were in the type series. The existence and location of other paralectotypes are unknown. Ohaus (1904b) described two varieties of this species each based on one specimen (both housed at ZMHB). These are infrasubspecific (unavailable) names that are not regulated by the ICZN. The specimens labeled by Ohaus as "types" of these varieties are excluded from the type series of *P. nigrosternalis* under ICZN Article 72.4.1. The male specimen considered to be of the variety "*pygidialis*" is at ZMHB labeled "Ecuador Baron." and is conspecific with *P. galerana*. The male specimen considered to be of the variety "*laevigata*" is at ZMHB labeled "Baranquilla Columb." Two female specimens from ZMHB labeled "VENEZ. Caracas," and "Columb. Cauca," both have Ohaus' orange "Platycoelia nigrosternalis Ohs. Cotype" labels. One female specimen at USNM labeled "Santé Fé de Bogota." has Ohaus' "Ohaus determ. Platycoelia nigrosternalis Cotype ♀ Ohs." label. One male specimen at ZMHB labeled "Santa Jnés (Ecuad.) R.Haensch S.," "Typus!," and "nigrosternalis Ohaus" These four specimens are not part of the original type series because

none of these localities were mentioned in the original description (Ohaus 1904b). Type locality: Pereira, Cauca, Colombia.

DESCRIPTION. Male (n=42). Length 23.8-28.5 mm, width 13.7-17.2 mm. Color dorsally light green (sometimes yellow or darkened to dark green or brownish-green) with lighter green elytral intervals 3, 5, 7; yellow elytron, pronotum, scutellum margins. Ventrally light green, metasternum with large, black, medial spot. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by approximately 3.9 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly less than other segments combined, slightly longer than clypeal length. *Pronotum:* Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium:* Width approximately 2.3 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae cream colored. *Venter:* Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose, setae white. Apical spiracles not extruding. *Legs:* Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internobasal stridulatory tooth.

Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.4 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

Female (n=25). Length 26.2-31.1 mm, width 15.0-17.9 mm. As male except in the following respects. *Head:* Antennal club approximately equal to segments 2-7. *Legs:* Protibia with 3 teeth in apical half, third tooth shorter. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented, club length not greater than other segments combined; pronotum surface densely punctate with a mix of small and moderate punctures; scutellum disc usually green; elytron with well-defined, yellow, longitudinal lines on striae 3 and 5; elytral apices capable of completely covering the pygidium; elytron with a distinct yellow suture; pygidium entirely setose; mesothoracic process lighter in color than metasternum; metasternum with a central black patch; abdominal sternites green; protibial spur noticeably shorter than adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 56). Western cordillera of the Andes Mountains in Colombia.

LOCALITY DATA. 66 specimens examined from AMNH, BMNH, CASC, CMNH, CNCI, DEIC, EMEC, FSCA, HAHC, MCZC, MGFT, MNHN, MXAL, OSAC, SMTD, USNM, ZMHB, ZMUH.

COLOMBIA (60). **ANTIOQUIA** (5): Yarumal, No Data. **CALDAS** (1): Manizales. **CAQUETÁ** (1): No Data. **CAUCA** (25): País Pamba, Pereira, Popayán, Silvia (20 km W), Timbío, No Data. **DISTRITO CAPITAL** (3): Bogotá, Santé Fé de Bogotá. **QUINDÍO** (1): Quindío. **VALLE DE CAUCA** (10): Cali, Cali (18 km W), Calima, San Antonio. **NO DATA** (14).

NO DATA (6).

One specimen labeled “Barranquilla” was considered from Colombia with no further data. Four specimens labeled “Venezuela” were considered to have no data. One specimen labeled “Venezuela D. F. Co Narquata” was considered to have no data. These localities are either far out of the known range or too low in elevation to support populations of this species.

TEMPORAL DATA. January (1), February (1), March (3), April (3), May (2), July (8), September (2), October (2), December (1).

21. *Platycoelia humeralis* Bates, 1888

(Figs. 59, 60)

Platycoelia humeralis Bates, 1888 (valid name)

CATALOG. *Platycoelia humeralis*, Bates 1888:293 [original description]; Ohaus 1904b:294, 297, 305, 306, 339, 340 [redescription]; Ohaus 1905:167 [illustration]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:56, 58 [catalog listing]; De Ruelle 1970:93 [catalog listing]; Machatschke 1972:302 [catalog listing]; Martínez 1976:328 [distribution]; Thomas 1993:402 [checklist]; Morón 1994b:17, 44 [distribution, biology, key to Scarabaeoidea of Sierra de Hidalgo, México]; Morón 1995:195 [comment on distribution]; Morón 1997:51 [redescription]; Ratcliffe

2002:26 [checklist]; Smith 2002a:381 [phylogenetic analysis of Brachysternina].

TYPE SPECIMENS. *Platycoelia humeralis* Bates 1888: 293. Lectotype female at BMNH labeled a) “Type” (round label with red border, typeface), b) “Sp. figured.” (typeface), c) “V. de Chiriqui, 4000 ft. Champion.” (typeface), d) “*Platycoelia humeralis* Bates” (handwritten), e) “B. C. A. Coll. II. (2). *Platycoelia humeralis*.” (typeface), f) “**PLATYCOELIA HUMERALIS BATES DET: A. B. T. SMITH 2001 LECTOTYPE ♀**” (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Nine male paralectotypes at ANSP, BMNH, MCZC, MNHN (4), USNM, and ZMHB all bearing the label “V. de Chiriqui, 4000-6000 ft. Champion.” (typeface) and my yellow paralectotype label. Twenty-one female paralectotypes at AMNH, ANSP (2), BMNH (2), CNCI, DEIC (3), MCZC (2), MNHN (5), SMTD, USNM (2), and ZMHB (2) all bearing the same labels as above. One female paralectotype at MNHN labeled “Coatepec Mexico” (handwritten) and bearing my yellow paralectotype label. Five female paralectotypes at BMNH (2), USNM, and ZMHB (2) all bearing the label “Bugaba, Panama. Champion.” (typeface) and my yellow paralectotype label. Although Bugaba was not explicitly mentioned as a locality in the original description of the species, Bates (1888) must have used these specimens for his original description. Both Bugaba specimens from the BMNH bear the label “B. C. A. Coll. II. (2). *Platycoelia humeralis*.” This is a typical label seen on many specimens used to write the *Biologia Centrali-Americana*. Therefore these specimens are paralectotypes. The locations of approximately 13 remaining paralectotypes are unknown. Type locality: Volcán de Chiriqui, Chiriqui, Panamá.

DESCRIPTION. Male (n=285). Length 21.5-29.3 mm, width 12.8-17.4 mm (Fig. 59). Color lime green (sometimes darkened to olive green or brownish-green) or yellow; elytral intervals 1, 3, 5, 7 lighter green (sometimes obsolete, lighter yellow in yellow specimens); yellow elytron, pronotum margins; yellow

scutellum (occasionally green medially); metasternum sometimes with medial black patch. Body ovate, strongly convex. *Head*: Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by approximately 3.0 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly shorter than length of frons. *Pronotum*: Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 2.6 times length medially. Surface weakly convex, moderately punctate; punctures small or moderate, setose; setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose laterally, setae white. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; third tooth short, sometimes obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Mesotarsomere 4 and metatarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internobasal stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified meso-

tarsal and metatarsal claws elongated with ventral tooth, not thickened (modified mesotarsal claw sometimes thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate). *Male Genitalia*: Phallobase approximately 1.6 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

Female (n=177). Length 24.7-31.0 mm, width 14.3-18.9 mm. As male except in the following respects. *Legs*: Protibia with 3 teeth in apical half, third tooth short but distinct. Protarsomere 3-4 without internoapical stridulatory ridge. Mesotarsomere 4 and metatarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with mix of small and moderate punctures; scutellum yellow; elytron with well-defined, yellow, longitudinal lines on striae 3 and 5, weaker lines on striae 1 and 7; elytral apices capable of completely covering the pygidium; pygidium entirely setose; mesothoracic process lighter in color than the metasternum; abdominal sternites with dark apical and basal borders; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 60). Occurs in montane areas of Central America from Hidalgo, México to north-western Panamá.

BIOLOGY. Morón (1994b) observed that *P. humeralis* was only captured at Tlanchinol, Hidalgo, México every second year. He speculated that the species may have a two-year life

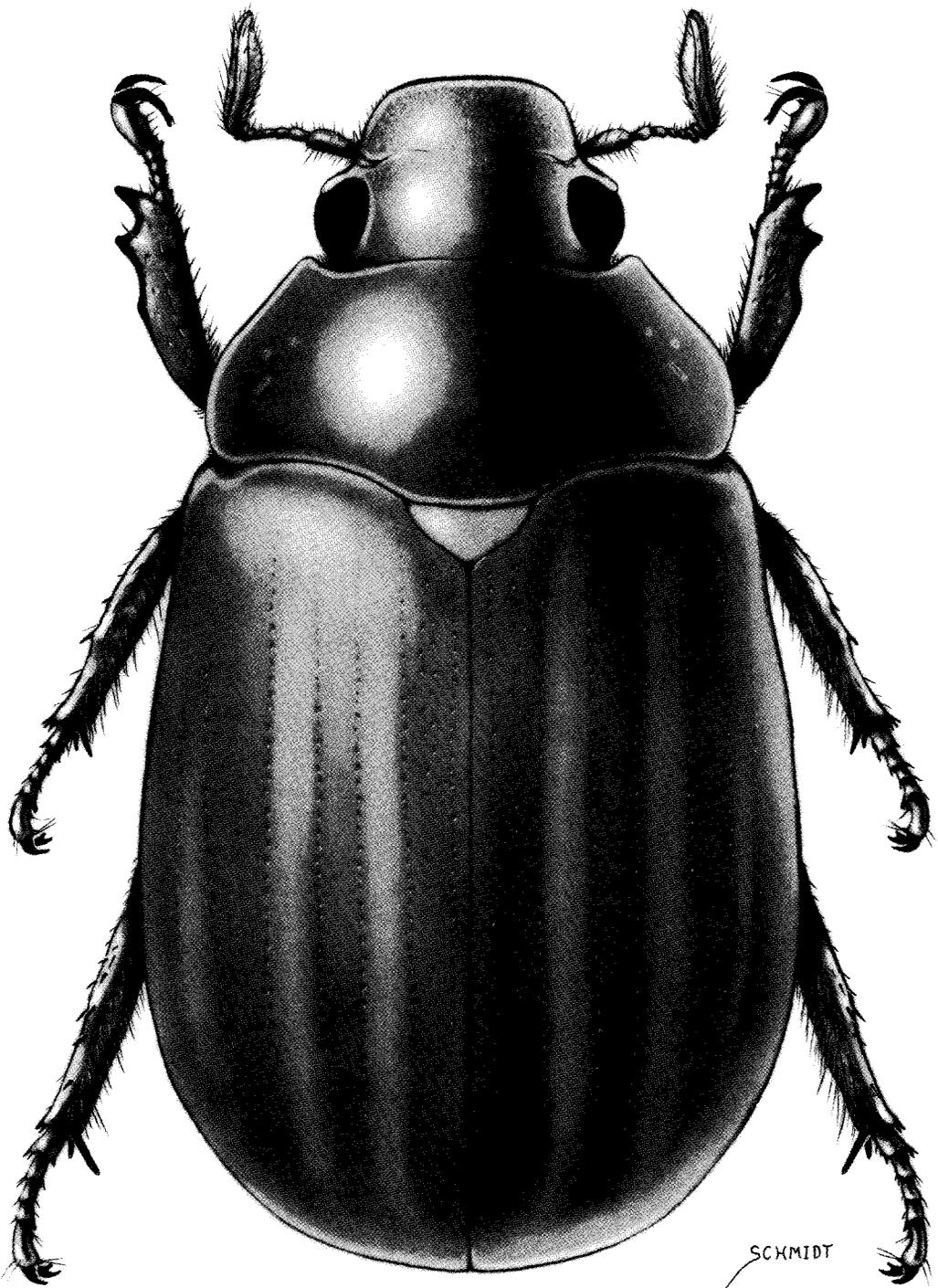


Fig. 59. *Platycoelia humeralis* male.

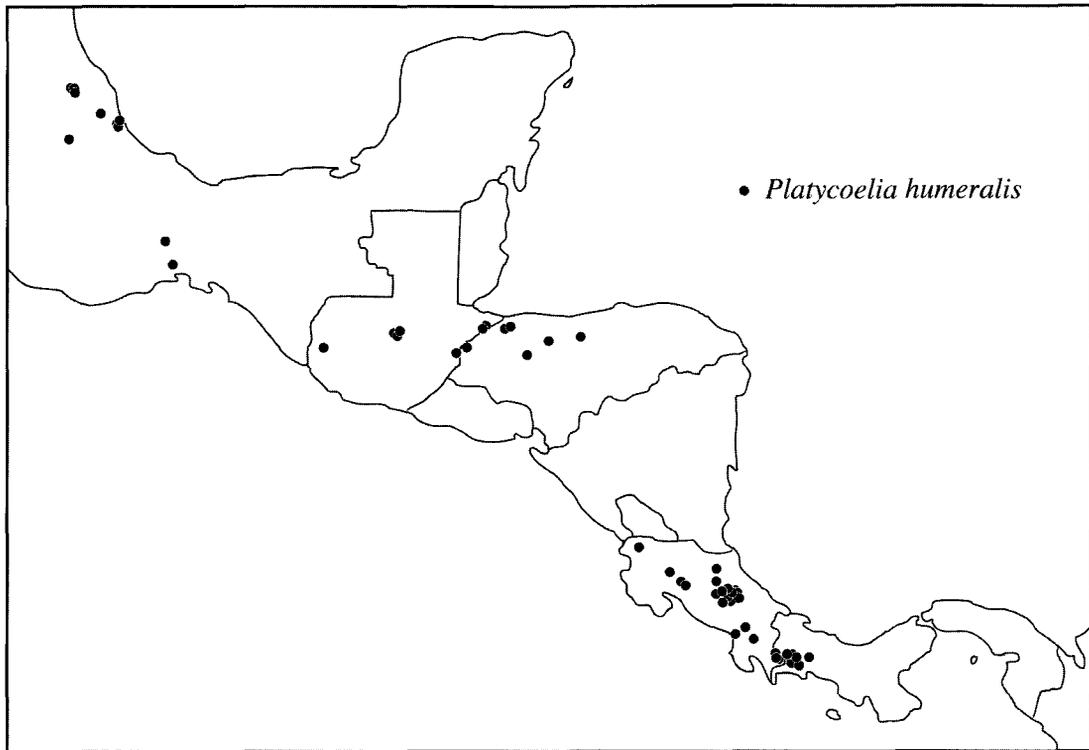


Fig. 60. Distribution of *Platycoelia humeralis* in México and Central America.

life cycle without overlapping generations. I have not observed this phenomenon in other populations. It is unknown if the life cycle is longer for some of the Mexican populations or if other populations have overlapping generations.

LOCALITY DATA. 462 specimens examined from ABTS, AMNH, ANSP, BCRC, BDGC, BMNH, CASC, CNCI, DCCC, DEIC, DJCC, EAPZ, EGRC, EMEC, FGIC, FMNH, HAHC, HNHM, INBC, ISNB, JMMC, LACM, MCZC, MGFT, MLJC, MNHN, MXAL, OSAC, PKLC, RACC, RFMC, SEMC, SLTC, SMFD, SMTD, TAMU, UCRC, UMRM, UNSM, USNM, UVGC, VMCP, ZMHB, ZSMC.

MÉXICO (73). HIDALGO (27): Molango, Tlanchinol, Zacualtipán. MÉXICO (2): México. OAXACA (3): La Esperanza, Sierra de Juárez. PUEBLA (1): Teziutlan. VERACRUZ (31): Banderilla (7 km NW), Coatepec, Xalapa. NO DATA (9).

GUATEMALA (56). BAJA VERAPAZ (33): Huehuetenango Barillas, Niño Perdido, Purulhá. IZABAL (7): Cerro San Gil, Negro Norte. SAN MARCOS (1): Bojonal Road (km 1.3). ZACAPA (15): La Unión.

HONDURAS (51). COPÁN (1): Lancetilla. CORTÉZ (47): Lago de Yojoa, Parque Nacional Cusuco, San Pedro Sula. OLANCHO (2): Parque Nacional La Muralla. YORO (1): Pico Pijol.

COSTA RICA (166). CARTAGO (60): Cachi, Chirripó Indian Reserve, Chirripó Valley, Estrella de Cartago, Grano de Oro, Orosi, Parque Nacional Tapanti, Quebrada Segunda, Río Grande de Orosi, Turrialba, Volcán Irazú. GUANACASTE (4): Estación Las Pailas, La Palma. HEREDIA (3): La Selva, Vara Blanca. LIMÓN (1): Coronado. PUNTARENAS (85): Buenos Aires, Cerro Biolley, Estación La Casona, Estación Biológica Las Alturas, Las

Cruces, Estación Pittier, Fila Cruces, Monteverde, Reserva Biológica Monteverde, San Luis Monteverde, San Vito. SAN JOSÉ (11): División, Estación Santa Elena, Estación Zurqui. NO DATA (2).

PANAMÁ (102). CHIRIQUI (102): Boquete, Bugaba, IRHE Vivero, La Fortuna, Potterillos, Quebrada Aleman, Río Sereno (15 km E), Santa Clara, Volcán de Chiriqui.

NO DATA (14).

One specimen labeled "Chanchamayo," one specimen labeled "Bolivia," and one specimen labeled "Brasil, Matto Grosso, Planalto de Pareús" were considered to have no data. These localities are far outside the known range of this species.

TEMPORAL DATA. January (3), February (2), March (5), April (10), May (65), June (82), July (65), August (54), September (35), October (17), November (5), December (7).

22. *Platycoelia intermedia* Ohaus, 1925 (Fig. 56)

Platycoelia intermedia Ohaus, 1925 (valid name)

CATALOG. *Platycoelia intermedia*, Ohaus 1925:82 [original description]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia intermedia* Ohaus lectotype male at ZMHB labeled a) "Macas Ecuador or." (typeface), b) "Type" (red label, typeface), c) "Platycoelia intermedia Ohs." (red label, handwritten), d) "PLATYCOELIA INTERMEDIA OHAUS ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Ohaus (1925) stated that the type series was "received from Staudinger," but did not explicitly state how many specimens were in the type series. The original description was based on

males only. The existence and location of paralectotypes are unknown. Type locality: Macas, Morona Santiago, Ecuador.

DESCRIPTION. Male (n=1). Length 25.8 mm, width 15.4 mm. Color olive green with slightly lighter green longitudinal stripes on elytron; yellow elytron, pronotum, scutellum margins. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons moderately punctate (base) to rugopunctate (apex); clypeus rugose, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by approximately 2.7 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly shorter than length of frons. **Pronotum:** Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apico-laterally, laterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae with scattered punctures, punctures moderate; intervals densely punctate, punctures small. Suture angled apically, without spine. **Pygidium:** Width approximately 2.6 times length medially. Surface weakly convex, densely punctate; punctures small or moderate, setose; setae short, cream colored. **Venter:** Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. **Legs:** Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internal stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal

claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres dorsoventrally flattened, apicomediaally acute.

Female (n=2). Length 28.5-29.8 mm, width 16.0-17.0 mm. As male except in the following respects. *Head*: Antennal club slightly shorter than other segments combined. *Legs*: Protibia with 3 teeth in apical half, third tooth shorter. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth or ridge. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: clypeal apex weakly reflexed; frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with a mix of small and moderate punctures; elytron with yellow, longitudinal lines on striae 1-7 within thick, light, longitudinal bands, light bands separated by thin, dark bands; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum and abdominal sternites green; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 56). Occurs on the eastern slope of the Andes Mountains in central Ecuador.

LOCALITY DATA. 3 specimens examined from SMTD, VMCP, ZMHB.

ECUADOR (3). MORONA SANTIAGO (2): Macas. NAPO (1): Chonta Yacu.

TEMPORAL DATA. December (1).

23. *Platycoelia convexa* new species (Fig. 52)

TYPE SPECIMENS. Male holotype, female allotype and 17 paratypes (10 male, 7 female). Holotype male at HAHC labeled "Dept. Cusco, PERU Santa Isabel Cosnipata Valley Nov. 30 1951 Felix Woytkowski." Allotype female at AMNH labeled "Peru: Dept. Huanuco 2800 m. Carpish XI, 1946 F. Woytkowski." One male paratype at AMNH labeled "Chanchamayo, Peru F 6032" and "Acc. 33591 H. Bassler Collection." One female paratype at ABTS labeled "Chanchamayo, Peru F 6032," "H. Bassler Collection Acc. 33591," and "Platycoelia sp DET. L. W. SAYLOR." One male paratype at UNSM and one female paratype at AMNH labeled "Chanchamayo, Peru III-28 F 6032" and "H. Bassler Collection Acc. 33591." One male paratype at ZMHB labeled "Peru Chanchamayo" and "Platycoelia flavostriata Latr." One female paratype at ZMHB labeled "Peru Chanchamayo." One male paratype at UNSM labeled "Peru: Dept. Huanuco 2500 m. Chinchao 25 km. Below Carpish, Sept. 5, 1946 F. Woytkowski." One male paratype at UNSM labeled "RONDOS PERU/X/82." One male and one female paratypes at MNHN labeled "Santo Domingo SE Peru 6000 ft." One male paratype at MGFT labeled "Peru Gerstner. 1912." One male and one female paratypes at HAHC labeled "PERU Huanuco Tingo María Vizguerra-leg. Coll. Martínez Jul.-972" and "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." One male paratype at USNM labeled "Sinchona Peru Rec'd VIII-29-44 J.G.Sander." One male paratype at ABTS labeled "BOLIVIA Do Cochabamba Pcia. Chapare Yungas del Palmar Locotal. 1200 mts. Coll. Martínez Nov.-53" and "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." One female paratype at CASC labeled "Peru (Monte Rico)" and "L.W. Saylor Collection." One female paratype at FMNH with no data label. Type locality: Santa Isabel (Cosñipata Valley), Cusco, Perú.

HOLOTYPE. Male: length 28.9 mm, width 17.7 mm. Color dorsally lime green with yellow elytron and pronotal margins, yellow scutellum. Ventrally light green, metasternum

with large, black, medial spot. Body ovate, strongly convex. *Head*: Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by approximately 2.7 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly less than other segments combined, slightly longer than clypeal length. *Pronotum*: Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 2.4 times length medially. Surface weakly convex, moderately punctate; punctures small or moderate, setose; setae cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose, setae white. Apical spiracles not extruding. *Legs*: Protibia with 2 teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internobasal stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

ALLOTYPE. Female: length 29.3 mm, width 16.9 mm. As male except in the following respects. Color of abdominal sternites brown.

Head: Antennal club slightly greater than segments 2-7. *Legs*: Protibia with 3 teeth in apical half, third tooth shorter. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=10). Length 26.5-29.7 mm, width 15.7-17.2 mm. Female (n=7). Length 28.0-31.6 mm, width 17.5-18.5 mm. Paratypes similar to holotype and allotype except in the following respects. Color of body sometimes darkened to dark green or brownish-green, abdominal sternites green to dark brown. Additional characters as follows. *Male Genitalia*: Phallobase 1.2 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ETYMOLOGY. The specific epithet of *Platycoelia convexa* refers to the general shape of the body.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with a mix of small and moderate punctures; elytron uniformly green; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum with a dark, medial patch; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 52). Known from the Andes Mountains from central Perú to central Bolivia.

LOCALITY DATA. 19 specimens examined from AMNH, CASC, FMNH, HAHC, MGFT, MNHN, USNM, ZMHB.

PERÚ (17). CUSCO (1) Santa Isabel (Cosñipata Valley). HUANUCO (5): Carpish, Chinchao, Rondos, Tingo María. JUNÍN (6): Chanchamayo. NO DATA (5).

BOLIVIA (1). COCHABAMBA (1): Yungas del Palmar.

NO DATA (1).

TEMPORAL DATA. March (2), July (1), August (1), September (1), October (1), November (3).

24. *Platycoelia interstincta* new species
(Fig. 63)

TYPE SPECIMEN. Male holotype. Holotype male at BMNH labeled "Tatamá Colombia 6000 to 8000 ft," "1911-201.," and "Ohaus determ. *Platycoelia variolosa* ♂ Ohs." Type locality: Tatamá, Risaralda, Colombia.

HOLOTYPE. Male: length 25.6 mm, width 16.4 mm. Color olive green with yellow elytron, pronotum, scutellum margins; elytron with black spots along striae. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeal apex broadly rounded. Eyes separated by 3.5 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly longer than clypeal length. **Pronotum:** Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled

apically, without spine. **Pygidium:** Width 2.8 times length medially. Surface weakly convex, moderately to densely punctate; punctures small or moderate, disc glabrous. **Venter:** Thorax densely setose, setae cream colored. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. **Legs:** Protibia with 1 apical tooth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internal stridulatory ridge. Mesotarsomere and metatarsomere 5 with internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. **Male Genitalia:** Phallobase 1.3 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ETYMOLOGY. *Platycoelia interstincta* means "the spotted *Platycoelia*" referring to the small dark spots on the elytra.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with a mix of small and moderate punctures; elytron with well-defined, dark, longitudinal spots along striae; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum and abdominal sternites green; protibia of male with 1 tooth; protibial spur noticeably shorter than the adjacent tibial apex; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with

an internobasal tooth; parameres with the apex dorsoventrally flattened, without a setose patch.

DISTRIBUTION (Fig. 63). Known only from Tatamá, Colombia.

LOCALITY DATA. 1 specimen examined from BMNH.

COLOMBIA (1). RISARALDA (1): Tatamá.

25. *Platycoelia variolosa* Ohaus, 1904
(Fig. 63)

Platycoelia variolosa Ohaus, 1904 (valid name)

CATALOG. *Platycoelia variolosa*, Ohaus 1904b:304, 305, 339 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

TYPE SPECIMENS. *Platycoelia variolosa* Ohaus lectotype male at ZMHB labeled a) "COLOMBIE" (light green label, typeface), b) "Platycoelia variolosa Type Ohs." (orange label, handwritten), c) "PLATYCOELIA VARIOLOSA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "COLOMBIE" (light green label, typeface), b) "♀" (typeface), c) "Platycoelia variolosa Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA VARIOLOSA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Two male paralectotypes at MNHN labeled a) "Colum" (handwritten), b) "Ex-Musæo D.Sharp 1890" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "Ohaus determ. variolosa Ohaus ♂ cotyp." (typeface and handwritten), e) "PLATYCOELIA VARIOLOSA OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (handwritten and typeface). One male

paralectotype at MNHN labeled a) "Ex-Musæo E.Steinheil" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. variolosa Ohaus ♂ cotyp." (typeface and handwritten), e) "PLATYCOELIA VARIOLOSA OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (handwritten and typeface). One Ecuadorian specimen of *P. paucarae* from ZMHB bears Ohaus' orange type label stating "Platycoelia variolosa cotype Ohs." Another Ecuadorian specimen (of *P. nigrosternalis*) at NMPC bears Ohaus' determination label stating "Platycoelia variolosa Cotype ♀ Ohs." Since Ecuador was not mentioned in the original description of *P. variolosa*, neither of these specimens are part of the type series. Type locality: Colombia.

DESCRIPTION. Male (n=10). Length 26.8-29.1 mm, width 14.4-17.3 mm. Color dorsally light green to olive green with yellow elytron, pronotum, and scutellum margins. Ventrally light green with metasternum, abdominal sternites black medially (sometimes black extends to lateral margins). Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeus subrectangular. Eyes separated by approximately 3.0 transverse eye-widths. Labrum moderately punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly longer than length of frons. *Pronotum:* Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium:* Width approximately 2.7 times length medially. Surface weakly convex, densely punctate; punctures small or moder-

ate, setose; setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose, setae white. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; apical 2 teeth longer, third tooth short, obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Prounguitractor plate cylindrical, with 2 subapical setae. Mesounguitractor plate and metaunguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate with 1 bifurcation twisted beneath the other in ventral view. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.4 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

Female (n=10). Length 27.2-30.9 mm, width 14.8-16.8 mm. As male except in the following respects. *Head*: Antennal club approximately equal to segments 2-7. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with a mix of small and moderate punctures; elytron without distinct, yellow, longitudinal lines; elytral apices capable of completely covering the pygidium; elytron with a distinct yellow suture; py-

gidium entirely setose; metasternum and abdominal sternites green or yellow; protibial apical 2 teeth adjacent, located in the apical quarter of the protibia; protibial spur noticeably shorter than the adjacent tibial apex; protarsomere 3 in males without a distinct apical stridulatory patch; modified protarsal claw in males laterally flattened; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 63). Andes Mountains in central Colombia.

LOCALITY DATA. 20 specimens examined from AMNH, CASC, DEIC, MNHN, VMCP, ZMHB, ZMUH.

COLOMBIA (19). ANTIOQUIA (2) Medellín. BOYACÁ (1): Villa de Leiva. CUNDINAMARCA (4): Fusagasugá, Monterredondo, Viotá. DISTRITO CAPITAL (1): Bogotá. NO DATA (11).

NO DATA (1).

TEMPORAL DATA. June (1).

26. *Platycoelia grandicula* new species

(Figs. 2, 8, 13, 61, 62)

TYPE SPECIMENS. Male holotype, female allotype and 92 paratypes (58 male, 34 female). Holotype male at UNSM labeled "PANAMA, PANAMA PR. 10 KM N EL LLANO MAY 16-22 1987 E. GIESBERT, COLL." and "Donated by Ed Giesbert 1997." Allotype female at UNSM labeled "PANAMA, PANAMA PR. ±10 KM N EL LLANO, 1400' MAY 16-20 1984 E. GIESBERT, COLL." and "Donated by Ed Giesbert 1997." One male paratype at FSCA labeled "PANAMA, PANAMA PR. 10-12 KM N EL LLANO JUNE 3-8 1986 E. GIESBERT, COLL." Two male paratypes at DCCC labeled "PANAMA Panama Pr. El Llano-Cartí Rd. 8 Km N El Ll-

ano 13 May 1994 BL&MV DCCarlson/FTHovore." Thirteen male and six female paratypes at EGRC, two male paratypes at PKLC, two female paratypes at LACM, one male and one female paratypes at ABTS, one male and one female paratypes at ZMHB, and one male and one female paratypes at MLJC labeled "PANAMA: Cocle, Cerro Gaital, VI-10-12-1985, E.Riley&D.Rider." One male and one female paratype at DJCC and one male and one female paratype at ABTS labeled "PANAMA: Coclé Cerro Gaital 850m 13-20 vii 96 Curoe." Two male and three female paratypes at DJCC labeled "Panama Cocle Cerro Gaital 11-V-94 Curoe, Monzon." Two male paratypes at DJCC labeled "Panama Cocle prov. El Valle 850m 23 VIII 98 D. Curoe col." One male paratype at SEMC labeled "PANAMA: Colon Prov (Santa Rita Ridge) 30 km SE Colon 13 May 1981 Robert W. Brooks." Three male and one female paratypes at INBC and one male paratype at BCRC labeled "COSTA RICA, Prov. Alajuela, R. B. San Ramón. 800m. MAR 1997. G. Carballo. L_N_245100_472100 #46303" and have database labels numbering from INBIO CR1002 461158 to INBIO CR1002 461162. Five male paratypes at INBC, one male paratype at ABTS, one male paratype at UNSM, and one female paratype at BCRC labeled "R. San Lorencito, 900 m, R. F. San Ramón, 5 km N de Colonia Palmareña, Prov. Alaju., COSTA RICA. 13-18 Jun 1993. I Curso Scarabaeidae. L-N-244500, 470700" and have database labels numbering from INBIO CR1001 392210 to INBIO CR1001 392212, INBIO CR1001 364826, INBIO CR1001 364798, and from INBIO CR1001 392225 to INBIO CR1001 392227. One male paratype at INBC labeled "Sector Colonia Palmareña, Prov. Alaju, COSTA RICA. 700m. 3-22 ABR 1995. E. Fletes, L_N_245900_475900 #4770" and has the database label number INBIO CR1002 248190. One male paratype at INBC labeled "Sector Colonia Palmarena, Prov. Alaju, COSTA RICA. 700m. ABR 1995. G. Carballo, L_N_245900_475900 #5455" and has the database label number INBIO CR1002 213454. One male and one female paratypes at INBC labeled "COSTA RICA, Prov. Alajuela, Sector Colonia Palmareña, 9 Km SO. De Baja

Rodriguez. 700m. MAY 1997. G. Carballo. L_N_245900_475900 #46301" and have the database label numbering from INBIO CR1002 541295 to INBIO CR1002 541296. One male paratype at ABTS labeled "COSTA RICA: Prov. Alajuela; Arenal Volcano (Observatory Lodge). 10°26'39"N, 84°42'62"W, 7-17Apr. 1991, M. Spencer." One male paratype at HAHC labeled "Limon Costa Rica Guayacan 8.IX.1972 V. O. Becker col." One male paratype at INBC labeled "R. San Lorenzo, 1050m, R.F. Cord. Guanacaste (Tenorio) Prov. Guan. COSTA RICA. C. Alvarado, Jun 1991, L-N-287800,427600" and has the database label number INBIO CR1000 668623. One male and two female paratypes at INBC labeled "C. R.-San José P.N.B.C. Est. Carrillo Abril 1985 700m A. M. Chacón" and has the database label numbering from INBIO CR1002 519146 to INBIO CR1002 519148. One male paratype at CNCI labeled "COSTA RICA B. Carrillo N. P. 84°07'W;10°10'N 10.IV.85; 500m. H. Goulet-L. Masner." One male paratype at USNM labeled "Rio Tacarcuna Darien Prov. Panama 1900 ft. Jul 63 W. P. Murdoch." One female paratype at FSCA, labeled "PANAMA, PANAMA PR. ±10 KM N EL LLANO, 1400' MAY 28 - JUNE 3, 1984 E. GIESBERT, COLL." One female paratype at DJCC labeled "PANAMA: Coclé Cerro Gaital 850 m 15-23 vi 96 Curoe." One female paratype from DJCC labeled "Panama, Pan Cerro Jefe 850m Altos de Capira 5 V 97 Curoe." One female paratype at SEMC labeled "PANAMA 800m Panama Prov. Cerro Compana May 8, 1973" and "P D Ashlock Collector." Two female paratypes at UNSM labeled "PANAMA: Panama Cerro Azul V-30-1986 B.Ratcliffe & party." One female paratype at UNSM labeled "PANAMA, Chiriqui pr. 10 km NE FORTUNA DAM May 15-17, 1993 E. Giesbert, Coll." and "Donated by Ed Giesbert 1997." One female paratype at UNSM labeled "PANAMA: Bocas d. Toro 2 mi. N of Divide on hwy. To Chiriqui Grande VI-1-1986 B.C. Ratcliffe & party." One female paratype at ABTS labeled "COSTA RICA, Prov. Alajuela, Puesto Quebradón. P.N. Volcán tenorio 300m. ABR 1997. G. Rodriguez. L_N_292050_436700 #46262" and has the database label number INBIO CR1002

553783. One male paratype at DCHC and one female paratype at UNSM labeled "COSTA RICA: Limón Guayacan 500 m 23-V-2001." One female paratype at DCHC labeled "PANAMÁ: Coclé El Valle 850 m V-2000 D.Curoe." Two male paratypes at FSCA labeled "PANAMA: Coclé Altos de Campana mv + bl. 13 May 1996 R. Turnbow" and "Platycoelia humeralis Bates det. R. Turnbow." One male paratype at FSCA labeled "PANAMA, PANAMA PR. ±10 KM N EL LLANO, 1400' MAY 28-JUNE 3, 1984 E. GIESBERT, COLL." Two male paratypes at FSCA labeled "PANAMA, Panama pr. 7-10km N El Llano April 21-30, 1995 E. Giesbert, coll." One male paratype at FSCA labeled "PANAMA, Panamá pr. 8-10km N El Llano May 24-June 2, 1992 E. Giesbert, coll." One male paratype at FSCA labeled "PANAMA, Panamá pr. 8-10km N El Llano Apr 26-May 4, 1992 E. Giesbert, coll." One male and one female paratypes at ABTS labeled "PANAMA, Panamá pr. 13km N El Llano April 21-30, 1995 E. Giesbert, coll." One male paratype at RFMC labeled "PANAMA Pnma Prv K 8-13 El Llano-Carti Rd 10-13 May 1996 Wappes Huether & Morris." One male paratype at RFMC labeled "PAN:Panama Prov. 7-11 km El Llano/Carti Rd. 17-18/V/1999 Morris/Wappes" and "Platycoelia humeralis Bates det. R. Morris." Type locality: 10 km north of El Llano, Panamá, Panamá.

HOLOTYPE. Male: length 26.9 mm, width 16.8 mm. Color light green with yellow head margin near eye, elytron, pronotum, scutellum margins, elytral stria 1. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete, absent medially. Clypeus trapezoidal. Eyes separated by approximately 4.5 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum (as in Fig. 2). Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than

other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium:* Width approximately 3.0 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderate, glabrous except near apex; setae short, tawny. *Venter:* Thorax moderately setose, setae white. Mesothoracic process strongly produced, projecting anteriorly past protrochanter; shape conical-elongate, apex rounded, dorsoventrally flattened (as in Fig. 8). Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half; apical tooth longer. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Prounguitractor plate cylindrical, with 2 subapical setae. Mesounguitractor plate and metaunguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate with 1 bifurcation twisted beneath the other in ventral view (as in Fig. 13). Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

ALLOTYPE. Female: length 29.5 mm, width 17.0 mm. As male except in the following respects. *Head:* Antennal club shorter than segments 2-7. *Legs:* Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=59). Length 27.1-30.8 mm, width 16.8-17.9 mm (Fig. 61). Female (n=35). Length 29.5-31.9 mm, width 17.0-19.2

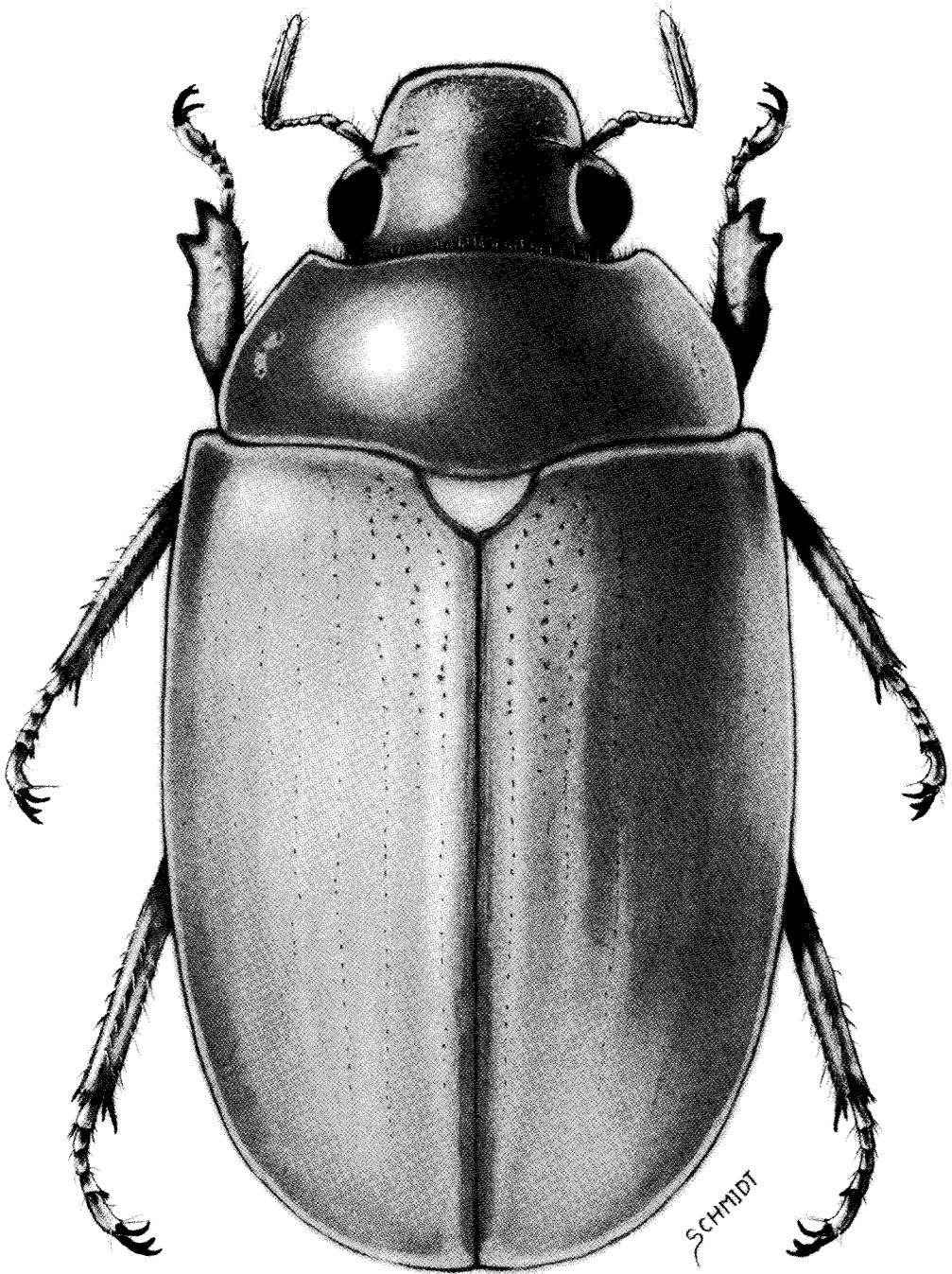


Fig. 61. *Platycoelia grandicula* male.

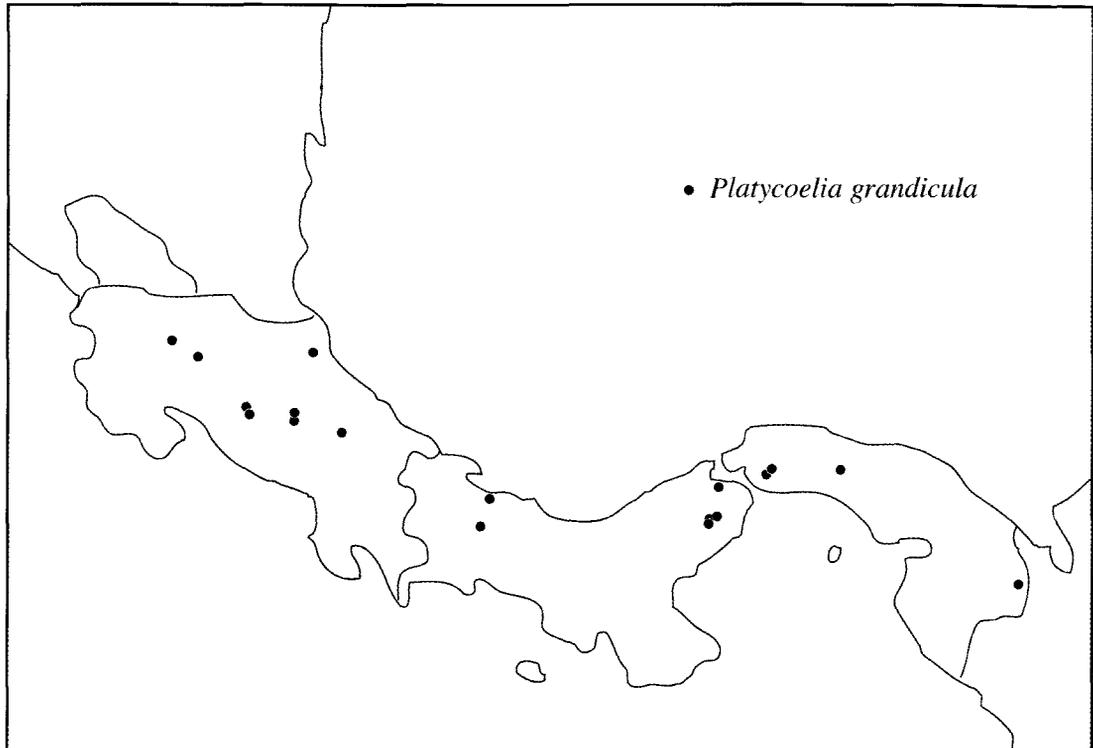


Fig. 62. Distribution of *Platycoelia grandicula* in Costa Rica and Panamá.

mm. Paratypes similar to holotype and allotype except in the following respects. Color of body sometimes darkened to dark green or brownish-green. Additional characters as follows. *Male Genitalia*: Phallobase 1.7 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ETYMOLOGY. *Platycoelia grandicula* is derived from Latin meaning "the rather large *Platycoelia*."

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with a mix of small and moderate punctures; elytron with a distinct, yellow, longitudinal line on stria 1; elytral api-

ces capable of completely covering the pygidium; pygidium entirely setose; metasternum and abdominal sternites green or yellow; protibial apical 2 teeth adjacent, located in the apical quarter of the protibia; protibial spur noticeably shorter than the adjacent tibial apex; protarsomere 3 in males without a distinct apical stridulatory patch; modified protarsal claw in males laterally flattened; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.

DISTRIBUTION (Fig. 62). Occurs in mid- to low-elevation montane areas of Costa Rica and Panamá.

LOCALITY DATA. 94 specimens examined from CNCI, DCCC, DCHC, DJCC, EGRC, FSCA, HAHC, INBC, LACM, PKLC, RFMC, SEMC, UNSM, USNM.

COSTA RICA (27). ALAJUELA (20): Parque Nacional Volcán Tenorio, Río San Lorencito, San Ramón, Sector Colonia Palmareña, Volcán Arenal (Observatory Lodge). HEREDIA (1): Parque Nacional Braulio Carrillo. LIMÓN (3): Guayacán. SAN JOSÉ (3): Estación Carrillo.

PANAMÁ (67). BOCAS DEL TORO (1): Chiriquí Grande. CHIRIQUÍ (1): Fortuna Dam (10 km NE). COCLÉ (44): Altos de Campana, Cerro Gaital, El Valle. COLÓN (1): Santa Rita Ridge. DARIEN (1): Río Tacarcuna. PANAMÁ (19): Cerro Azul, Cerro Campana, Cerro Jefé, El Llano.

TEMPORAL DATA. March (5), April (13), May (27), June (41), July (5), August (2), September (1).

27. *Platycoelia hiporum* new species
(Fig. 63)

TYPE SPECIMENS. Male holotype and 3 male paratypes. Holotype male at ANSP labeled "ECUADOR, Prov. Carchi, 4 km SSW of Chical, nr Q. San Jose of Rio Blanco, 1650m, new clearing/primary forest, 8-19 Aug. 1988 (Wechsler)." One male paratype at QCAZ labeled "ECUADOR ESMERALDAS CRISTAL 1500 m 6 Dec 1985 Legit Mvallejo" and "2180." One male paratype at ABTS and one male paratype at CMNH labeled "COLOMBIA: Narino Reserva La Planada, 7km above Chucunes between Tuquerras and Ricaurte March 1990 Tom Croat." Type locality: 4 km south-southwest of Chical, Carchi, Ecuador.

HOLOTYPE. Male: length 30.0 mm, width 16.6 mm. Color light green with yellow elytron margin. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture incomplete. Clypeus trapezoidal, apex not reflexed. Eyes separated by approximately 2.8 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of

labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly shorter than length of frons. *Pronotum:* Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium:* Width approximately 2.4 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderate, sparsely setose; setae short, tawny. *Venter:* Thorax moderately setose (except medially on metasternum), setae white. Mesothoracic process strongly produced, projecting anteriorly to protrochanter; shape conical-elongate, apex rounded; ventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half; apical 2 teeth longer; third tooth weak, obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth. Prounguitractor plate cylindrical, with 2 subapical setae. Mesounguitractor plate and metaunguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate with 1 bifurcation twisted beneath the other in ventral view. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

VARIATION. Male (n=3). Length 28.0-30.6 mm, width 16.8-17.5 mm. Other characters as follows: *Male Genitalia:* Phallobase 1.8 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute. Paratypes similar to holotype except in the

following respects. Color of body greenish-yellow, metasternum with distinct medial black line. Female unknown.

ETYMOLOGY. *Platycoelia hiporum* is named after the Canadian band "The Tragically Hip."

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: clypeal apex not reflexed; frontoclypeal suture incomplete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with mix of small and moderate punctures; elytron without distinct, yellow, longitudinal lines; elytral apices capable of completely covering the pygidium; pygidium entirely setose; metasternum with a dark medial patch; abdominal sternites green or yellow; protibial apical 2 teeth adjacent, located in the apical quarter of the protibia; protibial spur noticeably shorter than adjacent tibial apex; protarsomere 3 in males without a distinct apical stridulatory patch; modified protarsal claw in males laterally flattened; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with apex dorsoventrally flattened.

DISTRIBUTION (Fig. 63). Andes Mountains from extreme southern Colombia to northern Ecuador.

LOCALITY DATA. 4 specimens examined from ANSP, CMNH, QCAZ.

COLOMBIA (2). NARIÑO (2): Reserva La Planada.

ECUADOR (2). CARCHI (1): Chical. ESMERALDAS (1): Cristal.

TEMPORAL DATA. March (2), August (1), December (1).

28. *Platycoelia paucarae* new species
(Fig. 63)

TYPE SPECIMENS. Male holotype, female allotype and 10 paratypes (9 male, 1 female). Holotype male at USNM labeled "Huigra, Ecuador Alt. 4000 ft." and "M. Robinson Collection 1959." Allotype female at USNM labeled "Huigra, Ecuador Alt. 4000 ft." and "M. Robinson Collection 1959." One male paratype at ANSP labeled "Huigra, Ecuador Alt. 4000 ft.," "W.J. Coxey 12.31.1928 A.N.S. Lot 133," and "Ex Collection W.J. Coxey." One male paratype at ABTS labeled "ECUADOR Chimborazo Riobamba 2752m 4/ Dic/1993 Legit. F Rosero." One male paratype at ABTS and one male paratype at MNHN labeled "Balzapamba Prov. de Bolivar M de Mathan III-IV-1894." One male paratype at QCAZ labeled "ECUADOR PICHINCHA TANDAPI 1550m 3 En 1997 DGuevara" and "2281." One male paratype at QCAZ labeled "ECUADOR COTOPAXI LA OTONGA 2000M 10JAN1998 GOnore." One male paratype at QCAZ labeled "ECUADOR Loja Chinchas/ Piñas Km 7 1950m 17 I 1975 Coll Vénédictoff" and "*Platycoelia* sp. 3." One male paratype at ZMHB labeled "O. ECUADOR Rio Pastassa E. FeyerS., "♂," "*Platycoelia variolosa* cotype Ohs.," and "NOT A TYPE OF P. VARIOLOSA Det: A.B.T. Smith 2002." One male paratype at MNHN labeled "ECUADOR Km 17 de la route Limón - Méndez 900 m - 12 et 13. i. 1975 C. Herbulot." One female paratype at MNHN labeled "Ecuator Loja Abbé Gaujon," "Ohaus determ. *Platycoelia* Oberthüri Ohaus ♀ Type," and "Dr Ohaus Vidit 1903." Type locality: Huigra, Chimborazo, Ecuador.

HOLOTYPE. Male: length 29.6 mm, width 16.4 mm. Color light green with yellow elytron margin. Body ovate, strongly convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture complete. Clypeus subrectangular, apex weakly reflexed. Eyes separated by approximately 3.6 transverse eye-widths. Labrum sparsely punctate, with

moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth broadly truncate, extending past apex of mentum. Apex of mentum with triangular medial tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than other segments combined, slightly shorter than length of frons. *Pronotum*: Surface glabrous, densely punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals densely punctate, punctures small. Suture angled apically, without spine. *Pygidium*: Width approximately 3.3 times length medially. Surface weakly convex, moderately to densely punctate; punctures moderate, glabrous except near apex; setae short, tawny. *Venter*: Thorax moderately setose (except medially on metasternum), setae white. Mesothoracic process strongly produced, projecting anteriorly to prothorax; shape conical-elongate, apex rounded; ventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 3 subequal in size teeth in apical half; apical 2 teeth longer; third tooth weak, obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth. Pronguitor plate cylindrical, with 2 subapical setae. Mesounguitor plate and metaunguitor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate with 1 bifurcation twisted beneath the other in ventral view. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.9 times longer than length of parameres. Parameres dorsoventrally flattened, apicomediaally acute.

ALLOTYPE. Female: length 33.1 mm, width 19.0 mm. As male except in the following re-

spects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 with weak internobasal swelling. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=9). Length 28.0-32.2 mm, width 17.0-18.9 mm. Female (n=1). Length 31.6 mm, width 19.3 mm. Paratypes similar to holotype and allotype except in the following respects. Color of body sometimes greenish-yellow or darkened to dark green or brownish-green. *Pygidium*: Disc moderately setose.

ETYMOLOGY. I am very pleased to name *Platycoelia paucararum* after my friend and colleague Aura Paucar-Cabrera. Aura has had an interest in *Platycoelia* for many years and has graciously provided a wealth of information for this revision. This species is also native to Ecuador, which is Aura's homeland.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: clypeal apex weakly reflexed; frontoclypeal suture complete; labrum with a well-developed, truncate apical tooth strongly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; pronotum surface densely punctate with mix of small and moderate punctures; elytron without distinct, yellow, longitudinal lines; elytral apices capable of completely covering the pygidium; pygidium entirely setose; mesothoracic process light in color than the metasternum; metasternum with a dark medial patch; abdominal sternites dark; protibial apical 2 teeth adjacent, located in the apical quarter of the protibia; protibial spur noticeably shorter than the adjacent tibial apex; protarsomere 3 in males without a distinct apical stridulatory patch; modified protarsal claw in males laterally flattened; mesotarsomere 4 and metatarsomere 4 in males with an apical stridulatory ridge; mesotarsomere 5 and metatarsomere 5 with an internobasal tooth; parameres with the apex dorsoventrally flattened.



Fig. 63. Distribution of *Platycoelia interstincta*, *P. variolosa*, *P. paucarae*, and *P. hiporum* in Colombia and Ecuador.

DISTRIBUTION (Fig. 63). Known from the Andes Mountains of Ecuador.

LOCALITY DATA. 12 specimens examined from ANSP, MNHN, QCAZ, USNM, ZMHB.

ECUADOR (12). BOLÍVAR (2): Balzapamba. CHIMBORAZO (4): Huigra, Riobamba.

COTOPAXI (1): Otonga. LOJA (2): Chinchas – Piñas Road (km 7), Loja. MORONA SANTIAGO (1): Limón - Méndez Road (km 17). PASTAZA (1): Río Pastaza. PICHINCHA (1): Tandapi.

TEMPORAL DATA. January (4), March (2), December (2).

**29. *Platycoelia flavoscutellata*
Ohaus, 1904**
(Fig. 66)

Platycoelia flavoscutellata Ohaus, 1904 (valid name)

CATALOG. *Platycoelia flavoscutellata*, Ohaus 1904b:315, 317, 339 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia flavoscutellata* Ohaus lectotype male at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Typus!" (red label, typeface), c) "flavoscutellata Ohaus" (red label, handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA FLAVOSCU-TELLATA OHAUS ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Five male paralectotypes at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. flavoscutellata Ohaus ♂ Cotyp." (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA FLAVOSCU-TELLATA OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. flavoscutellata Ohaus ♂ Type" (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA FLAVOSCU-TELLATA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). Ohaus (1904b) had seven specimens in the type series for *P. flavoscutellata*, so all types are accounted for. Type locality: Cochabamba, Bolivia.

DESCRIPTION. Male (n=7). Length 23.2-23.8 mm, width 11.9-12.8 mm. Color olive green; scutellum yellow; elytral interval 3, 5 with yellow, longitudinal stripe; pronotum and elytron with yellow margin. Body ovate, convex. **Head:** Dorsal surface glabrous. Frons

rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 3.8 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 teeth, 2 inner teeth bifurcate. Mentum apical tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than other segments combined, slightly longer than length of frons. **Pronotum:** Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate with dark coloration; intervals moderately punctate, punctures small. Suture apically angled or with weak nub. **Pygidium:** Width approximately 2.1 times length medially. Surface convex, moderately punctate; punctures moderately large, setose; setae short, tawny. **Venter:** Thorax densely setose, setae cream colored. Mesothoracic process moderately produced, projecting anteriorly to procoxa; shape conical-elongate; ventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. **Legs:** Protibia with 3 teeth in apical half; apical 2 teeth subequal in size, third tooth short (sometimes obsolete). Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with inter-noapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory patch. Mesotarsomere and metatarsomere 5 without internobasal tooth. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. **Male Genitalia:** Phallobase approximately 1.2 times longer than length of parameres. Parameres with apex rounded.

Female: unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a distinct tooth curved into the oral cavity; antenna 10-segmented; elytron with a distinct, yellow, longitudinal line on stria 5; elytral apices not capable of completely covering the pygidium; metasternum and abdominal sternites green or yellow; mesothoracic process projecting apically to the procoxa; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 66). Known only from Cochabamba, Bolivia.

LOCALITY DATA. 7 specimens examined from MNHN.

BOLIVIA (7). COCHABAMBA (7): No Data.

30. *Platycoelia puncticollis* Ohaus, 1904

(Figs. 22, 30, 64, 65)

Platycoelia puncticollis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia puncticollis*, Ohaus 1904b:276, 307, 332, 339, 341 [original description]; Ohaus 1905:167 [illustration]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:303 [catalog listing].

Platycoelia puncticollis variety *bilineata* (unavailable, infrasubspecific name), Ohaus 1904b:309, 339 [original description as variety]; Ohaus 1918:177 [catalog listing as variety]; Blackwelder 1944:247 [checklist as variety]; Machatschke 1965:58 [catalog listing as form]; Machatschke 1972:303 [catalog listing as form].

Platycoelia puncticollis variety *unicolor* (unavailable, infrasubspecific name), Ohaus 1904b:309, 339 [original description as variety]; Ohaus 1918:177 [catalog listing as variety]; Blackwelder 1944:247 [checklist as variety]; Machatschke 1965:58 [catalog list-

ing as form]; Machatschke 1972:303 [catalog listing as form].

TYPE SPECIMENS. *Platycoelia puncticollis* Ohaus lectotype male at ZMHB labeled a) "Cauca Columb." (typeface), b) "Platycoelia puncticollis Type Ohs." (orange label, handwritten), c) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Valencia Venez." (typeface), b) "♂" (typeface), c) "Platycoelia puncticollis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Columbia" (typeface), b) "♂" (typeface), c) "Platycoelia puncticollis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Columb. Cauca" (typeface), b) "Platycoelia puncticollis Cotype Ohs." (red label, handwritten), c) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at NMPC labeled a) "Columb. Cauca" (typeface), b) "COTYPE" (typeface), c) "Ohaus determ. *Platycoelia puncticollis* Cotype ♂ Ohs." (typeface and handwritten), d) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Columb. Ocaña" (handwritten), b) "Platycoelia puncticollis Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Three female paralectotypes at ZMHB labeled a) "Valencia Venez." (handwritten), b) "♀" (typeface), c) "Platycoelia puncticollis Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA PUNCTICOLLIS OHAUS ♀"

PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Columbia" (typeface), b) "C.Bts. Obrth." (typeface), c) "♀" (typeface), d) "Platycoelia puncticollis Cotype Ohs." (orange label, handwritten), e) "PLATYCOELIA PUNCTICOLLIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype (now classified as *P. traceyae*) at ZMHB labeled a) "Sarayacu Ecuador. Buckley 1879" (handwritten), b) "Ex-Musæo D. Sharp 1890" (typeface), c) "Ohaus determ. Platycoelia puncticollis Ohs." (handwritten), d) "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "PLATYCOELIA TRACEYAE SMITH ♂ PARATYPE" (yellow label, handwritten and typeface). The existence and location of other specimens from Ohaus' original type series are unknown. Ohaus (1904b) described two varieties of this species (some specimens housed at ZMHB). These are infrasubspecific (unavailable) names that are not regulated by the ICZN. The specimens labeled by Ohaus as "types" of these varieties are excluded from the type series of *P. puncticollis* under ICZN Article 72.4.1. The two female specimens considered to be of the variety "*binineata*" are at ZMHB labeled "Bogota Columb." and "Ecuador Sarayacu." The latter specimen is conspecific with *P. traceyae*. The two (one male, one female) specimens considered to be of the variety "*unicolor*" are at ZMHB. The male is labeled "Venezuela" and the female is labeled "Columb. La Vega." Type locality: Cauca, Colombia.

DESCRIPTION. Male (n=124). Length 17.3-21.8 mm, width 10.0-12.2 mm (Fig. 64). Color of dorsal surface lime green to olive green or yellowish-green (sometimes darkened to brownish-green); elytral interval 4 (or 3) with weak yellow, longitudinal stripe; elytral interval 7 (or 6) with wide, strong, yellow, longitudinal stripe. Ventral surface yellow to lime green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete.

Clypeal apex rounded, deflexed. Eyes separated by approximately 3.9 transverse eye-widths. Labrum rugopunctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 1 apical tooth, molar region with strong lamellae. Maxilla with 3 apical teeth, interior 2 teeth bifurcate. Apex of mentum with acute medial tooth. Antenna 10-segmented; club approximately equal to other segments combined, approximately equal to length of frons. *Pronotum:* Surface glabrous, densely punctate, with moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae punctate, punctures moderate with dark coloration (sometimes without dark coloration); intervals sparsely punctate, punctures moderate. Suture apically with acuminate to acute spine. *Pygidium:* Width approximately 2.4 times length medially. Surface weakly convex, moderately punctate; punctures moderately large, setose (in apical half); setae short, tawny. *Venter:* Thorax densely setose (except sparsely setose medially), setae cream colored. Mesothoracic process moderately produced, projecting anteriorly past mesocoxa; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose, setae tawny. Apical 2 spiracles weakly extruding, cylindrical. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.5 times longer than length of parameres (Fig. 30). Parameres strongly conical; apex rounded, expanded (Fig. 22).

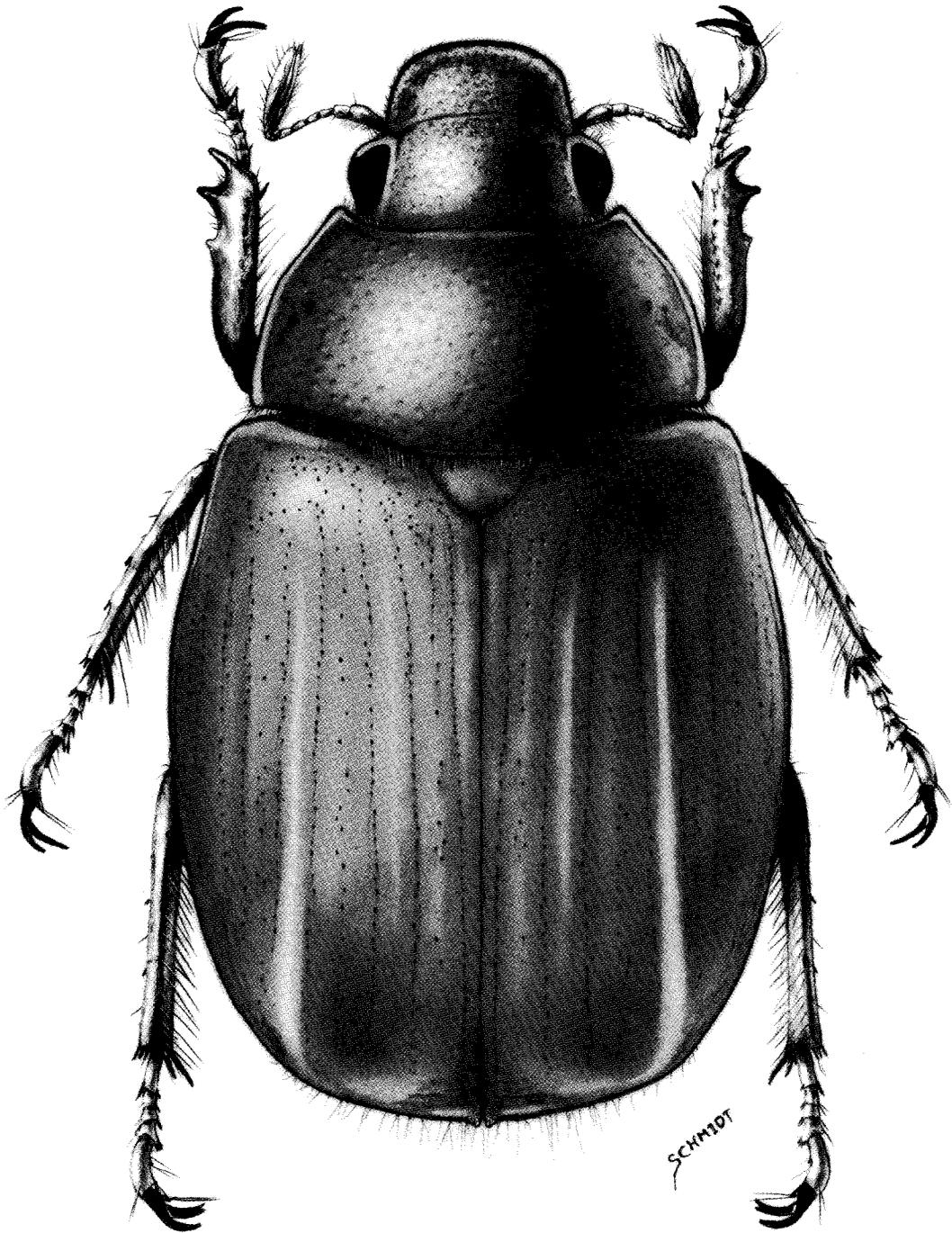


Fig. 64. *Platycolia puncticollis* male.

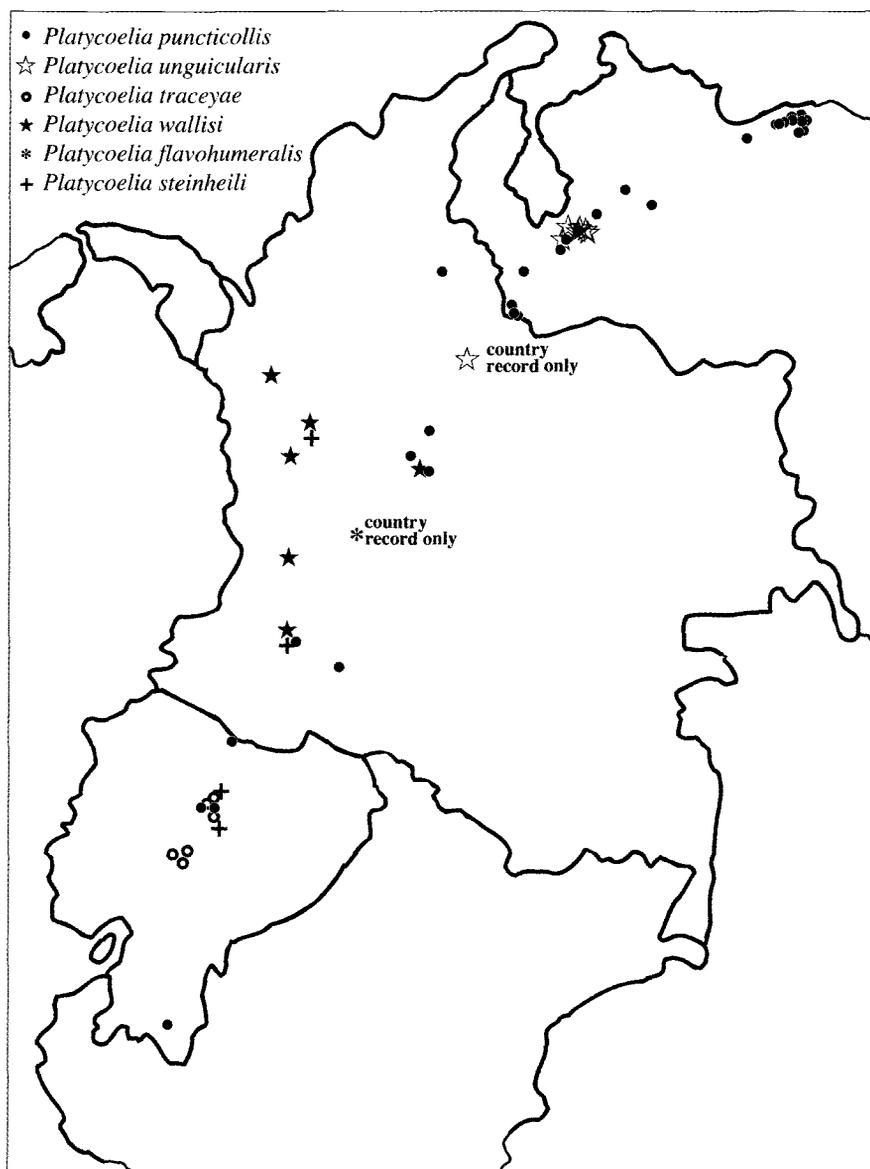


Fig. 65. Distribution of *Platycoelia puncticollis*, *P. unguicularis*, *P. traceyae*, *P. wallisi*, *P. flavohumeralis*, and *P. steinheili* in Venezuela, Colombia and Ecuador.

Female (n=165). Length 18.4-22.7 mm, width 11.0-13.2 mm. As male except in the following respects. *Head*: Antennal club slightly shorter than other segments combined. *Venter*: Apical spiracles not extruding. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a distinct tooth not curved into the oral cavity; mentum base medially depressed; antenna 10-segmented; elytron with a distinct, yellow,

longitudinal line on stria 5; elytral apices not capable of completely covering the pygidium; apex of the elytral suture with an acute spine; metasternum and abdominal sternites green or yellow; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle weakly protuberant; mesotarsomere 5 and metatarsomere 5 with an internomedial tooth; modified mesotarsal claw in male with the apex bifurcate, dorsolaterally flattened; parameres reduced, distinctly smaller than the expanded phallobase; parameres with the apex rounded, expanded.

DISTRIBUTION (Fig. 65). Known from the eastern slope of the Andes Mountains from northwestern Venezuela to southern Ecuador.

LOCALITY DATA. 288 specimens examined from AJRC, AMNH, BDGC, BMNH, CASC, CBAC, CMNC, DEIC, DJCC, FMNH, HAHC, HSIC, ISNB, MCZC, MGFT, MIZA, NMPC, SMFD, SMTD, UNSM, USNM, VMCP, ZMHB, ZSMC.

VENEZUELA (217). ARAGUA (31): Carretera Maracay - Choroni (km 25), Colonia Tovar, Puerto Portochuelo (Parque Nacional Henri Pittier), Rancho Grande, Tasajera sur del Consejo, Tiara. CARABOBO (9): Valencia. DISTRITO FEDERAL (4): Cumbre de Boquerón, El Junquito, Quebrada los Caracas. MÉRIDA (110): Carretera Mérida-El Valle (km 8), El Valle, La Carbonara, La Mucuy, La Pedregosa, Mucuchíes. LARA (12): Campo Elias (Carretera Humocaró), Parque Nacional Yacambú. MIRANDA (4): Carrizal, IVIC. TÁCHIRA (23): Betania, Carretera Bramón - Delicias, Las Lajas, Pueblo Hondo, Rubio. TRUJILLO (2): Boconó. NO DATA (22).

COLOMBIA (22). BOYACÁ (1): Villa de Leiva. CAUCA (3): No Data. CUNDINAMARCA (2): Viotá. DISTRITO CAPITAL (3): Bogotá. HUILE (1): Gigante. NORTE DE SANTANDER (1): Ocaña. NO DATA (11).

ECUADOR (37). LOJA (10): Loja. NAPO (25): Cosanga, Sierrazul. SUCUMBÍOS (1): La Bonita. NO DATA (1).

NO DATA (12).

Three specimens labeled "Bolivia" and one specimen labeled "Peru" were considered to have no data. These localities are far out of the known range of the species.

TEMPORAL DATA. January (5), February (12), March (23), April (11), May (106), June (15), July (11), August (6), September (2), October (22), November (11).

31. *Platycoelia unguicularis* Ohaus, 1904

(Fig. 65)

Platycoelia unguicularis Ohaus, 1904 (valid name)

CATALOG. *Platycoelia unguicularis*, Ohaus 1904b:314, 316, 339, 341 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:8 [distribution]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia unguicularis* Ohaus lectotype male at ZMHB labeled a) "Venez. Merida" (typeface), b) "Typus!" (red label, typeface), c) "unguicularis Ohaus" (red label, handwritten), d) "PLATYCOELIA UNGUICULARIS OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "Venez. Merida" (typeface), b) "Platycoelia unguicularis Cotype Ohs. ♀" (orange label, handwritten), c) "PLATYCOELIA UNGUICULARIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Alternans Er. La Vega Colombie" (handwritten), b) "Ex-Musæo Mniszech" (typeface), c) "Ohaus determ. Pl. unguicularis Ohaus ♀." (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA UNGUICULARIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a)

“Peru8” (handwritten), b) “Ex-Musæo JAMES THOMSON” (typeface), c) “Ohaus determ. Pl. unguicularis Ohaus ♀” (typeface and handwritten), d) “Dr Ohaus Vedit 1903.” (typeface), e) “PLATYCOELIA UNGUICULARIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002” (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) “Ex-Musæo JAMES THOMSON” (typeface), b) “Ohaus determ. Pl. unguicularis ♀. Ohaus” (typeface and handwritten), c) “Dr Ohaus Vedit 1903.” (typeface), d) “PLATYCOELIA UNGUICULARIS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002” (yellow label, handwritten and typeface). Ohaus (1904b) did not explicitly state how many specimens were in the type series. He examined material from “Ecuador, Zamora (Baron)” that I was unable to track down. The existence and location of any further remaining paralectotypes are unknown. Type locality: Mérida, Venezuela.

DESCRIPTION. Male (n=12). Length 18.9-19.7 mm, width 10.5-11.8 mm. Color of dorsal surface olive green or dark yellow; elytral interval 3, 7 with weak yellow, longitudinal stripe; elytral interval 5 with wide, strong, yellow, longitudinal stripe. Ventral surface yellowish-green to reddish-brown (especially metasternum) or dark yellow; abdominal sternites often with dark brown to black latitudinal stripe. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded, weakly deflexed. Eyes separated by approximately 3.6 transverse eye-widths. Labrum rugopunctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 1 apical tooth, molar region with strong lamellae. Maxilla with 1 small interior tooth; 1 large, cup-like, exterior tooth. Apex of mentum with acute medial tooth weakly curved into oral cavity. Antenna 10-segmented; club approximately equal to other segments combined, slightly longer than length of frons. *Pronotum:* Surface gla-

brous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae impressed, punctate; punctures moderate; intervals moderately punctate, punctures small and moderate. Suture apically with weak spine or nub. *Pygidium:* Width approximately 2.1 times length medially. Surface weakly convex, moderately punctate; punctures moderately large, setose in apical half; setae short, tawny. *Venter:* Thorax densely setose except sparsely setose medially, setae tawny. Mesothoracic process moderately produced, projecting anteriorly past mesocoxa; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose, setae tawny. Apical 2 spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with interno-basal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw longer than protarsomere 5, more thickened and elongate than other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.7 times longer than length of parameres. Parameres with apex angled ventrally.

Female (n=10). Length 18.0-22.5 mm, width 11.0-13.4 mm. As male except in the following respects. *Head:* Antennal club approximately equal to segments 2-7. *Legs:* Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a distinct tooth not curved into the oral cavity;

mentum base not medially depressed; antenna 10-segmented; elytron with a distinct, yellow, longitudinal line on stria 5; elytral apices not capable of completely covering the pygidium; elytral suture distinctly yellow, apex without an acute spine; metasternum with a dark medial patch; mesothoracic process projecting apically to procoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 with an internomedial tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 65). Known from the Andes Mountains of western Venezuela and an unknown locality in Colombia.

LOCALITY DATA. 22 specimens examined from BDGC, BMNH, CBAC, DEIC, HAHC, MIZA, MNHN, ZMHB.

VENEZUELA (17). **MÉRIDA** (15): Apartaderos, La Culata, Laguna de Mucubají, Mérida, Páramo de Mucuchíes, Teleférico. **NO DATA** (2).

COLOMBIA (1). **NO DATA** (1).

NO DATA (4).

Specimens labeled "Peru" and "Bolivia" were considered to have no data. These countries are far out of the known range of the species.

TEMPORAL DATA. April (8), May (2), June (1).

32. *Platycoelia burmeisteriana* Ohaus, 1917

(Fig. 66)

Platycoelia burmeisteri Ohaus, 1904 (primary junior homonym)

Platycoelia burmeisteriana Ohaus, 1917 (replacement name, valid name)

CATALOG. *Platycoelia burmeisteri*, Ohaus 1904b:312, 339 [original description]; Ohaus 1917:53 [designation of *Platycoelia burmeisteriana* as new name]; Ohaus 1918:176 [catalog listing as synonym of *Platycoelia burmeisteriana*]; Blackwelder 1944:246

[checklist as synonym of *Platycoelia burmeisteriana*]; Machatschke 1965:59 [catalog listing as synonym of *Platycoelia burmeisteriana*]; Machatschke 1972:303 [catalog listing as synonym of *Platycoelia burmeisteriana*].

Platycoelia burmeisteriana, Ohaus 1917:53 [new name for the primary junior homonym *Platycoelia burmeisteri* Ohaus]; Ohaus 1918:176 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia burmeisteri* Ohaus lectotype female at ZMHB labeled a) "BOLIVIA Yungas La Paz" (typeface), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "Burmeisteri Ohaus" (red label, handwritten), e) "PLATYCOELIA BURMEISTERI OHAUS PLATYCOELIA BURMEISTERIANA OHAUS ♀ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface), f) "*Platycoelia burmeisteriana* Ohaus, 1917 ♀ Det: A.B.T. Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Ohaus (1904b) did not state how many specimens were in the original type series (he had no male specimens). The existence and location of paralectotypes are unknown. Type locality: Yungas de La Paz, Bolivia.

DESCRIPTION. Male (n=75). Length 21.8-27.4 mm, width 11.8-15.5 mm. Color of dorsal surface lime green or yellow; yellow pronotum, scutellum, and elytron margins; elytral disc with 5 weakly raised, yellow, longitudinal lines, medial 3 lines thicker, lateral 2 lines thinner. Ventral surface yellow to lime green or yellow. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeus trapezoidal. Eyes separated by approximately 5.0 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with triangular medial tooth, apex of tooth extending past apex of mentum. Apex of mentum with triangular, medial tooth. Antenna 10-segmented; club

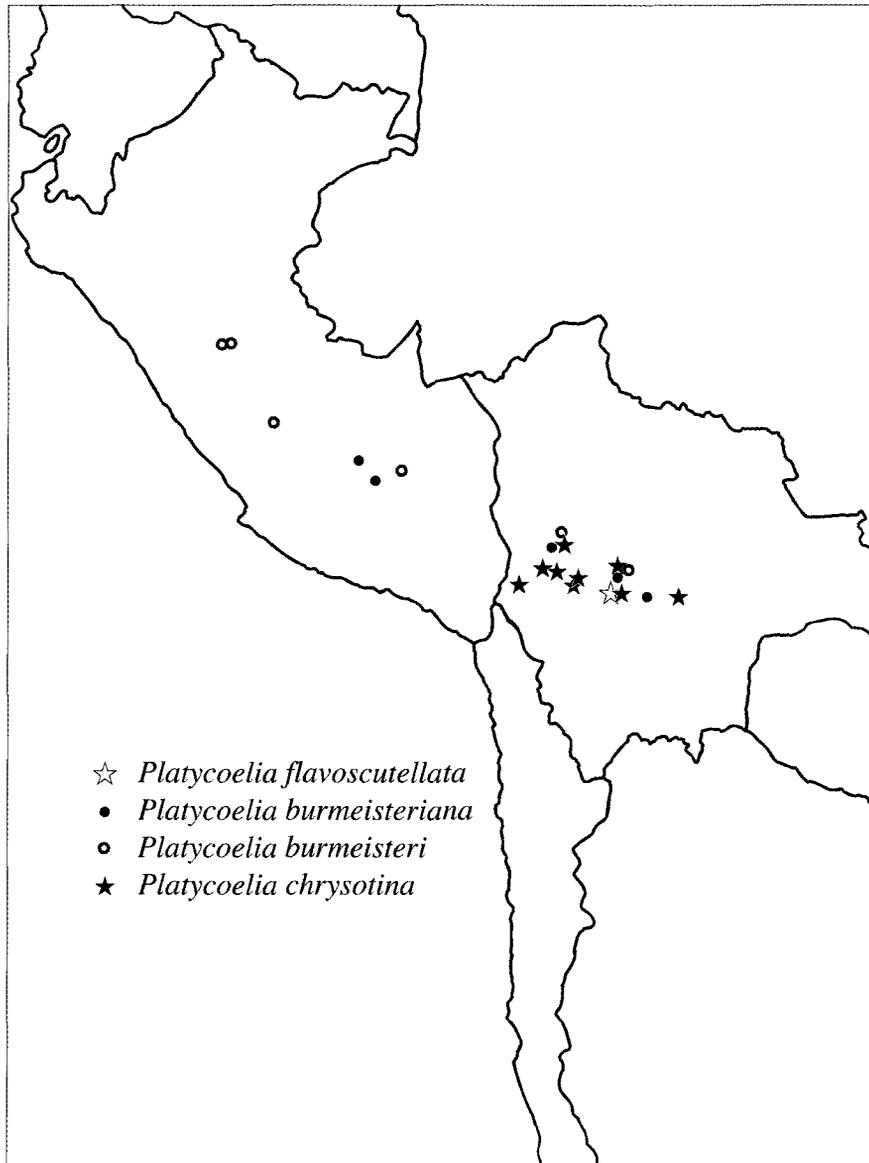


Fig. 66. Distribution of *Platycoelia flavoscutellata*, *P. burmeisteriana*, *P. burmeisteri*, and *P. chrysotina* in Perú and Bolivia.

approximately equal to segments 2-7, slightly longer than clypeal length. *Pronotum*: Surface glabrous, sparsely to moderately punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron*: Surface glabrous; longitudinal striae weakly impressed; intervals sparsely punctate. Suture rounded apically, without spine. *Pygidium*: Width approximately 2.1 times length medially. Surface weakly convex,

densely punctate; punctures moderate with setae, setae short, tawny. *Venter*: Thorax moderately setose, setae tawny. Mesothoracic process strongly produced, projecting anteriorly to protochanter; shape triangular, apex weakly rounded, dorsoventrally flattened. Abdomen sparsely setose. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth reduced. Mesotibia and metatibia wid-

est medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Unguigractor plate cylindrical, with 2 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres 1.3 times longer than length of phallobase. Parameres smooth, slightly enlarged at apex.

Female (n=16). Length 25.2-29.4 mm, width 12.9-16.9 mm. As male except in the following respects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a distinct tooth not curved into the oral cavity; mentum base medially depressed; antenna 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum and abdominal sternites green or yellow; mesothoracic process projecting apically to procoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 with an internomedial tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 66). Southern Perú to central Bolivia on the eastern slope of the Andes Mountains.

LOCALITY DATA. 91 specimens examined from AMNH, CASC, FMNH, HAHC, MNHN, USNM, ZMHB, ZSMC.

PERÚ (4). CUSCO (3): Machupicchu, Quillabamba (30-50 km S). NO DATA (1).

BOLIVIA (87). COCHABAMBA (9): Carrasco, Chaparé, Incachaca, Yungas del Palmar. LA PAZ (1): Yungas de La Paz. SANTA CRUZ (74): Parque Nacional Amboró. NO DATA (3).

TEMPORAL DATA. January (2), February (2), September (1), October (79), December (2).

33. *Platycoelia burmeisteri* Arrow, 1899 (Figs. 66)

Platycoelia burmeisteri Arrow, 1899 (valid name)

Platycoelia tschudii Ohaus 1904 (junior synonym)

Platycoelia proseni Martínez, 1976 (junior synonym)

CATALOG. *Platycoelia flavostriata*, Burmeister 1844:453 [misapplied]; Erichson 1847:100 [misapplied, catalog listing]; Burmeister 1855:525 [misapplied, key to species of *Platycoelia*]; Lacordaire 1856:371 [misapplied, distribution]; Harold 1869:1230 [misapplied, catalog listing]; Ohaus 1918:177 [catalog listing as synonym of *Platycoelia burmeisteri*]; Blackwelder 1944:246 [checklist as synonym of *Platycoelia burmeisteri*]; Ohaus 1952:8 [misapplied, distribution]; Machatschke 1965:58 [catalog listing as synonym for *Platycoelia burmeisteri*]; Machatschke 1972:302 [catalog listing as synonym of *Platycoelia burmeisteri*].

Platycoelia burmeisteri, Arrow 1899:369 [new name for Burmeister's *Platycoelia flavostriata*]; Ohaus 1904b:309 [comment on nomenclature]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:302 [catalog listing].

Platycoelia tschudii, Ohaus 1904b:303, 312, 339, 341 [original description]; Ohaus 1918:177 [placed in synonymy with *Platycoelia burmeisteri*]; Blackwelder 1944:246 [checklist as synonym of *Platycoelia burmeisteri*]; Machatschke 1965:58 [catalog listing as synonym of *Platycoelia burmeisteri*]; Machatschke 1972:303 [catalog listing as synonym of *Platycoelia burmeisteri*].

Platycoelia flavolineata (= *Platycoelia flavostriata*, *lapsus calami*), Ohaus 1904b:309, 339 [comment on nomenclature].

Platycoelia proseni, Martínez 1976:335, 338 [original description].

TYPE SPECIMENS. *Platycoelia burmeisteri* Arrow lectotype male at MLUH labeled a) "PLATYCOELIA BURMEISTERI ARROW ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface), b) "PLATYCOELIA TSCHUDII OHAUS ♂ DET:A.B.T. SMITH 2002 LECTOTYPE" (red label, handwritten and typeface), c) "*flavostriata* Latr. Dej. Alternans Er. Peru Tsuh." (green label, handwritten), d) "MLU Halle WB Zoologie S.-Nr. T.-Nr. 8/3/10" (typeface and handwritten), e) "*Platycoelia burmeisteri* Arrow, 1899 ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Arrow (1899) erected the name *P. burmeisteri* for the specimens Burmeister (1844) described as *P. flavostriata*. Arrow correctly determined that Burmeister's description was not of *P. flavostriata* but of an unnamed species. The type series consists of the specimens used by Burmeister (1844) in his description of *P. flavostriata*. Burmeister did not state how many specimens were examined for his description of this species. The existence and location of paralectotypes are unknown. Type locality: Perú.

Platycoelia tschudii Ohaus lectotype male at MLUH, same specimen as *Platycoelia burmeisteri* Arrow lectotype (see above for label data). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One paralectotype female (actually a specimen of *P. chrysotina*) at ZMHB labeled a) "BOLIVIA Yungas La Paz" (typeface), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "Tschudii Ohaus" (red label, handwritten), e) "PLATYCOELIA TSCHUDII OHAUS ♀ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia chrysotina* Ohaus, 1904 ♀ Det:A.B.T.Smith 2002" (typeface). Ohaus (1904b) based his description of *P. tschudii* on one male and one female specimen. Both type specimens are

accounted for. Ohaus (1918) first synonymized this name with *P. burmeisteri* Arrow. Type locality: Perú.

Platycoelia proseni Martínez holotype male at MACN labeled a) "BOLIVIA Do Cochabamba Pcia. Chapare Yungas del Palmar Locotal-1200 mts Coll. MARTINEZ NOV.-953" (handwritten), b) "HOLOTYPUS" (red label, typeface), c) "*Platycoelia proseni* ♂ sp. nov. A MARTINEZ-DET.1972" (red label, handwritten and typeface), d) "PLATYCOELIA PROSENI MARTÍNEZ ♂ HOLOTYPUS" (red label, handwritten and typeface), e) "*Platycoelia burmeisteri* Arrow, 1899 ♂ Det:A.B.T.Smith 2002" (typeface). Martínez (1976) based his description on the holotype only. The holotype of *P. proseni* does not exhibit character states different from *P. burmeisteri*, therefore I am synonymizing the names. Ohaus' (1904b) placement of this species with the 10-segmented species of *Platycoelia* may have caused Martínez to believe that his holotype of *P. proseni* represented a new species. All *P. burmeisteri* specimens examined have 9-segmented antennae. Type locality: Yungas del Palmar, Cochabamba, Bolivia. **NEW SYNONYMY.**

DESCRIPTION. Male (n=5). Length 19.7-20.7 mm, width 11.4-12.2 mm. Color of dorsal surface lime green to olive green; yellow head, pronotum, scutellum, and elytron margins; elytral intervals 1, 3, 5, and 7 with yellow, longitudinal lines, medial 2 lines thicker, lateral 2 lines thinner. Ventral surface yellow to lime green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeus trapezoidal. Eyes separated by approximately 3.2 transverse eye-widths. Labrum moderately punctate, setose; setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth separated from apex of mentum. Apex of mentum with small, triangular, medial tooth. Antenna 9-segmented; club slightly less than other segments combined, slightly longer than clypeal length. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent apically

and basally. *Elytron*: Surface glabrous; longitudinal striae weakly impressed; intervals sparsely to moderately punctate. Suture rounded apically, without spine. *Pygidium*: Width approximately 2.1 times length medially. Surface weakly convex, densely punctate; punctures moderate, setose (near apex); setae short, tawny. *Venter*: Thorax moderately setose (except glabrous medially), setae tawny. Mesothoracic process projecting anteriorly to procoxa, diamond shaped, ventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth reduced. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 with internomedial tooth. Unguitractor plate cylindrical, with 2 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres 1.1 times longer than length of phallobase. Parameres smooth, slightly enlarged at apex.

Female (n=8). Length 20.9-23.7 mm, width 12.8-13.3 mm. As male except in the following respects. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a distinct tooth not curved into the oral cavity; antenna 9-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum and

abdominal sternites green or yellow; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 with an internomedial tooth; parameres with the apex rounded, expanded.

DISTRIBUTION (Fig. 66). Andes Mountains from southern Perú to central Bolivia.

LOCALITY DATA. 12 specimens examined from AMNH, FMNH, HAHC, MACN, MLUH, MNHN, USNM, ZMHB.

PERÚ (8). CUSCO (2): Santa Isabel (Cosñipata Valley). HUÁNUCO (4): Carpish, Tingo María, No Data. JUNÍN (1): Chanchamayo. NO DATA (1).

BOLIVIA (4). COCHABAMBA (1): Yungas del Palmar. LA PAZ (3): Río Zongo.

TEMPORAL DATA. July (1), August (1), October (1), November (4).

34. *Platycoelia traceyae* new species

(Figs. 65, 67)

TYPE SPECIMENS. Male holotype, female allotype and 8 paratypes (5 male, 3 female). Holotype male at UNSM and one paratype male at VMCP labeled "ECU. Prov. NAPO 24.-27. 11. 1999 BAEZA env. 1910m Vl. Maly lgt. E24." Allotype female at UNSM labeled "Hacienda San Isidro Nov. 12, 1995 front porch lights M. Lysinger." One male paratype at USNM labeled "Yunguilla Ecuador, S.A. 30 X 1937 W.C. Macintyre" and "OL Cartwright Collection 1960." One male paratype at AMNH labeled "Ambato Ecuador." One male paratype at ABTS labeled "Ecuador Baños" and "In Halle mit der flavostriata Latr. sensu Burm. versleichen." One male paratype at ZMHB labeled a) "Sarayacu Ecuador. Buckley 1879," "Ex-Musæo D. Sharp 1890," "Ohaus determ. *Platycoelia puncticollis* Ohs.," and "PLATYCOELIA PUNCTICOLLIS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002." One female paratype at ZMHB labeled "Ecuador

Sarayacu," ♀, "puncticollis Ohs v. bilineata Ohs.," and "NOT A TYPE OF *P. PUNCTICOLLIS* Det:A.B.T.Smith 2002." One female paratype at ABTS labeled "Ecuador 5033." One female paratype at BMNH labeled "Buckley," "Equador," "Fry Coll. 1905-100.," and "Ohaus determ. *Platycoelia* n. sp. 2 bei inflata Ohs." Ohaus (1904b) also gave the variety name "*P. puncticollis* var. *bilineata*" to a specimen of *P. traceyae*. This variety name is infrasubspecific, and is not an available name regulated by the ICZN. Type locality: Baeza, Napo, Ecuador.

HOLOTYPE. Male: length 19.5 mm, width 11.0 mm. Color of dorsal surface lime green; head (adjacent to eye), pronotum and elytron margins yellow; elytral intervals 3 and 5 with yellowish-green longitudinal stripes. Ventral surface yellow to lime green, metasternum olive green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.4 transverse eye-widths. Labrum moderately punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth separated from apex of mentum. Apex of mentum with medial notch. Antenna 10-segmented; club slightly longer than segments 2-7, approximately equal to frons. *Pronotum:* Surface glabrous, moderately punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae not impressed, punctate, punctures moderate with dark coloration. Sutural apex angled, without spine. *Pygidium:* Width approximately 2.2 times length medially. Surface weakly convex, densely punctate; punctures moderate, setose (near apex); setae long, tawny. *Venter:* Thorax densely setose (glabrous medially), setae cream colored. Mesothoracic process projecting anteriorly to procoxa; shape weakly subelliptical, apex rounded, dorsoventrally flattened. Abdomen glabrous. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; apical 2 teeth subequal in size, third tooth shorter. Mesotibia and metatibia

widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak, apical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 with internal swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with weak ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.3 times longer than length of parameres. Paramere with apex rounded, weakly expanded.

ALLOTYPE. Female: length 20.9 mm, width 12.1 mm. As holotype except in the following respects. *Legs:* Protarsomere 4 without apical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=5). Length 16.5-19.9 mm, width 9.1-11.6 mm (Fig. 67). Female (n=3). Length 20.7-21.6 mm, width 10.8-12.1 mm. The paratypes differ from the holotype and allotype in the following respects. Color sometimes olive green. *Head:* Antenna sometimes appearing 9-segmented. *Elytron:* Sutural apex sometimes with weak spine.

ETYMOLOGY. *Platycoelia traceyae* is named after my wife Tracey, who has always been supportive of my work on scarab beetles.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frons with a yellow, transverse 'mask' around eyes; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron with a distinct, yellow, longitudinal line on stria 5; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum and abdominal sternites green or yellow; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle not

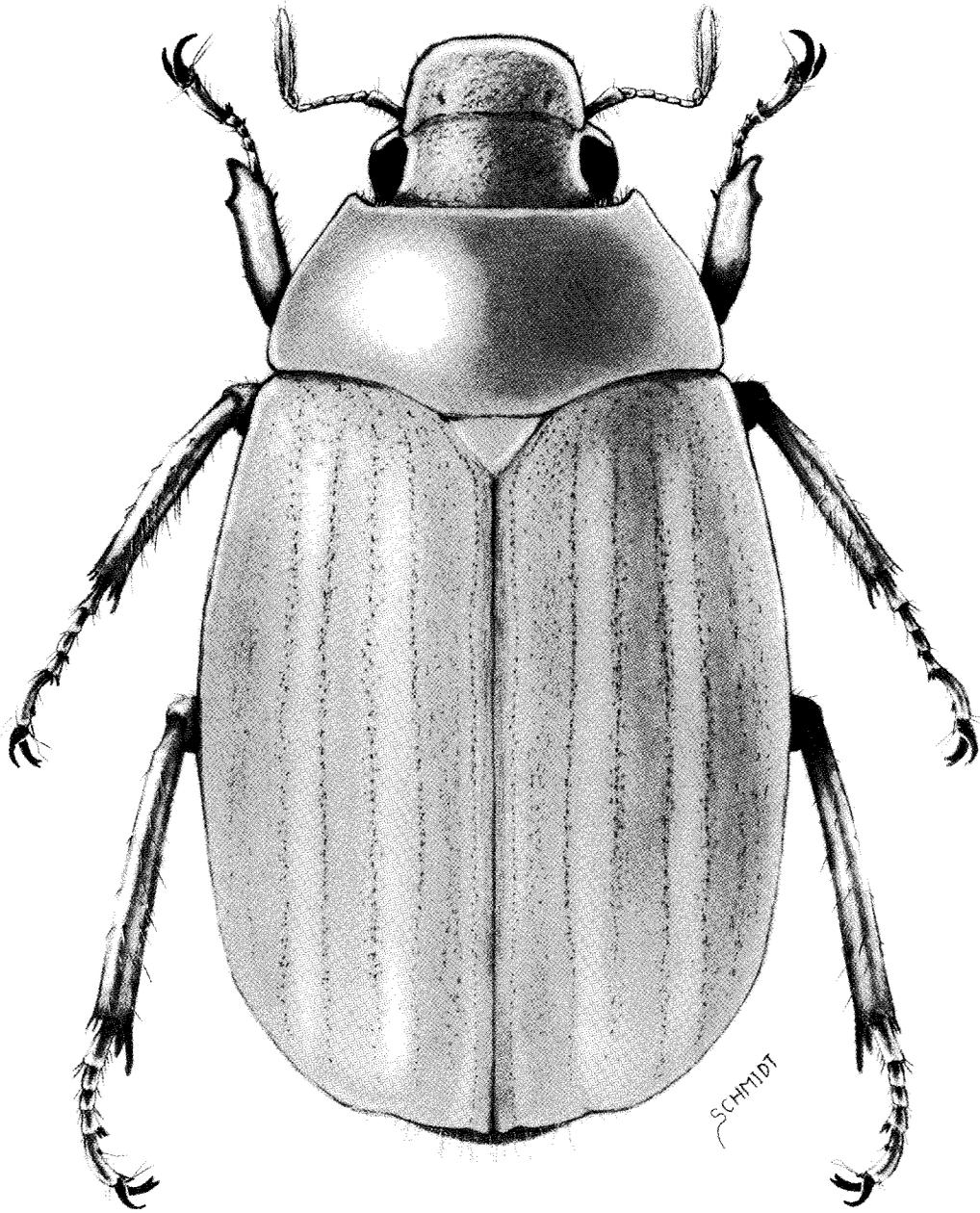


Fig. 67. *Platycoelia traceyae* male.

protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, expanded.

DISTRIBUTION (Fig. 65). Occurs on the eastern slope of the Andes Mountains in central Ecuador.

LOCALITY DATA. 10 specimens examined from AMNH, BMNH, HSIC, USNM, VMCP, ZMHB.

ECUADOR (10). NAPO (5): Baeza, Hacienda San Isidro (Cosanga), Sarayacu. TUNGURAHUA (3): Ambato, Baños, Yunguilla. NO DATA (2).

TEMPORAL DATA. October (1), November (3).

35. *Platycoelia wallisi* Ohaus, 1904 (Fig. 65)

Platycoelia wallisi Ohaus, 1904 (valid name)

CATALOG. *Platycoelia wallisi*, Ohaus 1904b:311, 339 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:58 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia wallisi* Ohaus lectotype male at ZMHB labeled a) "Frontino Columb. Wallis" (typeface), b) "Typus!" (red label, typeface), c) "Pl. Wallisi Ohaus" (red label, handwritten), d) "PLATYCOELIA WALLISI OHAUS ♂ DET: A.B.T. SMITH 2001 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at MNHN labeled a) "Columb. occ. (Wallis)" (handwritten), b) "flavostriata Latr" (handwritten), c) "Ex Musæo E. Steinheil" (typeface), d) "Ohaus determ. Pl. Wallisi Ohaus" (typeface and handwritten) e) "Dr Ohaus Vidit 1903." (typeface), f) "PLATYCOELIA WALLISI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). Two

male paralectotypes at MNHN labeled a) "Colombia (Cauca) Distrito de Pereira Roman M. Valencia 1886." (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "PLATYCOELIA WALLISI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Bogota Columb." (typeface), b) "Platycoelia Wallisi Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA WALLISI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Columb." (typeface), b) "Platycoelia Wallisi Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA WALLISI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). Three female paralectotypes at MNHN labeled a) "Columb. occ. (Wallis)" (handwritten), b) "Ex Musæo E. Steinheil" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Columb." (typeface), b) "Ex Musæo A.SALLÉ 1897" (typeface), c) "Ohaus determ. Pl. Wallisi Ohaus ♀" (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Columb. occ. (Wallis)" (handwritten), b) "♀" (typeface), c) "Platycoelia Wallisi Cotype Ohs." (orange label, handwritten), d) "Platycoelia flavostriata Lat. Colombia" (handwritten), e) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Columb. Cauca" (typeface), b) "♀" (typeface), c) "Platycoelia Wallisi Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Frontino Columb Wallis" (typeface), b) "♀" (typeface), c) "Platycoelia Wallisi Cotype Ohs." (orange

label, handwritten), d) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Bogota" (handwritten), b) "Ex Musæo Mniszech" (typeface), c) "Ohaus determ. Pl. Wallisi Ohaus ♀." (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA WALLISI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). Ohaus (1904b) did not state how many specimens were in the original type series. Ohaus also examined specimens from "Manizales (Steinheil)" and "Ecuador, Sara-yacu (Buckley)" but I was unable to locate these paralectotypes. The existence and location of additional remaining paralectotypes are unknown. One specimen labeled "COLUMBIA S.d.Popayan" also has Ohaus' orange cotype label. Since this locality was not mentioned in the original description, the specimen is not part of the type series. Type locality: Frontino, Antioquia, Colombia.

DESCRIPTION. Male (n=18). Length 21.3-23.0 mm, width 11.2-13.6 mm. Color olive green or brownish-yellow; elytral interval 2, 4, and 6 with yellow, longitudinal stripe; head, pronotum, scutellum, and elytron with yellow margin. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 4.1 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth separated from apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 teeth. Mentum with apicomedial notch. Antenna 10-segmented (often appearing 9-segmented); club approximately equal to segments 2-7 (2-6 in apparently 9-segmented individuals), slightly longer than length of frons. *Pronotum:* Surface glabrous, moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous;

longitudinal striae impressed, punctate; punctures moderate; intervals moderately punctate, punctures small. Suture apically with weak spine or nub. *Pygidium:* Width approximately 1.5 times length medially. Surface weakly convex, densely punctate to rugopunctate; punctures moderately large, setose (near apex); setae short, tawny. *Venter:* Thorax moderately setose (except sparsely setose medially), setae tawny. Mesothoracic process moderately produced, projecting anteriorly past mesocoxa; shape conical; ventrally flattened. Abdomen sparsely setose, setae tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internopical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 with internobasal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Parameres approximately 1.1 times longer than length of phallobase. Parameres with apex rounded.

Female (n=22). Length 23.4-27.8 mm, width 12.5-15.3 mm. As male except in the following respects. *Legs:* Protarsomere 3-4 without internopical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; metasternum and abdominal sternites green or yellow; mesothoracic process

projecting apically to the procoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 65). This species mainly occurs in the Andes Mountains of southern Colombia but most of the specimens studied were quite old with poor data.

LOCALITY DATA. 40 specimens examined from AMNH, CASC, CMNH, DEIC, MCZC, MNHN, SMFD, SMTD, ZMHB, ZMUH.

COLOMBIA (36). **ANTIOQUIA** (2): Frontino. **CALDAS** (2): Aguadita, Manizales. **CAUCA** (6): Pereira, Popayán, No Data. **DISTRITO CAPITAL** (7): Bogotá. **VALLE DEL CAUCA** (1): No Data. **NO DATA** (18).

NO DATA (4).

Specimens labeled "Caracas" and "Venezuela" were considered to have no data.

36. *Platycoelia flavohumeralis* new species

(Fig. 65)

TYPE SPECIMEN. Male holotype. Holotype male at MNHN labeled "Columb. occ. (Wallis)," "humeralis Steinh.," "Ex Musæo E. Steinheil," and "Ohaus determ. Pl. spec. nov. prope confluens mihi ignota." Type locality: western Colombia.

HOLOTYPE. Male: length 17.3 mm, width 10.1 mm. Color olive green with yellow elytron and pronotum margins; elytron with yellow patches basolaterally. Body ovate, convex. **Head:** Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by 4.0 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth; apex of tooth acute, weakly extending past apex of men-

tum. Apex of mentum with triangular medial tooth not curved into oral cavity. Antenna apparently 10-segmented (segments 1-7 observed, club missing from the only known specimen). **Pronotum:** Surface glabrous, moderately punctate, with small or moderate punctures. Marginal bead weak apicolaterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae weakly punctate, punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture angled apically, without spine. **Pygidium:** Width 1.9 times length medially. Surface weakly convex, sparsely to moderately punctate; punctures moderate, disc setose apically. **Venter:** Thorax moderately setose, setae cream colored. Mesothoracic process strongly produced, projecting anteriorly to procoxa; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose laterally, setae cream colored. Apical spiracles extruding. **Legs:** Protibia with 3 subequal in size apical teeth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internal stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. **Male Genitalia:** Phallobase 1.2 times longer than length of parameres. Parameres apex rounded.

ETYMOLOGY. *Platycoelia flavohumeralis* means "the yellow-shouldered *Platycoelia*" referring to the yellow spots on the base of the elytra.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth weakly overlapping the mentum; mentum

with a distinct tooth; antenna apparently 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytron with yellow patches basolaterally; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum and abdominal sternites green or yellow; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 65). From somewhere in western Colombia.

LOCALITY DATA. 1 specimen examined from MNHN.

COLOMBIA (1). NO DATA (1).

**37. *Platycoelia steinheili* Ohaus,
1904
(Fig. 65)**

Platycoelia steinheili Ohaus, 1904 (valid name)

CATALOG. *Platycoelia steinheili*, Ohaus 1904b:291, 338, 341 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:57 [catalog listing]; Machatschke 1972:302 [catalog listing]; Martínez 1976:328, 333, 338 [comparison with *Platycoelia bordoni* and *Platycoelia proseni*].

TYPE SPECIMENS. *Platycoelia steinheili* Ohaus lectotype male at ZMHB labeled a) "Columb. Popayan" (handwritten), b) "Typus!" (red label, typeface), c) "steinheili Ohaus" (red label, handwritten), d) "PLATYCOELIA STEINHEILI OHAUS M DET: A.B.T. SMITH 2001 LECTOTYPE" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at MNHN labeled a) "Manizales (Patino)" (handwritten), b) "Ex Musæo E. Steinheil" (typeface), c) "Dr

Ohaus Vidit 1903." (typeface), d) "Ohaus determ. ~~Callichloris~~ Plat. Steinheili Ohaus Type F" (typeface and handwritten), e) "PLATYCOELIA STEINHEILI OHAUS F PARALECTOTYPE A.B.T.SMITH 2001" (yellow label, handwritten and typeface). Ohaus (1904b) indicated that there was more than one male labeled "Colombia" in the Rothschild collection. These specimens are not in the BMNH or MNHN. The existence and location of additional remaining paralectotypes are unknown. Type locality: Popayán, Cauca, Colombia.

DESCRIPTION. Male (n=3). Length 17.8-21.1 mm, width 11.0-11.9 mm. Color of dorsal surface olive green to lime green (sometimes darkened to brownish-green); elytron with 6-7 thick, yellow, longitudinal stripes; head, pronotum, and elytron with yellow margins; pronotum medially with thick, longitudinal stripe; scutellum yellow. Ventral surface yellow to greenish-yellow with black metasternum, abdominal sternites (at least medially). Body ovate, convex. **Head:** Dorsal surface glabrous. Frons and clypeus moderately to densely punctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 6.2 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 1 tooth, molar region with strong lamellae. Maxilla with 3 cup-shaped teeth. Mentum with apicomедial notch or small tooth. Antenna 9-segmented; club slightly shorter than other segments combined, slightly shorter than length of frons. **Pronotum:** Surface glabrous, sparsely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae impressed, punctate; punctures moderate; intervals impunctate. Suture apically with acute spine. **Pygidium:** Width approximately 1.9 times length medially. Surface weakly convex, densely punctate; punctures moderately large to moderate, setose

(near apex); setae short, tawny. *Venter*: Thorax moderately setose (except glabrous medially), setae cream colored. Mesothoracic process projecting anteriorly to procoxa; parabolic, dorsoventrally flattened. Abdomen sparsely setose, setae cream colored. Apical spiracles weakly extruding. *Legs*: Protibia with 1 apical tooth, 2 short, obsolete medial teeth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4, with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 without internobasal tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw approximately equal in length to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.3 times longer than length of parameres. Parameres with apex rounded, weakly expanded.

Female (n=1). Length 22.1 mm, width 12.8 mm. As male except in the following respects. *Legs*: Protibia with 3 subequal in size teeth in apical half. Protarsomeres missing in specimen examined.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a distinct tooth; antenna 9-segmented; pronotum with a distinct yellow medial line; pronotum and elytron with prominent punctation; elytron with 6-7 distinct, yellow, longitudinal lines on the elytron; elytral apices not capable of completely covering the pygidium; apex of the elytral suture with an acute spine; metasternum and abdominal sternites black; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle weakly protuberant; protibia with 1 prominent tooth; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, expanded.

DISTRIBUTION (Fig. 65). Occurs from southern Colombia to central Ecuador mainly on the eastern slope of the Andes Mountains.

LOCALITY DATA. 4 specimens examined from BMNH, HAHC, MNHN, ZMHB.

COLOMBIA (2). CALDAS (1): Manizales. CAUCA (1): Popayán.

ECUADOR (2). NAPO (2): Archidona, Baeza.

TEMPORAL DATA. March (1).

38. *Platycoelia chrysotina* Ohaus, 1904

(Figs. 3, 9, 14, 66)

Platycoelia chrysotina Ohaus, 1904 (valid name)

Platycoelia pulchrior Ohaus, 1904 (junior synonym)

CATALOG. *Platycoelia chrysotina*, Ohaus 1904b:320, 330, 339 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

Platycoelia pulchrior, Ohaus 1904b:321, 339 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia chrysotina* Ohaus lectotype male at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "Platycoelia chrysotina Type Ohs." (orange label, handwritten), c) "PLATYCOELIA CHRYSOTINA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "♂" (typeface), c) "Platycoelia chrysotina Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA CHRYSOTINA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Two

male paralectotypes at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "Platycoelia chrysotina Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA CHRYSOTINA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Two male paralectotypes at ZMHB labeled a) "Bolivia Chaco" (typeface and handwritten), b) "PLATYCOELIA CHRYSOTINA OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "♂" (typeface), c) "Platycoelia chrysotina Cotyp. Ohaus" (handwritten), d) "75164" (typeface), e) "Type" (typeface), f) "für ein Exemplar von Geniates signatus Burm." (handwritten), g) "PLATYCOELIA CHRYSOTINA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Four female paralectotypes at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "♀" (typeface), c) "Platycoelia chrysotina Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA CHRYSOTINA OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Two female paralectotypes at ZMHB labeled a) "Bolivia Chaco" (typeface and handwritten), b) "PLATYCOELIA CHRYSOTINA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "♀" (typeface), c) "Cotypus!" (red label, typeface), d) "chrysotina Ohs." (handwritten), e) "PLATYCOELIA CHRYSOTINA OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at ZMHB labeled a) "Bolivia Chaco" (typeface), b) "♀" (typeface), c) "Cotype" (red label, typeface), d) "Platycoelia chrysotina Ohs." (orange label, handwritten), e) "PLATYCOELIA CHRYSOTINA OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Ohaus (1904b) stated that there were 40 male and eight female specimens in the original type series. The location of the remaining 33 male paralectotypes is unknown. Several specimens (at BMNH, SMTD, ZMHB) labeled "Bolivia Yungas" also have various type labels. Since this locality was not

mentioned in the original description, these specimens are not considered as part of the original type series. Type locality: Chaco, La Paz, Bolivia.

Platycoelia pulchrior Ohaus lectotype male at ZMHB labeled a) "Yungas-La Paz BOLIVIA 3000 m." (typeface and handwritten), b) "♂" (typeface), c) "Typus!" (red label, typeface), d) "P. pulchrior Ohaus" (red label, handwritten), e) "PLATYCOELIA PULCHROR OHAUS ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface), f) "*Platycoelia chrysotina* Ohaus, 1904 ♂ Det:A.B.T.Smith 2002" (typeface).

Lectotype here designated. See Methods and Materials section for a statement of taxonomic purpose. One paralectotype male at ZMHB labeled a) "Bolivia Chochabamba" (handwritten), b) "♂" (typeface), c) "Cotypus!" (red label, typeface), d) "P. pulchrior Ohaus" (red label, handwritten), e) "PLATYCOELIA PULCHROR OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia chrysotina* Ohaus, 1904 ♂ Det:A.B.T.Smith 2002" (typeface). Ohaus (1904b) did not state how many specimens were in the original type series (but there were males only). The existence and location of other paralectotypes are unknown. The type specimens of *P. pulchrior* do not have character states unique from *P. chrysotina*; therefore I am synonymizing the two names. As the first reviser, I select *P. chrysotina* to have priority over *P. pulchrior*. Type locality: Yungas de La Paz, Bolivia. **NEW SYNONYMY.**

DESCRIPTION. Male (n=24). Length 16.8-21.6 mm, width 9.1-11.7 mm. Color of dorsal surface lime green to olive green; yellow head, pronotum, scutellum, and elytron margins (wider along base of elytron); elytron with 5 thin, yellow longitudinal stripes on elytral intervals. Ventral surface yellow to yellowish-green with medial brown patch on metasternum, sometimes abdominal sternites. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons moderately to densely punctate, clypeus rugopunctate, punctures small or moderate. Frons not depressed. Frontoclypeal suture complete (occasionally incomplete). Clypeal apex broadly rounded. Eyes sepa-

rated by approximately 3.6 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth not overlapping apex of mentum (Fig. 3). Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 apical teeth, interior 2 teeth bifurcate. Apex of mentum with medial notch. Antenna 10-segmented; club approximately equal to segments 2-7, approximately equal to clypeal length. *Pronotum*: Surface glabrous, moderately punctate, with small or moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed, weakly punctate; punctures moderate with dark coloration; intervals moderately punctate, punctures moderate. Suture angled apically with weak nub or spine. *Pygidium*: Width approximately 2.1 times length medially. Surface weakly convex, moderately to densely punctate; punctures small or moderate, setose (near apical margin); setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to procoxa; shape conical-elongate, apex rounded, dorsoventrally flattened (Fig. 9). Abdomen sparsely setose, setae white. Apical 2 spiracles extruding, cylindrical. *Legs*: Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth shorter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate (Fig. 14). Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded, weakly expanded.

Female (n=23). Length 18.3-23.7 mm, width 10.1-12.1 mm. As male except in the fol-

lowing respects. *Head*: Antennal club slightly shorter than segments 2-7. *Venter*: Apical spiracles weakly extruding or not extruding. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum and abdominal sternites dark brown to black (at least medially); mesothoracic process projecting apically to the procoxa; apical abdominal spiracle weakly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 66). Andes Mountains of southern Perú and central Bolivia.

LOCALITY DATA. 48 specimens examined from AMNH, ANCB, BMNH, DEIC, DJCC, HAHC, HNHM, ISNB, MNHN, SMTD, USNM, ZMHB.

PERÚ (6). CUSCO (4): Marcapata, Pilcopata (40-53 km W), Valle de Lares (75 km NW Calca). NO DATA (2).

BOLIVIA (40). COCHABAMBA (5): Carrasco, Cochabamba, Limbo. LA PAZ (24): Chaco, La Paz, Sendá Uyuni – Qucara, Tojoloque, Yanacachi, Yungas de La Paz. SANTA CRUZ (1): Comarapa. NO DATA (10).

NO DATA (2).

One specimen labeled "Equateur Baños" was considered to have no data. This locality is far out of the known range for the species.

TEMPORAL DATA. January (1), February (6), October (4), December (1).

39. *Platycoelia butleri* new species
(Figs. 31, 68, front cover)

TYPE SPECIMENS. Male holotype, female allotype and 3 paratypes (2 male, 1 female). Holotype male at UNSM labeled "COLL LECOURT G. Cristal-Mayu à Cochabamba Alt: 2640 m. 28.XI.1995. BOLIVIE." Allotype female at ABTS labeled "BOLIVIA: Cochabamba Chapare, Corani, 2600 m Ctr Hidroelectrica 6 December 1996 M.Butler." One male paratype at EGRC labeled "PERU:Dpto.la Libertad Cumpang, above Ucta-bamba, on trail to Ongón: ca.2625 M" and "October 6-16, 1979 Coll. LJB." One male paratype at MNHN labeled "Loja de Mathan," "Dr Ohaus Vidit 1903.," and "Ohaus determ. Pl. spec. nova prope confluens mihi ignota." One female paratype at FMNH labeled "Chapare 3000m. Cochabamba Bol. 8-11-XII-84 Coll. L.E.Pena" and "FMNH. 1986 L.E. Pena Coll Acc.# 17-422." Type locality: Cristal-Mayu, Cochabamba, Bolivia.

HOLOTYPE. Male: length 16.7 mm, width 9.3 mm. Color lime green; yellow scutellum, and elytron margins; metasternum brown medially. Elytron with yellow reticulated pattern, apicolateral spot. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 4.0 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth resting against apex of mentum. Apex of mentum with medial tooth curved into oral cavity. Antenna 10-segmented; club slightly shorter than other segments combined, slightly shorter than frons. *Pronotum:* Surface glabrous, moderately punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae not impressed or punctate. Reticulated pattern weakly elevated. Sutural apex rounded, without spine. *Pygidium:* Width approximately 2.4 times length medially. Surface weakly convex, moderately to sparsely punctate; punctures

moderate, setose; setae long, tawny. *Venter:* Thorax densely setose, setae cream colored. Mesothoracic process projecting anteriorly to procoxa; shape conical-elongate, apex rounded, dorsoventrally flattened. Abdomen sparsely setose; setae tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; apical 2 teeth subequal in size, third tooth shorter. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with apical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 without internal swelling or tooth. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal claws elongated with long ventral tooth (apex even with claw apex), not thickened. Modified metatarsal claw elongate, with weak ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.1 times longer than length of parameres (Fig. 31). Paramere with apex with strong ventral curve.

ALLOTYPE. Female: length 16.3 mm, width 9.3 mm. As holotype except in the following respects. Color yellow (reticulated pattern on elytron weak, but evident). *Head:* Antennal club approximately equal to segments 2-7. *Legs:* Protarsomere 3-4 without apical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=2). Length 16.3 mm, width 9.2 mm. Female (n=1). Length 17.9 mm, width 10.4 mm. The paratypes differ from the holotype and allotype in the following respects. Color lime green or yellow (reticulated pattern on elytron weak, but evident). *Legs:* Modified metatarsal claw with ventral tooth sometimes prominent.

ETYMOLOGY. *Platycoelia butleri* is named honor of Michael Butler of Peterborough, Ontario. Mike spent a rainy night in a boggy area in the "middle-of-nowhere," Bolivia, to

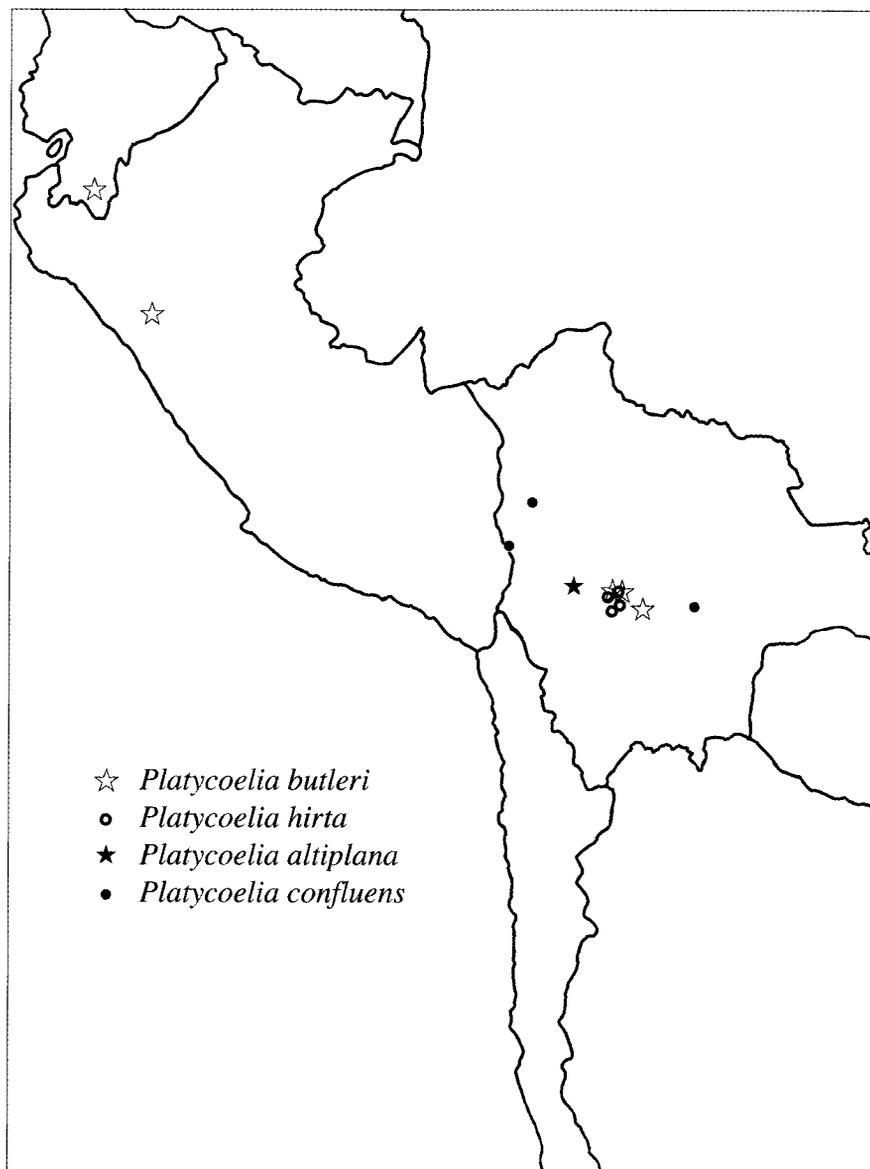


Fig. 68. Distribution of *Platycoelia butleri*, *P. hirta*, *P. altiplana*, and *P. confluens* in Ecuador, Perú and Bolivia.

collect the allotype of this species (while the rest of the expedition enjoyed a steak dinner in Cochabamba).

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a dis-

tinct tooth curved into the oral cavity; antenna 10-segmented; elytron with a distinct, yellow, reticulated pattern; elytral apices not capable of completely covering the pygidium; elytral suture yellow, apex without an acute spine; metasternum with a dark medial patch; abdominal sternites green to yellow; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere

5 without an internal tooth; parameres with the apex rounded, strongly curved downward.

DISTRIBUTION (Fig. 68). Occurs on the Andes Mountains from southern Ecuador to central Bolivia.

LOCALITY DATA. 5 specimens examined from ABTS, DJCC, EGRC, FMNH, MNHN.

ECUADOR (1). LOJA (1): Loja.

PERÚ (1). LA LIBERTAD (1) Uctubamba.

BOLIVIA (3). COCHABAMBA (3): Chaparé, Corani, Cristal-Mayu.

TEMPORAL DATA. October (1), November (1), December (2).

40. *Platycoelia hirta* Ohaus, 1904 (Fig. 68)

Platycoelia hirta Ohaus, 1904 (valid name)

CATALOG. *Platycoelia hirta*, Ohaus 1904b:317, 339 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia hirta* Ohaus lectotype male at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Typus!" (red label, typeface), d) "Pl. hirta Ohaus" (red label, handwritten), e) "PLATYCOELIA HIRTA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Four male paralectotypes at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. hirta Ohs. ♂ Cotyp." (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA HIRTA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label,

handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. hirta Ohs. ♂ Type." (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA HIRTA OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "♀" (typeface), c) "Typus!" (red label, typeface), d) "Pl. hirta Ohaus" (red label, handwritten), e) "Dr Ohaus Vidit 1903." (typeface), f) "PLATYCOELIA HIRTA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. hirta Ohs. ♀ Cotyp." (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA HIRTA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One female paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Ohaus determ. Pl. hirta Ohs. ♀ Type." (typeface and handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA HIRTA OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Ohaus (1904b) stated that there were six males and three females in the original type series, so all type specimens are accounted for. Type locality: Cochabamba, Bolivia.

DESCRIPTION. Male (n=75). Length 16.9-21.0 mm, width 8.9-10.0 mm. Color of dorsal surface olive green to lime green or yellow; yellow head, pronotum, scutellum, and elytron margins; elytron with irregular, translucent splotches giving water soaked appearance; 3 thin, yellow longitudinal stripes on elytral intervals; suture with thick yellow margin. Ventral surface yellow to yellowish-green with medial brown patch on metasternum (sometimes covering entire metasternum); abdominal sternites with brown along medial margins. Body ovate, con-

vex. *Head*: Dorsal surface glabrous. Frons moderately to densely punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.3 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 apical teeth, interior 2 teeth bifurcate. Apex of mentum with medial notch. Antenna 10-segmented; club slightly longer than segments 2-7, approximately equal to length of frons. *Pronotum*: Surface glabrous, moderately punctate, with small or moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed; intervals moderately punctate, punctures moderate. Suture angled apically without spine. *Pygidium*: Width approximately 1.8 times length medially. Surface weakly convex, sparsely to moderately punctate; punctures moderate, setose (near apical margin); setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process strongly produced, projecting anteriorly to procoxa; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose, setae white. Apical 2 spiracles extruding, cylindrical. *Legs*: Protibia with 3 teeth in apical half; 2 apical teeth subequal in size, third tooth shorter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallos-

base approximately 1.4 times longer than length of parameres. Parameres with apex rounded, weakly expanded.

Female (n=99). Length 17.2-23.2 mm, width 8.6-11.2 mm. As male except in the following respects. *Venter*: Apical spiracles not extruding. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with medial notch; antenna 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; elytron with 'blotchy' appearance; elytral suture yellow, apex without acute spine; metasternum dark brown to black (at least medially); abdominal sternites with dark apical and basal borders; mesothoracic process projecting apically to the procoxa; apical abdominal spiracle weakly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 68). Andes Mountains of central Bolivia.

LOCALITY DATA. 173 specimens examined from AMNH, BCRC, CMNH, FMNH, HAHC, MNHN, ZSMC.

BOLIVIA (172). COCHABAMBA (171): Chapare, Cochabamba, Incachaca, Limbo, Yungas de Totorá, Yungas del Palmar, No Data. SANTA CRUZ (1): Parque Nacional Amorbó.

NO DATA (1).

TEMPORAL DATA. February (11), September (1), October (8), November (3), December (1).

41. *Platycoelia alti plana* new species
(Fig. 68)

TYPE SPECIMENS. Male holotype and 11 male paratypes. Holotype male and 7 male paratypes at ANCB, two male paratypes at ABTS, and two male paratypes at UNSM labeled "BOLIVIA, Dept. La Paz Prov. Franz Tamayo Tojoloque Pastizal 20-22.X.1999 J. Corro." Type locality: Totoloque, Franz Tamayo, La Paz, Bolivia.

HOLOTYPE. Male: length 17.5 mm, width 10.0 mm. Color of dorsal surface light green to yellow; elytral suture with thick, yellow margin; elytral disc with 2 weakly raised, yellow, longitudinal lines. Ventral surface yellow to yellowish-green. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons moderately punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 6.3 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Apex of mentum with medial notch. Antenna 10-segmented; club slightly longer than segments 2-7, approximately equal to length of clypeus. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, weakly punctate; intervals sparsely punctate, punctures moderate. Suture angled apically without spine. *Pygidium:* Width approximately 2.0 times length medially. Surface weakly convex, sparsely punctate; punctures moderate, setose (near apical margin); setae short, cream colored. *Venter:* Thorax moderately setose (except glabrous medially), setae white. Mesothoracic process moderately produced, projecting anteriorly past mesocoxa, shape cylindrical, apex rounded, ventrally flattened. Abdomen sparsely setose, setae white. Apical 2 spiracles extruding, cylindrical. *Legs:*

Protibia with 3 teeth; 2 subequal in size teeth in apical quarter, third tooth obsolete. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

VARIATION. Male (n=11). Length 15.5-17.8 mm, width 8.9-10.0 mm. The paratypes do not differ significantly from the holotype. Other characters as follows. *Head:* Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 apical teeth, medial tooth bifurcate. *Male Genitalia:* Phallobase approximately 1.1 times longer than length of parameres. Parameres with apex rounded. Female unknown.

ETYMOLOGY. *Platycoelia alti plana* means "the *Platycoelia* of the Altiplano" referring to the habitat and region where it occurs.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; elytral suture yellow, apex without an acute spine; metasternum and abdominal sternites green to yellow; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 68). Tojoloque, Bolivia is the only known locality for this species.

LOCALITY DATA. 12 specimens examined from ANCB.

BOLIVIA (12). LA PAZ (12): Tojoloqui.

TEMPORAL DATA. October (12).

42. *Platycoelia confluens* Ohaus, 1904

(Figs. 68, 69)

Platycoelia confluens Ohaus, 1904 (valid name)

CATALOG. *Platycoelia confluens*, Ohaus 1904b:275, 318, 339 [original description]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:246 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia confluens* Ohaus lectotype male at ZMHB labeled a) "Bolivia Tanampaya" (handwritten), b) "Typus!" (red label, typeface), c) "confluens Ohaus" (red label, handwritten), d) "PLATYCOELIA CONFLUENS OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at ZMHB labeled a) "Bolivia Sorata" (handwritten), b) "♀" (typeface), c) "Pl. confluens Ohaus" (red label, handwritten), d) "PLATYCOELIA CONFLUENS OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivia" (green label, handwritten), b) "Collection Castelnau" (typeface), c) "Ex-Musæo VAN LANSBERGE" (typeface), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivia" (handwritten), b)

"Ex-Musæo Mniszech" (typeface), c) "Ohaus determ. Pl. confluens Ohaus ♂" (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Ex-Musæo Mniszech" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Ex-Musæo A.SALLÉ 1897" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Bolivia" (handwritten), b) "ExColl. Deyr IN ED. BROWN" (typeface), c) "confluens Deyrolle" (green label, handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Sorata" (green label, handwritten), b) "Ex-Musæo A.SALLÉ 1897" (typeface), c) "Ohaus determ. Pl. confluens Ohaus ♂" (typeface and handwritten), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA CONFLUENS OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). The existence and location of other specimens from Ohaus' original type series are unknown. There are two specimens in ZMHB labeled "Mapiri Bolivia" and "BOLIVIA S.Cruz d.l.S." with Ohaus' orange cotype labels. These localities were not mentioned in the original description so these specimens are not part of the original type series. Type locality: "Tanampaya," Bolivia (this locality is unknown to me).

DESCRIPTION. Male (n=14). Length 18.3-20.4 mm, width 10.3-10.6 mm (Fig. 69). Color of dorsal surface lime green; yellow head, pronotum, scutellum, and elytron margins; elytral suture with thick, yellow margin; elytral disc with 2 weakly raised, yellow,

longitudinal lines on striae 3 and 5, lateral line bifurcate, split in basal half. Ventral surface yellow to yellowish-green with medial, light brown patch on metasternum; abdominal sternites lime green with yellow along margins. Body ovate, convex. *Head*: Dorsal surface glabrous. Frons moderately punctate, clypeus rugopunctate, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.3 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with acute, triangular, medial tooth, apex of tooth weakly overlapping apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 apical teeth, interior 2 teeth bifurcate. Apex of mentum with medial notch. Antenna 10-segmented; club slightly longer than segments 2-7, approximately as long as frons. *Pronotum*: Surface glabrous, moderately punctate, with moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed; intervals sparsely punctate, punctures moderate. Suture angled apically without spine. *Pygidium*: Width approximately 1.7 times length medially. Surface weakly convex, sparsely punctate; punctures moderate, setose (near apical margin); setae short, cream colored. *Venter*: Thorax densely setose (except glabrous medially), setae white. Mesothoracic process moderately produced, projecting anteriorly past mesocoxa; shape conical-elongate, apex rounded; ventrally flattened. Abdomen sparsely setose, setae white. Apical 2 spiracles extruding, cylindrical. *Legs*: Protibia with 2 subequal in size teeth in apical quarter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length greater than

protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase approximately 1.6 times longer than length of parameres. Parameres with apex rounded.

Female (n=2). Length 19.8-20.9 mm, width 11.5-12.3 mm. As male except in the following respects. *Venter*: Apical spiracles weakly extruding. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a broad, triangular tooth weakly overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron with distinct, yellow, longitudinal lines on striae 3 and 5; elytral apices not capable of completely covering the pygidium; elytral suture yellow, apex without acute spine; metasternum with a dark medial patch; abdominal sternites green to yellow; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 68). Andes Mountains in northern to central Bolivia.

LOCALITY DATA. 16 specimens examined from BMNH, MCZC, MNHN, SMTD, ZMHB.

BOLIVIA (10). LA PAZ (3): Mapiri, Sorata. SANTA CRUZ (1): Santa Cruz. NO DATA (6).

NO DATA (6).

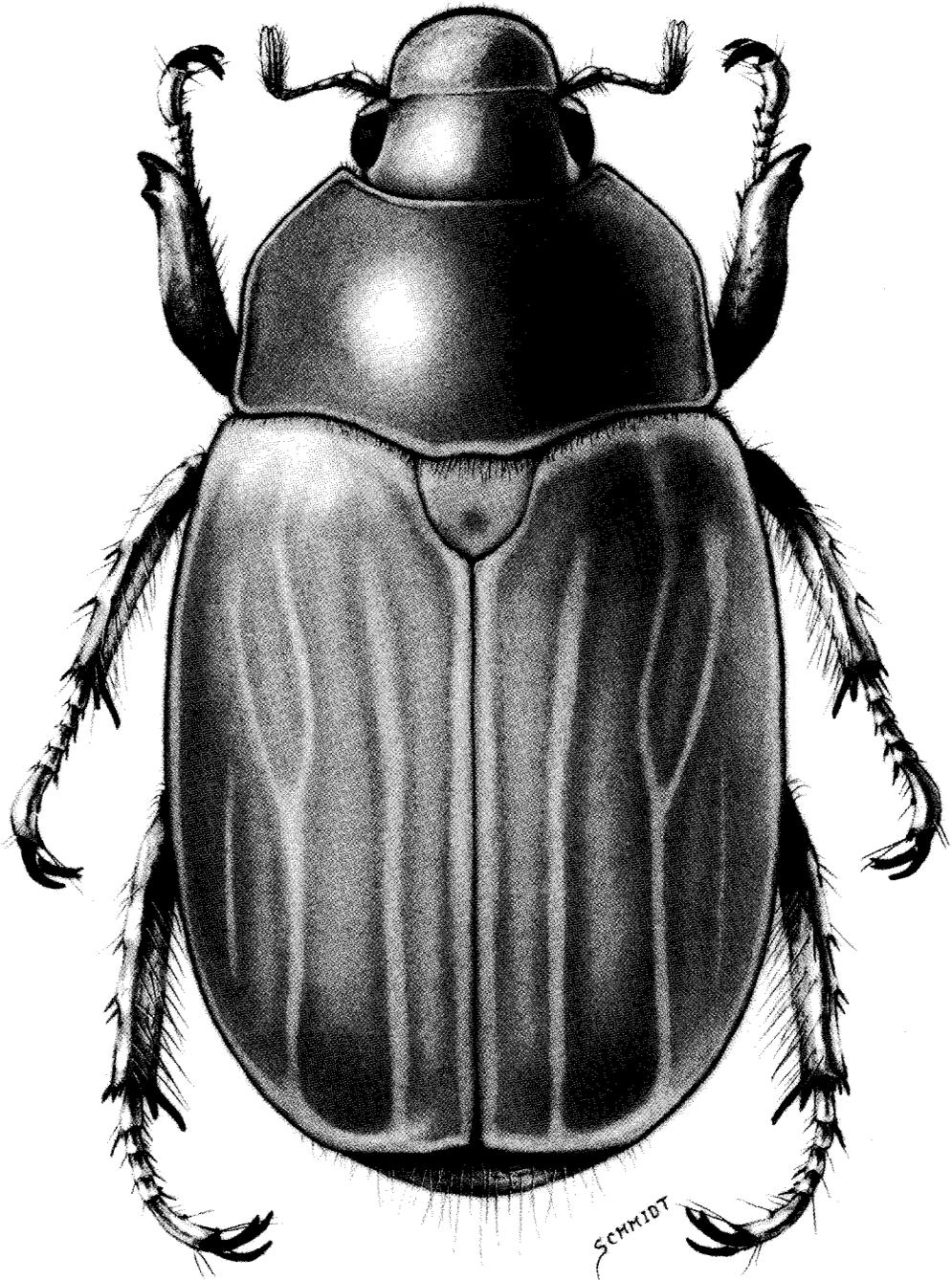


Fig. 69. *Platycoelia confluens* male.

43. *Platycoelia lutescens* Blanchard, 1851

(Figs. 58, 70)

Platycoelia lutescens Blanchard, 1851 (valid name)

Leucopelaea albescens Bates, 1891 (junior synonym)

Leucopelaea baronis Ohaus, 1905 (junior synonym)

CATALOG. *Platycoelia lutescens*, Blanchard 1851:227 [original description]; Lacordaire 1856:372 [distribution]; Guérin-Méneville 1855:585 [catalog listing]; Harold 1869:1230 [catalog listing]; Machatschke 1965:55, 60 [incorrectly cited as type species for *Leucopelaea*, new combination, catalog listing]; Machatschke 1972:301, 304 [incorrectly cited as type species for *Leucopelaea*, catalog listing]; Smith and Paucar-Cabrera 2000:408 [redescription, distribution, biology, entomophagy]; Smith 2002b:97 [lectotype validation of *Leucopelaea albescens*]; Smith 2002a:381 [phylogenetic analysis of Brachysternina]; Paucar-Cabrera and Smith 2002:442 [larval description].

Leucopelaea albescens, Whymper 1891:ix [biology]; Bates 1891b:30 [original description]; Whymper 1892:137 [biology]; Ohaus 1905:121, 122, 164 [redescription]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Onore 1997:279, 280, 284 [biology, entomophagy]; Smith and Paucar-Cabrera 2000:409 [placed as synonym of *Platycoelia lutescens*, lectotype designated]; Smith 2002b:97 [lectotype validation].

Leucopelaea lutescens, Ohaus 1905:122, 164 [new combination, redescription]; Ohaus 1908:405 [distribution]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist].

Leucopelaea baronis, Ohaus 1905:123, 164 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Smith and Paucar-Cabrera 2000:408 [placed as synonym of *Platycoelia lutescens*].

Platycoelia albescens, Machatschke 1965:60 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

Platycoelia baronis, Machatschke 1965:60 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

Anatista macrophylla (= *Platycoelia lutescens*, misidentification), Ratcliffe 1990:181 [entomophagy].

TYPE SPECIMENS. *Platycoelia lutescens* Blanchard lectotype female at MNHN labeled a) "59 49" (round, green label, handwritten on underside), b) "P. lutescens. Cat. Mus. Cusco (Pérou). M. Gay." (green label, handwritten), c) "PLATYCOELIA LUTESCENS BLANCHARD ♀ LECTOTYPE A. B. T. SMITH 2001" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Blanchard (1851) did not indicate how many specimens were in the type series. The location and existence of paralectotypes are unknown. Claude Gay collected the lectotype during his trip to Perú in 1839 (Blanchard 1851, Papavero 1971). Type locality: Perú.

Leucopelaea albescens Bates lectotype male at BMNH labeled a) "Co-type" (round label with red border), b) "92-24.", c) "Cotopaxi Ecuador. 12000 feet. Ed. Whymper.", d) "Leucopelaea albescens" (handwritten), e) "LEUCOPELAEALBESCENS BATES DET. A. B. T. SMITH 1999, LECTOTYPE" (red label, handwritten and typeface), f) "*Platycoelia LUTESCENS BLANCHARD* ♂ Det: A.B.T. Smith 1999" (typeface and handwritten). It has been suggested that the lectotype designation of *Leucopelaea albescens* by Smith and Paucar-Cabrera (2000) is invalid (see Pulawski and Kerzhner 2001). The lectotype designated by Smith and Paucar-Cabrera (2000) is valid under the current ICZN rules, even though there was no statement of taxonomic purpose was included (Article 74.7.3). Smith and Paucar-Cabrera (2000) was accepted in its final form on 23 November 1999, before the fourth edition of the ICZN came into affect. The International Commission on Zoological Nomenclature (1999) states in Article 86.1.2 that "If an author submits for publication before 1 January 2000 a work containing names or nomenclatural act proposed under the provisions of the third (1985) edition of the Code which was then in force, but the work is not published until after 31 December 1999, the names or acts are not to

be set aside on the grounds that they do not comply with the changed provisions of the fourth edition. The Commission should be asked to validate the names or acts." A request to the Commission to uphold this lectotype designation has been published (Smith 2002b). One male paralectotype at MNHN labeled a) "Machachi, Ecuador. 9-10,000 feet. Ed Whympfer" (typeface) on upperside and "1368171 K" (handwritten) on lowerside, b) "Leucopelaea albescens Bates" (handwritten), c) "Ex-Musæo H.W.BATES 1892" (typeface), d) "Dr Ohaus Vidit 1903." (typeface), e) "LEUCOPELAEA ALBESCENS BATES 1891 DET:A.B.T.SMITH 2001 PARALECTOTYPE" (yellow label, handwritten and typeface), f) "PLATYCOELIA LUTESCENS BLANCHARD ♂ Det:A.B.T.Smith 2001" (handwritten and typeface). One male paralectotype at MNHN labeled a) "Cotopaxi 12000 ft" (handwritten), b) "Leucopelaea albescens Bates" (handwritten), c) "Ex-Musæo H.W.BATES 1892" (typeface), d) "Dr Ohaus Vidit 1903." (typeface), e) "LEUCOPELAEAALBESCENS BATES 1891 DET:A.B.T.SMITH 2001 PARALECTOTYPE" (yellow label, handwritten and typeface), f) "PLATYCOELIA LUTESCENS BLANCHARD ♂ Det: A.B.T. Smith 2001" (handwritten and typeface). Four male paralectotypes at MNHN labeled a) "Cotopaxi 12000 ft" (handwritten), b) "Ex-Musæo H.W.BATES 1892" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "LEUCOPELAEA ALBESCENS BATES 1891 DET: A.B.T.SMITH 2001 PARALECTOTYPE" (yellow label, handwritten and typeface), e) "PLATYCOELIA LUTESCENS BLANCHARD ♂ Det:A.B.T.Smith 2001" (handwritten and typeface). One male paralectotype at ZMHB labeled a) "Cotopaxi 12000" (handwritten), b) "Leucopelaea albescens Cotype ♂ Bts." (orange label, handwritten), c) "LEUCOPELAEA ALBESCENS BATES 1891 DET: A.B.T. SMITH 2001 PARALECTOTYPE" (yellow label, handwritten and typeface), d) "PLATYCOELIA LUTESCENS BLANCHARD ♂ Det:A.B.T.Smith 2001" (handwritten and typeface). One male paralectotype at ZMHB labeled a) "Machachi Ecuador" (typeface), b) "♂" (typeface), c) "Leucopelaea albescens H.

Bates" (handwritten), d) "LEUCOPELAEA ALBESCENS BATES 1891 DET: A.B.T. SMITH 2001 PARALECTOTYPE" (yellow label, handwritten and typeface), e) "PLATYCOELIA LUTESCENS BLANCHARD ♂ Det:A.B.T.Smith 2001" (handwritten and typeface). Bates (1891b) stated that there were 13 specimens in the type series. The location of the remaining 4 paralectotypes is unknown. Placed in synonymy with *P. lutescens* by Smith and Paucar-Cabrera (2000). Type locality: the plain of Limpiopungo near Volcán Cotopaxi, Ecuador (Whympfer 1892).

Leucopelaea baronis Ohaus lectotype male at ZMHB labeled a) "Ecuador Baron" (typeface), b) "Leucopelaea Baronis Type Ohs." (orange label, handwritten), c) "LEUCOPELAEA BARONIS OHAUS ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface), d) "Zool. Mus. Berlin" (typeface), e) "*Platycoelia* LUTESCENS BLANCHARD ♂ Det: A.B.T. Smith 1999" (typeface and handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Two male paralectotypes at ZMHB labeled a) "Ecuador Baron" (typeface), b) "Leucopelaea Baronis Cotype Ohs." (orange label, handwritten), c) "LEUCOPELAEA BARONIS OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), d) "*Platycoelia* LUTESCENS BLANCHARD ♂ Det:A.B.T.Smith 1999" (typeface and handwritten). Two female paralectotypes at ZMHB labeled a) "Ecuador Baron" (typeface), b) "Leucopelaea Baronis Cotype Ohs." (orange label, handwritten), c) "LEUCOPELAEA BARONIS OHAUS ♀ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), d) "*Platycoelia* LUTESCENS BLANCHARD ♀ Det:A.B.T.Smith 1999" (typeface and handwritten). Three male paralectotypes at ZMHB labeled a) "Ecuador Baron" (typeface), b) "Leucopelaea Baronis Cotype Ohs." (orange label, handwritten), c) "LEUCOPELAEA BARONIS OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), d) "PLATYCOELIA LUTESCENS BLAN-

CHARD ♂ Det: A.B.T. Smith 2001" (handwritten and typeface). Two female paralectotypes at ZMHB labeled a) "Ecuador Baron" (typeface), b) "Leucopelaea Baronis Cotype Ohs." (orange label, handwritten), c) "LEUCOPELAEA BARONIS OHAUS ♀ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), d) "PLATYCOELIA LUTESCENS BLANCHARD ♀ Det: A.B.T. Smith 2001" (handwritten and typeface). Smith and Paucar-Cabrera (2000) erroneously referred to the type specimens of *Leucopelaea baronis* as a holotype and paratypes (see discussion of Ohaus' type in Methods and Materials section). One specimen labeled "Ecuador E. Deville" also had an orange "Leucopelaea Baronis Cotype Ohs." label but the original description mentioned only specimens collected by Baron (Ohaus 1905) so this specimen is not considered to be in the type series. Placed in synonymy with *P. lutescens* by Smith and Paucar-Cabrera (2000). Type locality: Ecuador.

DESCRIPTION. Male (n=226). Length 16.1-24.3 mm, width 10.2-13.6 mm (Fig. 70). Color dorsally and ventrally cream-colored when alive (often turning tan or testaceous when dead). Body ovate, convex. *Head:* Dorsal surface glabrous. Frons impunctate or sparsely punctate (base) to moderately punctate (apex), punctures moderate. Clypeus densely punctate (base) to rugopunctate (apex), punctures moderate. Frons not depressed. Frontoclypeal suture complete, weakly bisinuate. Clypeal apex rounded, moderately reflexed. Eyes separated by approximately 5.5 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with weak apical tooth, weak medial nub; molar region without lamellae. Maxilla with 2-3, apical teeth. Apex of mentum with medial notch. Antenna 10-segmented (sometimes appearing 9-segmented); club slightly shorter than other segments combined, slightly longer than clypeal length. *Pronotum:* Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally.

Elytron: Surface glabrous, with weakly impressed longitudinal striae; intervals impunctate. Suture apically rounded to angular. *Pygidium:* Width approximately 1.7 times length. Surface weakly convex, punctate; punctures small, sparse, setose in apical half; setae long, tawny. *Venter:* Thorax moderately to densely setose; setae long, tawny. Mesothoracic process small, projecting anteriorly to subapex of mesocoxa, or reduced nub. Abdominal sternites laterally moderately setose, medially sparsely setose; setae long, reddish. Apical 2 spiracles with margins strongly extruding, cylindrical. *Legs:* Protibia with 3 teeth in apical half; first and second teeth subequal in size in size, third tooth small, often worn and obsolete, removed slightly from apical teeth. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth or swelling. Mesotarsomere and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.4 times longer than length of parameres. Parameres with apex rounded.

Female (n=35). Length 17.5-30.3 mm, width 10.7-16.8 mm. As male except in the following respects. *Head:* Antennal club approximately equal to segments 2-7. *Legs:* Third protibial tooth broadly acute, rarely worn down and obsolete. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

LARVAE. *Platycoelia lutescens* larvae were described by Paucar-Cabrera and Smith (2002). The following diagnostic characters were given: epipharynx with laeotorma longer than dexiotorma, expanded towards chaetoparia; mandible with two scissorial teeth; abdominal spiracles elongate.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: color cream or tan; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron without distinct longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 58). Andes Mountains from southern Colombia to southern Perú. Recorded from 1,800-4,000 m. Occurs in paramo and other grassland habitats.

BIOLOGY. Smith and Paucar-Cabrera (2000) discussed the biology of *P. lutescens*. The adults emerge from the paramo when the winter rains begin (usually late October to early November). It has been observed that adult emergence coincides with rainy days and the sound of thunder (Whymper 1892, Onore 1997). They emerge 'en masse' and have been seen by the thousands for a short period of time. Whymper (1892) gives an excellent account of this in *Travels Amongst the Great Andes of the Equator*. On 14 February 1880 while travelling to Volcán Cotopaxi (he was primarily on a mountain climbing expedition) Whymper writes "It was our intention to travel direct to Cotopaxi, but a violent storm drove us for refuge into Pedregal . . . at the northern foot of Rumiñahui." The next day after the violent storm, Whymper continued toward Cotopaxi through the plain of Limpiopungo, noting "I found here, in great numbers, a rather large beetle belonging to the same tribe as our cockchafer" (Whymper collected some specimens that were part of the type series for *Leucopelaea albescens* [= *P. lutescens*]). Whymper also noted that the beetles were probably "emerging hindquarters first from the sandy soil." The destruction

of paramo habitat around Quito (for urban development) caused *P. lutescens* populations to decline in that area (Smith and Paucar-Cabrera 2000).

LOCALITY DATA. 288 specimens examined from BCRC, BMNH, CASC, CMNH, DEIC, DJCC, FGIC, HAHC, HNHM, LACM, LEMQ, MCZC, MGFT, MLJC, MNHN, QCAZ, SMFD, SMTD, USNM, ZMHB, ZSMC.

COLOMBIA (7). NARIÑO (7): Cumbal, Pasto.

ECUADOR (272). BOLÍVAR (4): Cashca Totoras. CAÑAR (18): El Tambo. COTOPAXI (25): El Boliche, Latacunga, Limpiopungo, Parque Nacional Cotopaxi. ESMERALDAS (2): Mayronga. IMBABURA (16): Juncal, Otavalo. PICHINCHA (162): Alóag, Cayambe (9.9 km NW), Chillogallo, Conocoto, Cumbayá, Ilaló, Machachi, Nono, Palmeras, Píntag, Quito, Santa Catalina, Tambillo, No data. TUNGURAHUA (4): Baños, Píllaro. NO DATA (37).

PERÚ (5). CUSCO (1): Cusco. LIMA (1): Callanga. PUNO (1): No data. NO DATA (2).

NO DATA (4).

Doubtful locality labels include four specimens labeled "Guayquil, Ecuador," two specimens labeled "Zarayaku Ecuador or." and one specimen labeled Archidona. I considered these "Ecuador, no data" because these localities are too low in elevation to support populations of this species. One specimen labeled "Chili" is also doubtful (this locality is far out of the known range for the species) and I consider as a "No Data" specimen.

TEMPORAL DATA. January (10), February (9), March (2), April (1), May (4), June (4), August (1), September (2), October (34) November (16), December (28).

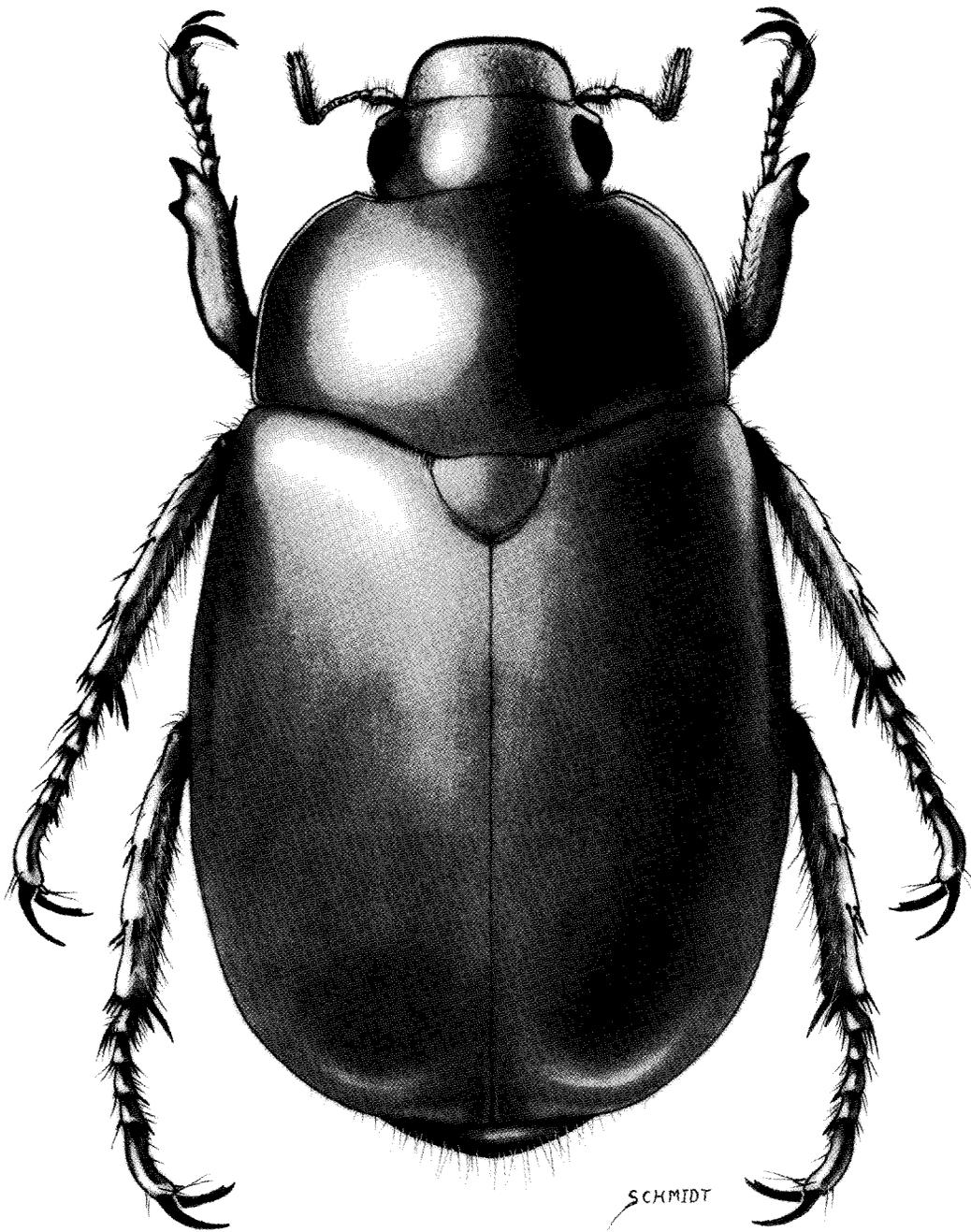


Fig. 70. *Platycoelia lutescens* male.

44. *Platycoelia gaujoni* Ohaus, 1904

(Fig. 71)

Platycoelia gaujoni Ohaus, 1904 (valid name)
CATALOG. *Platycoelia gaujoni*, Ohaus 1904b:323, 339 [original description]; Ohaus 1908:405 [biology]; Ohaus 1909a:89, 97 [biology]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing]; Paucar-Cabrera and Smith 2002:440 [larval description].

TYPE SPECIMENS. *Platycoelia gaujoni* Ohaus lectotype male at ZMHB labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Typus!" (red label, typeface), c) "Gaujoni Ohaus" (red label, handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at ZMHB labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Platycoelia Gaujoni Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Two male paralectotypes at ZMHB labeled a) "Ecuador Loja" (typeface), b) "Platycoelia Gaujoni Cotype Ohs." (orange label, handwritten), c) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Seven male paralectotypes at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH

2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. Gaujoni Ohaus ♂." (typeface and handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Equateur Loja Abbé Gaujon" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. Gaujoni Ohaus ♂ Expl. typ." (typeface and handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "EquateurOr. De Bañon à Canelos M.de Mathan IX-X-1894" (typeface), b) "C.Bts. Obrth." (typeface), c) "♂" (typeface), d) "Platycoelia Gaujoni Cotype Ohs." (handwritten), e) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Ecuador Baron" (typeface), b) "♂" (typeface), c) "Platycoelia Gaujoni Cotype Ohs." (handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at USNM labeled a) "Ecuador Baron" (typeface), b) "U.S.N.M. ParatypeNo. 44524" (red label, typeface and handwritten), c) "Ohaus determ. ♂ Platycoelia Gaujoni Ohs. Cotype" (typeface and handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). The following two *P. gaujoni* paralectotypes from Colombia are now considered to be *P. pusilla*. One male paralectotype at ZMHB labeled a) "Columbia Popayan" (handwritten), b) "♂" (typeface), c) "Platycoelia gaujoni Cotype Oh." (orange label, handwritten), d) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), e) "PLATYCOELIA PUSILLA SMITH ♂ PARATYPE" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "Columbia" (typeface), b) "Platy-

coelia gaujoni Cotype Oh." (orange label, handwritten), c) "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), d) "PLATYCOELIA PUSILLA SMITH ♂ PARATYPE" (yellow label, handwritten and typeface). Ohaus (1904b) stated that there were about 40 specimens in the type series. The location of the remaining approximately 20 paralectotypes is unknown. Two male specimens at ISNB are labeled by Ohaus as 'cotype' but they were not collected until after the original description of the species was published and are not part of the original type series. One female specimen labeled "Ecuador Loja" had Ohaus' "Platycoelia Gaujoni Cotype Ohs." label on it. Since Ohaus (1904b) had no female specimens for the original description this specimen is not part of the type series. Type locality: Loja, Ecuador.

DESCRIPTION. Male (n=39). Length 16.2-20.1 mm, width 9.2-10.3 mm. Color olive green to lime green or dark yellow; elytral intervals 3 and 5 sometimes with weak, yellow, longitudinal stripe; pronotum, scutellum, and elytron with yellow margin; metasternum with medial brown patch. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.8 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth separated from apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 teeth. Mentum with apicomedial notch. Antenna 10-segmented; club approximately equal to other segments combined), slightly longer than length of frons. *Pronotum:* Surface glabrous, moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate; intervals sparsely punctate, punctures small. Suture apically angled, without spine. *Pygidium:* Width ap-

proximately 2.1 times length medially. Surface weakly convex, sparsely to moderately punctate; punctures moderately large, setose (near apex); setae short, tawny. *Venter:* Thorax densely setose (except sparsely setose medially), setae tawny. Mesothoracic process weakly produced, projecting anteriorly weakly past mesocoxa; shape conical. Abdomen sparsely setose, setae tawny. Apical spiracles weakly extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Parameres approximately 1.4 times longer than length of phallobase. Parameres with apex rounded, weakly deflexed laterally.

Female (n=4). Length 21.6-22.3 mm, width 11.3-12.8 mm. As male except in the following respects. *Legs:* Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

LARVAE. A *Platycoelia gaujoni* larva was described by Paucar-Cabrera and Smith (2002). The following diagnostic characters were given: epipharynx with laeotorma shorter than dextortorma; mandible with three scissorial teeth; abdominal spiracles round.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: length less than 23 mm; frons not depressed medioapically; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented,



Fig. 71. Distribution of *Platycoelia gaujoni*, *P. pusilla*, *P. bordoni*, and *P. parva* in Colombia, Ecuador, and Perú.

club longer than the other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum with a dark medial patch; abdominal sternites green to yellow; mesothoracic process projecting apically past mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 71). Occurs in the Andes Mountains of central and southern Ecuador.

BIOLOGY. Ohaus (1908, 1909a) recorded observations of *P. gaujoni* larvae from Loja, Ecuador. He stated that the larvae were found under fallen logs and that they feed on the organic matter in the soil.

LOCALITY DATA. 44 specimens examined from BMNH, HAHC, ISNB, MGFT, MNHN, SMTD, USNM, ZMHB, ZSMC.

ECUADOR (42). LOJA (31): Loja, Ornillos Condor, Villonaco. TUNGURAHUA (1): Baños. ZAMORA CHINCHIPE (2): Zamora. NO DATA (8).

PERÚ (1). NO DATA (1).

NO DATA (1).

TEMPORAL DATA. August (1), September (4), October (11).

45. *Platycoelia pusilla* new species

(Fig. 71)

TYPE SPECIMENS. Male holotype and 11 male paratypes. Holotype male at USNM labeled "Colombia Cald June 20 1940 Manizales," "FJOtoya Collr," and "F9026." One male paratype at ZMHB labeled "Columbia Popayan," "♂," "Platycoelia gaujoni Cotype Oh.," and "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002." One male paratype at ZMHB labeled "Columbia," "Platycoelia gaujoni Cotype Oh.," and "PLATYCOELIA GAUJONI OHAUS ♂ PARALECTOTYPE A.B.T.SMITH 2002." One male paratype at SMFD labeled "Columb. 82 Lehmann 85," "N_o 104.," and "Det. F. Ohaus 1908 Platycoelia gaujoni Ohs." Two male paratypes at SMFD, two male paratypes at UNSM, and one male paratype at ABTS labeled "Columb. 82 Lehmann 85" and "N_o 104." One male paratype at ZMHB labeled "Columb. 82 Lehmann 85," "N_o 104.," and "Ohaus determ. Platycoelia gaujoni Ohs." One male paratype at ABTS labeled "Columbia Pasco del Amindin." One male paratype at MNHN labeled "N. Grenade," "Ex-Musæo Mniszech," "Ohaus determ. Platycoelia spec. prope chrysotina, mihi ignota," and "Dr Ohaus Vidit 1903." Type locality: Manizales, Caldas, Colombia.

HOLOTYPE. Male: length 16.7 mm, width 8.3 mm. Color of dorsal surface olive green;

pronotum, scutellum, and elytron margins yellow; elytral intervals 3 and 5 with weak, yellowish-green longitudinal stripes. Ventral surface yellow to light green, metasternum olive green with large medial brown patch. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 5.3 transverse eye-widths. Labrum moderately punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with weak, triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 9-segmented; club slightly shorter than segments 2-6, slightly shorter than frons. *Pronotum:* Surface glabrous, moderately to densely punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, weakly punctate; punctures moderate; intervals sparsely punctate. Sutural apex angled, without spine. *Pygidium:* Width approximately 1.8 times length medially. Surface weakly convex, sparsely punctate; punctures moderate, setose (along apical margin); setae tawny. *Venter:* Thorax moderately setose (sparsely setose medially), setae tawny. Mesothoracic process weakly projecting anteriorly past mesocoxa; shape conical. Abdomen sparsely setose, setae tawny. Apical spiracles extruding, cylindrical. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak, apical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 without internal swelling. Prounguitractor plate cylindrical, with 2 subapical setae. Mesounguitractor plate, metaunguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with weak ventral tooth, not thickened.

VARIATION. Male (n=11). Length 15.2-19.5 mm, width 8.4-10.2 mm. Female: unknown. The paratypes differ from the holotype in the following respects. Color sometimes yellow. *Head:* Antenna sometimes appearing 10-segmented. Additional characters as follows. *Head:* Mandibular scissorial region with two teeth, molar region with weakly developed lamellae. Maxilla with 3 apical teeth, middle tooth bifurcate. *Male Genitalia:* Phallobase approximately 1.5 times longer than length of parameres. Paramere with apex rounded.

ETYMOLOGY. *Platycoelia pusilla* is derived from Latin meaning "the tiny *Platycoelia*."

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: length less than 20 mm; frons not depressed medioapically; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented (sometimes appearing 10-segmented), club not longer than other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum with a dark medial patch; abdominal sternites green to yellow; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 71). Known from the Andes Mountains of central to southern Colombia.

LOCALITY DATA. 12 specimens examined from MNHN, SMFD, USNM, ZMHB.

COLOMBIA (12). CALDAS (1): Manizales. CAUCA (1): Popayán. NARIÑO (1): Pasto. NO DATA (9).

TEMPORAL DATA. June (1).

46. *Platycoelia bordoni* Martínez, 1976
(Fig. 71)

Platycoelia bordoni Martínez, 1976 (valid name)

CATALOG. *Platycoelia bordoni*, Martínez 1976:333, 338 [original description]; Smith and Paucar-Cabrera 2000:412 [comment on morphology].

TYPE SPECIMENS. *Platycoelia bordoni* Martínez holotype male at MACN labeled a) "COLOMBIA D₀ Huila Vn. Puracé, 3400 m C. Bordon – leg. Coll. Martínez 20-XII-71" on upperside "vegetación de bosque nebuloso" on underside (handwritten), b) "HOLOTYPUS" (red label, typeface), c) "*Platycoelia bordoni* ♂ sp. nov. A MARTINEZ-DET.1972" (red label, handwritten and typeface), d) "PLATYCOELIA BORDONI MARTÍNEZ ♂ HOLOTYPUS" (red label, handwritten and typeface). One male paratype at HAHC labeled a) "COLOMBIA D₀ Huila Vn Puracé, 3400 m C. Bordon – leg. Coll. Martínez 20-XII-71" on upperside "vegetación de bosque nebuloso" on underside (handwritten), b) "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." (typeface), c) "PARATIPO" (typeface), d) "*Platycoelia bordoni* ♂ sp. nov. A MARTINEZ-DET.1972" (handwritten and typeface), e) "PLATYCOELIA BORDONI MARTÍNEZ ♂ PARATYPE" (yellow label, handwritten and typeface). Martínez (1976) based his description on the holotype and one paratype. Type locality: Volcán Puracé, Huila, Colombia.

DESCRIPTION. Male (n=4). Length 19.4-21.2 mm, width 10.8-11.8 mm. Color olive green or brownish-yellow; elytral intervals 3 and 5 sometimes with weak, yellow, longitudinal stripe; elytron with yellow margin; metasternum with medial, light brown patch; abdominal sternites olive green to brownish-yellow. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 3.8 transverse eye-widths.

Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth well separated from apex of mentum. Mentum with apicomedial notch. Antenna 9-segmented or 10-segmented; club slightly longer than segments 2-7 (2-6 in 9-segmented individuals), slightly longer than length of frons. *Pronotum*: Surface glabrous, moderately punctate, with moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate; intervals sparsely punctate, punctures small. Suture apically angled, without spine. *Pygidium*: Width approximately 1.9 times length medially. Surface weakly convex, sparsely punctate (near apex); punctures moderately large, setose; setae short, tawny. *Venter*: Thorax densely setose (except sparsely setose medially), setae tawny. Mesothoracic process weakly produced, projecting anteriorly weakly past mesocoxa; shape conical. Abdomen sparsely setose, setae tawny. Apical 2 spiracles extruding, cylindrical. *Legs*: Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres approximately 1.4 times longer than length of phallobase. Parameres with apex rounded.

Female: unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: length greater than 19 mm; frons depressed medioapically; frontoclypeal suture complete; apex of the labrum with a reduced, triangu-

lar tooth not overlapping mentum; mentum with a medial notch; antenna 9-segmented or 10-segmented, club not longer than other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; metasternum moderately setose, with a dark medial patch; abdominal sternites green to yellow; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 71). Volcán Puracé, Colombia is the only known area where this species occurs.

LOCALITY DATA. 4 specimens examined from HAHC, MACN.

COLOMBIA (4). CAUCA (1): Volcán Puracé. HUILA (3): Volcán Puracé.

TEMPORAL DATA. December (4).

47. *Platycoelia parva* Kirsch, 1885 (Figs. 23, 32, 35, 71)

Platycoelia parva Kirsch, 1885 (valid name)
Platycoelia nigricauda Bates, 1891 (junior synonym)

CATALOG. *Platycoelia parva*, Kirsch 1885:222 [original description]; Ohaus 1904b:325, 328, 330, 339, 341 [redescription]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing]; Onore 1997:280 [entomophagy]; Smith and Paucar-Cabrera 2000:412 [comment on morphology].

Platycoelia nigricauda, Bates 1891b:30 [original description]; Whymper 1892:138 [biology]; Ohaus 1904b:327, 339, 341 [redescription]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing]; Smith and Paucar-Cabrera 2000:412 [comment on morphology].

Callichloris nigricauda, Arrow 1899:369 [new combination, comment on morphology].

Pelidnota nigricauda (= *Platycoelia nigricauda*, *lapsus calami*), Onore 1997:279, 280 [biology, entomophagy].

TYPE SPECIMENS. *Platycoelia parva* Kirsch lectotype male at SMTD labeled a) "Ecuador 5032" (green label, handwritten), b) "Typus!" (pink label, typeface), c) "Platycoelia parva Kirsch" (handwritten), d) "PLATYCOELIA PARVA KIRSCH ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface), e) "parva Kirsch 85" (green label, handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at SMTD labeled a) "Paramo Bord oncillo 3300" (handwritten), b) "5034" (green label, handwritten), c) "PLATYCOELIA PARVA KIRSCH ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). Kirsch (1885) did not state how many specimens were in the original type series, but Ohaus (1904b) speculated that there were more than the two detailed above. The existence and location of other paralectotypes are unknown. Type locality: Ecuador.

Platycoelia nigricauda Bates lectotype male at MNHN labeled a) "Cotopaxi 12000ft." (handwritten), b) "Platycoelia nigricauda Bates" (handwritten), c) "Ex-Musæo H.W. BATES 1892" (typeface), d) "Dr Ohaus Vidit 1903." (typeface), e) "PLATYCOELIA NIGRICAUDA BATES ♂ LECTOTYPE A.B.T. SMITH 2002" (red label, handwritten and typeface), f) "*Platycoelia parva* Kirsch, 1885 ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One female paralectotype at MNHN labeled a) "Cotopaxi Ecuador. 12000 feet. Ed. Whympfer." (handwritten and typeface), b) "Ex-Musæo H.W.BATES 1892" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA NIGRICAUDA BATES ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia parva* Kirsch, 1885 ♀ Det:A.B.T.Smith 2002" (typeface). One paralectotype at BMNH labeled a) "Co-Type" (round label with red bor-

der, handwritten and typeface), b) "Ecuador (Whympfer)" (handwritten), c) "92-24." (typeface), d) "Platycoelia nigricauda Bates" (typeface), e) "PLATYCOELIA NIGRICAUDA BATES PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia parva* Kirsch, 1885 ♀ Det:A.B.T.Smith 2002" (typeface). Bates (1891b) had four specimens in his original type series. The location of the one remaining paralectotype is unknown. Bates (1891b) also mentioned a fifth "immature" specimen from Antisana. This specimen is excluded from the type series because it is distinguished as a "variety," and the current location of this specimen is unknown. The type specimens of *P. nigricauda* did not have any unique character states from the specimens of *P. parva*; therefore I am synonymizing the two names. The form of the mouthparts and size of these specimens are somewhat variable, but I could not find consistent patterns between populations. Whether these differences are intraspecific traits or interspecific character states remains an unanswered question. More specimens will have to be studied in order to determine the precise limits of the species. Type locality: Volcán Cotopaxi, Ecuador. **NEW SYNONYMY.**

DESCRIPTION. Male (n=96). Length 18.9-23.0 mm, width 10.7-12.6 mm. Color olive green to lime green or brownish-yellow (sometimes darkened to brownish-green); elytral intervals 3 and 5 sometimes with weak, yellow, longitudinal stripe; elytron with yellow margin; metasternum, abdominal sternites sometimes with brown to black patches. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons depressed. Frontoclypeal suture complete. Clypeal apex rounded. Eyes separated by approximately 5.7 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth separated from apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 teeth. Mentum with apicomedial notch. Antenna 10-segmented

(sometimes 9-segmented); club slightly longer than segments 2-7 (2-6 in 9-segmented individuals), slightly longer than length of frons. *Pronotum*: Surface glabrous, moderately to sparsely punctate, with moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate; intervals sparsely punctate, punctures small. Suture apically angled, without spine. *Pygidium*: Width approximately 1.7 times length medially. Surface weakly convex, sparsely punctate to moderately punctate; punctures moderately large, setose (near apex); setae short, tawny. *Venter*: Thorax densely setose (except sparsely setose medially), setae tawny. Mesothoracic process weakly produced, projecting anteriorly weakly past mesocoxa; shape conical. Abdomen sparsely setose, setae tawny. Apical spiracles extruding, cylindrical. *Legs*: Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres approximately 1.4 times longer than length of phallobase (Fig. 32). Parameres with apex rounded (Fig. 23).

Female (n=25). Length 20.0-26.7 mm, width 11.6-14.1 mm. As male except in the following respects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: length greater than 19 mm; frons depressed medioapically; frontoclypeal suture complete;

apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented or 10-segmented, club not longer than other segments combined; elytral apices not capable of completely covering the pygidium; apex of elytral suture without an acute spine; metasternum densely setose; abdominal sternites green to yellow; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 71). Occurs mainly in the Andes Mountains of Ecuador.

BIOLOGY. Whympers (1892) and Onore (1997) made a few observations on the biology of this species (as *P. nigricauda*). It is found in similar sandy-soil paramo habitats as *P. lutescens* but can also be found at higher elevations. The mass emergence of adults coincides with thunderstorms during the rainy season generally from November to February (as with *P. lutescens*).

LOCALITY DATA. 121 specimens examined from AMNH, BMNH, CASC, CMNH, HAHC, ISNB, LACM, MGFT, MNHN, QCAZ, SMFD, SMTD, VMCP, ZMHB.

COLOMBIA (1). NO DATA (1).

ECUADOR (117). AZUAY (2): El Cajas. CAÑAR (2): Shical. BOLÍVAR (3): Cashca Totoras, Chimborazo Pass. CARCHI (1): El Ángel. CHIMBORAZO (2): Volcán Chimborazo. COTOPAXI (8): Latacunga, Razuyacu, Rumiñahui, Volcán Cotopaxi. LOJA (6): Loja. NAPO (40): Antisana, Oyacachi, Papallacta, Salcedo-Tena Road (km 139). MORONA SANTIAGO (1): Macas. PICHINCHA (29): Alóag, El Chaupi, La Cocha, Papallacta (12 km NW), Pasochoa, Quito, Volcán Antisana. TUNGURAHUA (7): Baños, Volcán Chimborazo. NO DATA (16).

PERÚ (1). NO DATA (1).

NO DATA (2).

One specimen labeled "Guircoba, Sonora, MEX" was considered to have no data. This locality is far out of the known range of the genus *Platycoelia*.

TEMPORAL DATA. January (3), February (40), March (1), May (1), August (1), September (1), October (9), November (11).

48. *Platycoelia furva* new species
(Fig. 72)

TYPE SPECIMENS. Male holotype, female allotype and 2 male paratypes. Holotype male and allotype female at QCAZ and one male paratype at ABTS labeled "ECUADOR XII-86 BOLÍVAR TOTORAS Legit L. COLOMA." One male paratype at UNSM labeled "ECUADOR XI/86 BOLÍVAR TOTORAS Legit L. COLOMA." Type locality: Cashca Totoras, Azuay, Ecuador.

HOLOTYPE. Male: length 21.8 mm, width 11.9 mm. Color of dorsal surface yellowish-green; dark brown maculations on frons, pronotum, and covering most of elytron (especially apically, laterally). Ventral surface black. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons rugopunctate, clypeus rugose. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 2.9 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae reddish-brown. Apex of labrum with triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 10-segmented; club approximately equal to segments 2-7, slightly longer than clypeus. *Pronotum:* Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, punctate, punctures moderate. Sutural apex angled, without spine. *Pygidium:* Width approximately 1.7 times length medially. Surface con-

vex; disc with base impunctate, apex sparsely punctate, punctures moderate, setose (near apex); setae long, reddish-brown. *Venter:* Thorax densely setose, setae reddish-brown. Mesothoracic process weakly projecting anteriorly past mesocoxa; shape conical, apex rounded. Abdomen sparsely setose, setae reddish-brown. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; apical 2 teeth subequal in size, third tooth obsolete. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak, apical stridulatory ridge. Protarsomere 5 with internal stridulatory surface. Mesotarsomere and metatarsomere 5 without internal swelling. Unguitractor plate cylindrical, with 2 apical setae. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claw elongate, with weak ventral tooth, not thickened. *Male Genitalia:* Phallobase approximately 1.4 times longer than length of parameres. Paramere with apex rounded.

ALLOTYPE. Female: length 25.7 mm, width 15.0 mm. As holotype except in the following respects. Color of elytron almost entirely dark brown. *Legs:* Protibia with 3 distinct teeth in apical half. Protarsomeres unknown (missing from this specimen).

VARIATION. Male (n=2). Length 23.3-23.5 mm, width 12.9-13.4 mm. Female: known only from allotype. The paratypes do not differ significantly from the holotype.

ETYMOLOGY. *Platycoelia furva* means "the dark-colored *Platycoelia*" referring to the appearance of this species.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: color mainly dark brown to black; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping

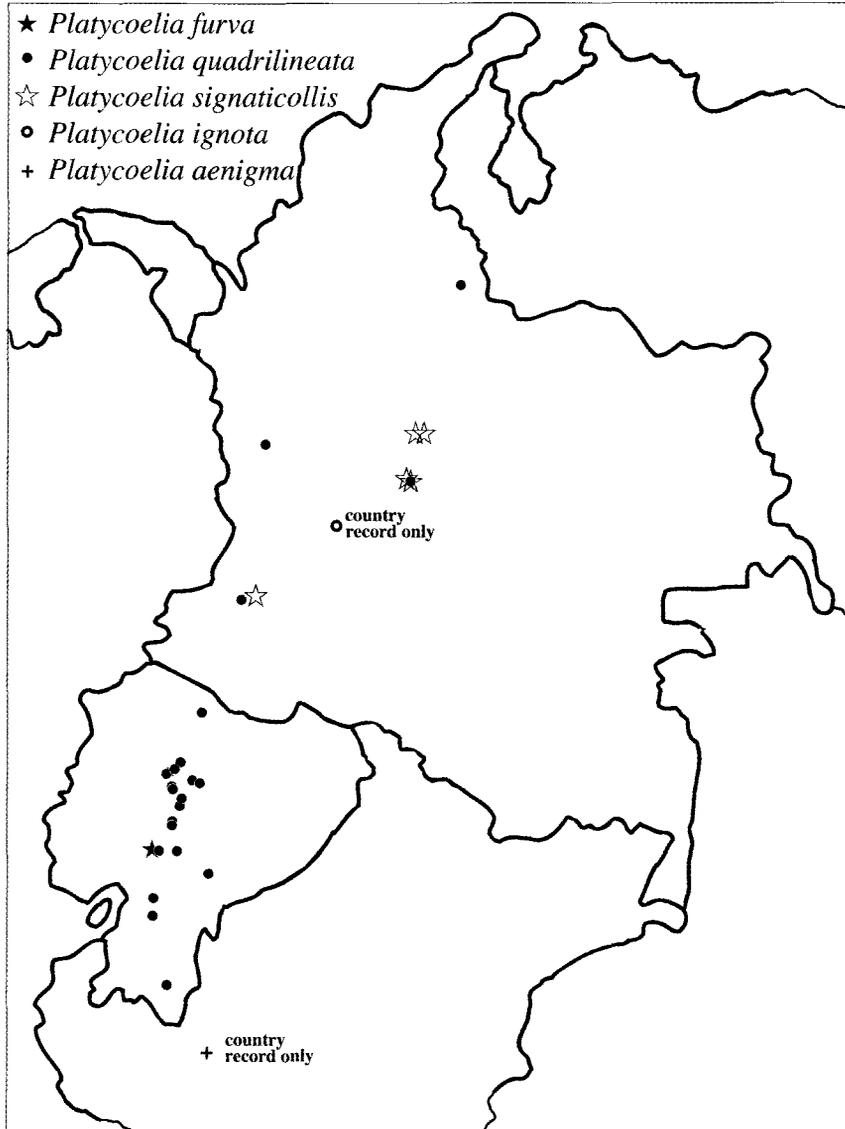


Fig. 72. Distribution of *Platycoelia furva*, *P. quadrilineata*, *P. signaticollis*, *P. ignota*, and *P. aenigma* in Colombia, Ecuador, and Perú.

the mentum; mentum with a medial notch, base medially depressed; antenna 10-segmented, club not longer than other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 72). Cashca Totoras, Ecuador is the only known locality for this species.

LOCALITY DATA. 4 specimens examined from QCAZ.

ECUADOR (4). BOLÍVAR (4): Cashca Totoras.

TEMPORAL DATA. November (1), December (3).

49. *Platycoelia quadrilineata***Burmeister, 1844**

(Fig. 72)

Platycoelia quadrilineata Burmeister, 1844 (valid name)

CATALOG. *Platycoelia quadrilineata*, Burmeister 1844:454 [original description]; Blanchard 1851:227 [catalog listing]; Burmeister 1855:525 [key to species of *Platycoelia*]; Lacordaire 1856:372 [distribution]; Harold 1869:1230 [catalog listing]; Ohaus 1904b:329, 331, 339 [redescription]; Ohaus 1908:405 [distribution]; Ohaus 1918:177 [catalog listing]; Blackwelder 1944:247 [checklist]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing].

TYPE SPECIMENS. *Platycoelia quadrilineata* Burmeister lectotype male at MLUH labeled a) "4-lineata Buq. Columb. Bgt." (green label, handwritten), b) "PLATYCOELIA QUADRILINEATA BURMEISTER ♂ A.B.T. SMITH 2002 LECTOTYPE" (red label, handwritten and typeface), c) "MLU Halle WB Zoologie S.-Nr. T.-Nr. 8/3/10" (typeface and handwritten). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at MLUH labeled a) "PLATYCOELIA QUADRILINEATA BURMEISTER ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), b) "MLU Halle WB Zoologie S.-Nr. T.-Nr. 8/3/10" (typeface and handwritten). One male paralectotype at ZMHB labeled a) "11466" (typeface), b) "Type" (orange label, typeface), c) "quadrilineata (Buq*) Burm. Bogotá Buq." (green label, handwritten), d) "PLATYCOELIA QUADRILINEATA BURMEISTER ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). One male paralectotype at ZMHB labeled a) "11466" (handwritten), b) "PLATYCOELIA QUADRILINEATA BURMEISTER ♂ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface). The accession number 11466 on the two paralectotype at the ZMHB indicates the two specimens accessioned from the Buquet Collection collected near Bogotá, Colombia. Burmeister

(1844) did not state how many specimens were in the type series (which was from the Buquet collection). The existence and location of other paralectotypes are unknown. Type locality: Bogotá, Colombia.

DESCRIPTION. Male (n=55). Length 20.8-27.1 mm, width 10.9-15.0 mm. Color of dorsal surface olive green to lime green or dark yellow (sometimes darkened to brownish-green); pronotum often with dark maculations; elytral intervals 3, 5, and 7 sometimes with weak, yellow, longitudinal stripe; pronotum, scutellum, and elytron with yellow margin. Ventral surface olive green to reddish-brown, metasternum sometimes with medial brown patch. Body ovate, strongly convex. **Head:** Dorsal surface glabrous. Frons densely punctate, clypeus rugopunctate, punctures moderate. Frons depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.0 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with 2 teeth, molar region with strong lamellae. Maxilla with 3 teeth, 2 inner teeth bifurcate. Mentum with apicomedial notch. Antenna 10-segmented; club approximately equal to segments 2-7, slightly longer than length of frons. **Pronotum:** Surface glabrous, moderately punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. **Elytron:** Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate with dark coloration; intervals sparsely punctate, punctures small. Suture apically angled, without spine. **Pygidium:** Width approximately 1.8 times length medially. Surface convex, disc impunctate (sparsely punctate near apex); punctures moderately large, setose; setae short, tawny. **Venter:** Thorax densely setose (except moderately setose medially), setae cream colored. Mesothoracic process weakly produced, projecting anteriorly weakly past mesocoxa; shape conical. Abdomen sparsely setose, setae cream colored. Apical spiracles not extruding. **Legs:** Protibia with 3 subequal

in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth or swelling. Unguitractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Parameres approximately 1.1 times longer than length of phallobase. Parameres with apex rounded, weakly deflexed laterally.

Female (n=60). Length 25.2-32.8 mm, width 14.2-17.5 mm. As male except in the following respects. *Legs*: Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: color mainly green, pronotum with dark maculations; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch, base medially depressed; antenna 10-segmented, club not longer than other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 72). Andes Mountains from the eastern cordillera in Colombia through to southern Ecuador.

LOCALITY DATA. 115 specimens examined from AMNH, ANSP, BMNH, CMNH, CNCI,

HAHC, INBC, LACM, MGFT, MIZA, MLUH, MNHN, NMPC, QCAZ, SMFD, UNSM, USNM, VMCP, ZMHB, ZMUH.

COLOMBIA (17). CALDAS (1): Manizales. CAUCA (1): No Data. DISTRITO CAPITAL (6): Bogotá. NORTE DE SANTANDER (5): Cerro Oroque. NO DATA (4).

ECUADOR (96). AZUAY (41): Gima. BOLÍVAR (4): Cashca Totoras. CAÑAR (2): El Tambo. CARCHI (3): Impuera. CHIMBORAZO (1): Parque Nacional Shangay. COTOPAXI (3): Estación El Bolche, Volcán Cotopaxi. LOJA (1): Loja. MORONA SANTIAGO (3): Macas. NAPO (12): Papallacta. PICHINCHA (15): Alóag, La Cocha, Lloa, Machachi, Papallacta (12 km NW), Quito, San Juan. TUNGURAHUA (2): Ambato, Cevallos. NO DATA (8).

NO DATA (3).

TEMPORAL DATA. February (6), March (7), April (4), May (1), June (51), September (2), October (2), November (12).

50. *Platycoelia rufosignata* Ohaus, 1904

(Figs. 33, 73)

Platycoelia rufosignata Ohaus, 1904 (valid name)

CATALOG. *Platycoelia rufosignata*, Ohaus 1904b:331, 339 [original description]; Ohaus 1908:405 [distribution]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:8 [distribution]; Machatschke 1965:59 [catalog listing]; Machatschke 1972:303 [catalog listing]; Onore 1997:280 [entomophagy].

TYPE SPECIMENS. *Platycoelia rufosignata* Ohaus lectotype male at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. Oberthüri Ohs. ♂. Type" (typeface and handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♂ LECTOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). **Lectotype here**

designated. See Methods and Materials section for a statement of taxonomic purpose. One male paralectotype at MNHN labeled a) "Bolivie Prov.Cochabamba P.Germain 1889" (typeface), b) "Oberthüri Ohaus" (red label, handwritten), c) "Dr Ohaus Vidit 1903." (typeface), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♂ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Two male paralectotypes at MNHN labeled a) "Bolivie Prov. Cochabamba P. Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. Oberthüri Ohs. ♂. Type." (typeface and handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♂ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface). Two female paralectotypes at MNHN labeled a) "Bolivie Prov. Cochabamba P.Germain 1889" (typeface), b) "Dr Ohaus Vidit 1903." (typeface), c) "Ohaus determ. Pl. Oberthüri Ohs. ♀. Type." (typeface and handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface). The following paralectotypes from Colombia and Ecuador are specimens of *P. quadrilineata*. One female paralectotype at MNHN labeled a) "R. Macas Equador" (typeface), b) "Ex-Musæo H.W. BATES 1892" (typeface), c) "Dr Ohaus Vidit 1903." (typeface), d) "Ohaus determ. Pl. Oberthüri Ohs. ♀. Type." (typeface and handwritten), e) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia quadrilineata* Burmeister, 1844 ♀ Det:A.B.T.Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "ECUADOR Macas 1300m. E. Feyer S." (typeface), b) "*Platycoelia rufosignata* Cotype Ohs." (orange label, handwritten), c) "Ecuador Quitogupula Pamasqui" (handwritten), d) e) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET:A.B.T.SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia quadrilineata* Burmeister, 1844 ♀ Det: A.B.T.Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "O.ECUADOR Macas E. Feyer S." (typeface), b) "♀" (typeface), c) "*Platycoelia rufosignata* Cotype

Ohs." (orange label, handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET: A.B.T.SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia quadrilineata* Burmeister, 1844 ♀ Det: A.B.T. Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "Ecuador Baron" (typeface), b) "♀" (typeface), c) "*Platycoelia rufosignata* Type Ohs." (orange label, handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia quadrilineata* Burmeister, 1844 ♀ Det: A.B.T. Smith 2002" (typeface). One female paralectotype at ZMHB labeled a) "Coll.Nonfried Columbia." (typeface), b) "♀" (typeface), c) "*Platycoelia rufosignata* Cotype Ohs." (orange label, handwritten), d) "PLATYCOELIA RUFOSIGNATA OHAUS ♀ PARALECTOTYPE DET: A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia quadrilineata* Burmeister, 1844 ♀ Det: A.B.T. Smith 2002" (typeface). Ohaus (1904b) did not specify how many specimens were in the type series. The existence and location of additional paralectotypes are unknown. One specimen at ZMHB labeled "Quito Pichincha" also has one of Ohaus' orange cotype labels. Since this locality was not mentioned in the original description, I consider this specimen not to be part of the type series. In 1903, Ohaus labeled all the specimens at MNHN as "*Platycoelia* Oberthüri." He apparently changed his mind about the name between then and when the original description was published in 1904. The name "*Platycoelia* Oberthüri" has never been mentioned in any publication. One specimen (of *P. paucarae*) at MNHN has the labels "Equateur Loja Abbé Gaujon" and "Ohaus determ. *Platycoelia* Oberthüri Ohaus ♀ Type." Since Loja was not mentioned in the original description, this specimen is not part of the original type series for *P. rufosignata*. Type locality: Cochabamba, Bolivia.

DESCRIPTION. Male (n=6). Length 24.8-27.5 mm, width 12.6-13.9 mm. Color of dorsal surface olive green; pronotum often with dark maculations; elytral intervals 3, 5, and 7 sometimes with weak, yellow, longitudinal stripe;

pronotum, scutellum, and elytron sometimes with yellow margin. Ventral surface olive green to reddish-brown. Body ovate, strongly convex. *Head*: Dorsal surface glabrous. Frons densely punctate, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex broadly rounded. Eyes separated by approximately 4.4 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with small, triangular, medial tooth, apex of tooth separated from apex of mentum. Mandibular scissorial region with 1 tooth, molar region with strong lamellae. Maxilla with 3 teeth, inner 2 teeth bifurcate. Mentum with apicomedial notch, basomedially with two deep impressions on either side of midline (Fig. 33). Antenna 10-segmented; club approximately equal to segments 2-7, slightly shorter than length of frons. *Pronotum*: Surface glabrous, densely punctate, with small and moderate punctures. Marginal bead weak laterally, absent elsewhere. *Elytron*: Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate; intervals moderately punctate, punctures small. Suture apically angled, without spine. *Pygidium*: Width approximately 2.0 times length medially. Surface weakly convex, disc impunctate (sparsely punctate near apex); punctures moderately large, setose; setae short, tawny. *Venter*: Thorax densely setose (except moderately setose medially), setae tawny. Mesothoracic process weakly produced, projecting anteriorly weakly past mesocoxa; shape conical. Abdomen sparsely setose, setae tawny. Apical spiracles not extruding. *Legs*: Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial, stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Unguigractor plate cylindrical; with 1 apical, 1 subapical seta. Modified protarsal claw with length greater than protarsomere 5, thickened and elongate when compared with other claw, laterally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Geni-*

talia: Parameres approximately 1.3 times longer than length of phallobase. Parameres with apex rounded, weakly deflexed laterally.

Female (n=17). Length 25.6-34.0 mm, width 14.1-17.6 mm. As male except in the following respects. *Legs*: Protarsomere 3-4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: color mainly green, pronotum with dark maculations; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch, base with deep pits on either side of the midline; antenna 10-segmented, club not longer than the other segments combined; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Andes Mountains from southern Perú to central Bolivia.

LOCALITY DATA. 23 specimens examined from BMNH, CMNH, HAHC, MCZC, MGFT, MNHN, ZMHB, ZSMC.

PERÚ (4). APURÍMAC (2): Abancay, No Data. JUNÍN (1): Tarma. NO DATA (1).

BOLIVIA (18). COCHABAMBA (7): Incachaca, No Data. LA PAZ (10): Cuticucho, La Paz. NO DATA (1).

NO DATA (1).

One specimen labeled "Chile Puerto Arturo" was considered to have no data. This locality is far out of the known range of the genus *Platycoelia*.

TEMPORAL DATA. April (1), May (1), December (7).

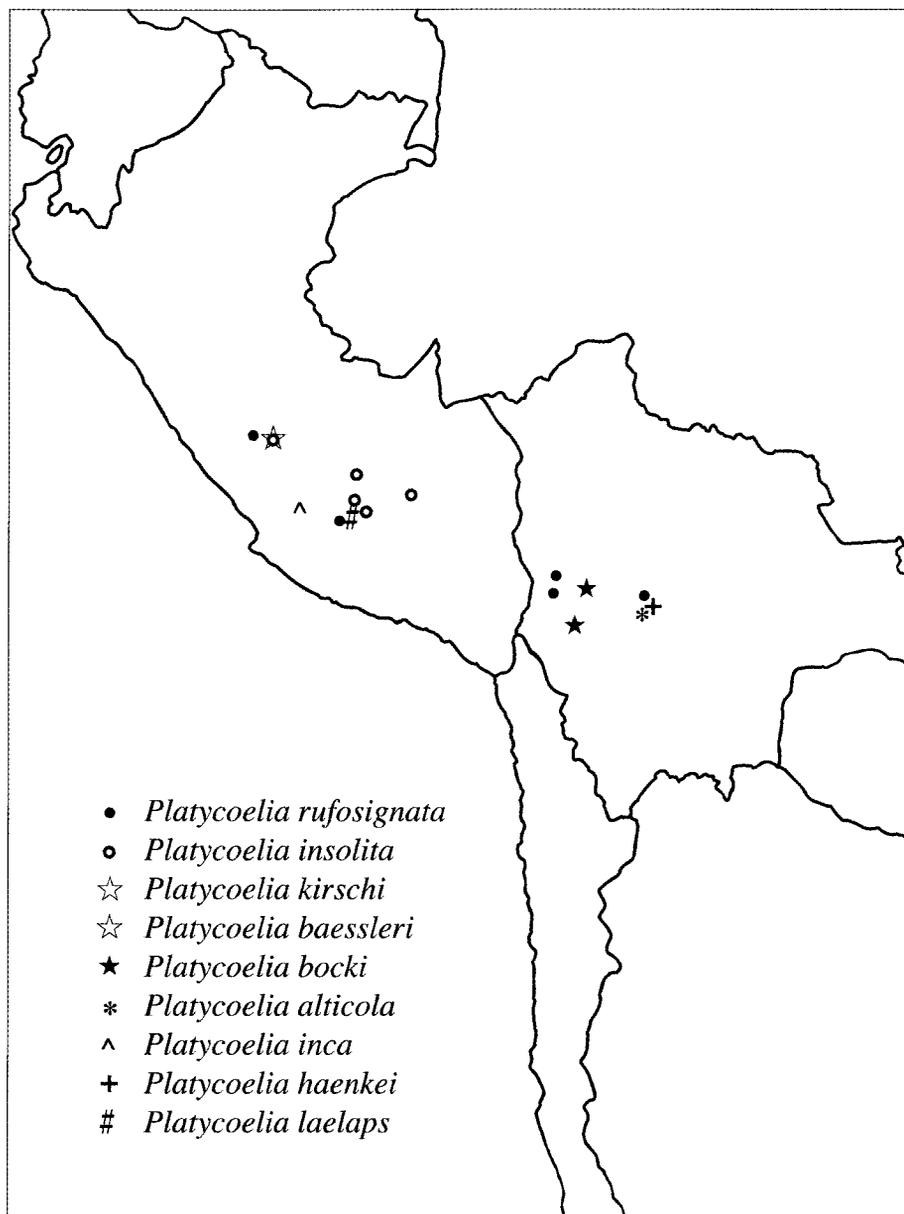


Fig. 73. Distribution of *Platycoelia rufosignata*, *P. insolita*, *P. kirschi*, *P. baessleri*, *P. bocki*, *P. alticola*, *P. inca*, *P. haenkei*, and *P. laelaps* in Perú and Bolivia.

51. *Platycoelia insolita* new species

(Figs. 73, 74)

TYPE SPECIMENS. Male holotype, female allotype and 33 paratypes (26 male, 7 female). Holotype male at USNM labeled "PERU: Cusco; 40 km West of Pilcopata 13-Feb-1978"

and "Univ.Maryland-SEL:SMF Expedition." Allotype female at USNM labeled "PERU: Cusco; Machupicchu 2040 meters 16-Feb-1978" and "Univ.Maryland-SEL:SMF Expedition." One male paratype at ABTS labeled "PERU:Cusco; 40 km West of Pilcopata 20 Jan 1979" and "Univ.Maryland-SEL:SMF Expedition." Eleven male and one female paratypes

at LACM, one male and one female paratypes at ABTS, one male and one female paratypes at UNSM, one male paratype at BCRC, and one male paratype at MLJC labeled "La Merced Chanchamayo, PERU coll. E.G. Smyth." Two male and one female paratypes at LACM labeled "Chanchamayo, PERU coll. E.G. Smyth." One male paratype at LACM labeled "PERU:Huánuco Dept. Chanchamayo (no date) E.G.Smyth." One male paratype at ABTS labeled "PERU: Cusco; Buenos Aires, 53 km.W. Pilcopata 2280 meters 3-6 XII 79 J.B.Heppner lower montane wet." One male paratype at CASC labeled "Peru" and "L.W. Saylor Collection." One female paratype at ABTS labeled "Vitoc, 1400 to 1800M XI-2-40" and "Coll. of Bob Potts." One male paratype at MNHN labeled "Chancha-mayo," "Ex. Musæo H. W. Bates 1892," "Ohaus determ. Pl. Helli Ohaus ♂," "Dr Ohaus vidit 1903," and "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A. B. T. Smith 2002." One female paratype at ZMHB labeled "Peru Urubamba Bär S.," "♀," and "Platycoelia nigricauda Ohs." Two male and one female paratypes at CASC and one male paratype at HAHC labeled "Chanchamayo Peru E.G. Smyth." One male paratype at UCDC labeled "Tarma, Peru Mar. 3. 1962" and "R.E. Fontaine Collector." Type locality: 40 km west of Pilcopata, Cusco, Perú.

HOLOTYPE. Male: length 22.1 mm, width 11.6 mm. Color dark brown with green tinge around some margins. Elytron with greenish-yellow patch basomedially. Body subelliptical, convex. *Head:* Dorsal surface glabrous. Frons and clypeus rugose to rugopunctate. Frons not depressed. Frontoclypeal suture complete. Clypeal apex rounded with deflexed margin. Eyes separated by approximately 1.8 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae reddish-yellow. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 10-segmented; club slightly longer than other segments combined, slightly longer than frons. *Pronotum:* Surface glabrous, moderately punctate, with moderate punctures.

Marginal bead weak laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, weakly punctate; punctures moderate; intervals impunctate. Suture with distinct, apical spine. *Pygidium:* Width approximately 2.1 times length medially. Surface weakly convex, moderately to densely punctate (medially impunctate); punctures moderate, setose; setae long, reddish-yellow. *Venter:* Thorax densely setose, setae reddish-yellow. Mesothoracic process weakly projecting anteriorly past mesocoxa, cylindrical. Abdomen sparsely setose; setae long, reddish-yellow. Apical spiracles not extruding. *Legs:* Protibia with 1 apical tooth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with apical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 without internal swelling or tooth. Unguitractor plate cylindrical, with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

ALLOTYPE. Female: length 22.3 mm, width 12.2 mm. As holotype except in the following respects. Color of dorsal surface light green with dark brown pronotal maculations. *Head:* Antennal club slightly shorter than other segments combined. *Legs:* Protibia with 3 teeth in apical half. Protarsomere 3-4 without apical stridulatory ridge. Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=26). Length 17.3-22.6 mm, width 10.3-11.4 mm (Fig. 74). Female (n=7). Length 21.0-25.7 mm, width 12.2-14.7 mm. The paratypes differ from the holotype and allotype in the following respects. Color of dorsal surface brownish-green to light green. Additional characters as follows. *Male Genitalia:* Phallobase approximately 1.3 times longer than length of parameres. Parameres with apex rounded.

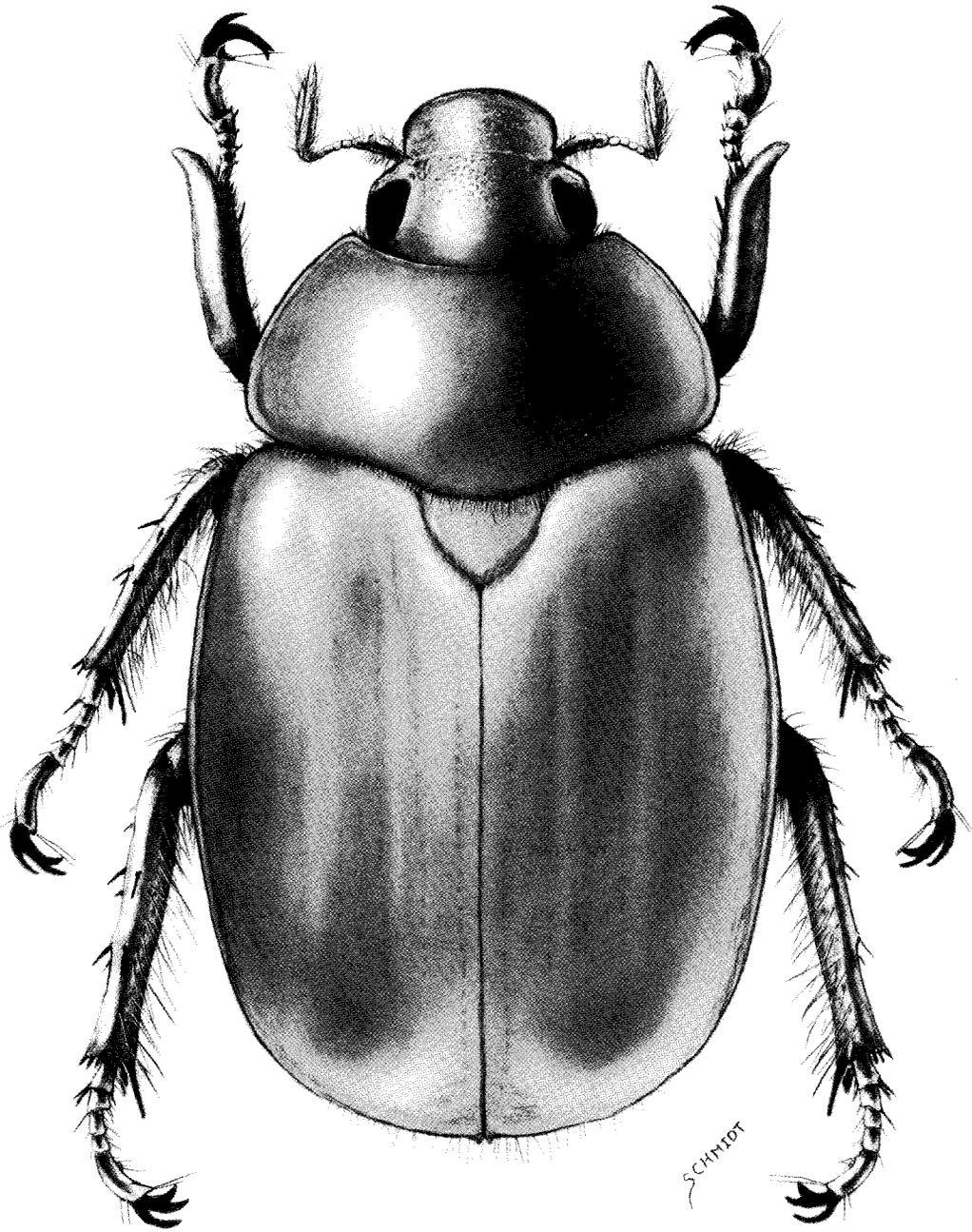


Fig. 74. *Platycoelia insolita* male.

ETYMOLOGY. *Platycoelia insolita* means “the unusual *Platycoelia*” referring to the atypical appearance of this species.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping mentum; mentum with a medial notch; antenna 10-segmented; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture with an acute spine; mesothoracic process projecting apically past the mesocoxa; apical abdominal spiracle not protuberant; protibia of male with 1 prominent tooth; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Known from the high Andes Mountains of central Perú.

LOCALITY DATA. 35 specimens examined from CASC, LACM, MNHN, UCDC, USNM.

PERÚ (35). CUSCO (5): Buenos Aires, Machupicchu, Pilcopata (40 km W), Urubamba. JUNÍN (29): Chanchamayo, La Merced, Tarma. NO DATA (1).

TEMPORAL DATA. January (1), February (2), March (1), November (1), December (1).

52. *Platycoelia signaticollis*
(Burmeister, 1844)
(Figs. 4, 10, 72, 75)

Callichloris signaticollis Burmeister, 1844 (original combination)

CATALOG. *Callichloris signaticollis*, Burmeister 1844:456 [original description]; Blanchard 1851:227 [catalog listing]; Lacordaire 1856:378 [distribution]; Harold 1869:1232 [catalog listing]; Ohaus 1904b:333, 335, 339, 341 [redescription]; Ohaus 1905:167 [illustration]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist].

Callichloris (Callichloris) signaticollis, Gutiérrez 1951:118 [key to species of *Callichloris*].

Platycoelia signaticollis, Machatschke 1965:55, 60 [cited as type species for *Callichloris*, new combination, catalog listing]; Machatschke 1972:301, 304 [cited as type species for *Callichloris*, catalog listing].

TYPE SPECIMENS. *Callichloris signaticollis* Burmeister lectotype male at MLUH labeled a) “CALLICHLORIS SIGNATICOLLIS BURMEISTER ♂ LECTOTYPE A. B. T. SMITH 2002, LECTOTYPE” (red label, handwritten and typeface), b) “signaticollis Dup. 197, Columb. (illegible)” (green label, handwritten), c) “MLU.-Halle, WB Zoologie, S.-Nr., T.-Nr., 8/3/10” (typeface and handwritten) d) “*Platycoelia signaticollis* (Burmeister, 1844) ♂ Det:A.B.T.Smith 2002” (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Two male paralectotypes at MLUH labeled a) “CALLICHLORIS SIGNATICOLLIS BURMEISTER ♂ PARALECTOTYPE A. B. T. SMITH 2002” (yellow label, handwritten and typeface), b) “MLU.-Halle, WB Zoologie, S.-Nr., T.-Nr., 8/3/10” (typeface and handwritten), c) “*Platycoelia signaticollis* (Burmeister, 1844) ♂ Det:A.B.T.Smith 2002” (typeface). One male paralectotype at MLUH labeled a) “122.” (green label, handwritten), b) “CALLICHLORIS SIGNATICOLLIS BURMEISTER ♂ PARALECTOTYPE A. B. T. SMITH 2002” (yellow label, handwritten and typeface), c) “MLU.-Halle, WB Zoologie, S.-Nr., T.-Nr., 8/3/10” (typeface and handwritten), d) “*Platycoelia signaticollis* (Burmeister, 1844) ♂ Det: A.B.T.Smith 2002” (typeface). The existence and location of other paralectotypes are unknown. Type locality: Colombia.

DESCRIPTION. Male (n=24). Length 15.4-17.1 mm, width 7.8-9.4 mm (Fig. 75). Color dorsally greenish-tan to dark green, head with frons black, pronotum with black maculations (at least medially in apical half, extending laterally to base) to all black; ventrally dark brown to black, legs tan to light brown. Body subelliptical, convex. **Head:** Dorsal surface glabrous. Frons and clypeus

moderately to densely punctate, punctures moderate. Frons slightly depressed medioapically. Frontoclypeal suture weakly bisinuate. Clypeus rectangular, apex reflexed. Eyes separated by approximately 5.5 transverse eye-widths. Labrum sparsely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with 2 teeth, molar region smooth. Maxilla with 4 apical teeth. Apex of mentum with medial notch (Fig. 4). Antenna 9-segmented or 10-segmented (segments 5 and 6 often fused); club slightly shorter than other segments combined, approximately equal to length of frons. *Pronotum*: Surface glabrous, sparsely punctate, with small and moderate punctures. Marginal bead present apically and laterally, absent basally. *Elytron*: Surface glabrous; longitudinal striae impressed, impunctate to weakly punctate; intervals impunctate. Suture apically rounded. *Pygidium*: Width approximately 1.8 times length medially. Surface smooth, weakly convex, impunctate (except sparsely punctate near apex); punctures moderate, glabrous (except near apex); setae long, tawny. *Venter*: Thorax densely setose; setae long, tawny to golden-brown. Mesothoracic process barely produced, projecting anteriorly to subapex of mesocoxa (Fig. 10). Abdomen sparsely setose; setae moderately-sized, tawny to golden-brown. Apical spiracles weakly extruding. *Legs*: Protibia with 3 teeth in apical half; first and second teeth subequal in size; third tooth small, often worn and obsolete, removed slightly from apical teeth. Mesotibia and metatibia widest between base and middle. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere 5 and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongated when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws

elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.3 times longer than length of parameres. Parameres with apex ventrally angled.

Female (n=5). Length 17.5-17.7 mm, width 9.8-10.0 mm. As male except in the following respects. *Head*: Antennal club approximately equal to segments 2-7 (2-6 in 9-segmented individuals). *Legs*: Protibia with third tooth distinct, subequal in size to other teeth. Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth or swelling. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frons dark in color (relative to rest of dorsal surface), medioapically depressed; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; pronotum with dark maculations; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle weakly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 72). Eastern Colombian arm of the Andes Mountains to southern Colombia.

LOCALITY DATA. 29 specimens examined from BMNH, CASC, MGFT, MLUH, MNHN, NHMB, SMFD, SMTD, USNM, ZMHB, ZSMC.

COLOMBIA (26). BOYACÁ (8): Muzo, Santa Rosa de Viterbo. CAUCA (1): No Data. CUNDINAMARCA (3): Choachí. DISTRITO CAPITAL (1): Bogotá. NO DATA (13).

NO DATA (3).

TEMPORAL DATA. April (1), May (2).

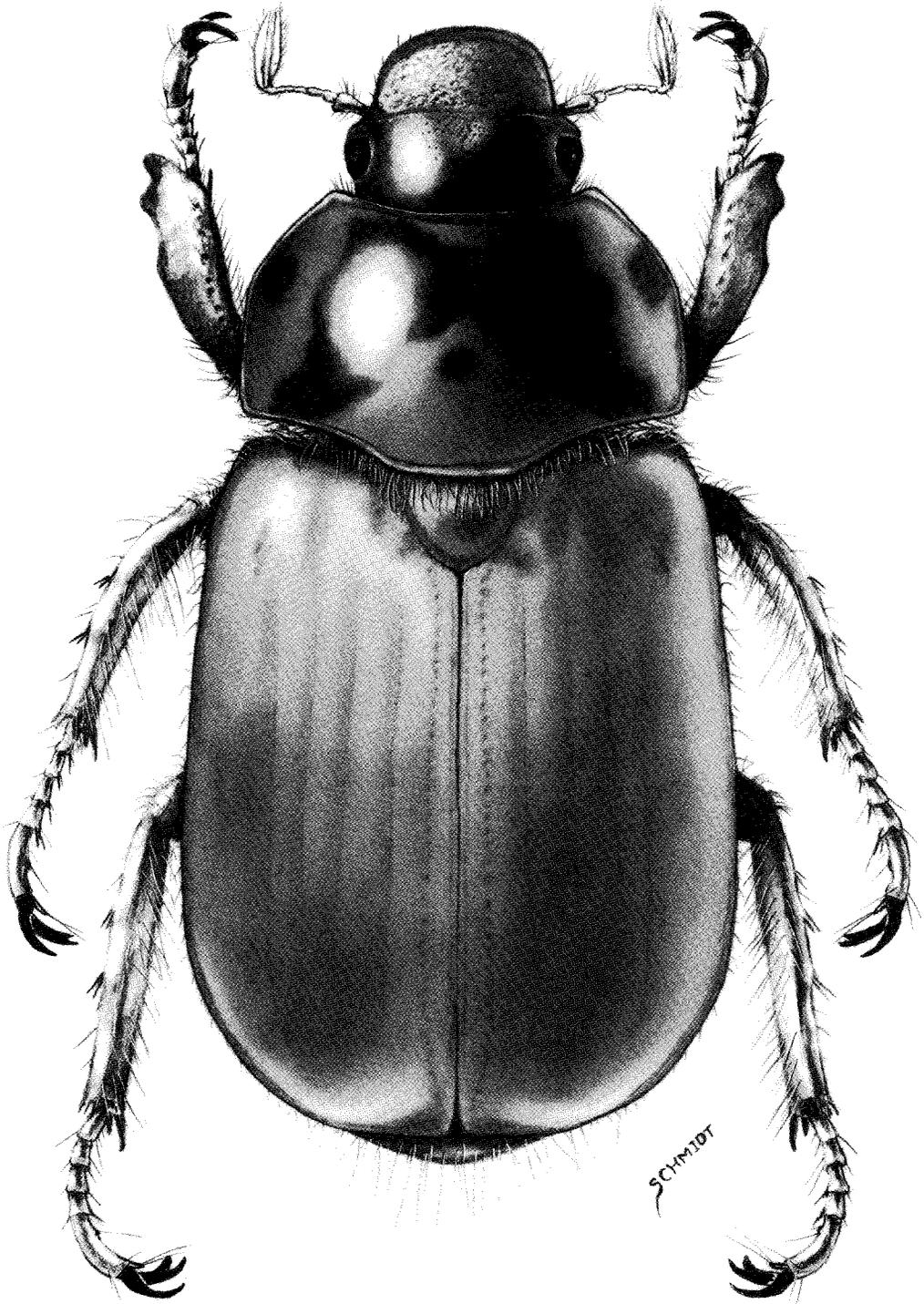


Fig. 75. *Platycoelia signaticollis* male.

53. *Platycoelia helleri* (Ohaus, 1904)

(Fig. 58)

Callichloris helleri Ohaus, 1904 (original combination)

CATALOG. *Callichloris helleri*, Ohaus 1904b:333, 334, 339, 341 [original description]; Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist]; Ohaus 1952:9 [distribution].

Callichloris (*Epicallichloris*) *helleri*, Gutiérrez 1951:115, 116 [new combination, key to species of *Callichloris*].

Platycoelia helleri, Machatschke 1965:60 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

TYPE SPECIMENS. *Callichloris helleri* Ohaus lectotype male at ZMHB labeled a) "Columb. Bogota" (typeface), b) "Typus!" (red label, typeface), c) "C. Helleri Ohaus" (red label, handwritten), d) "CALLICHLORIS HELLERI OHAUS ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten and typeface), e) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Thirteen paralectotypes were examined as follows. Three male paralectotypes at ZMHB labeled a) "Columb. Bogota" (typeface), b) "♂" (typeface), c) "Callichloris Helleri Ohs. Cotype" (orange label, handwritten), d) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). Three male paralectotypes at ZMHB labeled a) "Callanga Peru" (typeface), b) "♂" (typeface), c) "Callichloris Helleri Cotype Ohs." (orange label, handwritten), d) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). One male paralectotype at SMTD labeled a) "Callanga Peru" (typeface) b) "Cotypus!" (red label, typeface), c) "76277" (green label, handwritten), d) "Callichloris Helleri Ohaus" (handwritten), e) "CALLI-

CHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). Two male paralectotypes at MNHN labeled a) "Colombie" (handwritten), b) "Ex.Musæo A.SALLÉ 1897" (typeface), c) "Ohaus determ. Pl. Helleri Ohaus ♂ Cotyp." (typeface and handwritten), d) "Dr Ohaus vidit 1903" (typeface), e) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). One male paralectotype at MNHN labeled a) "Colomb." (typeface), b) "Ex.Musæo A.SALLÉ 1897" (typeface), c) "Dr Ohaus vidit 1903" (typeface), d) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det: A.B.T.Smith 2002" (typeface). One male paralectotype (now classified as *P. insolita*) at MNHN labeled a) "Chancha-mayo" (handwritten), b) "Ex.Musæo H. W. Bates 1892" (typeface), c) "Ohaus determ. Pl. Helleri Ohaus ♂" (typeface and handwritten), d) "Dr Ohaus vidit 1903" (typeface), e) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A. B. T. SMITH 2002" (yellow label, handwritten and typeface), f) "PLATYCOELIA INSOLITA SMITH ♂ PARATYPE" (yellow label, handwritten and typeface). One male paralectotype at MNHN labeled a) "Cauca Valley Colomb" (handwritten), b) "Ex.Musæo H. W. Bates 1892" (typeface), c) "Dr Ohaus vidit 1903" (typeface), d) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface), e) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). One male paralectotype at BMNH labeled a) "♂" (typeface), b) "Co-type" (round label with yellow border, typeface), c) "Typus!" (red label, typeface), d) "Callanga, Peru 1907 - 27" (handwritten), e) "Callanga Peru" (typeface), f) "Ohaus determ. Callichloris Helleri Ohs." (typeface and handwritten), g) "CALLICHLORIS HELLERI OHAUS ♂ PARALECTOTYPE A.B.T. SMITH 2002" (yellow label, handwritten and typeface),

h) "*Platycoelia helleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). Ohaus (1904b) stated that he examined about 20 male specimens in the type series. The location of the remaining (approximately seven) paratypes is unknown. Type locality: Bogotá, Colombia.

DESCRIPTION. Male (n=16). Length 20.6-22.7 mm, width 12.2-12.6 mm. Color dorsally dark green (sometimes dark yellowish-green); black frons; brown pronotal maculations; thick brown border along elytral suture, apex, lateral edge. Ventrally reddish-brown. Body ovate, convex. *Head:* Dorsal surface glabrous. Frons sparsely punctate (base, lateral edge) to densely punctate (medioapically), clypeus rugose, punctures moderate. Frons weakly depressed medioapically. Frontoclypeal suture complete, weakly bisinuate. Clypeus rectangular, apex slightly reflexed. Eyes separated by approximately 4.5 transverse eye-widths. Labrum rugose with setose punctures, setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with 1 tooth, molar region with weak lamellae. Maxilla with 3 apical teeth. Apex of mentum with medial notch. Antenna 9-segmented; club approximately equal to segments 2-6, approximately equal to clypeal length. *Pronotum:* Surface glabrous, sparsely punctate, with small and moderate punctures. Marginal bead present apically (except medially) and laterally, absent basally. *Elytron:* Surface glabrous; longitudinal striae weakly impressed, weakly punctate; intervals impunctate. Suture apically rounded. *Pygidium:* Width approximately 1.7 times length medially. Surface smooth; disc flat, impunctate (except moderately punctate near apex); punctures moderately large, setose; setae long, tawny. *Venter:* Thorax densely setose; setae long, tawny to golden-brown. Mesothoracic process barely produced, projecting anteriorly to subapex of mesocoxa. Abdomen sparsely setose laterally; setae long, tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; first and second teeth subequal in size; third tooth small, often worn

and obsolete, removed slightly from apical teeth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internopical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongated when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.6 times longer than length of parameres. Parameres with apex rounded.

Female: Unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: frons dark in color; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum with weak maculations; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; elytron with a thick, black suture line; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 58). If the data labels are to be believed, this species occurs in highly disjunct areas of Andean Colombia and Perú. More specimens with reliable data are needed to determine the distribution of this species.

LOCALITY DATA. 16 specimens examined from BMNH, MNHN, SMTD, ZMHB.

COLOMBIA (9). ANTIOQUIA (1): Medellín. DISTRITO CAPITAL (4): Bogotá. NO DATA (4)

PERÚ (7). LIMA (5): Callanga. NO DATA (2).

54. *Platycoelia ignota* new species
(Fig. 72)

TYPE SPECIMEN. Male holotype. Holotype male at BMNH labeled "549," "67 45," "Callichloris Lafertei Reiche Colombia," and "So named in Reiches Collection. C. W." Type locality: Colombia.

HOLOTYPE. Male: Length 23.3 mm, width 12.9 mm. Color dorsally black with green clypeus, pronotum, and pygidium, pronotum with dark brown maculations. Ventrally yellowish-brown to brown. Body subovate, convex. *Head:* Dorsal surface sparsely setose at clypeal apex; setae tawny. Frons moderately to densely punctate, clypeus rugose. Frons weakly depressed. Frontoclypeal suture complete. Clypeus rectangular with reflexed apex. Eyes separated by 6.0 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth separated from apex of mentum. Apex of mentum with medial notch. Antenna 9-segmented; club slightly shorter than segments 1-6, approximately equal to clypeal length. *Pronotum:* Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead present laterally, absent apically and basally. *Elytron:* Surface glabrous; longitudinal striae weakly impressed or not impressed, weakly punctate; punctures moderate; intervals impunctate. Suture rounded apically, without spine. *Pygidium:* Width 1.8 times length medially. Surface weakly convex, sparsely punctate near apex; punctures moderate, with some scattered setae. *Venter:* Thorax densely setose, setae tawny. Mesothoracic process reduced, not projecting anteriorly past mesocoxa. Abdomen sparsely setose laterally; setae long, tawny. Apical 2 spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; apical 2 teeth close together, longer; third tooth shorter. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with internopical stridulatory ridge. Protarsomere 5 with internomedial tooth bearing stridulatory ridge. Mesotarsomere and metatarsomere 5 without internal swelling or tooth. Unguigractor plate cylindrical, with 1 apical, 1 sub-

apical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.2 times longer than length of parameres. Parameres with apex rounded.

ETYMOLOGY. *Platycoelia ignota* is Latin for the "unknown" or "obscure" *Platycoelia*. The name reflects the fact that this species is known from only one specimen with poor data.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: color dorsally black with a green clypeus, pronotum, and pygidium; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum with weak maculations; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 72). Colombia, the precise locality is unknown.

LOCALITY DATA. 1 specimen examined from BMNH.

COLOMBIA (1). **NO DATA** (1).

55. *Platycoelia kirschi* (Ohaus, 1904)
(Fig. 73)

Callichloris kirschi Ohaus, 1904 (original combination)

CATALOG. *Callichloris kirschi*, Ohaus 1904b: 335, 336, 339, 341 [original description]; Ohaus 1918:178 [catalog listing];

Blackwelder 1944:247 [checklist]; Ohaus 1952:8 [distribution].

Callichloris (Callichloris) kirschi, Gutiérrez 1951:118, 120 [new combination, key to species of *Callichloris*].

Platycoelia kirschi, Machatschke 1965:59 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

TYPE SPECIMEN. *Callichloris kirschi* Ohaus holotype female at SMTD labeled a) "Dr. Bässler Chanchomayo" (green label), b) "♀" (white label with black border), c) "Typus!" (red label), d) "C. Kirschi Ohaus" (red label), e) "CALLICHLORIS KIRSCHI OHAUS ♀ HOLOTYPE" (red label, handwritten and typeface), f) "Staatl. Museum für Tierkunde Dresden," g) "Kirschi Ohaus" (handwritten green label), h) "*Platycoelia* KIRSCHI (OHAUS, 1904) ♀ Det: A.B.T. Smith 2002" (typeface and handwritten). There is only one specimen in the type series (Ohaus 1904b) therefore the holotype is fixed by monotypy. Type locality: Chanchamayo, Junín, Perú.

DESCRIPTION. Female (n=1). Length 21.2 mm, width 12.5 mm. Color dorsally black; ventrally reddish-brown to dark brown. Body subelliptical, convex. *Head:* Dorsal surface glabrous. Frons moderately punctate (base) to rugose (apex), clypeus rugose, punctures moderate. Frons broadly depressed medioapically. Frontoclypeal suture complete, obscured by punctures. Clypeus broadly rounded, apex slightly reflexed. Eyes separated by approximately 3.2 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with three teeth; apical 2 teeth adjacent, third tooth near base; molar region with lamellae. Maxilla with three apical teeth. Apex of mentum with medial notch. Antenna 10-segmented; club approximately equal to segments 2-7, approximately equal to clypeal length. *Pronotum:* Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead present apically (except medially) and later-

ally, absent basally. *Elytron:* Surface glabrous; longitudinal striae weakly punctate; intervals impunctate. Suture apically rounded. *Pygidium:* Width approximately 1.8 times length medially. Surface smooth, flat, impunctate (except sparsely punctate near apex); punctures moderate with scattered setae; setae long, tawny. *Venter:* Thorax moderately setose laterally; setae long, tawny. Mesothoracic process barely produced, projecting anteriorly to subapex of mesocoxa. Abdomen sparsely setose; setae moderately-sized, tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; first and second teeth subequal in size; third tooth shorter, removed slightly from apical teeth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long. Protarsomere 5 and mesotarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with ventral tooth, not thickened.

Male: Unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsal color black; frons medioapically depressed; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth.

DISTRIBUTION (Fig. 73). The only known locality is Chanchamayo, Perú.

LOCALITY DATA. 1 specimen examined from SMTD.

PERÚ (1). **JUNÍN** (1): Chanchamayo.

56. *Platycoelia baessleri* (Ohaus, 1904)
(Fig. 73)

Callichloris baessleri Ohaus, 1904 (original combination)

CATALOG. *Callichloris baessleri*, Ohaus 1904b:336, 339, 341 [original description]; Ohaus 1952:9 [distribution].

Callichloris bässleri (= *Callichloris baessleri*, *lapsus calami*), Ohaus 1918:178 [catalog listing]; Blackwelder 1944:247 [checklist].

Callichloris (*Callichloris*) *baessleri*, Gutiérrez 1951:118, 120 [new combination, key to species of *Callichloris*].

Platycoelia baessleri, Machatschke 1965:59 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

TYPE SPECIMENS. *Callichloris baessleri* Ohaus lectotype male at SMTD labeled a) "Dr. Bässler; Lima" (green label), b) "12397" (green label), c) "Callichloris Bässleri Type Ohaus" (handwritten), d) "Typus" (red label), e) "CALLICHLORIS BAESSLERI OHAUS ♂ LECTOTYPE A. B. T. SMITH 2002" (red label, handwritten), f) "baessleri Ohaus" (green label, handwritten), g) "Staatl. Museum für Tierkunde Dresden," h) "*Platycoelia baessleri* (Ohaus, 1904) ♂ Det:A.B.T.Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. The lectotype is labeled Lima, but this is probably too low to support populations of this species. I consider the collecting locality as Perú with no further data. One female paralectotype at ZMHB labeled a) "Dr. Bässler Chanchomayo" (green label, typeface), b) "♀" (typeface), c) "Typus!" (typeface), d) "C. Bässleri Ohaus" (handwritten), e) "CALLICHLORIS BAESSLERI OHAUS ♀ PARALECTOTYPE A.B.T.SMITH 2002" (yellow label, handwritten and typeface), f) "*Platycoelia baessleri* (Ohaus, 1904) ♀ Det:A.B.T.Smith 2002" (typeface). The existence and location of remaining paralectotypes are unknown. Type locality: Perú.

DESCRIPTION. Male (n=1). Length 17.3 mm, width 10.2 mm. Color dorsally black;

ventrally reddish-brown to brown. Body ovate, convex. *Head*: Dorsal surface glabrous. Frons sparsely to densely punctate, clypeus densely punctate, punctures moderate. Frons slightly depressed medioapically. Frontoclypeal suture complete, obscured by punctures. Clypeus broadly rounded, apex reflexed. Eyes separated by 2.8 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with one tooth. Maxilla with 3 apical teeth. Apex of mentum with medial notch. Antenna 10-segmented; club approximately equal to segments 2-7, slightly shorter than clypeal length. *Pronotum*: Surface glabrous, sparsely punctate, with small and moderate punctures. Marginal bead present apically (except medially) and laterally, absent basally. *Elytron*: Surface glabrous; longitudinal striae slightly impressed, punctate; intervals impunctate. Suture apically rounded. *Pygidium*: Width approximately 1.9 times length medially. Surface smooth, weakly convex, impunctate (except sparsely punctate near apex); punctures moderate, glabrous (except near apex); setae long, tawny. *Venter*: Thorax densely setose; setae long, tawny to golden-brown. Mesothoracic process barely produced, projecting anteriorly to subapex of mesocoxa. Abdomen sparsely setose; setae moderately-sized, tawny to golden-brown. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; teeth subequal in size. Mesotibia and metatibia widest apically. Mesotarsomere 5 internomedial tooth absent. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified mesotarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.5 times longer than length of parameres. Parameres with apex slightly angled medially.

Female (n=1). Length 18.2 mm, width 11.8 mm. As male except in the following respects. *Legs*: Modified protarsal claw with ventral tooth, not thickened.

The protarsi and metatarsi of the male specimen are missing, but presumably this species has the modified protarsal claw thick-

ened with apex unevenly bifurcate as in all other species of *Platycoelia*.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsal color black; frontoclypeal suture complete; eyes separated by 2.8 transverse eye-widths; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Chanchamayo, Perú is the only known locality for this species. The locality data is from a century old specimen and the locality may not be accurate.

LOCALITY DATA. 2 specimens examined from SMTD, ZMHB.

PERÚ (2). JUNÍN (1): Chanchamayo. NO DATA (1).

57. *Platycoelia aenigma* new species
(Fig. 72)

TYPE SPECIMEN. Holotype male at BMNH labeled "Amaz Nauta" on upperside and "58. 77." on lower side of a round, blue label. It is also labeled "Ohaus determ Callichloris n. sp. ♂." Malcolm Kerley, collection manager at the BMNH, informed me that the numbers on the round label refers to an accession number. The entry for the numbers "58. 77." is "1858-77, 346 coleoptera collected from Amazon Nautas and Chapapanga, July 9th, collected by Degand." This information is vague but confirms that the specimen was probably collected on the east slope of the Andes Moun-

tains in northern Perú. Type locality: northern Perú.

HOLOTYPE. Male: Length 17.6 mm, width 10.5 mm. Color dorsally light green with light brown pronotal maculations and elytron. Ventrally brownish-yellow. Body ovate, convex. **Head:** Dorsal surface sparsely setose, setae tawny. Frons sparsely punctate (base) to densely punctate (apex), clypeus densely punctate, punctures moderately large to moderate. Frons weakly depressed. Frontoclypeal suture complete. Clypeus trapezoidal with strongly reflexed apex. Eyes separated by 5.0 transverse eye-widths. Labrum moderately punctate, setose; setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth separated from apex of mentum. Apex of mentum with medial notch. Antenna 10-segmented; club approximately equal to segments 1-7, slightly longer than length of frons. **Pronotum:** Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead present laterally, absent apically and basally. **Elytron:** Surface glabrous; longitudinal striae weakly impressed, punctate; punctures moderate; intervals impunctate. Suture evenly angled apically, without spine. **Venter:** Thorax densely setose, setae tawny. Mesothoracic process reduced, not projecting anteriorly past mesocoxa. **Legs:** Protibia with 3 teeth in apical half; apical 2 teeth close together, longer; third tooth shorter. Mesotibia and metatibia widest medially. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 without internal swelling or tooth. Unguitractor plate cylindrical, with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal claw slightly thickened, elongate, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened.

The entire abdomen of this specimen is missing.

ETYMOLOGY. The specific name of *P. aenigma* is the Latin word for "a mystery." I feel this name is appropriate for such an unusual species, especially since it is only known from one old specimen with poor data and no abdomen.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsal color light green with light brown elytron; frons sparsely setose laterally; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; pronotum with weak maculations; elytron without distinct, yellow, longitudinal lines; apex of elytral suture without acute spine; mesothoracic process nub to weakly projecting apically; mesotarsomere 5 and metatarsomere 5 without internal tooth; modified mesotarsal claw in male with apex bifurcate, dorsoventrally flattened.

DISTRIBUTION (Fig. 72). Known from Perú with no precise locality.

LOCALITY DATA. 1 specimen examined from BMNH.

PERÚ (1). NO DATA (1).

The holotype is labeled "Amaz Nauta" which is in the lowlands of Perú. I assume that the actual collecting locality was in the Andes Mountains somewhere west of Nauta.

58. *Platycoelia bocki* (Ohaus, 1925) (Fig. 73, 76)

Callichloris bocki Ohaus, 1925 (original combination)

CATALOG. *Callichloris bocki*, Ohaus 1925:83 [original description]; Blackwelder 1944:247 [checklist]; Gutiérrez 1951:116, 118, 120 [comparison with other *Callichloris*]; Gutiérrez 1952:226 [comparison with *Callichloris haenkei*].

Platycoelia bocki, Machatschke 1965:59 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

TYPE SPECIMENS. *Callichloris bocki* Ohaus lectotype male at ZMHB labeled a) "Boliv., Prov.LaPaz Bez.S.-Yungas Chulumani, 125Km östl v. LaPaz1600-2000m" (light green label, typeface), b) "Ch. Bock leg. IX-X. 1916 ded. 12. 8. 1921." (light green label, typeface), c) "Type" (red label, typeface), d) "Callichloris Bocki Ohs." (red label, handwritten), e) "CALLICHLORIS BOCKI OHAUS LECTOTYPE A. B. T. SMITH 2001" (red label, handwritten and typeface), f) "*Platycoelia bocki* (Ohaus, 1925) ♂ Det:A.B.T. Smith 2002" (typeface). **Lectotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Two male paralectotypes at ZMHB labeled a) "Boliv., Prov.LaPaz Bez.S.-Yungas Chulumani, 125Km östl v. LaPaz1600-2000m" (light green label, typeface), b) "Ch. Bock leg. IX-X. 1916 ded. 12. 8. 1921." (light green label, typeface), c) "Cotype" (red label, typeface), d) "Callichloris Bocki Ohs." (orange label, handwritten), e) "CALLICHLORIS BOCKI OHAUS PARALECTOTYPE A. B. T. SMITH 2001" (yellow label, handwritten and typeface), f) "*Platycoelia bocki* (Ohaus, 1925) ♂ Det:A.B.T.Smith 2002" (typeface). The location and existence of other paralectotypes are unknown. Ohaus (1925) stated that type specimens were deposited in the Hamburg collection. These specimens, along with the entire Coleoptera and Lepidoptera collections, were completely destroyed in July 1943 by air raid bombing (Klapperich 1948). Type locality: Chulumani, La Paz, Bolivia.

DESCRIPTION. Male (n=4). Length 14.6-15.0 mm, width 8.6-8.9 mm (Fig. 76). Color dorsally black with light yellowish-brown elytron; ventrally black with yellowish-brown tibiae, tarsi, abdominal sternite apices. Body ovate, convex. *Head:* Dorsal surface sparsely setose, setae tawny. Frons sparsely punctate (base) to densely punctate (apex), clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete,

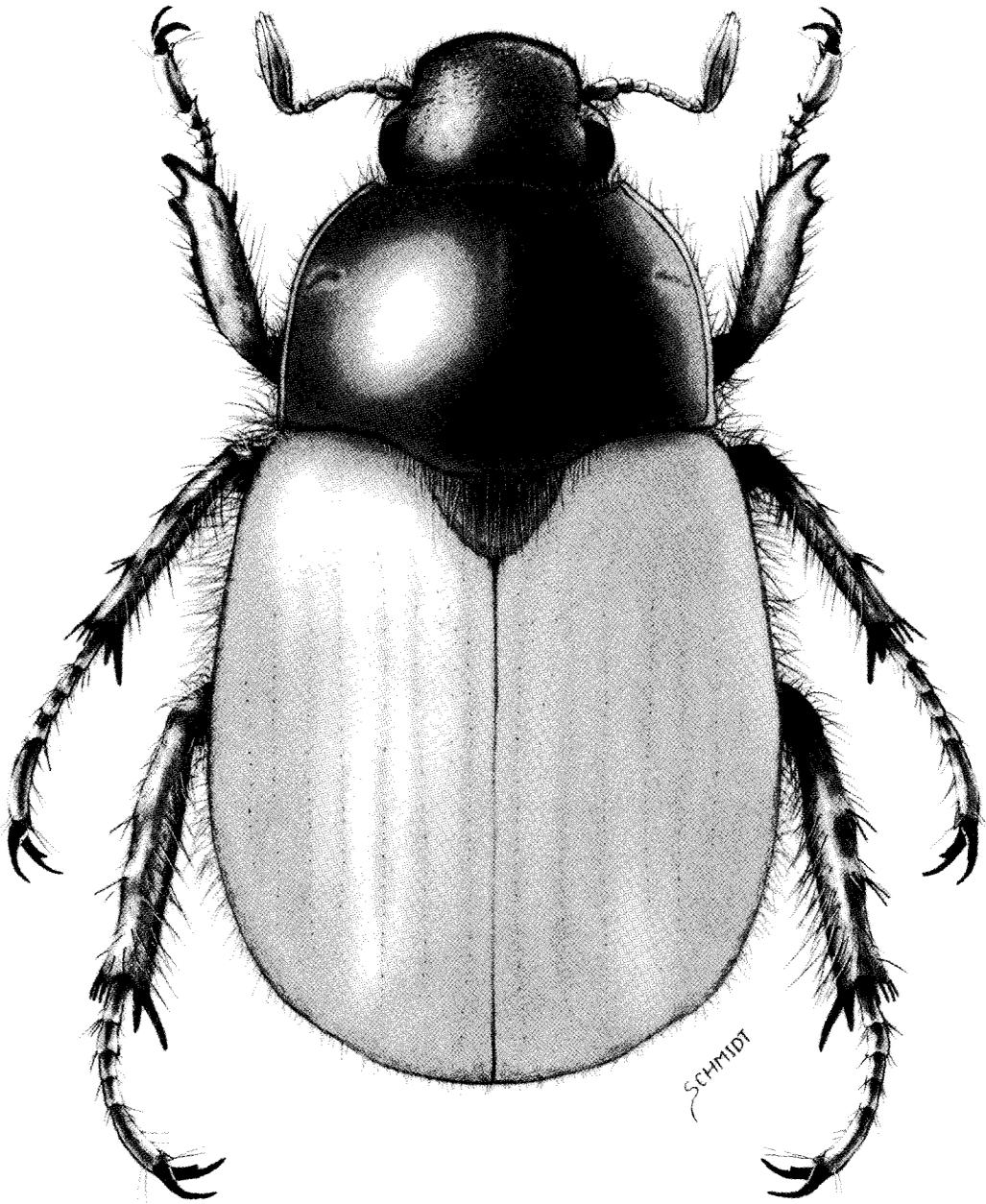


Fig. 76. *Platycoelia bocki* male.

obscured by punctures. Clypeus broadly rounded, apex reflexed. Eyes separated by approximately 4.3 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth well separated from apex of mentum. Mandibular scissorial region with 1 tooth, molar region smooth. Maxilla with 3 apical teeth. Apex of mentum with medial notch. Antenna 9-segmented; club slightly shorter than other segments combined, approximately equal to length of frons. *Pronotum*: Surface glabrous, sparsely punctate, with moderate punctures. Marginal bead present apically (except medially) and laterally, absent basally. *Elytron*: Surface glabrous; longitudinal striae weakly impressed, impunctate to weakly punctate; intervals impunctate. Suture apically rounded. *Pygidium*: Width approximately 1.9 times length medially. Surface smooth, weakly convex, impunctate (except sparsely punctate near apex); punctures moderate, setose; setae long, tawny. *Venter*: Thorax densely setose; setae long, tawny. Mesothoracic process barely produced, projecting anteriorly to subapex of mesocoxa. Abdomen sparsely setose, setae tawny. Apical spiracles not extruding. *Legs*: Protibia with 3 teeth in apical half; first and second teeth subequal in size; third tooth short, removed slightly from apical teeth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak internoapical stridulatory ridge. Protarsomere 5 with internomedial stridulatory tooth. Mesotarsomere 5 and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length slightly shorter than protarsomere 5, thickened and elongated when compared with other claw, flattened on slightly diagonally plane, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia*: Phallobase 1.5 times longer than length of parameres. Parameres with apex rounded.

Female: Unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoe-*

lia by the following combination of characters: dorsal color black with light yellowish-brown elytron; frons sparsely setose laterally; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 10-segmented; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Andes Mountains in La Paz, Bolivia.

LOCALITY DATA. 4 specimens examined from USNM, ZMHB.

BOLIVIA (4). LA PAZ (4): Chulumani, Pongo de Quime.

TEMPORAL DATA. July (1), October (3).

59. *Platycoelia alticola* (Gutiérrez, 1951)
(Fig. 73)

Callichloris (*Epicallichloris*) *alticola* Gutiérrez, 1951 (original combination)

CATALOG. *Callichloris* (*Epicallichloris*) *alticola*, Gutiérrez 1951:112, 115, 116 [cited as type species for *Callichloris* (*Epicallichloris*), original description, key to species of *Callichloris*]; Gutiérrez 1952:226 [comparison with *Callichloris haenkei*].

Platycoelia alticola, Machatschke 1965:60 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing]; Smith and Jameson 2001:105 [comparison with *Eremophygus bicolor*].

TYPE SPECIMENS. *Callichloris* (*Epicallichloris*) *alticola* Gutiérrez neotype male at FMNH labeled a) "Bolivia 10-IX-49 Cochabamba 4000 ms – Pena coll" (handwrit-

ten), b) "Callichloris (*Epicallichloris*) *alticola* – Gut ♂ R. Gutiérrez-Det.50" (handwritten and typeface), c) "CALLICHLORIS ALTI-COLA GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), d) "FMNH, 1986 L. Peña Coll. Acc. # 17-422" (typeface), e) "CALLICHLORIS ALTICOLA GUTIÉRREZ NEOTYPE A.B.T.SMITH 2002" (red label, handwritten and typeface). f) "*Platycoelia alticola* (Gutiérrez, 1951) ♂ Det:A.B.T.Smith 2002" (typeface). The location of the holotype from Gutiérrez's original type series is unknown. The holotype male was deposited in Antonio Martínez's personal collection (Gutiérrez 1951). This collection was purchased by Henry and Anne Howden (HAHC), and at the time of purchase, all the primary types were deposited at MACN. The holotype is not at MACN according to Axel Bachmann (a curator at MACN) and Federico Ocampo (who searched for the specimen on my behalf), HAHC (which I searched myself), or any of the other collections from which I borrowed material. I can only conclude that it has been lost. The neotype is also the sole paratype of this species (Gutiérrez 1951). Gutiérrez based the original description on two specimens. The holotype was from Bolivia with the following data "Chapare dep. de Cochabamba; Yungas del Palmar; 3500 m; I-1949" (Gutiérrez 1951). The neotype is also from Cochabamba (Bolivia), therefore, the type locality for the species is not significantly altered. **Neotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. The neotype was originally deposited as a paratype by Gutiérrez in the "Sociedad Científica Chilena Claudio Gay" collection. This short-lived collection was absorbed into the Luis Peña Collection, which was purchased by FMNH in 1986. Type locality: Cochabamba, Bolivia.

DESCRIPTION. Male (n=2). Length 15.1-16.6 mm, width 8.9-9.1 mm. Color dorsally dark brown to black with light brown elytron; ventrally brown to light brown. Body ovate, convex. *Head:* Dorsal surface setose, setae tawny. Frons moderately punctate (base) to rugose (apex), clypeus rugose, punctures moderate. Frons slightly depressed. Frontoclypeal

suture obscured by punctures. Clypeus broadly rounded, apex reflexed. Eyes separated by approximately 4.2 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with weak medial notch. Antenna 9-segmented; club slightly longer than other segments combined, slightly longer than frons. *Pronotum:* Surface setose along apex; setae long, tawny. Surface moderately punctate, with moderate punctures. Marginal bead present apically (except medially), laterally, absent basally. *Elytron:* Surface glabrous; longitudinal striae weakly punctate; impunctate. Suture apically angled. *Pygidium:* Width approximately 2.0 times length medially. Surface rugose, weakly convex, moderately setose; setae long, tawny. *Venter:* Thorax densely setose; setae long, tawny. Mesothoracic process reduced to nub, adjacent to mesocoxa. Abdomen sparsely setose, setae tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest medially, apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere 5 and metatarsomere 5 without internal teeth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongated when compared with other claw, flattened dorsoventrally, apex unevenly bifurcate (small bifurcation reduced to nub). Modified mesotarsal claw elongated, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.2 times longer than length of parameres. Parameres with apex rounded, weakly expanded subapically.

Female: Unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsal color dark brown to black with light brown elytron; frons sparsely setose laterally; frontoclypeal suture complete; apex of the la-

brum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum well-separated from the eyes, sparsely setose adjacent to the margins; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Known from Cochabamba, Bolivia. Occurs in the Andes Mountains at high elevation (3,500- 4,000 m).

LOCALITY DATA. 2 specimens examined from HAHC, FMNH.

BOLIVIA (2). **COCHABAMBA** (2): Cochabamba.

TEMPORAL DATA. January (1), September (1).

60. *Platycoelia inca* new species

(Figs. 73, 77)

TYPE SPECIMENS. Male holotype, female allotype and 133 paratypes (126 male, 7 female). Holotype male, allotype female, 98 male paratypes, and 3 female paratypes at CASC, eight male and two female paratypes at ABTS, three male and two female paratypes at UNSM, four male paratypes at HAHC, two male paratypes at BCRC, two male paratypes at MLJC, two male paratypes at ZMHB, two male paratypes at USNM, two male paratypes at FMNH, one male paratype at VMCP, and 2 male paratypes at DJCC labeled "PERU 40 km.S.of Ayacucho III-8-1951," "Ross and Michelbacher Collectors," and "Altiplano. Flying at dusk." Type locality: 40 km south of Ayacucho, Ayacucho, Perú.

HOLOTYPE. Male: Length 16.1 mm, width 9.8 mm. Color dorsally of tan head and scutellum, brown pronotum and pygidium, dark brown elytron. Ventrally tan with brown ab-

dominal sternites. Body subelliptical, convex. **Head:** Dorsal surface with clypeus moderately setose, setae tawny. Frons moderately punctate (base) to rugose, clypeus rugose. Frons not depressed. Frontoclypeal suture complete. Clypeus rounded with well-defined apical margin. Eyes separated by approximately 4.2 transverse eye-widths. Labrum densely punctate, with moderately large, setose punctures, setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 9-segmented; club slightly shorter than segments 2-7, approximately equal to clypeal length. **Pronotum:** Surface setose; setae long, tawny. Surface moderately punctate, with moderate punctures. Marginal bead weak laterally, absent apically and basally. **Elytron:** Surface glabrous; longitudinal striae weakly impressed, weakly punctate; punctures moderate; intervals impunctate. Suture rounded apically, without spine. **Pygidium:** Width approximately 2.0 times length medially. Surface weakly convex, sparsely punctate; punctures moderate, setose near apex; setae long, tawny. **Venter:** Thorax densely setose, setae tawny. Mesothoracic process greatly reduced nub adjacent to mesocoxa. Abdomen sparsely setose; setae long, tawny. Apical 2 spiracles strongly extruding, cylindrical. **Legs:** Protibia with 3 teeth in apical half; apical 2 teeth close together, longer; third tooth shorter. Mesotibia and metatibia widest medially. Protarsomeres 3-4 wider than long, cup-shaped. Protarsomere 4 without stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere and metatarsomere 5 without internal swelling or tooth. Unguitractor plate cylindrical, with 1 apical, 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, greatly thickened and elongate when compared with other claw, dorsoventrally flattened, apex unevenly bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened.

ALLOTYPE. Length 19.5 mm, width 10.9 mm. As male except in the following respects. **Venter:** Apical 2 spiracles weakly extruded.

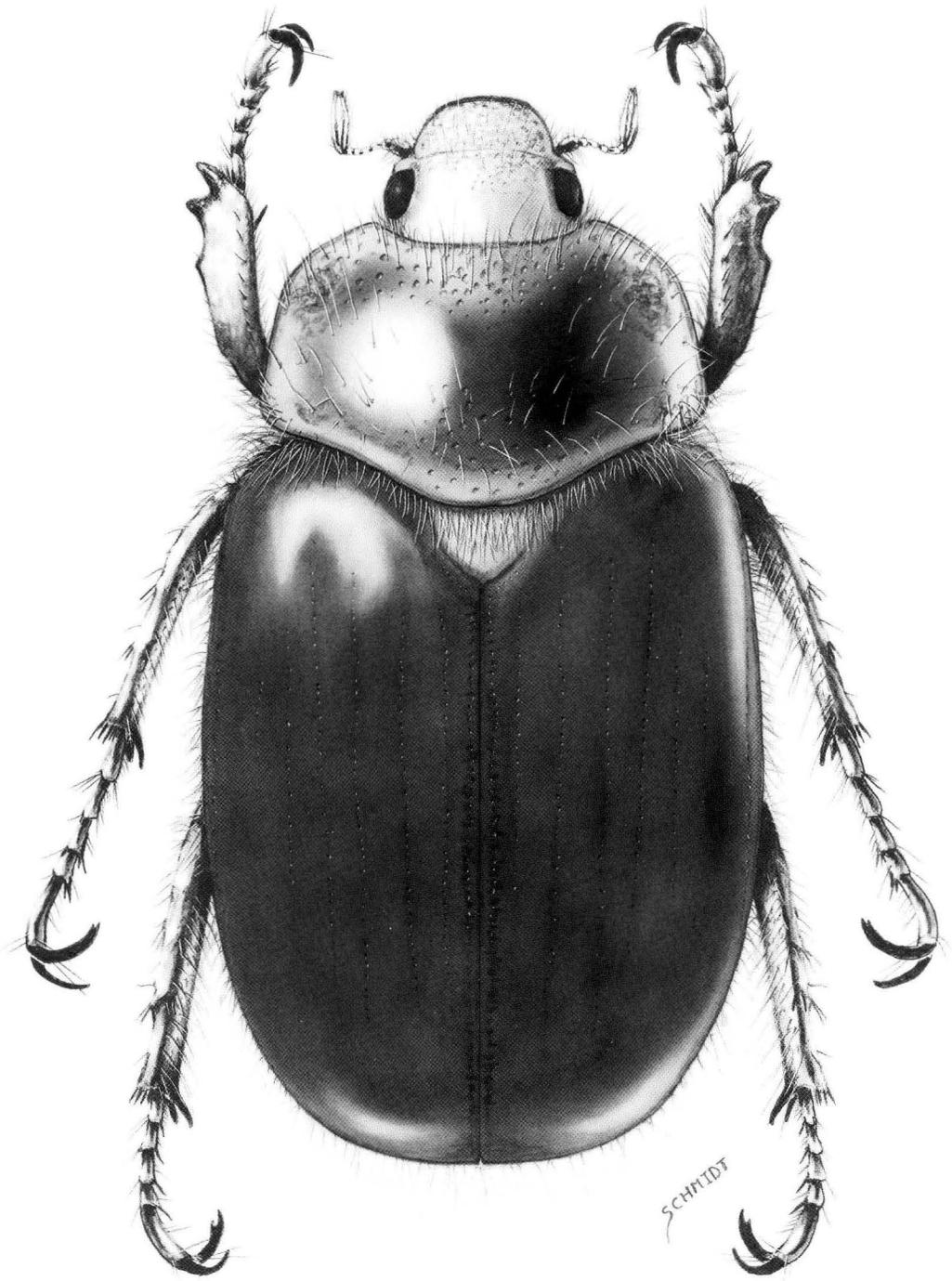


Fig. 77. *Platycoelia inca* male paratype.

Legs: Modified protarsal claw with ventral tooth, not thickened.

VARIATION. Male (n=126). Length 16.0-20.5 mm, width 8.9-11.0 mm (Fig. 77). Female (n=7). Length 16.9-19.6 mm, width 9.2-10.3 mm. The paratypes do not differ significantly from the holotype and allotype. Additional characters as follows. *Head:* Mandibular scissorial region with weak apical tooth, no medial tooth; molar region without lamellae. Maxilla with 2 weak, apical teeth. *Male Genitalia:* Phallobase approximately 1.3 times longer than length of parameres. Parameres with apex rounded.

ETYMOLOGY. *Platycoelia inca* is named after the pre-Spanish rulers of the area in which this species occurs.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsally with tan head and scutellum, brown pronotum and pygidium, dark brown elytron; frons sparsely setose laterally; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum well-separated from the eyes, sparsely setose, with weak maculations; elytron without distinct, yellow, longitudinal lines; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle strongly protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Ayacucho, Perú is the only known locality for this species.

LOCALITY DATA. 135 specimens examined from CASC, DJCC.

PERÚ (135). AYACUCHO (135): Ayacucho (40 km S).

TEMPORAL DATA. March (135).

61. *Platycoelia haenkei* (Gutiérrez, 1952)

(Figs. 24, 73, 78)

Callichloris (Epicallichloris) haenkei Gutiérrez 1952 (original combination)

CATALOG. *Callichloris (Epicallichloris) haenkei*, Gutiérrez 1952:225 [original description].

Platycoelia haenkei, Machatschke 1965:60 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing]; Smith and Jameson 2001:105 [comparison with *Eremophygus bicolor*].

TYPE SPECIMENS. *Callichloris (Epicallichloris) haenkei* Gutiérrez holotype male at UCCC labeled a) "Bolivia I-51 Cordillera Cochabamba 4000m Zischka" (handwritten), b) "HOLOTIPO ♂" (orange label, typeface and handwritten) c) "Callichloris haenkei Gutierr ♂ R. Gutiérrez-Det.52" (handwritten and typeface), d) "CALLICHLORIS HAENKEI GUTIÉRREZ ♂ HOLOTYPE" (red label, handwritten and typeface), e) "*Platycoelia haenkei* (Gutiérrez, 1952) ♂ Det:A.B.T.Smith 2002" (typeface). Five male paratypes at UCCC labeled a) "Bolivia I-51 Cordillera Cochabamba 4000m Zischka" (handwritten), b) "PARATIPO ♂" (orange label, typeface and handwritten) c) "CALLICHLORIS HAENKEI GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), d) "*Platycoelia haenkei* (Gutiérrez, 1952) ♂ Det:A.B.T.Smith 2002" (typeface). One male paratype at MNCC labeled a) "Bolivia I-51 Cordillera de Cochabamba 4000m Zischka" (handwritten), b) "PARATIPO ♂" (orange label, typeface and handwritten) c) "Callichloris haenkei Gutierr. ♂ R. Gutiérrez-Det.52" (handwritten and typeface), d) "CALLICHLORIS HAENKEI GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), e) "CHILE M. N. H. N. Tipo No 2855" (typeface and handwritten), f) "*Platycoelia haenkei* (Gutiérrez, 1952) ♂ Det:A.B.T.Smith 2002" (typeface). One male paratype at HAHC labeled a) "Bolivia I-51 Cordillera Cochabamba 4000m Zischka" (handwritten), b) "PARATIPO ♂" (orange label, typeface and handwritten) c) "Callichloris haenkei Gutierr. ♂ R. Gutiérrez-Det.52"

(handwritten and typeface), d) "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." (typeface), e) "CALLICHLORIS HAENKEI GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), f) "*Platycoelia haenkei* (Gutiérrez, 1952) ♂ Det:A.B.T.Smith 2002" (typeface). One male paratype at HAHC and three male paratypes at ZSMC labeled a) "Bolivia – Cordillera de Cochabamba - 4000m – 15.1.1951 leg. Zischka" (handwritten), b) "PARATIPO" (orange label, typeface) c) "Callichloris haenkei Gutierr ♂ R. Gutiérrez-Det.52" (handwritten and typeface), d) "H. & A. HOWDEN COLLECTION ex. A. Martinez coll." (typeface), e) "CALLICHLORIS HAENKEI GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), f) "*Platycoelia haenkei* (Gutiérrez, 1952) ♂ Det: A.B.T. Smith 2002" (typeface). The location of the 121 additional paratypes is unknown. Gutiérrez (1952) indicated that 122 paratypes were deposited in the Rodolfo Zischka collection in Cochabamba, Bolivia (some of Zischka's collection is at ZSMC). The current status and location of this collection are unknown. Type locality: Cordillera Cochabamba, Bolivia.

DESCRIPTION. Male (n=12). Length 10.5-13.0 mm, width 6.2-6.8 mm (Fig. 78). Color dorsally black with light reddish-brown elytron; ventrally black with dark yellow abdominal sternites. Body ovate, convex. *Head:* Dorsal surface setose, setae tawny. Frons densely punctate to rugose, clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture obscured by punctures. Clypeus trapezoidal, apex reflexed. Eyes separated by approximately 5.7 transverse eye-widths. Labrum densely punctate, setose; setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 9-segmented (sometimes appearing 8-segmented); club slightly longer than other segments combined, slightly longer than frons. *Pronotum:* Surface densely setose; setae long, tawny. Surface densely punctate, with moderate punctures. Marginal bead present laterally,

absent apically and basally. *Elytron:* Surface sparsely setose near base; longitudinal striae weakly impressed, densely punctate; intervals densely punctate, punctures moderate. Suture apically rounded. *Pygidium:* Width approximately 1.6 times length medially. Surface rugose, weakly convex, setose; setae long, tawny. *Venter:* Thorax densely setose; setae long, tawny. Mesothoracic process reduced to nub, adjacent to mesocoxa. Abdomen sparsely setose, setae tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 subequal in size teeth in apical half. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 3-4 with weak internoapical stridulatory ridge. Protarsomere 5 without internal tooth. Mesotarsomere 5 and metatarsomere 5 without internal teeth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongated when compared with other claw, flattened on slightly diagonally plane, apex unevenly bifurcate (small bifurcation reduced to nub, sometimes worn off). Modified mesotarsal claw elongated, apex unevenly bifurcate. Modified metatarsal claw elongate, with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.2 times longer than length of parameres. Parameres with apex rounded, slightly curved ventrally (Fig. 24).

Female: Unknown.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: length less than 14 mm; dorsal color black with light reddish-brown elytron; frons moderately setose; frontoclypeal suture complete; apex of the labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum well-separated from eyes, moderately setose; elytron without distinct, yellow, longitudinal lines; elytron sparsely setose at the base; elytral apices not capable of completely covering the pygidium; apex of the elytral suture without an acute spine; mesothoracic process nub to weakly projecting

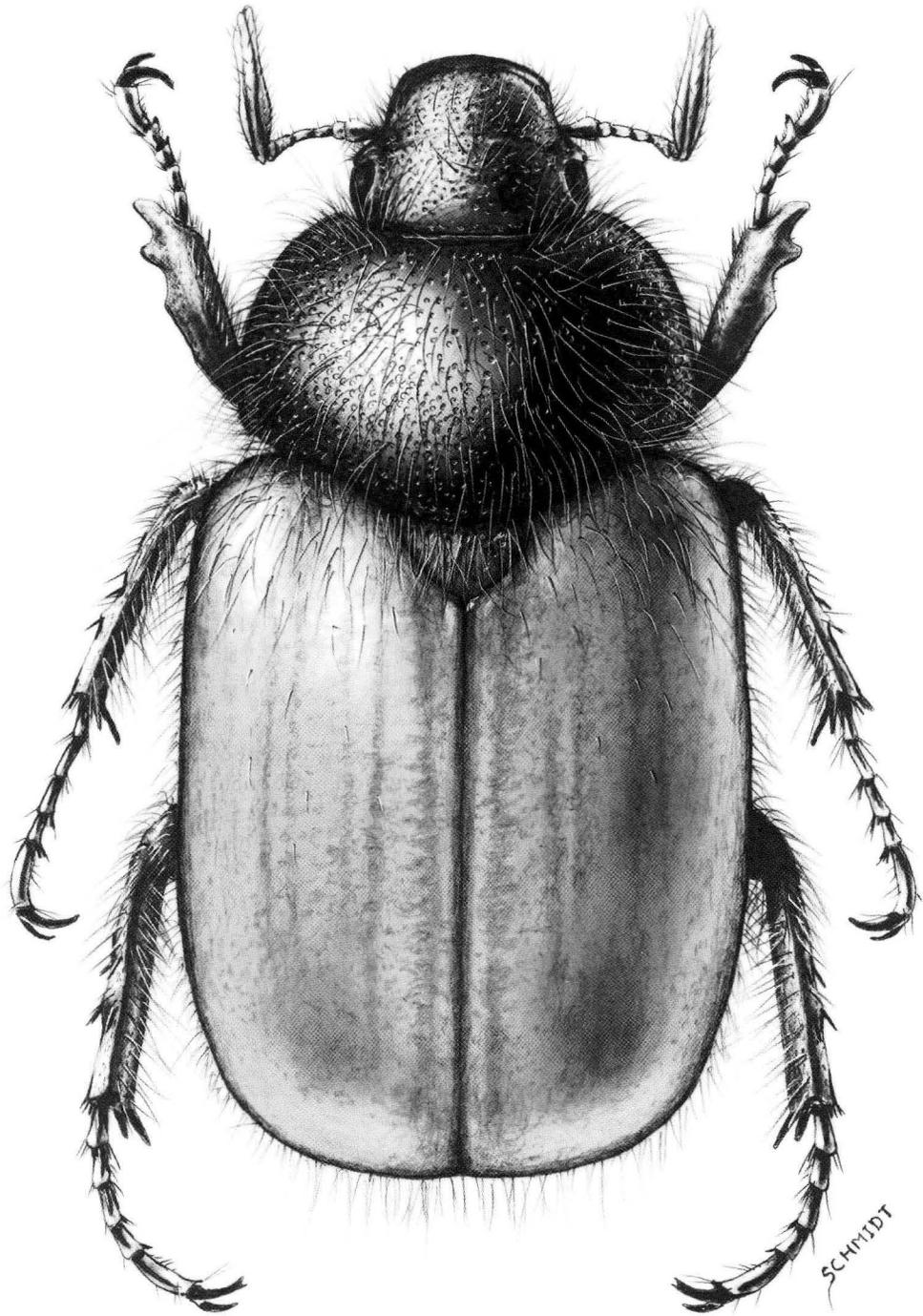


Fig. 78. *Platycoelia haenkei* male paratype.

apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; modified mesotarsal claw with the apex bifurcating, dorsoventrally flattened; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Known only from the large type series collected at Cordillera Cochabamba, Bolivia.

LOCALITY DATA. 12 specimens examined from HAHC, MNMC, UCCC, ZSMC.

BOLIVIA (12). COCHABAMBA (12): Cordillera Cochabamba.

TEMPORAL DATA. January (12).

62. *Platycoelia laelaps* (Gutiérrez, 1951)

(Fig. 73)

Callichloris laelaps Gutiérrez 1951 (original combination)

CATALOG. *Callichloris* (*Callichloris*) *laelaps*, Gutiérrez 1951:117, 118, 119 [original description, key to species of *Callichloris*].

Platycoelia laelaps, Machatschke 1965:59 [new combination, catalog listing]; Machatschke 1972:304 [catalog listing].

TYPE SPECIMENS. *Callichloris laelaps* Gutiérrez neotype male at CMNC labeled a) "Perú I-II-49 Anta-Cuzco 4200 ms Kuschel" (handwritten), b) "PARATIPO ♂" (orange label, typeface and handwritten), c) "Callichloris (*Calli-chloris*) *laelaps*. Gut ♂ R. Gutiérrez-Det.49" (handwritten and typeface), d) "CALLICHLORIS LAELAPS GUTIÉRREZ ♂ NEOTYPE A.B.T. SMITH 2002" (handwritten and typeface), e) "*Platycoelia laelaps* (Gutiérrez, 1951) ♂ Det: A.B.T. Smith 2002" (typeface). The location of the holotype and two additional male paratypes from Gutiérrez's original type series is unknown. The holotype male was deposited in the "Sociedad Científica Chilena Claudio Gay" collection (Gutiérrez 1951). This short-lived

collection was combined with the Luis Peña collection, which was later purchased by the FMNH. The holotype is not in FMNH or any of the other collections from which I borrowed material. I can only conclude that it has been lost. The neotype is also a paratype of this species and has identical label data to the lost holotype (Gutiérrez, 1951). **Neotype here designated.** See Methods and Materials section for a statement of taxonomic purpose. Allotype female at UCCC labeled a) "Perú I-II-49 Anta-Cuzco 4200 ms Kuschel" (handwritten) b) "ALOTIPO ♀" (orange label, typeface and handwritten), c) "Callichloris (*Callichloris*) *laelaps* Gut ♀ R. Gutiérrez-Det.49" (handwritten and typeface), d) "CALLICHLORIS LAELAPS GUTIÉRREZ ♀ ALLOTYPE" (red label, handwritten and typeface), e) "*Platycoelia laelaps* (Gutiérrez, 1951) ♀ Det: A.B.T. Smith 2002" (typeface). One male paratype at UCCC labeled a) "Perú I-II-49 Anta-Cuzco 4200 ms Kuschel" (handwritten), b) "PARATIPO" (red label, typeface), c) "Callichloris (*Calli-chloris*) *laelaps*. Gut ♂ R. Gutiérrez-Det.49" (handwritten and typeface), d) "CALLICHLORIS LAELAPS GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), e) "*Platycoelia laelaps* (Gutiérrez, 1951) ♂ Det:A.B.T.Smith 2002" (typeface). One male paratype at MNMC labeled a) "Perú I-II-49 Anta-Cuzco 4200 ms Kuschel" (handwritten), b) "PARATIPO" (red label, typeface), c) "Callichloris (*Calli-chloris*) *laelaps*. Gut ♂ R. Gutiérrez-Det.49" (handwritten and typeface), d) "CALLICHLORIS LAELAPS GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), e) "CHILE M. N. H. N. Tipo No 2965" (typeface and handwritten), f) "*Platycoelia laelaps* (Gutiérrez, 1951) ♂ Det: A.B.T. Smith 2002" (typeface). One male paratype at MNMC labeled a) "Perú I-II-49 Anta-Cuzco 4200 ms Kuschel" (handwritten), b) "PARATIPO" (red label, typeface), c) "CALLICHLORIS LAELAPS GUTIÉRREZ ♂ PARATYPE" (yellow label, handwritten and typeface), d) "CHILE M. N. H. N. Tipo No 2966" (typeface and handwritten), e) "*Platycoelia laelaps* (Gutiérrez, 1951) ♂ Det: A.B.T. Smith 2002" (typeface). Type locality: Anta, Cusco, Perú.

DESCRIPTION. Male (n=4). Length 13.1-15.0 mm, width 8.1-9.3 mm. Color dorsally green; broad black band along apex and base of head; black band along lateral, apical and suture margins of elytron. Ventrally dark brown, dark yellow legs. Body ovate, convex. *Head:* Dorsal surface setose; setae long, tawny. Frons sparsely punctate (base) to densely punctate (apex), clypeus rugose, punctures moderate. Frons not depressed. Frontoclypeal suture complete, obscured by punctures. Clypeal apex rounded, reflexed. Eyes separated by approximately 4.8 transverse eye-widths. Labrum rugose, setose; setae tawny. Apex of labrum with minute, triangular, medial tooth, apex of tooth well separated from apex of mentum. Apex of mentum with medial notch. Antenna 9-segmented; club approximately equal to other segments combined, approximately equal to length of frons. *Pronotum:* Surface with scattered setae; setae long, tawny. Surface sparsely punctate, with moderate punctures. Marginal bead present apically (except medially) and laterally, absent basally. *Elytron:* Surface glabrous; longitudinal striae weakly punctate; intervals impunctate. Suture apically rounded. *Pygidium:* Width approximately 1.7 times length medially. Surface smooth, flat, sparsely punctate; punctures moderate, glabrous (except near apex); setae long, tawny. *Venter:* Thorax densely setose; setae long, tawny to golden-brown. Mesothoracic process reduced to nub adjacent to mesocoxa. Abdomen sparsely setose; setae moderate, tawny. Apical spiracles not extruding. *Legs:* Protibia with 3 teeth in apical half; first and second teeth subequal in size; third tooth shorter, removed slightly from apical teeth. Mesotibia and metatibia widest apically. Protarsomeres 2-4 wider than long, cup-shaped. Protarsomere 4 with weak internoapical stridulatory ridge. Protarsomere 5 with weak internomedial stridulatory tooth. Mesotarsomere 5 and metatarsomere 5 without internal tooth. Unguitractor plate cylindrical, with 1 apical and 1 subapical seta. Modified protarsal claw with length approximately equal to protarsomere 5, thickened and elongated when compared with other claw, dorsoventrally flattened, apex unevenly

bifurcate. Modified mesotarsal and metatarsal claws elongated with ventral tooth, not thickened. *Male Genitalia:* Phallobase 1.4 times longer than length of parameres. Parameres with weakly curved dorsally.

Female (n=1). Length 18.0 mm, width 10.4 mm. As male except in the following respects. Color dorsally yellowish-tan; broad black band along apex and base of head; black band along lateral, apical and suture margins of elytron. *Head:* Antennal club slightly longer than segments 2-6. *Legs:* Protarsomere 4 without internoapical stridulatory ridge. Protarsomere 5 without internal tooth or swelling. Modified protarsal claw with ventral tooth, not thickened.

DIAGNOSIS. This species is distinguished from all other species in the genus *Platycoelia* by the following combination of characters: dorsal color green or yellowish-tan with a broad black band along the apex and base of the head and along the lateral, apical and suture margins of the elytron; frons sparsely setose laterally; frontoclypeal suture complete; apex of labrum with a reduced, triangular tooth not overlapping the mentum; mentum with a medial notch; antenna 9-segmented; pronotum sparsely setose, with weak maculations; elytron without distinct, yellow, longitudinal lines; elytron sparsely setose at the base; elytral apices not capable of completely covering the pygidium; mesothoracic process nub to weakly projecting apically; apical abdominal spiracle not protuberant; mesotarsomere 5 and metatarsomere 5 without an internal tooth; parameres with the apex rounded, not expanded.

DISTRIBUTION (Fig. 73). Known only from one locality: Anta, Cusco, Perú.

LOCALITY DATA. 5 specimens examined from HAHC, MNNC, UCCC.

PERÚ (5). CUSCO (5): Anta.

TEMPORAL DATA. February (5).

ACKNOWLEDGMENTS

First and foremost, I thank my family for their never-ending support. My wife, Tracey, has always been extremely supportive of my biological pursuits. She made significant personal and career sacrifices by moving to a foreign country and living the life of a graduate student while I pursued a Ph.D. degree, and I will forever be grateful to her. She has also been a wonderful companion on several field trips over the years. I also thank Tracey and our daughters Ainsley and Maia for being understanding and supportive when it came to going away on trips or spending late hours in the museum working on scarab research. I thank my parents, Ian and Susan for my early and persistent exposure to nature that played a large part in forming the values and interests I hold today, and my brother Julian, who was always my “partner in crime” during those years when we did everything together. My father is a research scientist with the Canadian National Collection who studies water mite systematics. From a young age, I spent a lot of time traveling around North America, staying at field stations, camping in parks, and going to other remote areas while my father collected water mites. I think this was a rare and special opportunity for a young person to experience in this day and age of excessive urbanization, television, and other “improvements” and “modernizations” in our lives. The following individuals were very influential along the career path that lead me to scarab systematics and they all have my thanks: Monty Wood, Henry Howden, R. A. Lautenschlager, Claus Vogel, Mike Butler, Jim Rising, Stuart Peck, and Doug Currie.

I acknowledge and thank my Ph.D. co-supervisors, Drs. Brett Ratcliffe and Mary Liz Jameson. They played a big role in my success as a Ph.D. student by being supportive of my research interests (even when they were tangential) and by pushing me to do better. They went beyond the typical role of a graduate student supervisor by being mentors, colleagues, and friends. Their support manifested itself not only in the freedom to pursue some my own interests, but also the financial and technical backing of the laboratory to achieve my goals. Brett and Mary Liz are also thanked for critically reviewing this monograph. I also

thank Federico Ocampo and Aura Paucar-Cabrera who were fellow graduate students in our laboratory during my tenure as a Ph.D. student at the University of Nebraska State Museum. They have both been supportive, helpful, personable, collaborative, friendly, inquisitive, provided me with constructive criticism, and have generally been a lot of fun to be around. They are also both top-notch scarab systematists.

I also acknowledge Leon Higley (Department of Entomology, UNL) and John Janovy (School of Biological Sciences, UNL), who served for over four years on my supervisory committee. The Department of Entomology (UNL) has always been extremely supportive of me, and I especially thank Department Head, Z B Mayo, for his contributions to my efforts. Also from the Department of Entomology (UNL), I thank Tiffany Heng-Moss, Sharron Quisenberry, and Marilyn Weidner for their willingness to provide assistance. Other individuals at the University of Nebraska who have facilitated my Ph.D. tenure include Guillermo Ortí (School of Biological Sciences) and Trish Freeman (University of Nebraska State Museum).

I am grateful to the Field Museum of Natural History in Chicago, the United States National Museum (Smithsonian), the Canadian National Collection of Insects (CanaColl), Entomological Society of America, and Sigma Xi for awards supporting my travel to institutions and meetings during my Ph.D. tenure. I thank the following University of Nebraska-Lincoln organizations for additional financial support for my research and travel to meetings: Initiative for Ecological and Evolutionary Analysis, Department of Entomology, Bruner Club (Department of Entomology), and International Programs.

My research involved travel to conduct field work and museum work. I am deeply grateful for the outpouring of help and friendship that many of my good hosts provided in various places. I thank the following individuals for their hospitality while visiting their institutions and/or countries: Giovanni Onore and Aura Paucar-Cabrera (Ecuador, QCAZ); Luis Joly, José Clavijo, and Carlos Bordón (Venezuela, MIZA); Malcolm Kerley and



Team Scarab at Selva Negra, Nicaragua. From the left, back row: Andrew Smith and Matt Paulsen; front row: Julio Torres, Federico Ocampo, Brett Ratcliffe, and Mary Liz Jameson. The rusted tank was used by the Sandinistas in the 1980s but now points travelers in the direction of the Hotel Selva Negra. Photo by Ron Cave.

Alfried Vogler (United Kingdom, BMNH); Jean Menier (France, MNHN); Hella Wendt and Constanze Paetel (Germany, ZMHB); Ron Cave, Roberto Cordero, and Julio Torres (Honduras, EAPZ); Jean-Michel Maes (Nicaragua, JMMC); Eunice Echeverría and Flor Urrutia (El Salvador, National Collection of Insects); Miguel Monné and Fernando Vaz-de-Mello (Brazil); Al Newton, Margret Thayer, and Phil Parrillo (Chicago, Illinois, FMNH); David Furth, Nancy Adams, and Gloria House (Washington, D. C., USMN); Bob Anderson, François Génier, Henry Howden, and Anne Howden (Ottawa, Ontario, CMNC); Yves Bousquet, Ales Smetana, Monty Wood, and Bruce Gill (Ottawa, Ontario, CNCI); Doug Currie, Brad Hubley, Andy Bennett, Chris Darling, and John Swann (Toronto, Ontario, ROME); Steve Ashe and Rod Hanley (Lawrence, Kansas, SEMC); Terry Wheeler (St. Anne de Bellevue, Quebec, LEMQ); Dave Hawks, Doug Yanega, John Heraty, and Martin Barnes (Riverside, California, UCRC); Alex Reifschneider and family, Rich Cunning-

ham and family, Frank Hovore and family, Chuck Bellamy, and Phil Harpootlian (Los Angeles [and vicinity], California, AJRC, RACC, LACM). I also thank the individuals and institutions mentioned in the Methods and Materials section for making material available to me for study. Daniel Curoe and Vladislav Maly are thanked for allowing specimens from their personal collections to be deposited at UNSM as holotypes of new species.

I thank Peter Allsopp and an anonymous reviewer for excellent reviews of this manuscript. Dan Schmidt is gratefully acknowledged for the excellent *Platycoelia* carbon dust habitus illustrations and the cover illustration. Angie Fox is thanked for the cover layout and assistance with the illustrations. Linda Ratcliffe is gratefully acknowledged for her publication design and layout of the manuscript. Muchas gracias to Federico Ocampo for translating the abstract and keys into Spanish. This project was supported, in part, by an NSF/PEET grant (DEB-9712447) to B. Ratcliffe and M. Jameson.

LITERATURE CITED

- Arrow, G. J. 1899. On the classification of the coleopterous family Rutelidae. *Annals and Magazine of Natural History* series 7, volume 4:363-370.
- Bates, H. W. 1888. Insecta. Coleoptera. Rutelidae, pp 216-296. In F. D. Godman and O. Salvin (eds.), *Biologia Centrali-Americana*, volume 2, part 2. 432 pp.
- Bates, H. W. 1891a. Introduction, pp. 1-6. In E. Whymper (ed.), *Supplementary Appendix to Travels Amongst the Great Andes of the Equator*. John Murray, London. 147 pp.
- Bates, H. W. 1891b. Coleoptera, pp. 7-39. In E. Whymper (ed.), *Supplementary Appendix to Travels Amongst the Great Andes of the Equator*. John Murray, London. 147 pp.
- Blackwelder, R. E. 1944. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Part 2. United States National Museum Bulletin 185:927-1492.
- Blanchard, C. É. 1845. *Histoire Naturelle des Insectes, Leurs Moeurs, Leurs Métamorphoses et Leur Classification ou Traité Élémentaire d'Entomologie*, vol. 1. Librairie F. Savy, Paris.
- Blanchard, C. É. 1850. Ordre des Coleoptera. In H. Milne-Edwards, C. É. Blanchard, and H. Lucas (eds.), *Muséum d'Histoire Naturelle de Paris. Catalogue de la Collection Entomologique. Classe des Insectes*. vol. 1, part 1. Gide and Baudry, Paris. Pp. 1-128.
- Blanchard, C. É. 1851. Ordre des Coleoptera. In H. Milne-Edwards, C. É. Blanchard, and H. Lucas (eds.), *Muséum d'Histoire Naturelle de Paris. Catalogue de la Collection Entomologique. Classe des Insectes*. vol. 1, part 2. Gide and Baudry, Paris. Pp. 129-240.
- Burmeister, H. 1844. *Handbuch der Entomologie*, vol. 4, part 1. T. C. F. Enslin, Berlin. 586 pp.
- Burmeister, H. 1855. *Handbuch der Entomologie*, vol. 4, part 2. T. C. F. Enslin, Berlin. 569 pp.
- Calvert, P. P. 1898. Burmeister's types of Odonata. *Transactions of the American Entomological Society* 25: 27-104.
- Cardoso, A. 1944. Germán Burmeister. *Revista de la Sociedad Entomológica Argentina* 12(3): 159-165.
- Carne, P. B. 1954. Notes on the Australian Rutelinae (Coleoptera) and description of a new genus. *Proceedings of the Royal Entomological Society of London (Series B)* 23: 36-40.
- Carne, P. B. 1955. Notes on the Australian Rutelinae (Scarabaeidae, Coleoptera). Suppression of a generic name under *Cililopocha* Lea. *Proceedings of the Linnean Society of New South Wales* 80(2): 137.
- Carne, P. B. 1956. A revision of *Saulostomus* Waterhouse and description of a new ruteline genus (Scarabaeidae, Coleoptera). *Proceedings of the Linnean Society of New South Wales* 81(1): 62-70.
- Carne, P. B. 1957. A revision of the ruteline genus *Anoplognathus* Leach (Coleoptera: Scarabaeidae). *Australian Journal of Zoology* 5(1): 88-143.
- Carne, P. B. 1958. A review of the Australian Rutelinae (Coleoptera: Scarabaeidae). *Australian Journal of Zoology* 6(2): 162-240.
- Dejean, P. F. M. A. 1833. *Catalogue des Coléoptères de la Collection de M. le Comte Dejean*, Fascicles 1-2. Méquignon-Marvis Père et Fils, Paris, 176 pp.
- Dejean, P. F. M. A. 1836. *Catalogue des Coléoptères de la Collection de M. le Comte Dejean. Troisième Édition, Revue, Corrigée et Augmentée*, Fascicles 1-4. Méquignon-Marvis Père et Fils, Paris, 468 pp.
- Delgado, L., A. Pérez, and J. Blackaller. 2000. Claves para determinar a los taxones genericos y supragenericos de Scarabaeoidea Latreille, 1802 (Coleoptera) de Mexico. *Folia Entomologica Mexicana* 110:33-87.
- De Ruelle, R. 1970. A catalogue of the types of Coleoptera in the Canadian National Collection of Insects. *Memoirs of the Entomological Society of Canada* 72:1-134.

- Erichson, W. F. 1847. *Conspectus Insectorum Coleopterorum quae in Republica Peruana observata sunt*. Archiv für Naturgeschichte 13:67-185.
- Evenhuis, N. L. 1997. *Litteratura Taxonomica Dipterorum (1758-1930)*. Volume I-II. Backhuys Publishers, Leiden. 871 pp.
- Farris, J. S. 1969. A successive approximations approach to character weighting. *Systematic Zoology* 18:374-385.
- Fauré, G. O. 1953. Necrología Don Ramón Gutiérrez (1917-1953). *Revista Chilena de Entomología* 1953:183-185.
- Frey, G. 1967. Neue Ruteliden aus dem Museum G. Frey (Col.). *Entomologischen Arbeiten aus dem Museum G. Frey* 18:374-383.
- Fritz, M. A. 1994. Necrológio Antonio Martínez (1922-1993). *Revista Brasileira de Entomologia* 38(3/4): 781-791.
- Guérin-Ménéville, M. F. E. 1855. Catalogue des Insectes Coléoptères, recueillis par M. Gaetano Osculati, pendant son exploration de la région équatoriale, sur les bords du Napo et de l'Amazone. *Verhandlungen der k. k. zoologische-botanischen Gesellschaft in Wien* 5:573-612.
- Gutiérrez, R. 1951. Notas sobre Scarabaeidae Neotropicos II. *Anales de la Sociedad Científica Argentina* 151:105-125.
- Gutiérrez, R. 1952. Notas sobre Scarabaeidae neotrópicos (III). *Revista Chilena de Entomología* 1952:207-227.
- Harold, E. 1869. Scarabaeidae. In M. Gemminger and E. Harold (eds.), *Catalogus Coleopterorum Hucusque Descriptorum Synonymicus et Systematicus*, vol. 4. E. H. Gummi, Munich. Pp 979-1346.
- Horn, W. and I. Kahle. 1935. Über entomologische Sammlungen (Ein Beitrag zur Geschichte der Entomomuseologie), part 1. *Entomologische Beihefte aus Berlin-Dahlem* 2:1-160.
- Horn, W. and I. Kahle. 1936. Über entomologische Sammlungen (Ein Beitrag zur Geschichte der Entomomuseologie), part 2. *Entomologische Beihefte aus Berlin-Dahlem* 3:161-296.
- Horn, W. and I. Kahle. 1937. Über entomologische Sammlungen (Ein Beitrag zur Geschichte der Entomomuseologie), part 3. *Entomologische Beihefte aus Berlin-Dahlem* 4:297-388.
- Howden, H. F. 1981. Zoogeography of some Australian Coleoptera as exemplified by the Scarabaeoidea. Pp. 1009-1035. In A. Keast (ed.), *Ecological Biogeography of Australia*. Dr. W. Junk Publishers, The Hague. 2142 pp.
- International Commission on Zoological Nomenclature. 1999. *International Code of Zoological Nomenclature, Fourth Edition*. International Commission on Zoological Nomenclature, The Natural History Museum, London. 306 pp.
- Jameson, M. L. 1998. Phylogenetic analysis of the subtribe Rutelina and revision of the *Rutela* generic groups (Coleoptera: Scarabaeoidea: Rutelinae: Rutelini). *Bulletin of the University of Nebraska State Museum* 14:1-184. [dated 1997].
- Jameson, M. L. and A. B. T. Smith. 2002. Revision of the South American genus *Brachysternus* Guérin-Ménéville (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini: Brachysternina). *Coleopterists Bulletin* 56:321-366.
- Kirsch, T. 1871. Beiträge zur Käferfauna von Bogotà. *Berliner Entomologische Zeitschrift* 14:337-378. [dated 1870].
- Kirsch, T. F. W. 1873. Beiträge zur Kenntniss der Peruanischen Käferfauna. *Berliner Entomologische Zeitschrift* 17:339-418.
- Kirsch, T. 1885. Neue südamerikanische Käfer. *Berliner Entomologische Zeitschrift* 29:207-224.
- Klapperich, H. 1948. Notes about German and Austrian Coleopterists and collections. *Coleopterists Bulletin* 2:67.
- Kuijten, P. J. 1992. A revision of the genus *Parastasia* in the Indo-Australian region (Coleoptera: Scarabaeidae: Rutelinae). *Zoologische Verhandelingen* 275:1-207.
- Lacordaire, J. T. 1856. *Histoire Naturelle des Insectes. Genera des Coléoptères*, vol. 3. Librairie Encyclopédique de Roret, Paris. 594 pp.

- Laporte, F. L. (Comte de Castelnau). 1840. *Histoire Naturelle des Insectes Coléoptères* (Volume 2 of *Histoire Naturelle des Animaux Articulés*). P. Duménil, Paris. 564 pp.
- Latreille, P. E. 1813. Insectes de l'Amérique Equinoxiale, Recueillis Pendant le Voyage de Mm. de Humboldt et Bonpland, et décrits, part 2. In: *Voyage de Humboldt et Bonpland. Deuxième Partie. Observations de Zoologie et d'Anatomie Comparée*. F. Schœll et Dufour, Paris, 64 pp. [dated 1811].
- Luteyn, J. L. 1999. Páramos: a checklist of plant diversity, geographic distribution, and botanical literature. *Memoirs of the New York Botanical Garden* 84:1-278.
- Machatschke, J. W. 1965. Coleoptera Lamellicornia. fam. Scarabaeidae, subfam. Rutelinae, section Rutelinae Orthochilidae. *Genera Insectorum* 199^c:1-145.
- Machatschke, J. W. 1972. Scarabaeoidea: Melolonthidae, Rutelinae. *Coleopterum Catalogus Supplementa* 66(1):1-361.
- MacLeay, W. S. 1819. *Horæ Entomologicae: or Essays on the Annulose Animals*, volume 1, part 1. S. Bagster, London. 160 pp.
- Maddison, D. R. and W. P. Maddison. 2002. *MacClade 4.03: Analysis of Phylogeny and Character Evolution*. Version 4.03. Sinauer Associates, Sunderland, Massachusetts. Computer program.
- Madge, R. B. 1988. The publication dates of Dejean's catalogues. *Archives of Natural History* 15(3):317-321.
- Martínez, A. 1976. Contribucion al conocimiento del genero *Platycoelia* Burmeister (Col. Scarab. Rutelinae, Anoplognathini). *Entomologischen Arbeiten aus dem Museum G. Frey* 27:327-343.
- Martínez, A. and A. Martínez. 1994. Una nueva especie de *Platycoelia* (Coleoptera, Scarabaeidae). *Revista Brasileira de Entomologia* 38(3/4): 545-548.
- Mayr, E. 1982. *The Growth of Biological Thought: Diversity, Evolution, and Inheritance*. Harvard University Press, Cambridge, Massachusetts. 974 pp.
- Meier, R., P. Kores, and S. Darwin. 1991. Homoplasy slope ratio: a better measurement of observed homoplasy in cladistic analyses. *Systematic Zoology* 40:74-88.
- Morón, M. A. 1994a. Las diversidad generica de los coleopteros Melolonthidae en Mexico. *Acta Zoologica Mexicana (nueva serie)* 61:7-19.
- Morón, M. A. 1994b. Fauna de Coleoptera Lamellicornia en las montañas del noreste de Hidalgo, Mexico. *Acta Zoologica Mexicana (nueva serie)* 63:7-59.
- Morón, M. A. 1995. Las especies mexicanas de *Phalangogonia* Burmeister (Coleoptera: Melolonthidae, Rutelinae). *Giornale Italiano di Entomologia* 7:195-202.
- Morón, M. A. 1997. Capítulo 2, Rutelinae. In M. A. Morón, B. C. Ratcliffe, and C. Deloya (eds.), *Atlas de los Escarabajos de México; Coleoptera: Lamellicornia; Vol. I Familia Melolonthidae*. Sociedad Mexicana de Entomología, México. 280 pp.
- Morrone, J. J. 1999. Presentacion preliminar de un nuevo esquema biogeografico de America del Sur. *Biogeographica* 75(1):1-16.
- Newton, A. F. 1985. South temperate Staphylinoida (Coleoptera) their potential for biogeographic analysis of austral disjunctions, pp. 180-220. In G. E. Ball (ed.) *Taxonomy, Phylogeny and Zoogeography of Beetles and Ants*. Dr. W. Junk, Dordrecht. 514 pp.
- Nissen, C. 1952. Dr. Friedrich Ohaus (Mainz 5 xii. 1864-22. X. 1946 Mainz): a bibliography of his entomological papers. *Journal of the Society for the Bibliography of Natural History* 2(9): 400-406.
- O'Hara, J. E. 1995. Henry Walter Bates – his life and contributions to biology. *Archives of Natural History* 22(2): 195-219.
- Ohaus, F. 1904a. Revision der Anoplognathiden (Coleoptera lamellicornia). *Stettiner Entomologische Zeitung* 65:57-175.
- Ohaus, F. 1904b. Revision der amerikanischen Anoplognathiden (Coleoptera lamellicornia). *Stettiner Entomologische Zeitung* 65:254-341.

- Ohaus, F. 1905. Revision der amerikanischen Anoplognathiden (Coleoptera lamellicornia). *Stettiner Entomologische Zeitung* 66:120-167.
- Ohaus, F. 1908. Die Ruteliden meiner Sammelreisen in Südamerika (Col.). *Deutsche Entomologische Zeitschrift* 1908:383-408.
- Ohaus, F. 1909a. Bericht über eine entomologische Studienreise in Südamerika. *Stettiner Entomologische Zeitung* 70:3-139.
- Ohaus, F. 1909b. Neue Coleoptera lamellicornia aus Argentinien. *Deutsche Entomologische Zeitschrift* 1909:425-447.
- Ohaus, F. 1917. Neue Geniatinen (Col. Lamell. Rutelin.). *Stettiner Entomologische Zeitung* 78:3-53.
- Ohaus, F. 1918. Scarabaeidae: Euchirinae, Phaenomerinae, Rutelinae. *Coleopterorum Catalogus* 20:1-241. [dated 1915].
- Ohaus, F. 1925. Beitrag zur Kenntnis der Ruteliden (Col. lamell.). *Deutsche Entomologische Zeitschrift* 1925:75-83.
- Ohaus, F. 1952. Rutelinae (Col. Scarab.), p. 1-10. In E. Titschack (ed.), *Beiträge zur Fauna Perus*, volume 3. Gustav Fischer, Jena. 256 pp.
- Onore, G. 1997. A brief note on edible insects in Ecuador. *Ecology of Food and Nutrition* 36:277-285.
- Papavero, N. 1971. *Essays on the History of Neotropical Dipterology, with Special Reference to Collectors (1750-1905)*, volume 1. Museu de Zoologia, Universidade de São Paulo, 216 pp.
- Papavero, N. 1973. *Essays on the History of Neotropical Dipterology, with Special Reference to Collectors (1750-1905)*, volume 2. Museu de Zoologia, Universidade de São Paulo, pp. 217-446.
- Paucar-Cabrera, A. and A. B. T. Smith. 2002. Larval descriptions for the Neotropical genus *Platycoelia* (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini). *Coleopterists Bulletin* 56:438-445.
- Pulawski, W. J. and I. M. Kerzhner. 2001, Article 74.7.3 of the code: proposed deletion. *Zoosystematica Rossica* 10(1): 1-7.
- Ratcliffe, B. C. 1990. The significance of scarab beetles in the ethnoentomology of non-industrial, indigenous peoples. *Proceedings of the First International Congress of Ethnobiology* 1:159-185.
- Ratcliffe, B. C. 2002. A checklist of the Scarabaeoidea (Coleoptera) of Panama. *Zootaxa* 32:1-48.
- Ratcliffe, B. C. and F. Ocampo. 2002. A review of the genus *Hylamorpha* Arrow (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini: Brachysternina). *Coleopterists Bulletin* 56:367-378.
- Remane, A. 1956. *Die Grundlagen des natürlichen Systems der vergleichenden Anatomie und Phylogenetik*, volume 2. Geest and Portig, Leipzig, Germany. 362 pp.
- Sharp, D. 1878. Description of some new species of beetles (Scarabaeidae) from Central America. *Journal of the Linnean Society* 13:129-138.
- Sherborn, C. D. 1899. A note on the date of the parts of 'Humboldt and Bonpland's Voyage: Observations de Zoologie.' *Annals and Magazine of Natural History series 7* volume 3:428.
- Smith, A. B. T. 2002a. Revision of the southern South American endemic genus *Aulacopalpus* Guérin-Méneville with phylogenetic and biogeographic analyses of the subtribe Brachysternina (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini). *Coleopterists Bulletin* 56:379-437.
- Smith, A. B. T. 2002b. Case 3237: *Leucopelaea albescens* Bates, 1891 (Insecta, Coleoptera): proposed validation of the lectotype designation. *Bulletin of Zoological Nomenclature* 59:97-98.
- Smith, A. B. T. and M. L. Jameson. 2001. *Eremophygus bicolor* (Gutiérrez) (Coleoptera: Scarabaeidae: Rutelinae: Rutelini): a new tribal and generic placement for the Bolivian scarab *Platycoelia bicolor* (Gutiérrez) (Anoplognathini). *Coleopterists Bulletin* 55(1):103-106.

- Smith, A. B. T. and M. A. Morón. 2003. Revision, phylogeny, and biogeography of the Central American endemic genus *Phalangogonia* Burmeister (Coleoptera: Scarabaeidae: Rutelinae: Anoplognathini). Systematic Entomology. In press.
- Smith, A. B. T. and A. Paucar-Cabrera. 2000. Taxonomic review of *Platycoelia lutescens* (Scarabaeidae: Rutelinae: Anoplognathini) and a description of its use as food by the people of the Ecuadorian highlands. *Annals of the Entomological Society of America* 93(3):408-414.
- Solier, A. J. J. 1851. Orden III. Coleopteros, pp. 5-285. In C. Gay (ed.), *Historia Física y Política de Chile. Zoología*, vol. 5. C. Gay, Paris. 564 pp.
- Swofford, D. L. 2002. *PAUP*. Phylogenetic Analysis Using Parsimony (*and Other Methods)*. Version 4.0b10. Sinauer Associates, Sunderland, Massachusetts. Computer program.
- Thayer, M. K. 1985. Revision, phylogeny and biogeography of the austral genus *Metacorneolabium* Steel (Coleoptera: Staphylinidae: Omaliinae), pp. 113-179. In G. E. Ball (ed.) *Taxonomy, Phylogeny and Zoogeography of Beetles and Ants*. Dr. W. Junk, Dordrecht. 514 pp.
- Thomas, D. B. 1993. Scarabaeidae (Coleoptera) of the Chiapanecan forests: a faunal survey and chorographic analysis. *Coleopterists Bulletin* 47(4):363-408.
- Torre-Bueno, J. R. 1989. *The Torre-Bueno Glossary of Entomology*. Revised edition (compiled by S. W. Nichols). New York Entomological Society, New York. 840 pp.
- Uhlig, M. and B. Jaeger. 1995. Zur Erforschung der Käferfauna der afrotropischen Region durch das Museum für Naturkunde Berlin mit einem Überblick über die coleopterologischen Ergebnisse der ersten gemeinsamen Expedition des Museums für Naturkunde Berlin und des State Museum Windhoek in Namibia. *Mitteilungen aus dem Zoologischen Museum in Berlin* 71(2): 213-245.
- Wheeler, Q. D. and N. I. Platnick. 2000. The phylogenetic species concept (*sensu* Wheeler and Platnick), p. 55-69. In Q. D. Wheeler and R. Meier (eds.), *Species Concepts and Phylogenetic Theory: A Debate*. Columbia University Press, New York, 230 pp.
- Whymper, E. 1891. Preface, p. v-xvii. In E. Whymper (ed.), *Supplementary Appendix to Travels Amongst the Great Andes of the Equator*. John Murray, London, 147 pp.
- Whymper, E. 1892. *Travels Amongst the Great Andes of the Equator*. John Murray, London. 456 pp.
- Zunino, M. and E. Monteresino. 1990. Ideas preliminares sobre la evolución de los aparatos copuladores en Rutelinae (Coleoptera, Scarabaeoidea) y la filogenia del grupo. *Revista de la Sociedad Entomológica Argentina* 48:3-13.

Appendix 1. Character matrix used in the phylogenetic analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<i>Phalangogonia sperata</i>	3	1	4	0	0	0	0	1	0	1	0	2	1	1	2	4	0	0	1
<i>Platycoelia abdominalis</i>	0	0	1	0	0	0	1	1	0	1	0	2	0	1	2	2	0	1	1
<i>Platycoelia aenigma</i>	1	1	4	0	0	2	1	0	0	0	1	?	1	0	0	?	?	?	?
<i>Platycoelia alternans</i>	0	1	1	0	0	0	1	1	1	1	0	2	1	1	2	2	1	1	1
<i>Platycoelia alticola</i>	1	1	1	0	0	2	0	1	1	0	1	?	1	0	0	?	?	?	?
<i>Platycoelia alti plana</i>	0	1	1	0	0	0	1	0	0	2	0	?	1	1	1	2	1	1	1
<i>Platycoelia baessleri</i>	0	1	1	0	0	0	1	1	0	2	0	2	1	0	0	1	0	1	1
<i>Platycoelia bocki</i>	1	1	1	0	0	2	1	1	0	0	1	?	1	0	0	0	0	1	0
<i>Platycoelia bordoni</i>	0	1	0	0	1	0	1	0	0	1	1	?	1	0	0	1	0	1	1
<i>Platycoelia burmeisteri</i>	0	1	1	0	0	0	1	1	1	1	1	2	2	0	0	3	0	1	0
<i>Platycoelia burmeisteriana</i>	0	1	1	0	0	0	1	0	0	1	1	3	1	1	1	2	0	1	1
<i>Platycoelia butleri</i>	0	1	1	0	0	1	1	0	1	1	0	1	1	1	1	2	0	1	1
<i>Platycoelia chrysolina</i>	0	1	1	0	0	0	1	1	0	1	0	2	1	1	1	2	1	1	1
<i>Platycoelia confluens</i>	0	1	1	0	0	0	1	1	0	1	0	3	1	1	1	3	1	1	1
<i>Platycoelia convexa</i>	0	0	2	1	0	0	1	1	0	0	1	2	0	2	2	3	1	1	1
<i>Platycoelia flavohumeralis</i>	0	1	1	0	0	0	1	1	0	?	?	?	1	0	1	?	?	1	?
<i>Platycoelia flavoscutellata</i>	2	1	1	0	0	0	1	1	0	1	1	?	1	1	1	2	0	1	1
<i>Platycoelia flavostriata</i>	0	0	2	0&1	0	0	1	1	0	1	1	2	0	2	2	3	1	1	1
<i>Platycoelia forcipalis</i>	0	0	3	0	0	0	1	0	0	0	1	3	0	2	2	2	1	1	1
<i>Platycoelia furva</i>	0	1	1	0	0	0	1	1	0	2	0	3	1	0	0	1	0	1	1
<i>Platycoelia galerana</i>	0	0	3	1	0	0	1	1	0	0	1	2	0	2	2	3	1	1	1
<i>Platycoelia gaujoni</i>	0	1	0	0	0	0	1	0	0	0	1	3	1	0	0	1	0	1	1
<i>Platycoelia grandicula</i>	0	0	3	1	0	0	1	1	0	0	1	2	0	2	2	2	1	1	1
<i>Platycoelia haenkei</i>	1	1	4	0	0	3	0	1	0	1	?	1	0	0	0	0	1	0	0
<i>Platycoelia helleri</i>	0	1	1&4	0	0	0	1	1	1	1	0	3	1	0	0	1	0	1	0
<i>Platycoelia hiporum</i>	0	0	3	1	0	0	1	1	0	0	1	?	0	2	2	2	1	1	1
<i>Platycoelia hirta</i>	0	1	1	0	0	1	1	1	0	1	0	2	1	1	1	3	1	1	0
<i>Platycoelia humeralis</i>	0	0	3	1	0	0	1	1	0	1	1	2	0	2	2	2	1	1	1
<i>Platycoelia ignota</i>	0	1	4	0	0	0	1	0	1	1	0	?	1	0	0	?	?	?	?
<i>Platycoelia inca</i>	1	1	0	0	0	2	0	1	1	1	1	2	1	0	0	0	0	1	1
<i>Platycoelia inflata</i>	0	0	1	0	0	0	1	1	1	1	0	2	1	1	2	2	1	1	1
<i>Platycoelia insolita</i>	0	1	1	0	0	0	1	1	0	0	1	2	1	0	0	1	0	1	0
<i>Platycoelia intermedia</i>	0	1	2	1	0	0	1	1	0	1	1	2	0	2	2	2	1	1	1
<i>Platycoelia interstincta</i>	0	0	2	1	0	0	1	1	0	0	1	?	0	2	2	?	?	?	?
<i>Platycoelia kirschi</i>	0	1	1	0	1	0	1	1	0	?	?	2	1	0	0	1	0	1	1
<i>Platycoelia laelaps</i>	1	1	0	0	0	2	1	0	1	0	1	2	1	0	0	0	0	1	1
<i>Platycoelia lutescens</i>	0	1	0&1	0	0	0	1	0	0	1	1	3	1	0	0	1	0	1	1
<i>Platycoelia marginata</i>	0	1	1	0	0	0	1	1	1	1	1	2	1	1	2	3	1	1	0
<i>Platycoelia meridensis</i>	0	1	1	0	0	0	1	1	1	1	0	2	1	1	2	2	1	1	1
<i>Platycoelia mesosternalis</i>	0	0	1	0	0	0	1	0	0	1	0	3	1	2	2	2	1	1	1
<i>Platycoelia nervosa</i>	0	0	1	0	0	0	1	1	1	1	0	2	1	1	2	2	1	1	1
<i>Platycoelia nigrosternalis</i>	0	0	2	1	0	0	1	1	0	1	0	3	0	2	2	3	1	1	1
<i>Platycoelia occidentalis</i>	0	0	1	0	0	0	1	1	0	1	0	2	1	1	2	2	0	1	1
<i>Platycoelia parva</i>	0	1	0&1	0	1	0	1	0	0	1	0	3	1	0	0	1	0	1	1
<i>Platycoelia paucarae</i>	0	1	2	0	0	0	1	1	0	1	1	2	0	2	2	2	1	1	1
<i>Platycoelia penai</i>	0	1	2	0	0	0	1	1	0	0	1	2	0	2	2	3	1	1	1
<i>Platycoelia peruviana</i>	0	1	2	0	0	0	1	1	0	1	0	4	1	2	2	2	0	1	1
<i>Platycoelia pomacea</i>	0	0	1	0	0	0	1	1	0	1	1	2	0	2	2	2	0	1	1
<i>Platycoelia prasina</i>	0	1	1	0	0	0	1	1	1	1	0	2	1	1	2	2	1	1	1
<i>Platycoelia puncticollis</i>	2	1	1	0	0	0	1	1	0	0	1	2	1	1	1	3	1	1	0
<i>Platycoelia pusilla</i>	0	1	0	0	0	0	1	0	0	2	0	?	1	0	0	1	0	1	1
<i>Platycoelia quadrilineata</i>	0	1	1	0	0	0	1	1	0	2	0	3	1	0	0	2	0	1	1
<i>Platycoelia rufosignata</i>	0	1	1	0	0	0	1	1	0	1	0	3	1	0	0	2	0	1	1
<i>Platycoelia sandia</i>	0	1	3	0	0	0	1	1	0	0	1	2	0	2	2	2	1	1	1
<i>Platycoelia selanderi</i>	0	1	1	0	0	0	1	1	1	1	1	2	1	1	2	2	1	1	0
<i>Platycoelia signaticollis</i>	0	1	1&4	0	1	0	1	0	0&1	0	0	2	1	0	0	0	0	1	1
<i>Platycoelia simplicior</i>	0&1	1	1	0	0	1	1	1	1	0	1	?	1	1	2	1	0	1	1
<i>Platycoelia steinheili</i>	0	1	1	0	0	0	1	0	1	1	0	3	1	0	1	2	1	1	1
<i>Platycoelia traceyae</i>	0	1	1	0	0	0	1	1	0	1	1	2	2	0	0	3	0	1	1
<i>Platycoelia unguicularis</i>	2	1	1	0	0	0	1	1	0	0	1	2	1	1	1	3	1	1	1
<i>Platycoelia valida</i>	0	0	1	0	0	0	1	1	0	1	0	3	1	1	2	2	0	1	1
<i>Platycoelia variolosa</i>	0	0	2	1	0	0	1	1	0	0	1	2	0	2	2	2	1	1	1
<i>Platycoelia wallisi</i>	0	1	1	0	0	0	1	1	0&1	2	0	3	2	0	0	3	0	1	1

Appendix 1. Continued

	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
<i>Phalangogonia sperata</i>	0	3	3	2	0	1&2	0	1	0	1	1	2	0	2	1	0	0	2	0
<i>Platycoelia abdominalis</i>	3	3	3	2	0	0	0	1	0	2	0	1	0	0	1	1	0	2	0
<i>Platycoelia aenigma</i>	1	?	?	0	0	1	0	2	1	0	0	1	0	?	?	?	?	0	3
<i>Platycoelia alternans</i>	3	3	1	2	1	1	0	2	0	1	0	2	0	0	1	0	0	2	0&1
<i>Platycoelia alticola</i>	?	?	?	0	0	1	1	2	0	0	0	1	0	1	1	1	0	0	3
<i>Platycoelia alti plana</i>	1	2	1	0	0	2	0	2	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia baessleri</i>	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3
<i>Platycoelia bocki</i>	2	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	3
<i>Platycoelia bordoni</i>	1	2	2	0	0	1	0	1	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia burmeisteri</i>	1	3	2	1	0	2	0	2	0	0	0	1	0	0	1	0	0	2	1
<i>Platycoelia burmeisteriana</i>	1	3	1	1	1	1	0	1	1	0	0	1	0	2	1	0	0	2	0
<i>Platycoelia butleri</i>	1	3	1	2	0	0	0	1	1	0	0	1	0	0	0	0	0	2	0
<i>Platycoelia chrysotina</i>	1	2	2	0	0	1	0	2	1	0	0	2	0	0	1	0	0	2	0
<i>Platycoelia confluens</i>	1	2	1	0	0	1	0	1	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia convexa</i>	1	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia flavohumeralis</i>	1	3	1	1	0	1	0	2	1	0	0	1	0	0	0	0	0	2	0
<i>Platycoelia flavoscutellata</i>	1	2	2	2	0	1	0	2	1	0	0	1	0	2	1	0	0	2	0
<i>Platycoelia flavostriata</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia forcipalis</i>	1	3	1	2	0	2	0	2	2	1	0	1	0	0	1	1	0	2	0
<i>Platycoelia furva</i>	1	2	1	0	1	2	0	2	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia galerana</i>	1	3	1	2	0	2	0	2	1	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia gaujoni</i>	1	2	2	0	0	1	0	1	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia grandicula</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia haenkei</i>	1	1	0	0	0	2	3	1	0	0	1	2	1	1	1	1	0	0	3
<i>Platycoelia helleri</i>	1	2	0	0	0	1	0	2	1	0	0	1	0	0	1	1	0	0	3
<i>Platycoelia hiporum</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia hirta</i>	1	2	2	0	0	2	0	2	1	0	0	2	0	0	0	0	0	2	0
<i>Platycoelia humeralis</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia ignota</i>	?	?	?	0	0	2	0	2	1	0	0	1	0	0	0	1	0	0	3
<i>Platycoelia inca</i>	1	1	1	0	0	1	2	2	1	0	0	0	0	0	1	0	0	0	3
<i>Platycoelia inflata</i>	3	3	3	2	1	1	0	2	0	2	0	1	0	0	1	0	0	2	1
<i>Platycoelia insolita</i>	1	2	2	0	0	1	0	2	1	2	0	1	0	0	1	0	0	1	3
<i>Platycoelia intermedia</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia interstincta</i>	?	?	?	2	0	2	0	2	0	0	0	2	0	?	1	0	1	2	0
<i>Platycoelia kirschi</i>	1	2	1	0	0	1	0	1	0	0	0&1	1	0	0	1	1	0	0	3
<i>Platycoelia laelaps</i>	2	1	0	0	0	1	2	1	0	0	1	1	1	0	1	1	0	0	3
<i>Platycoelia lutescens</i>	1	2	2	0	0	1	0	2	1	0	0	1	0	0	0	0	0	0	3
<i>Platycoelia marginata</i>	3	3	1	2	0	1	0	2	1	2	0	1	0	0	0	0	0	1	3
<i>Platycoelia meridensis</i>	3	3	1	2	0	1	0	2	1	0	0	1	0	0	0	0	0	1&2	3
<i>Platycoelia mesosternalis</i>	0	3	1	2	0	2	0	2	0	0	0	1	0	0	1	1	1	1	2
<i>Platycoelia nervosa</i>	3	3	1	2	1	1	0	2	0	1	0	2	0	0	1	0	0	2	1
<i>Platycoelia nigrostermalis</i>	0	3	1	2	0	2	0	2	1	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia occidentalis</i>	3	3	3	2	0	1	0	2	0	1	0	2	0	0	1	0	0	2	0
<i>Platycoelia parva</i>	1	2	1&2	0	0	0&1	0	1	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia paucarae</i>	0	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia penai</i>	1	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia peruviana</i>	3	3	3	2	0	2	0	2	0	0	0	1	0	0	1	1	0	2	0
<i>Platycoelia pomacea</i>	3	3	3	2	0	0	0	1	0	2	0	1	0	0	1	1	0	2	0
<i>Platycoelia prasina</i>	3	3	1	2	0	2	0	2	1	0	0	1	0	0	0&1	0	0	1	3
<i>Platycoelia puncticollis</i>	1	3	2	1	1	2	0	2	1	2	0	1	0	0	1	0	0	2	0
<i>Platycoelia pusilla</i>	1	2	2	0	0	1	0	1	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia quadrilineata</i>	1	2	2	0	1	2	0	2	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia rufosignata</i>	1	2	2	0	2	2	0	2	1	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia sandia</i>	1	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia selanderi</i>	3	3	1	2	1	1	0	2	0	1	0	1	0	0	0	0	0	1	3
<i>Platycoelia signaticollis</i>	1	2	2	0	0	1	0	1	1	0	0	1	0	0	0	1	0	0	3
<i>Platycoelia simplicior</i>	3	3	1	2	0	2	0	2	0	0	0	1	0	0	0	0	0	1	3
<i>Platycoelia steinheili</i>	3	3	2	1	0	0	0	0	1	2	0	0	0	0	1	0	0	2	0
<i>Platycoelia traceyae</i>	1	2	2	0	0	1	0	2	1	0	0	1	0	0	1	0	0	2	0
<i>Platycoelia unguicularis</i>	0	3	1	1	0	1	0	2	1	0	0	2	0	0&2	0	0	0	2	0
<i>Platycoelia valida</i>	3	3	3	2	0	1	0	2	0	1	0	1	0	0	1	0	0	2	0
<i>Platycoelia variolosa</i>	1	3	1	2	0	2	0	2	0	0	0	2	0	2	1	0	1	2	0
<i>Platycoelia wallisi</i>	1	2&3	1	0	0	2	0	2	1&2	0	0	0&1	0	0	1	0	0	2	0&1

Appendix 1. Continued

	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
<i>Phalangogonia sperata</i>	2	3	0	1	2	1	0	0	?	0	0	0	0	0	0	1	0	0	1
<i>Platycoelia abdominalis</i>	5	2	0	1	2	1	0	1	0	0	0	0	1	0	0	1	0	1	0
<i>Platycoelia aenigma</i>	0	?	?	1	2	1	0	1	1	?	0	1	0	0	0	1	1	1	0
<i>Platycoelia alternans</i>	5	2	0	0	2	1	0	1	2	1	1	0	2	0	0	1	1	1	0
<i>Platycoelia alticola</i>	0	1	0	1	2	1	0	1	1	?	0	1	0	0	0	1	1	1	1
<i>Platycoelia alti plana</i>	2	2	2	1	2	1	1	1	1	?	1	0	1	0	0	0	1	1	0
<i>Platycoelia baessleri</i>	1	1	0	1	2	1	0	1	0	0	?	?	?	?	?	?	1	1	1
<i>Platycoelia bocki</i>	0	1	0	1	2	1	0	1	1	?	1	0	2	0	0	1	2	1	1
<i>Platycoelia bordoni</i>	2	2	2	1	2	1	0	1	0	?	1	0	1	0	0	0	1	1	0
<i>Platycoelia burmeisteri</i>	2	2	0	1	2	1	1	1	1	1	1	1	0	0	0	0	0	1	0
<i>Platycoelia burmeisteriana</i>	2	2	0	1	2	1	0	1	1	0	1	1	0	0	0	0	1	1	0
<i>Platycoelia butleri</i>	1	1	0	1	2	1	1	1	1	1	1	1	0	0	0	1	1	1	0
<i>Platycoelia chryсотina</i>	2	1	1	1	2	1	1	1	1	1	1	0	1	0	0	0	1	1	0
<i>Platycoelia confluens</i>	2	2	2	1	2	1	1	1	1	1	0	0	1	0	0	0	1	1	0
<i>Platycoelia convexa</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	0	2	1	0
<i>Platycoelia flavohumeralis</i>	2	2	2	1	2	1	0	1	0	?	1	0	1	0	0	0	1	1	0
<i>Platycoelia flavoscutellata</i>	1	2	0	1	2	1	0	1	1	?	1	0	2	0	0	1	1	1	0
<i>Platycoelia flavostriata</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	0	2	1	0
<i>Platycoelia forcipalis</i>	2	2	0	1	2	0	0	1	1	0	0	0	1	0	0	1	1	1	0
<i>Platycoelia furva</i>	1	2	0	1	2	1	0	1	0	0	1	0	1	0	0	0	1	1	0
<i>Platycoelia galerana</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	0	2	1	0
<i>Platycoelia gaujoni</i>	1	2	2	1	2	1	0	1	0	0	1	0	1	0	0	0	1	1	0
<i>Platycoelia grandicula</i>	2	2	0	1	2	1	1	1	2	1	1	0	1	1	2	0	0	1	0
<i>Platycoelia haenkei</i>	0	1	0	1	2	1	0	1	1	?	0	1	0	0	0	1	1	1	1
<i>Platycoelia helleri</i>	1	2	0	1	2	1	1	1	0	?	1	0	1	0	0	0	1	1	1
<i>Platycoelia hiporum</i>	2	2	0	1	2	1	1	1	2	?	1	0	1	1	2	0	0	1	0
<i>Platycoelia hirta</i>	1	1	1	1	2	1	1	1	1	1	1	0	1	0	0	1	1	1	0
<i>Platycoelia humeralis</i>	1	2	0	1	2	1	0	1	2	1	0	0	1	0	0	1	2	1	0
<i>Platycoelia ignota</i>	0	2	0	1	2	1	1	1	0	?	1	0	1	0	0	0	2	1	1
<i>Platycoelia inca</i>	0	1	2	1	2	1	0	1	0	1	0	1	0	0	0	1	1	1	0
<i>Platycoelia inflata</i>	5	2	0	0	0&1	0	0	1	2	0	0	0	2	0	1	1	2	1	0
<i>Platycoelia insolita</i>	0	1	0	0	0	0	?	1	0	0	0	0	0	0	0	1	1	1	1
<i>Platycoelia intermedia</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	1	2	1	0
<i>Platycoelia interstincta</i>	1	1	?	1	1	0	0	1	2	?	0	0	0	1	0	0	2	1	0
<i>Platycoelia kirschi</i>	3	1	0	?	?	?	1	1	0	0	?	?	?	?	?	?	1	1	1
<i>Platycoelia laelaps</i>	0	1	0	1	2	1	0	1	1	0	1	1	0	0	0	1	0	1	1
<i>Platycoelia lutescens</i>	1	1&2	2	1	2	1	0	1	0	0	1	0	1	0	0	1	1	1	0
<i>Platycoelia marginata</i>	1	2	0	0	0&1	0	0	1	1	0	1	0	2	0	0	1	2	1	1
<i>Platycoelia meridensis</i>	2	0	0	0	0	0	?	1	1	0	1	0	2	0	0	0	1	0&1	0
<i>Platycoelia mesosternalis</i>	4	0	0	1	2	1	0	1	1	0	1	1	0	0	0	0	1	1	0
<i>Platycoelia nervosa</i>	5	2	0	0	0	0	?	1	2	0	1	0	2	0	1	1	1	1	0
<i>Platycoelia nigrostermalis</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	1	2	1	0
<i>Platycoelia occidentalis</i>	5	2	0	1	2	1	1	1	1	1	0	0	0	0	0	1	1	1	0
<i>Platycoelia parva</i>	1	2	2	1	2	1	0&1	1	0	0	1	0	1	0	0	1	1	1	0
<i>Platycoelia paucarae</i>	2	2	0	1	2	1	1	1	2	1	1	0	1	1	2	0	0	1	0
<i>Platycoelia penai</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	1	1	1	0
<i>Platycoelia peruviana</i>	2	2	0	1	2	0	1	1	2	1	1	0	0	0	0	2	1	0	0
<i>Platycoelia pomacea</i>	4	0	0	1	2	0	0	1	1	0	1	0	1	0	1	1	0	1	0
<i>Platycoelia prasina</i>	1	2	0	0	1	0&1	0	1	1	0	1	0	2	0	0	0	1	1	1
<i>Platycoelia puncticollis</i>	2	2	1	1	2	1	1	1	1	1	0	0	1	0	0	0	1	1	1
<i>Platycoelia pusilla</i>	1	2	2	1	2	1	0	1	0	?	1	0	1	0	0	0	1	1	0
<i>Platycoelia quadrilineata</i>	1&2	2	0	1	2	1	0	1	0	0	1	0	1	0	0	0	1	1	0
<i>Platycoelia rufosignata</i>	1	2	0	1	2	1	0	1	0	0	1	0	1	0	0	0	1	1	0
<i>Platycoelia sandia</i>	2	2	0	1	2	1	0	1	2	1	0	0	0	1	0	0	1	1	0
<i>Platycoelia selanderi</i>	2	2	0	0	1	0&1	0	1	1&2	0	1	0	2	0	0	1	0	1	1
<i>Platycoelia signaticollis</i>	1	1	1	1	2	1	1	1	0	1	1	0	1	0	0	1	1	1	0
<i>Platycoelia simplicior</i>	1	1	0	0	2	1	0	1	1&2	?	1	0	2	0	0	0	1	1	1
<i>Platycoelia steinhelii</i>	2	2	1	1	1	1	0	1	0	0	1	0	1	0	0	0	1	1	0
<i>Platycoelia traceyae</i>	5	2	0	1	2	1	1	1	1	1	1	1	0	0	0	1	1	1	1
<i>Platycoelia unguicularis</i>	0	2	0	1	2	1	1	1	1	1	0	0	1	0	0	0	1	1	0
<i>Platycoelia valida</i>	5	2	0	1	2	1	1	1	1	0	0	0	1	0	0	1	1	1	0
<i>Platycoelia variolosa</i>	1	2	0	1	2	1	1	1	2	1	1	0	0	1	2	0	0	1	0
<i>Platycoelia wallisi</i>	5	2	0	1	2	1	1	1	1	1	1	0	0	0	0	1	2	1	0

Appendix 1. Continued

	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76
<i>Phalangogonia sperata</i>	1	1	1	0	0	1	1	1	1	0	0	?	0	0	0	1	0	0	0
<i>Platycoelia abdominalis</i>	0	1	2	1	0	0	0	1	2	1	0	0	1	1	1	1	0	1	1
<i>Platycoelia aenigma</i>	0	0	0	0	1	0	0	0	0	1	1	?	?	?	?	?	?	?	?
<i>Platycoelia altermans</i>	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	0	3
<i>Platycoelia alticola</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia alti plana</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia baessleri</i>	0	0	0	1	1	1	0	?	?	?	1	1	1	1	1	0	0	0	0
<i>Platycoelia bocki</i>	0	0	0	1	2	1	0	0	0	1	2	1	1	1	1	1	0	0	0
<i>Platycoelia bordoni</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia burmeisteri</i>	0	0	1	1	0	0	0	1	1	1	0	0	1	1	1	1	0	0	0
<i>Platycoelia burmeisteriana</i>	0	0	1	1	1	0	0	0	1	1	1	0	1	1	1	0	0	0	3
<i>Platycoelia butleri</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia chrysolina</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia confluens</i>	0	1	0	1	1	0	0	1	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia convexa</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia flavohumeralis</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia flavoscutellata</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia flavostriata</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia forcipalis</i>	0	0	2	1	2	0	0	0	2	1	2	0	1	1	0	1	0	0	1
<i>Platycoelia furva</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia galerana</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia gaujoni</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	3
<i>Platycoelia grandicula</i>	0	1	2	1	0	0	0	1	2	1	0	1	1	1	0	0	0	0	1
<i>Platycoelia haenkei</i>	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia helleri</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia hiporum</i>	0	1	2	1	0	0	0	1	2	1	0	1	1	1	0	0	0	0	1
<i>Platycoelia hirta</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia humeralis</i>	0	1	2	0&1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia ignota</i>	0	0	0	1	2	1	0	0	0	1	2	1	1	1	1	0	0	0	0
<i>Platycoelia inca</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia inflata</i>	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	1	0	0	2
<i>Platycoelia insolita</i>	0	1	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	3
<i>Platycoelia intermedia</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia interstincta</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	0
<i>Platycoelia kirschi</i>	0	?	0	?	2	1	0	?	?	?	?	?	?	?	?	?	?	?	?
<i>Platycoelia laelaps</i>	0	0	0	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0
<i>Platycoelia lutescens</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia marginata</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	2
<i>Platycoelia meridensis</i>	0	0	0	1	0	1	0	0	0	1	0	1	1	1	1	2	0	0	2
<i>Platycoelia mesosternalis</i>	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	0	0	0	1
<i>Platycoelia nervosa</i>	0	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	0	0	2
<i>Platycoelia nigrosternalis</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia occidentalis</i>	0	0	2	1	1	0	0	0	2	1	1	1	1	1	1	1	1	1	1
<i>Platycoelia parva</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia paucarae</i>	0	1	2	1	0	0	0	1	2	1	0	1	1	1	0	0	0	0	1
<i>Platycoelia penai</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia peruviana</i>	0	0	2	1	0	0	0	0	2	1	0	1	1	1	0	1	0	0	1
<i>Platycoelia pomacea</i>	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	0	0	3
<i>Platycoelia prasina</i>	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	2	0	0	2
<i>Platycoelia puncticollis</i>	0	0	1	0	2	1	0	0	1	1	2	1	1	1	1	2	0	0	2
<i>Platycoelia pusilla</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia quadrilineata</i>	0	0	0	1	1	0&1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia rufosignata</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia sandia</i>	0	1	2	1	2	0	0	1	2	1	2	1	1	1	0	0	0	0	1
<i>Platycoelia selanderi</i>	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	2	0	0	2
<i>Platycoelia signaticollis</i>	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia simplicior</i>	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	2	0	0	2
<i>Platycoelia steinheili</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0
<i>Platycoelia traceyae</i>	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia unguicularis</i>	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0
<i>Platycoelia valida</i>	0	0	2	1	1	1	0	0	2	1	1	0	1	1	1	1	0	0	1
<i>Platycoelia variolosa</i>	0	1	2	1	0	0	0	1	2	1	0	1	1	1	0	0	0	0	1
<i>Platycoelia wallisi</i>	0	1	0	1	2	0	0	1	0	1	2	0	1	1	1	0	0	0	3

Appendix 1. Continued

	77	78	79	80	81	82	83	84	85	86	87	88	89
<i>Phalangogonia sperata</i>	0	0	0	0	1	0	0	0	0	1	0	0	1
<i>Platycoelia abdominalis</i>	1	0	0	0	2	0	0	2	0	3	3	0	0
<i>Platycoelia aenigma</i>	?	0	1	2	2	0	0	1	0	0	?	?	0
<i>Platycoelia alternans</i>	0	0	0	0	2	0	3	0&1	0	0	0	0	0
<i>Platycoelia alticola</i>	0	0	0	1	0	0	0	0	0	1	1	1	0
<i>Platycoelia altiplana</i>	1	0	0	0	2	0	3	1	0	0	0	0	0
<i>Platycoelia baessleri</i>	1	0	0	0	0	0	0	0	0	1	1	1	0
<i>Platycoelia bocki</i>	0	0	0	1	0	0	0	0	0	1	1	1	0
<i>Platycoelia bordoni</i>	1	0	0	0	2	0	1	0	0	2	0	0	0
<i>Platycoelia burmeisteri</i>	0	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia burmeisteriana</i>	1	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia butleri</i>	0	0	0	0	2	0	3	1	0	2	0	0	0
<i>Platycoelia chrysochina</i>	0	0	0	0	2	0	3	0	0	2	1	0	0
<i>Platycoelia confluens</i>	0	0	0	0	2	0	3	1	0	2	0	0	0
<i>Platycoelia convexa</i>	0	0	0	0	2	0	0	0	0	2	0&1	0	1
<i>Platycoelia flavohumeralis</i>	0	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia flavoscutellata</i>	1	0	0	0	2	0	2	0	0	0	0	0	0
<i>Platycoelia flavostriata</i>	0	0	0	0	2	0	3	0&1	0	0	0	0	0
<i>Platycoelia forcipalis</i>	1	0	0	0	2	0	3	0	0	2	2	0	0
<i>Platycoelia furva</i>	0	0	2	0	0&2	0	0	0	0	1	1	0&1	0
<i>Platycoelia galerana</i>	0	0	0	0	2	0	3	0&1	0	1	1&3	0	0
<i>Platycoelia gaujoni</i>	0	0	0	0	2	0	1	0	0	2	0	0	0
<i>Platycoelia grandicula</i>	1	0	0	0	2	0	0	0	0	0	0	0	0
<i>Platycoelia haenkei</i>	1	0	0	1	0	0	0	0	0	1	2	0	0
<i>Platycoelia helleri</i>	1	1	1	0	2	0	0	0	1	1	1	0	0
<i>Platycoelia hiporum</i>	1	0	0	0	2	0	0	0	0	2	0	0	0
<i>Platycoelia hirta</i>	1	0	0	0	2	0	3	1	0	2	2	0	0
<i>Platycoelia humeralis</i>	1	0	0	0	2	0	3	0	0	2	2	0	1
<i>Platycoelia ignota</i>	1	1	1	2	2	0	0	0	0	1	1	0	0
<i>Platycoelia inca</i>	0	0	1	2	1	0	0	0	0	0	1	1	0
<i>Platycoelia inflata</i>	0	0	0	0	2	0	3	1	0	0	0	0	0
<i>Platycoelia insolita</i>	0	0	1	0	0&2	0	0	0	0	1	1	0&1	0
<i>Platycoelia intermedia</i>	0	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia interstincta</i>	0	0	0	0	2	0	0	0	0	0	0	0	0
<i>Platycoelia kirschi</i>	?	0	0	0	0	0	0	0	0	1	1	1	0
<i>Platycoelia laelaps</i>	0	0	1	0	2	0	0	0	1	1	1	0	0
<i>Platycoelia lutescens</i>	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Platycoelia marginata</i>	0	0	0	0	2	0	0	0	0	1	1	0	1
<i>Platycoelia meridensis</i>	0	0	0	0	2	0	0	1	0	0	0	0	0
<i>Platycoelia mesosternalis</i>	0	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia nervosa</i>	0	0	0	0	2	0	3	0	0	0	0	0	0
<i>Platycoelia nigrosternalis</i>	0	0	0	0	2	0	3	1	0	2	0	0	1
<i>Platycoelia occidentalis</i>	1	0	0	0	2	1	0	0	0	0	0	0	1
<i>Platycoelia parva</i>	0	0	0	0	2	0	1	0	0	0&2	0	0	0
<i>Platycoelia paucarae</i>	1	0	0	0	2	0	0	0	0	2	1	0	1
<i>Platycoelia penai</i>	0	0	0	0	2	0	3	0	0	2	0	0	0
<i>Platycoelia peruviana</i>	1	0	0	0	2	0	3	1	0	0	0	0	0
<i>Platycoelia pomacea</i>	0	0	0	0	2	0	0	2	0	0	0	0	0
<i>Platycoelia prasina</i>	0	0	0	0	2	0	3	1	0	2	0	0	0
<i>Platycoelia puncticollis</i>	0	0	0	0	2	0	2	0	0	0	0	0	0
<i>Platycoelia pusilla</i>	0	0	0	0	2	0	1	0	0	2	0	0	0
<i>Platycoelia quadrilineata</i>	0	0	2	0	2	0	1	0&1	0	1&2	0&3	0	0&1
<i>Platycoelia rufosignata</i>	0	0	2	0	2	0	1	0	0	2	3	0	0
<i>Platycoelia sandia</i>	0	0	0	0	2	0	3	0	0	1	1	0	1
<i>Platycoelia selanderi</i>	0	0	0	0	2	0	0	0	0	0	2	0	0
<i>Platycoelia signaticollis</i>	1	1	2	0	2	0	0	0	0	1	1	0	0
<i>Platycoelia simplicior</i>	0	0	0	0	2	0	0	0	0	0	0	0	0
<i>Platycoelia steinheili</i>	0	0	0	0	2	0	3	0	0	1	1	0	1
<i>Platycoelia traceyae</i>	0	0	0	0	2	0	2	0	0	0	0	0	0
<i>Platycoelia unguicularis</i>	0	0	0	0	2	0	2	1	0	1	0&1	0	0
<i>Platycoelia valida</i>	1	0	0	0	2	1	0	0	0	0	0	0	0
<i>Platycoelia variolosa</i>	1	0	0	0	2	0	0	1	0	0	0	0	0
<i>Platycoelia wallisi</i>	0	0	0	0	2	0	3	0	0	0	0	0	0

Appendix 2. Checklist of the World Anoplognathini MacLeay, 1819

Subtribe Anoplonathina MacLeay, 1819

Genus *Anoplognathus* Leach, 1815

Paranonca Laporte, 1840

- Anoplognathus abnormis* MacLeay, 1873 (*Anoplognathus*) – Australia
Anoplognathus quadrilineatus Waterhouse, 1874
Anoplognathus aeneus Waterhouse, 1868 (*Anoplognathus*) – Australia
Anoplognathus aureus Waterhouse, 1889 (*Anoplognathus*) – Australia
Calloodes frenchi Blackburn, 1890
Anoplognathus concinnus Blackburn, 1900
Anoplognathus blackdownensis Carne, 1981 (*Anoplognathus*) – Australia
Anoplognathus boisduvalii Boisduval, 1835 (*Anoplognathus*) – Australia
Anoplognathus pulchripes Burmeister, 1844
Anoplognathus lineatus MacLeay, 1864
Anoplognathus brevicollis Blackburn, 1892 (*Anoplognathus*) – Australia
Anoplognathus brunnipennis Gyllenhal, 1817 (*Anoplognathus*) – Australia
Anoplognathus flavipennis Boisduval, 1835
Anoplognathus castaneipennis Laporte, 1840
Anoplognathus quadrimaculatus Ohaus, 1898
Anoplognathus chloropyrus (Drapiez, 1819) (*Anoplognathus*) – Australia
Anoplognathus nitidulus Boisduval, 1835
Anoplognathus concolor Burmeister, 1855 (*Anoplognathus*) – Australia
Anoplognathus daemeli Ohaus, 1898 (*Anoplognathus*) – Australia
Anoplognathus micantipennis Ohaus, 1898
Anoplognathus flindersensis Carne, 1981 (*Anoplognathus*) – Australia
Anoplognathus hilleri Allsopp, 1990 (*Anoplognathus*) – Australia
Anoplognathus hirsutus Burmeister, 1844 (*Anoplognathus*) – Australia
Anoplognathus explanatus Arrow, 1901
Anoplognathus quadraticeps Ohaus, 1904
Anoplognathus macalpinei Carne, 1981 (*Anoplognathus*) – Australia
Anoplognathus macleayi aurora Arrow, 1919 (*Anoplognathus*) – Australia
Anoplognathus macleayi macleayi Blackburn, 1892 (*Anoplognathus*) – Australia
Anoplognathus pallidus Arrow, 1919
Anoplognathus montanus MacLeay, 1873 (*Anoplognathus*) – Australia
Anoplognathus odewahnii MacLeay, 1873
Anoplognathus multiseriatus Lea, 1919 (*Anoplognathus*) – Australia
Anoplognathus narmarus Carne, 1957 (*Anoplognathus*) – Australia
Anoplognathus nebulosus acuminatus Ohaus, 1904 (*Anoplognathus*) – Australia
Anoplognathus nebulosus moanus Carne, 1957 (*Anoplognathus*) – Australia
Anoplognathus nebulosus nebulosus MacLeay, 1864 (*Anoplognathus*) – Australia
Anoplognathus olivieri (Dalman, 1817) (*Rutela*) – Australia
Anoplognathus impressus Boisduval, 1835
Anoplognathus duponti Boisduval, 1835
Anoplognathus pallidicollis Blanchard, 1851 (*Anoplognathus*) – Australia
Anoplognathus parvulus Waterhouse, 1873 (*Anoplognathus*) – Australia
Anoplognathus mastersii MacLeay, 1873
Anoplognathus cuprifulgens Ohaus, 1904
Anoplognathus pindarus Carne, 1957 (*Anoplognathus*) – Australia
Anoplognathus porosus (Dalman, 1817) (*Rutela*) – Australia
Anoplognathus inustus Kirby, 1818
Anoplognathus pectoralis Burmeister, 1844
Anoplognathus luridus Arrow, 1901
Anoplognathus prasinus (Laporte, 1840) (*Paranonca*) – Australia
Anoplognathus punctulatus insularis Ohaus, 1898 (*Anoplognathus*) – Papua New Guinea
Anoplognathus punctulatus punctulatus Olliff, 1890 (*Anoplognathus*) – Australia
Anoplognathus rhinastus Blanchard, 1851 (*Anoplognathus*) – Australia
Anoplognathus rothschildti Ohaus, 1898 (*Anoplognathus*) – Australia
Anoplognathus rubiginosus MacLeay, 1873 (*Anoplognathus*) – Australia
Anoplognathus rugosus Kirby, 1818 (*Anoplognathus*) – Australia
Anoplognathus viridicollis Boisduval, 1835
Anoplognathus longipennis MacLeay, 1873
Anoplognathus dispar MacLeay, 1873
Anoplognathus smaragdinus Ohaus, 1904 (*Anoplognathus*) – Australia
Calloodes prasinus MacLeay, 1873
Calloodes translucidus Benderitter, 1923
Anoplognathus suturalis Boisduval, 1835 (*Anoplognathus*) – Australia
Anoplognathus velutinus Boisduval, 1835 (*Anoplognathus*) – Australia
Anoplognathus vietor Allsopp and Carne, 1986 (*Anoplognathus*) – Australia
Anoplognathus viridiaeneus (Donovan, 1805) (*Melolontha*) – Australia
Rutela caesarea Billberg, 1817
Rutela latreillei Gyllenhal, 1817
Anoplognathus viriditarsis Leach, 1815 (*Anoplognathus*) – Australia
Rutela analis Dalman, 1817
Anoplognathus reticulatus Boisduval, 1835
Anoplognathus impressifrons Boisduval, 1835
Anoplognathus viridicollis MacLeay, 1873

Genus *Anoplostethus* Brullé, 1837

Anoplosternus Guérin-Méneville, 1838
Panschizus Blackburn, 1888

- Anoplostethus laetus* Rothschild and Jordan, 1894 (*Anoplostethus*) – Australia
Anoplostethus nobilis Benderitter, 1924
Anoplostethus opalinus Brullé, 1837 (*Anoplostethus*) – Australia
Panschizus pallidus Blackburn, 1888
Anoplostethus roseus Blanchard, 1851 (*Anoplostethus*) – Australia
Anoplostethus opalinus Blanchard, 1846

Genus *Calloodes* White, 1845

Calloodes atkinsoni Waterhouse, 1868 (*Calloodes*) – Australia, Papua New Guinea

Appendix 2. Continued

Calloodes nitidissimus Lea, 1919 (*Calloodes*) – Australia

Calloodes frenchi Ohaus, 1912*

Calloodes grayianus (White, 1845) (*Anoplognathus*) – Australia

Calloodes rayneri MacLeay, 1864 (*Calloodes*) – Australia

Genus *Epichrysus* White, 1841

Epichrysus lamprimoides (White, 1841) (*Brachysternus*) –
Australia

Genus *Paraschizognathus* Ohaus, 1904

Paraschizognathus brittoni Carne, 1974 (*Paraschizognathus*) –
Australia

Paraschizognathus brunneus Carne, 1958 (*Paraschizognathus*) –
Australia

Paraschizognathus elgatus elgatus Carne, 1958
(*Paraschizognathus*) – Australia

Paraschizognathus elgatus kiewarrus Carne, 1958
(*Paraschizognathus*) – Australia

Paraschizognathus frazieri Carne, 1974 (*Paraschizognathus*) –
Australia

Paraschizognathus marcus Allsopp and Carne, 1986
(*Paraschizognathus*) – Australia

Paraschizognathus miskoi Carne, 1974 (*Paraschizognathus*) –
Australia

Paraschizognathus ocularis Carne, 1958 (*Paraschizognathus*) –
Australia

Paraschizognathus olivaceus Ohaus, 1904 (*Paraschizognathus*) –
Australia

Paraschizognathus pinarus Carne, 1958 (*Paraschizognathus*) –
Australia

Paraschizognathus prasinicollis Ohaus, 1904 (*Paraschizognathus*) –
Australia

Paraschizognathus prasinus nigricans Ohaus, 1904
(*Paraschizognathus*) – Australia

Paraschizognathus prasinus prasinus (Boisduval, 1835)
(*Schizognathus*) – Australia

Paraschizognathus queenslandicus Carne, 1958
(*Paraschizognathus*) – Australia

Paraschizognathus tubrabuccae Carne, 1958 (*Paraschizognathus*) –
Australia

Genus *Repsimus* MacLeay, 1819

Repsimus aeneus (Fabricius, 1775) (*Melolontha*) – Australia

Scarabaeus aeratus Gmelin, 1790

Repsimus purpureipes MacLeay, 1871

Repsimus manicatus manicatus (Swartz, 1817) (*Rutela*) – Australia

Rutela bracteatus Drapiez, 1819

Anoplognathus brownii MacLeay, 1819

Anoplognathus dytiscoides MacLeay, 1819

Repsimus manicatus montanus Lea, 1919 (*Repsimus*) – Australia

Genus *Wambo* Allsopp, 1988

Wambo puticasus Allsopp, 1988 (*Wambo*) – Australia

Subtribe Schizognathina Ohaus, 1918**Genus *Amblochilus* Blanchard, 1851**

Amblochilus bicolor Blanchard, 1851 (*Amblochilus*) – Australia

Genus *Amblyterus* MacLeay, 1819

Amblyterus bundabergensis Carne, 1958 (*Amblyterus*) – Australia

Amblyterus cicatricosus (Gyllenhal, 1817) (*Melolontha*) – Australia

Amblyterus geminatus MacLeay, 1819

Amblyterus clypealis Ohaus, 1904 (*Amblyterus*) – Australia

Amblyterus deuqueti Carne, 1958 (*Amblyterus*) – Australia

Amblyterus palumia Allsopp, 1992 (*Amblyterus*) – Australia

Amblyterus paradoxus Carne, 1975 (*Amblyterus*) – Australia

Amblyterus simplicitarsis Carne, 1958 (*Amblyterus*) – Australia

Amblyterus tarsalis Lea, 1919 (*Amblyterus*) – Australia

Amblyterus tibialis Carne, 1958 (*Amblyterus*) – Australia

Genus *Bilobatus* Machatschke, 1970

Homotropus Waterhouse, 1878

Bilobatus luridipennis (Waterhouse, 1878) (*Homotropus*) –
Australia

Bilobatus testaceipennis (Ohaus, 1901) (*Homotropus*) – Australia

Genus *Cilipocha* Lea, 1914

Dynastomorphus Carne, 1954

Cilipocha angularis (Carne, 1954) (*Dynastomorphus*) – Australia

Cilipocha mandibularis (Carne, 1954) (*Dynastomorphus*) –
Australia

Cilipocha pachypus (Lea, 1917) (*Aneurystypus*) – Australia

Cilipocha pilosicollis (Lea, 1917) (*Aneurystypus*) – Australia

Cilipocha whiteae Lea, 1914 (*Cilipocha*) – Australia

Genus *Dungoorus* Carne, 1958

Dungoorus murrumbullus Carne, 1958 (*Dungoorus*) – Australia

Genus *Eosaulostomus* Carne, 1956

Eosaulostomus collaris (Blackburn, 1892) (*Aneurystypus*) –
Australia

Eosaulostomus excisus Carne, 1956 (*Eosaulostomus*) – Australia

Eosaulostomus halei Carne, 1956 (*Eosaulostomus*) – Australia

Eosaulostomus minicus (Lea, 1919) (*Saulostomus*) – Australia

Eosaulostomus norsemanae Carne, 1956 (*Eosaulostomus*) –
Australia

Eosaulostomus weiskei (Ohaus, 1904) (*Saulostomus*) – Australia

Genus *Exochogenys* Carne, 1958

Exochogenys nigripennis (Blanchard, 1851) (*Schizognathus*) –
Australia

Genus *Mesystoechus* Waterhouse, 1878

Mesystoechus ciliatus Waterhouse, 1878 (*Mesystoechus*) –
Australia

Mesystoechus costatus Carne, 1958 (*Mesystoechus*) – Australia

Appendix 2. Continued

Genus *Mimadoretus* Arrow, 1901

Popillia MacLeay, 1887

Mimadoretus flavomaculatus (MacLeay, 1887) (*Popillia*) – Australia
Mimadoretus leucothyreus Lea, 1919 (*Mimadoretus*) – Australia
Mimadoretus niveosquamosus Lea, 1919 (*Mimadoretus*) – Australia

Genus *Pseudoschizognathus* Ohaus, 1904

Pseudoschizognathus lajoyi Ohaus, 1913 (*Pseudoschizognathus*) – Australia
Pseudoschizognathus schoenfeldti Ohaus, 1904 (*Pseudoschizognathus*) – Australia
Pseudoschizognathus occidentalis Ohaus, 1913
Pseudoschizognathus varicollis Ohaus, 1904 (*Pseudoschizognathus*) – Australia

Genus *Saulostomus* Waterhouse, 1878

Saulostomus brunneoviridis Lea, 1920 (*Saulostomus*) – Australia
Saulostomus feischei Ohaus, 1904 (*Saulostomus*) – Australia
Saulostomus monteithi Carne, 1985 (*Saulostomus*) – Australia
Saulostomus striatus Ohaus, 1935 (*Saulostomus*) – Australia
Saulostomus villosus Waterhouse, 1878 (*Saulostomus*) – Australia

Genus *Schizognathus* Fischer Von Waldheim, 1823

Schizognathus apricagge Allsopp, 1989 (*Schizognathus*) – Australia
Schizognathus burmeisteri Ohaus, 1904 (*Schizognathus*) – Australia
Schizognathus compressicornis Ohaus, 1898 (*Schizognathus*) – Australia
Schizognathus lucidus Ohaus, 1904 (*Schizognathus*) – Australia
Schizognathus macleayi Fischer Von Waldheim, 1823 (*Schizognathus*) – Australia
Schizognathus mesosternalis Ohaus, 1912 (*Schizognathus*) – Australia
Schizognathus rugulosus Carne, 1958 (*Schizognathus*) – Australia
Schizognathus viridiaeneus Ohaus, 1904 (*Schizognathus*) – Australia

Genus *Trioplognathus* Ohaus, 1904

Trioplognathus griseopilosus (Ohaus, 1901) (*Anoplognathus*) – Australia
Anoplognathus antiquus Arrow, 1919

Subtribe *Phalangogoniina* Ohaus, 1918

Genus *Phalangogonia* Burmeister, 1844

Phalangogonia dispar Ohaus, 1925 (*Phalangogonia*) – Guatemala, Honduras
Phalangogonia jamesonae Smith and Morón, 2003 (*Phalangogonia*) – México
Phalangogonia lacordairei Bates, 1888 (*Phalangogonia*) – México
Phalangogonia obesa Burmeister, 1844 (*Phalangogonia*) – México, Guatemala
Phalangogonia parilis Bates, 1888 (*Phalangogonia*) – Guatemala
Phalangogonia championi Bates, 1888

Phalangogonia punctata Franz, 1955 (*Phalangogonia*) – El Salvador

Phalangogonia ratcliffei Smith and Morón, 2003 (*Phalangogonia*) – México

Phalangogonia sperata Sharp, 1877 (*Phalangogonia*) – Honduras, Nicaragua, Costa Rica, Panamá
Phalangogonia stipes Sharp, 1877

Phalangogonia debilidens Ohaus, 1904

Subtribe *Platycoeliina* Burmeister, 1844

Genus *Platycoelia* Dejean, 1833

Callichloris Burmeister, 1844

Leucopelaea Bates, 1891

Epicallichloris Gutiérrez, 1951

Platycoelia abdominalis Ohaus, 1904 (*Platycoelia*) – Perú
Platycoelia aenigma Smith, 2003 (*Platycoelia*) – Perú
Platycoelia alternans Erichson, 1847 (*Platycoelia*) – Bolivia, Perú
Platycoelia alticola (Gutiérrez, 1951) (*Callichloris*) – Bolivia
Platycoelia altiplana Smith, 2003 (*Platycoelia*) – Bolivia
Platycoelia baessleri (Ohaus, 1904) (*Callichloris*) – Perú
Platycoelia bocki (Ohaus, 1925) (*Callichloris*) – Bolivia
Platycoelia bordoni Martínez, 1976 (*Platycoelia*) – Colombia
Platycoelia burmeisteri Arrow, 1899 (*Platycoelia*) – Bolivia, Perú
Platycoelia tschudii Ohaus, 1904
Platycoelia proseni Martínez, 1976
Platycoelia burmeisteriana Ohaus, 1917 (*Platycoelia*) – Bolivia, Perú
Platycoelia burmeisteri Ohaus, 1904
Platycoelia butleri Smith, 2003 (*Platycoelia*) – Bolivia, Ecuador, Perú
Platycoelia chrysolina Ohaus, 1904 (*Platycoelia*) – Bolivia, Perú
Platycoelia pulchrior Ohaus, 1904
Platycoelia confluens Ohaus, 1904 (*Platycoelia*) – Bolivia
Platycoelia convexa Smith, 2003 (*Platycoelia*) – Bolivia, Perú
Platycoelia flavohumeralis Smith, 2003 (*Platycoelia*) – Colombia
Platycoelia flavoscutellata Ohaus, 1904 (*Platycoelia*) – Bolivia
Platycoelia flavostriata (Latreille, 1813) (*Melolontha*) – Argentina, Bolivia, Colombia, Ecuador, Perú, Venezuela
Platycoelia forcipalis Ohaus, 1904 (*Platycoelia*) – Ecuador
Platycoelia furva Smith, 2003 (*Platycoelia*) – Ecuador
Platycoelia galerana Smith, 2003 (*Platycoelia*) – Ecuador
Platycoelia gaujoni Ohaus, 1904 (*Platycoelia*) – Ecuador, Perú
Platycoelia grandicula Smith, 2003 (*Platycoelia*) – Costa Rica, Panamá
Platycoelia haenkei (Gutiérrez, 1952) (*Callichloris*) – Bolivia
Platycoelia helleni (Ohaus, 1904) (*Callichloris*) – Colombia, Perú
Platycoelia hiporum Smith, 2003 (*Platycoelia*) – Colombia, Ecuador
Platycoelia hirta Ohaus, 1904 (*Platycoelia*) – Bolivia
Platycoelia humeralis Bates, 1888 (*Platycoelia*) – Costa Rica, Guatemala, Honduras, México, Panamá
Platycoelia ignota Smith, 2003 (*Platycoelia*) – Colombia
Platycoelia inca Smith, 2003 (*Platycoelia*) – Perú
Platycoelia inflata Ohaus, 1904 (*Platycoelia*) – Argentina, Bolivia, Perú
Platycoelia tucumana Ohaus, 1904
Platycoelia insolita Smith, 2003 (*Platycoelia*) – Perú
Platycoelia intermedia Ohaus, 1925 (*Platycoelia*) – Ecuador
Platycoelia interstincta Smith, 2003 (*Platycoelia*) – Colombia
Platycoelia kirschi (Ohaus, 1904) (*Callichloris*) – Perú

Appendix 2. Continued

- Platycoelia laelaps* (Gutiérrez, 1951) (*Callichloris*) – Perú
Platycoelia lutescens Blanchard, 1851 (*Platycoelia*) – Colombia, Ecuador, Perú
Leucopelaea albescens (Bates, 1891)
Leucopelaea baronis (Ohaus, 1905)
Platycoelia marginata Burmeister, 1844 (*Platycoelia*) – Colombia, Ecuador, Perú, Venezuela
Platycoelia olivacea Blanchard, 1851
Platycoelia laevis Burmeister, 1855
Platycoelia scutellata Guérin-Méneville, 1855
Platycoelia meridensis Smith, 2003 (*Platycoelia*) – Venezuela
Platycoelia mesosternalis Ohaus, 1904 (*Platycoelia*) – Costa Rica, Panamá
Platycoelia nervosa Kirsch, 1871 (*Platycoelia*) – Colombia, Ecuador
Platycoelia nigrostenalis Ohaus, 1904 (*Platycoelia*) – Colombia
Platycoelia occidentalis Ohaus, 1904 (*Platycoelia*) – Colombia
Platycoelia parva Kirsch, 1885 (*Platycoelia*) – Colombia, Ecuador, Perú
Platycoelia nigricauda Bates, 1891
Platycoelia paucarae Smith, 2003 (*Platycoelia*) – Ecuador
Platycoelia penai Frey, 1967 (*Platycoelia*) – Ecuador
Platycoelia peruviana Smith, 2003 (*Platycoelia*) – Bolivia, Perú
Platycoelia pomacea Erichson, 1847 (*Platycoelia*) – Bolivia, Brazil, Perú
Platycoelia boliviensis Blanchard, 1851
Platycoelia brasiliensis Ohaus, 1904
Platycoelia prasina Erichson, 1847 (*Platycoelia*) – Argentina, Bolivia, Perú
Platycoelia limbata Ohaus, 1904
Platycoelia puncticollis Ohaus, 1904 (*Platycoelia*) – Colombia, Ecuador, Venezuela
Platycoelia pusilla Smith, 2003 (*Platycoelia*) – Colombia
Platycoelia quadrilineata Burmeister, 1844 (*Platycoelia*) – Colombia, Ecuador
Platycoelia rufosignata Ohaus, 1904 (*Platycoelia*) – Bolivia, Perú
Platycoelia sandia Smith, 2003 (*Platycoelia*) – Ecuador
Platycoelia selanderi Martínez and Martínez, 1994 (*Platycoelia*) – Argentina, Bolivia, Perú
Platycoelia signaticollis (Burmeister, 1844) (*Callichloris*) – Colombia
Platycoelia simplicior Ohaus, 1909 (*Platycoelia*) – Argentina
Platycoelia steinheili Ohaus, 1904 (*Platycoelia*) – Colombia, Ecuador
Platycoelia traceyae Smith, 2003 (*Platycoelia*) – Ecuador
Platycoelia unguicularis Ohaus, 1904 (*Platycoelia*) – Colombia, Venezuela
Platycoelia valida Burmeister, 1844 (*Platycoelia*) – Colombia
Platycoelia variolosa Ohaus, 1904 (*Platycoelia*) – Colombia
Platycoelia wallisi Ohaus, 1904 (*Platycoelia*) – Colombia
- Aulacopalpus aconcaguensis* Smith, 2002 (*Aulacopalpus*) – Chile
Aulacopalpus castaneus (Laporte, 1840) (*Brachysternus*) – Chile
Bembegeneius fulvescens Solier, 1851
Tribostethes cupreus Philippi and Philippi, 1864
Aulacopalpus fulvovirens Ohaus, 1910
Aulacopalpus ciliatus (Solier, 1851) (*Tribostethes*) – Argentina, Chile
Aulacopalpus clypealis Ohaus, 1905 (*Aulacopalpus*) – Chile
Aulacopalpus pilicollis (Fairmaire, 1883) (*Tribostethes*) – Argentina, Chile
Aegolasia michaelsoni Kolbe, 1907
Aulacopalpus punctatus (Fairmaire and Germain, 1860) (*Tribostethes*) – Chile
Amblyterus variabilis Philippi, 1861
Aulacopalpus pygidialis Ohaus, 1905 (*Aulacopalpus*) – Chile
Aulacopalpus valdiviensis Smith, 2002 (*Aulacopalpus*) – Chile
Aulacopalpus viridis Guérin-Méneville, 1838 (*Aulacopalpus*) – Chile
Tribostethes virens Philippi and Philippi, 1864
- Genus *Brachysternus* Guérin-Méneville, 1831**
- Brachysternus angustus* (Philippi and Philippi, 1864) (*Aulacopalpus*) – Argentina, Chile
Brachysternus germaini (Ohaus, 1910) (*Tribostethes*) – Chile
Brachysternus marginatus Germain, 1905 (*Brachysternus*) – Chile
Brachysternus olivaceus Philippi and Philippi, 1864 (*Brachysternus*) – Chile
Brachysternus chloris Philippi and Philippi, 1864
Brachysternus riverae Germain, 1905
Brachysternus herbaceus Germain, 1905
Brachysternus araucanicus Ohaus, 1905
Brachysternus patagoniensis Jameson and Smith, 2002 (*Brachysternus*) – Argentina, Chile
Brachysternus prasinus Guérin-Méneville, 1831 (*Brachysternus*) – Argentina, Chile
Brachysternus fulvipes Guérin-Méneville, 1838
Brachysternus vicinus Guérin-Méneville, 1840
Brachysternus sinuatifrons Germain, 1905
Brachysternus viridis Germain, 1905
Brachysternus pubescens Germain, 1905
Brachysternus dilatatus Germain, 1905
Brachysternus viridipes Ohaus, 1905
Brachysternus hirtus Ohaus, 1905
Brachysternus spectabilis Erichson, 1847 (*Brachysternus*) – Argentina, Chile
Brachysternus obscurus Philippi and Philippi, 1864
Brachysternus major Philippi and Philippi, 1864
Brachysternus philippii Germain, 1905
- Genus *Hylamorpha* Arrow, 1899**
- Hylamorpha elegans* (Burmeister, 1844) (*Aulacopalpus*) – Argentina, Chile
Callichloris perelegans Curtis, 1845
Sulcipalpus subviolaceus Nonfried, 1894
Hylamorpha rufimana Arrow, 1899
Hylamorpha cylindrica Arrow, 1899

Subtribe *Brachysternina* Burmeister, 1844**Genus *Aulacopalpus* Guérin-Méneville, 1838**

- Tribostethes* Curtis, 1845
Bembegeneius Solier, 1851
Sulcipalpus Harold, 1869
Pseudadelphus Arrow, 1899
Amblyterodes Germain, 1905
Aegolasia Kolbe, 1907

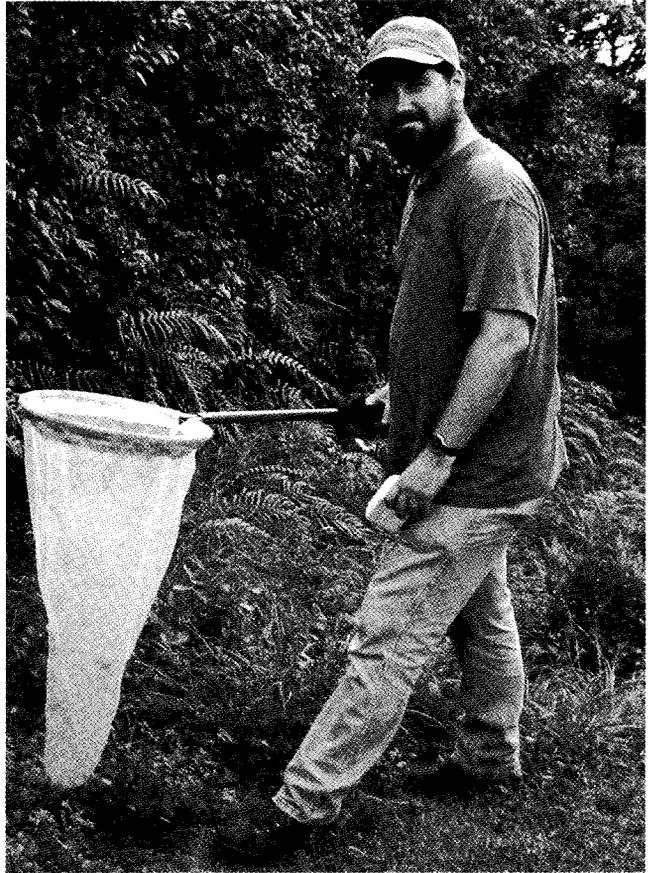
* *Calloodes frenchi* Ohaus, 1912 is a primary junior homonym of *Calloodes frenchi* Blackburn, 1890 and is permanently invalid under Article 57.2 of the ICZN.

ABOUT THE AUTHOR

Dr. Andrew Smith is a Research Associate with the University of Nebraska State Museum. His research interests include the systematics, evolution, biogeography, and conservation of scarab beetles. His current research focus is on the phylogenetics and biogeography of phytophagous scarabs, especially in the southern hemisphere. He is also conducting monographic revisions of other ruteline genera besides *Platycoelia*.

Smith started on his path to a career in insect taxonomy early in life. At a young age, he spent a lot of time traveling around North America, staying at field stations, camping in parks, and going to other remote areas while his father collected water mites. His father, Ian Smith, is a research scientist with the Canadian National Collection who studies water mite systematics. This early and extensive exposure to natural habitats led to an interest in collecting beetles (among other things). Many years later, while attending Carleton University in Ottawa, Canada, his interest in beetles was rekindled when he attended a field course in Costa Rica taught by Monty Wood. While on the field course, Smith was introduced to the wonders of tropical entomology and the amazing diversity of scarab beetles. Smith later returned to Costa Rica twice and also went to Bolivia. Back at Carleton, courses taught by Henry Howden and Stuart Peck provided the impetus for continuing on with scientific studies on scarab beetles.

After finishing his undergraduate degree, Smith spent an intense but gratifying field season conducting research on small mammals in northern Ontario (northwest of Thunder Bay). This was followed by a Masters degree at the University of Toronto with two field seasons of forest bird censuses and research at the Wildlife Research Station in



Dr. Andrew Smith collecting at the peak of Cerro Montecristo, El Salvador. Photo by Mary Liz Jameson.

Algonquin Provincial Park, Ontario. These experiences taught him how to be a research scientist and the importance and enjoyment of conducting field research.

In 1997, Brett Ratcliffe and Mary Liz Jameson offered Smith a Ph.D. position at the University of Nebraska-Lincoln to conduct scarab systematics research. At UNL, Smith's research flourished and resulted in monographic revisions, phylogenetic analyses, and larval descriptions of several poorly known taxa. He also went on field trips to El Salvador, Honduras, Nicaragua, Venezuela, Ecuador, and Argentina to conduct scarab research. This monograph on *Platycoelia* is the main product of Smith's research endeavors as a Ph.D. student.



Platycoelia flavostriata from Rancho Grande, Venezuela

